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16–18 September 2015, Oslo, Norway

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Contents

Keynote lectures S1

Oral presentations S5

Frailty and sarcopenia S5
Comorbidity and multimorbidity S9
Acute care S11
Geriatric education S13
Geriatric rehabilitation S14
Organisation of care and gerotechnology S15
Biogerontology and genetics S15
Metabolism and nutrition S16
Infectious diseases and vaccines S17
Pharmacology S19
Cognition and dementia S20
Comprehensive geriatric assessment S22
Delirium S24
Psychiatric symptoms and illnesses S26
Geriatrics in organ disease S26
Pre- and postoperative care S27
Ethics and end of life care S29
Longevity and prevention S29

Poster presentations S32

Acute care S32
Biogerontology and genetics S44
Cognition and dementia S46
Comorbidity and multimorbidity S57
Comprehensive geriatric assessment S65
Delirium S76
Ethics and end of life care S79
Frailty and sarcopenia S84
Geriatric education S94
Geriatrics in organ disease S96
Geriatric rehabilitation S102

Infectious diseases and vaccines ... S113
Longevity and prevention ... S118
Metabolism and nutrition ... S123
Organisation of care and gerotechnology ... S132
Pharmacology ... S136
Pre- and postoperative care ... S146
Psychiatric symptoms and illnesses ... S152

Symposia ... S157

Invited symposium ... S157
The old kidney – challenges and possibilities ... S157
Improving the care for older patients with cancer ... S158
Invited symposium: Pre- and postoperative care ... S159
Quality improvement in hip fracture care ... S159
Invited symposium ... S160
Delirium in elderly patients ... S160
Acute functional decline ... S161
Dementia, Biomarker, Genetics and Experimental treatment ... S161
Symposium: Metabolism and nutrition ... S163
Impact of nutrition for health of older people: Asian's perspective ... S163
"nutritionDay in nursing homes" – present state and future prospects ... S164
Symposium: Geriatric education ... S165
Dissemination and action to promote Physical Activity (PA). Educational and behavioral aspects to increase PA in clinical practice ... S165
Innovating for a reason: using new educational technologies to improve learning in geriatric medicine ... S166
SIG Symposium ... S168
An international overview of nursing home research: EUGMS and AMDA I ... S168
An international overview of nursing home research: EUGMS and AMDA II ... S169
How to get published? ... S170
Joint symposium EUGMS SIG Falls Prevention and Fracture/ProFouND/EIP on AHA/EUNAAPA ... S170
SIG Symposium: Pre- and postoperative care ... S172
Successful aging creates new challenges in geriatric cardiology – TAVI as novel treatment in aortic stenosis ... S172
SIG Symposium ... S173
Geriatric Emergency Medicine – the future of modern healthcare ... S173
SIG Symposium: Infectious diseases and vaccines ... S173
Vaccine for seniors: present and future ... S173
SIG Symposium ... S174
Palliative medicine ... S174
Symposium: Cognition and dementia ... S175
Falls in cognitive impairment and dementia: identifying those at risk and developing novel interventions ... S175

Late-breaking abstracts ... S177

Oral presentations ... S177
Posters ... S179

Author index ... S189

European Geriatric Medicine 6S1 (2015) S1–S4

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Keynote lectures

KL-01
Longevity for future Europeans – Genes and lifestyle

K. Christensen
The Danish Twin Registry, Odense C, Denmark

A rapidly increasing proportion of individuals in the Europe are surviving into their tenth decade. While there is no doubt that we are doing well in making the elderly survive better than previously, the key questions are whether this will continue, what the underlying mechanisms are, and whether we are also doing good for the oldest-old. There is widespread concern that the basis for the survival success is better survival of frail and disabled elderly into the highest ages, the so-called "Failure of Success Hypothesis". An alternative hypothesis is that we are experiencing a "Success of Success", i.e., an increasing proportion of the population is living to the highest ages in better health than previous generations. The planning of and policy development for the future care of the oldest-old will be highly dependent on whether one or both genders are experiencing the "Failure of Success" or the "Success of Success" as they may reach the highest ages. This scientific knowledge is of fundamental importance for the sustainability of modern societies.

KL-02
The world is aging, but individuals are not: what can we expect in the future?

L. Fratiglioni
Karolinska Institutet, Stockholm, Sweden

It is the first time in the history of mankind that the proportion of the aged population (conventionally identified as 65+) is growing steadily worldwide. This is a relatively new phenomenon that started in the industrialized countries and has now also reached less developed areas of the world. Unfortunately, we have mostly focused our attention on the negative consequences linked to the aging of the population. This increasing focus on the negative aspects has already led to deleterious consequences for individuals who are frightened, for example, at the appearance of the first signs of memory decline that are not always related to the development of Alzheimer's disease. We need to implement a more scientific attitude in our approach to health and illness in old age. During recent decades population-based studies have made tremendous progress showing that aging is not necessarily linked to disease and disability. Health status in late life is a result of the complex interaction of genetic susceptibility, biological factors, and environmental exposure, experienced over the whole life span. Current evidence strongly supports the important role of lifestyles and health behaviors – including nutrition, physical activity and psychosocial factors – and vascular burden in the pathogenetic process and clinical manifestation of several age-related diseases such as dementia and multimorbidity. It is expected that interventions leading towards the promotion of healthy behaviors, the optimal control of vascular factors; the maintenance of a socially-integrated lifestyle and mentally-stimulating activities may lead to a longer and healthier life after the age of 75.

KL-04
Anti-aging medicine

V. Calabrese
University of Catania, Italy

Symptomatic Medicine operates only when the disease becomes manifest, in the attempt to identify and contrast disease progression. Even the concept of check up is based on biochemical and instrumental analysis (echography, radiology, …) aims at detecting (but not preventing) signals from factors triggering the pathological process.
Preventive Medicine, on the contrary, invests in health by implementing preventive strategies aimed at mitigating the risk of disease and inverting the chronic pathological process.
Anti-aging medicine is a sort of preventive medicine, namely a healthy aging medicine, which is the result of the gerontology research on human aging and has the scope of keeping the patient in a state of health and wellness.
Anti-aging medicine has been fairly developed over the last decade due to discoveries in the field of genetics, pharmacology, biotechnology, nano-technology and info-technology; as a consequence, it has invaded the field of traditional symptomatic medicine by progressively integrating the traditional with the innovative approach, acquiring scientific dignity and restoring the original intent of the medical mission, which is to prevent and/or modify, rather than post-pone, the onset of disease.
Anti-aging medicine is not an end in itself, rather it is an appropriate tool to determine the health level at any given time and to implement preventive interventions to protect health from a potential disease risk.
As a result, anti-aging medicine should be considered a healthcare approach, which is focused on the prevention of disease and life span increase, in contrast to symptomatic treatment; therefore, it cannot be simply a medical procedure, nevertheless it should be adopted from the health system and healthcare professionals.
In conclusion, anti-aging medicine is a predictive medicine because it can predict, via genetic testing, the onset and development of a pathological process in any cells of the organisms. In addition, it is an holistic medicine as it considers the physiological and/or pathological processes of our cells at a global level and in real time. It is also a preventive medicine that enables to discover what has been manifesting or will be manifest in the near or long term future; along with this, it allows to implement interventions that are able to prevent, modify, delay progression, postpone the onset or block these biological processes. Moreover, it is a regenerative medicine because it is capable of acting directly onto mechanisms of cellular regenerations. Finally, anti-aging medicine is a complementary medicine as it completes the traditional medicine, although with different timing and modalities.

KL-06
Cancer and aging: Facing realities and an uncertain future

J. Breivik
University of Oslo, Oslo, Norway

Cancer development is closely related to aging and arguably an inevitable consequence of our multicellular composition. The better we become at treating cancer and other diseases, the longer we live and the more cancer cases there will be in the population. Accordingly, the great cancer epidemic is not a problem modern medicine is about to solve – it is a problem we are about to create. Moreover, if we should find a solution to cancer – and aging – presumably by replacing or reprogramming the cells of the organism, this development will have dramatic implications for society. It may in fact be the end to humanity, as we know it. The prevailing dogma that the solution to cancer awaits around the next corner, as some kind of ingenious therapy is highly misleading, and it is time to communicate a more balanced and realistic understanding of cancer and cancer research.

KL-07
Physical activity as primary and secondary prevention

T. Rantanen
Department of Health sciences and Gerontology Research Centre, University of Jyväskylä, University of Jyväskylä, Finland

In old age physical activity can mostly be studied in terms of secondary or tertiary prevention as most people have comorbidity. Alleviating the consequences of chronic conditions is essential in postponing the transition from active old age (the third age) to disabled old age (the fourth age) with reduced opportunities for participation and good quality of life. A novel way to look at the transition from the third to the fourth age is through changes in life-space mobility. Life-space refers to the spatial area where a person purposefully moves through. The smallest life-space may comprise only one room. Going to other rooms, to the yard, neighborhood or beyond extends the life-space. Mobility is optimal when people are able to go where they wish, when they wish and using the transportation they wish. Mobility is a prerequisite for accessing community amenities. Life-space mobility is based on the balance between a person's internal capacity and the external challenges encountered in daily life. Life-Space Mobility in Old Age is a study among 848 75–90-year old people who were followed up for two years for changes in their life-space mobility. Of them, at the baseline, 174 wore an accelerometer for seven days to objectively assess their physical activity level, and 360 kept a diary about their physical activity for seven days in terms of activities and places visited. Higher life-space mobility was associated with better quality of life, more physical activity, less depressive symptoms, better sensory functions and lower extremity performance, better sense of autonomy and better transportation options. During the days when people did not go out of home, 70% exhibited three minutes or less physical activity. Not going outdoors daily was associated with poor lower extremity performance and environmental mobility barriers especially in the entrance areas of homes. The study suggests that solving mobility barriers around the entrance areas and going out daily may be postpone life-space restriction and transition to the fourth age.

KL-09
Adverse events and negative consequences of physical exercise in older people

M. Myrstad
Diakonhjemmet Hospital, Oslo, Norway

The benefits of physical exercise might be largest in the least active individuals. At the same time, inactive old individuals are likely to be the most vulnerable to adverse effects of exercise. There is a lack of evidence regarding the safety of exercise in older people, but the overall incidence of adverse events and negative consequences of physical exercise seems to be low.

Individuals with underlying cardiovascular pathology have an increased risk of sudden cardiac death during endurance exercise. Furthermore, prolonged regular endurance exercise has been associated with an increased risk of atrial fibrillation. Progressive resistance strength training might be linked to musculoskeletal injuries and many types of exercise might be associated with an increased risk of falls and injuries, especially in frail individuals and individuals with impaired mobility.

Some situations require evaluation by a physician prior to exercise. The main goal of the evaluation is to achieve the valuable benefit of the activity at minimal risk. The evaluation should be supportive, enabling and solution oriented, in line with existing guidelines and it should balance enthusiasm and caution. Co-morbid conditions should be optimally treated and attention should be drawn to the nutritional status. The dose and type of exercise should be individually tailored and the abilities, needs and preferences of each individual should be taken into account.

For the majority, potential harmful side-effects of exercise are by far outweighed by the benefits of regular physical activity. With few exceptions, all individuals, also those with impaired mobility or chronic diseases, should be encouraged to practice regular physical activity and exercise.

KL-11
The patient's choice and preferences

D. O'Neill
Trinity College Dublin, Dublin, Ireland

One of the most subtle and sophisticated areas of clinical practice in geriatric medicine is that of eliciting and acting upon the preferences of the patient, particularly those with impairments of cognition and/or communication. Ageism (including that of older people), gerontological illiteracy, and neglect of the ethical and practical dimensions of the informant history [1] are among the factors that hinder the emergence of the patient's voice and preference in care decisions within the complex matrix of more vocal relatives/caregivers and healthcare professionals. Even within the practice of geriatric medicine the format of care-planning meetings may unwittingly impede the emergence of patient's voice and wishes if not appropriately structured [2]. Research studies on age-related diseases may also include endpoints that do not reflect the desired endpoints of older people [3]. This presentation will cover recent research on how geriatricians and gerontologists might best illuminate the viewpoint of older people, and diffuse this knowledge base into the wider practice of healthcare.

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KL-12
The role of pharmacogenetics in individualized drug treatment of older people

E. Molden
Center for Psychopharmacology, Diakonhjemmet Hospital, and School of Pharmacy, University of Oslo, Oslo, Norway

Background: Aging and pharmacogenetics are two independent factors that may predispose for unwanted drug effects. While age-

dependent changes in pharmacokinetics and pharmacodynamics are progressive, pharmacogenetic differences are inherent (lifelong) sources of pharmacological variability

Aims: (i) To illustrate how the effect of aging may depend on pharmacogenetic factors, and (ii) outline future potential of pharmacogentic analyses for individualized drug treatment in older people.

Key points: Aging causes a general decline in pharmacokinetic processes, e.g. drug metabolism, renal filtration and P-glycoprotein-mediated efflux transport. The impact of pharmacogentics in terms of pharmacological vulnerability is therefore increased by age, as secondary/backup processes are reduced in the elderly. We recently showed that the impact of age on serum concentrations of the antidepressant venlafaxine was much stronger in the subgroup born without CYP2D6 metabolism ('poor metabolizers', i.e. 8-fold higher levels in patients >65 years vs. <40 years, than those with normal CYP2D6 phenotype ('extensive metabolizers', i.e. ~1.5-fold age-difference) [1]. This illustrates that the clinical relevance of pharmacogenetic variability is boosted by age.

Today, several pharmacogenetic analyses are available as routine tests at many laboratories. To bring out the full potential of these tests in terms of improving drug therapy, it is necessary with clinical guidelines providing indications and practical information for the application of pharmacogenetic analyses. In such guidelines, multiple drugs in the elderly should be considered as an independent indication for requisition of pharmacogenetic analyses. For the benefit to be maximized, it is important that information from pharmacogenetic analyses follows the patient through the health care system and that sufficient expertise for the use of the information is available.

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KL-13
Surgical care for older people, the present and future role of the geriatrician

D.E. Forman
University of Pittsburgh Medical Center, Pittsburgh, United States of America

The demographics of aging create a very important role for the geriatrician as an integral part of surgical care. Older adults are most likely to become surgical candidates, but due to the inherent intricacies of aging, the expertise of an excellent surgeon and hospital is not sufficient to provide excellent surgical care. The geriatrician provides expertise to enhance the care provided by surgeons, anesthesiologists, and others in the traditional surgical team by supplying key perspectives in regard to each patient's personal and health parameters, and also to the broader context of their lives. The geriatrician can help clarify critical detail in regard baseline health issues (e.g., cardiovascular, renal, pulmonary, and neurologic) as well as those that are especially age-related (e.g., frailty, cognition, multi-morbidity, polypharmacy, weight changes, and family supports). Even more fundamentally, the geriatrician provides expertise to clarify if surgery is truly aligned with each patient's goals and whether or not those goals are feasible. Likewise, the geriatrician provides expertise to enrich pre-op (nutrition, pre-habilitation) and post-op (rehabilitation, home-care, medication and pain management, family support) management to best ensure optimal outcomes. In general, the geriatrician facilitates a holistic approach to surgery that expands the orientation from a procedure into an extended process that is commensurate with the needs of older patients. Overall, the geriatrician provides broad medical insight and expertise which facilitates patient-centered approaches as a basic part of surgical management.

KL-14
Surgery in older people – the present and future role of the geriatrician. Cancer surgery

J. Dhesi
Guys and St Thomas' NHS Foundation Trust, London, United Kingdom

Increasing numbers of older people are undergoing both elective and emergency surgery for cancer. This is related in part to changing demographics and patient expectations, but also to advances in surgical and anaesthetic technique. The benefits of cancer surgery in the older population are comparable to the younger, namely improvements in mortality, morbidity, symptom and pain control, functional status, and quality of life. However in comparison to younger patients, older people have higher rates of post-operative complications, longer length of stay and higher postoperative mortality. Recent reports have demonstrated deficiencies in the care we provide for this vulnerable group of patients. These findings have led to the suggestion that we need to radically review the traditional model of care for surgical patients. This presentation will describe the evidence base relating to older cancer surgical patients in the context of recent reports, will consider the challenges we face in delivering safe and effective clinical services and describe approaches being taken by geriatricians working with multidisciplinary teams to improve outcomes.

Learning objectives:

1. To understand the changing profile of the cancer surgical population
2. To understand the impact of this clinical profile on postoperative outcomes
3. To consider the deficiencies of the traditional cancer surgical pathway
4. To understand the benefits of new approaches to delivery of care for older cancer surgical patients

KL-15
Surgery in older people – the present and future role of the geriatrician: Orthopaedic surgery

F. Frihagen
Orthopaedic Department, Oslo University Hospital, Oslo, Norway

Orthopaedic patients are getting older and orthopaedic surgeons operate on older patients in all areas of orthopaedic surgery. The present role of the geriatrician varies widely across Europe, as does the role of the orthopaedic surgeon. The archetypical orthogeriatric diagnosis is hip fracture. This is also where most of the clinical experience for orthogeriatric co-management, and most of the science, is found. Other patient groups that may be labeled orthogeriatric due to the complexity of the treatment and an increased risk of complications, medical as well as surgical, would be other elderly patients with fractures and elderly and/or multimorbid elective patients undergoing major orthopaedic surgery (e.g. hip or knee arthroplasty, or major revision surgery). The potential benefit for these groups is less studied. Various models of collaboration between orthopaedic surgeons and geriatric teams exist, some with a high degree of integration with a joint responsibility, and some with the one party functioning in a consultative role and the other assuming the main responsibility for the patients. It may be that the large variation in the systems for implementing orthogeriatric care is only in part due to medical knowledge, and also dependent on local treatment traditions, organizational factors and budget. The best functioning systems seem to be the ones with a high degree of integration, or the ones where the geriatric teams have a leading role. It remains unclear if sub groups of patients benefit more or less from orthogeriatric care, for instance according to pre-surgical functional level or morbidity.

KL-17
Dementia diagnostics – state of the art in Europe

J. Snaedal
Geriatric Department, Landspitali University Hospital, Reykjavik, Iceland

The view on diagnosis of the causes of cognitive impairment and dementia has fundamentally changed in the last decade. Before, the diagnosis of the most prevalent cause, Alzheimer's Disease (AD) was made only after other causes had been ruled out and furthermore, the disease should have been progressed into dementia. After the groundbreaking publications by B. Dubois and co-workers in 2007 and 2010, most clinicians regard biomarkers to form the basis for positive diagnosis of the disease, irrespective of the disease stage. In Europe, the biomarkers are generally considered to be a clear indication of the disease but in North America, clinical guidelines are more cautious even though they use the same types of biomarkers.
In this presentation, the main types of biomarkers for AD will be discussed, their importance as well as some pitfalls in interpretation of results. Some glimpse into other possible biomarkers of AD will be given as well as into biomarkers and clinical diagnosis of other causes of cognitive impairment and dementia. Last but not least, some ethical issues will be discussed regarding the importance of early diagnosis as well as the challenges clinicians will face in the coming years when they will have access to new and most probably expensive pharmacological agents.

KL-19
Integrated geriatric care in acute hospitals

A.J. Cruz-Jentoft
Hospital Universitario, Ramon y Cajal, Madrid, Spain

Geriatric care has relentlessly grown in acute care hospitals in most European countries. Geriatric departments usually deploy a wide range of services, from acute care to outpatient geriatric clinics to home care, to manage complex older patient needs. Geriatric departments should have some common aspects in the way they work, as is mostly true for some organ specialities. But heterogeneity in acute geriatric care is wide both between and within countries. In this presentation, usual services or levels of care offered by geriatric departments will be described, and evidence for their effectiveness will be showed. The question about a "core" set of services that may be used to define a standard geriatric department in Europe will be discussed.
Nowadays roughly half of the patients admitted to an acute care hospital are older than 65, and the number of those over 80 is increasing exponentially. Geriatric units cannot and should not take care of every old individual, and in real practice most older patients will not be cared for by geriatricians. Although evidence for geriatric consultation is weak, there are many other ways that geriatric departments can use to influence on the way older patients are cared when admitted under other medical or surgical specialties. These will be reviewed and discussed.
Finally, geriatric's core is multidisciplinar. Special links should be established with some key disciplines, that will have an impact on results of geriatric care. A brief review of such links and how they can be developed will be offered.

KL-20
Interface geriatrics in a nutshell

S. Conroy
University of Leicester, Leicester, United Kingdom

Health and social care systems are starting to experience the boom in the oldest old. Much as this is a testament to societal advances in general, it does present some challenges. Much of the focus in recent times has been on hospital admissions and how to prevent them.
However, preventing hospital admissions is not easy, and several large scale projects targeting older people with varying levels of risk of admission have failed to demonstrate either clinical or cost-effectiveness [1–3].
An alternative is to look at the hospital's response to the increasing number of older people attending. Traditionally emergency departments have not focussed on older people and the emergency medicine curriculum has not hitherto covered geriatric medicine in any great detail. These factors, combined with the immense pressure of the 4-hour target, mean that the conversion rate (proportion attending that are admitted) is higher in the oldest old compared to any other group.
By introducing the principles of Comprehensive Geriatric Assessment into the emergency care axis, it might be possible to attenuate the ED conversion rate for older people. But this alone is insufficient – closing the front door even with correct assessment, is insufficient if attention is not paid to the back door.
Interface geriatrics seeks to re-establish the link between primary secondary care, essentially re-introducing the 'G' of CGA into emergency, acute and community care of older people.
Results from Leicester indicate that incorporating CGA in the emergency department reduced admissions in those aged 85+ by 10%; in addition strengthening CGA in the community settings was associated with a 25% reduction in readmissions [4].

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Oral presentations

Frailty and sarcopenia

O-001

Low serum creatinine levels in orthogeriatric patients and its consequences on kidney function assessment, with relation to possible benefits of utilizing cystatin C levels

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Introduction: Aim of this study was to evaluate the performance of formulas for estimation of glomerular filtration rate (GFR) – as recommended by international guidelines – for a specific population such as Orthogeriatrics.
Methods: Test subjects: 571 patients of the "Traumatology and General Orthopedics Department", aged over 65 years with bone fractures requiring surgical treatment.
This observational study utilized levels of creatinine and CysC at entry and, where available, post operation. It then estimated GFR with formulas: MDRD, CKD-EPIcreatinine, CKD-EPICysC, CKD-EPIcreatinine-CysC, BIS-1 and BIS-2.
Results: During hospitalization the creatinine levels diminished from 0.97 to 0.78 mg/dL ($p < 0.001$), while CysC levels were stable (p=ns). This happened especially in hip fracture cases (Fig.1). The GFR calculated with formulas based on creatinine, obviously and paradoxically, became higher as time progressed ($p < 0.001$). The GFR calculated with the CKD-EPICysC formula, however, remained stable. The prevalence of chronic kidney disease changed with the used formula: 17% with MDRD or CKD-EPIcreatinine vs 50–80% with CKD-EPIcysC.
Population: Average age 82.7±8.2 years; 76.7% female. Average creatinine level 0.93±0.53 mg/dL. Average CysC level 1.48±0.61 mg/L. 74.6% hip fractures. 73% serum creatinine <1 mg/dL.
Conclusions: A high percentage of senior orthopedic patients has low creatinine levels, which results in a significant overestimation of the GFR when using formulas based on creatinine. In these cases CysC is possibly a useful alternative.

O-002

Dietary animal-derived protein intake and frailty: a prospective study in community-dweller older subjects (FRAIL Project)

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Objectives: It is generally accepted that malnutrition is involved in pathophysiology of frailty. Relationship between dietary animal-derived protein (DAP) intake and prevalence of frailty in humans is still unclear. Using data from the FRAIL Project, a prospective population-based observational study, we aimed at evaluating if DAP consumption is associated with frailty in community-dwelling adults aged 65 years and older.
Methods: Frailty was assessed according to the Cardiovascular Health Study (CHS) model and the FRAIL Scale. All subjects underwent a comprehensive geriatric assessment and physical performance tests (SPPB, Timed Up&Go Test). The DAP intake was evaluated using specific items of the Mini Nutritional Assessment.
Results: Among the 315 participants enrolled (mean age 78±4.5 years; 53% men) 196 claimed to eat DAP every day. These subjects were not different in mean age, BMI and physical performance from those with lower DAP intake. Prevalences of frailty were 11.7% and 10.8% by using CHS and FRAIL methods, respectively. A significant negative association between DAP daily intake and frailty has been observed both with CHS and FRAIL scale ($p = 0.02$ and $p = 0.002$, Fisher's exact test). Logistic regression analysis confirmed this association both with FRAIL scale (OR = 0.38, 95% CI 0.20–0.74, $p = 0.004$, adjustment for age, sex, comorbidity, polypharmacy, Barthel index, SPPB) and with CHS score (OR = 0.62, 95% CI 0.36–1.04, $p = 0.075$, adjustment for age, sex, comorbidity, Barthel index and Timed Up&Go Test).
Conclusions: DAP daily intake is associated with a lower prevalence of frailty in community-dwellers older subjects, suggesting that a dietary intervention could be useful to prevent or delay frailty.

O-003

Recommendations for non-pharmacological interventions to prevent falls in older patients. Applying the GRADE approach. The SENATOR project ONTOP series

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Objectives: To develop explicit and transparent recommendations for non-pharmacological interventions to prevent falls in older adults based on the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach to rating the quality of evidence and the strength of recommendations.
Methods: A multidisciplinary panel was constituted comprising geriatricians, nurses and a clinical epidemiologist. The evidence was compiled from a systematic search of reviews published from 2009 to January 2015. A Delphi method was used to establish critical and important outcomes. The GRADE approach was used to rate the evidence and to formulate recommendations.
Results: The critical outcomes were fall incidence. The non-pharmacological interventions were categorized as single component, multiple and multifactorial interventions according to the PROFANE taxonomy. An overview of systematic reviews identified 59 systematic reviews in 3 settings: community (n = 120

trials), care facilities(n = 17 studies), hospital (acute, sub-acute and rehabilitation) (n = 15 trials). We developed clinical questions for each intervention and each setting. Strong recommendations (n = 4) were formulated, based on moderate quality evidence, for exercise (group, home-based, Tai Chi), and home safety modification and provision of personal mobility aids, to prevent falls in community-dwelling older adults. Moreover, moderate quality of evidence allowed to strongly recommend multifactorial interventions (n = 3) in all 3 settings. One clinical question, regarding knowledge/education,with moderate quality evidence, had a strong recommendation against. Twenty-two clinical questions had low/very low quality of evidence and weak recommendations for (n = 4) and against (n = 18).
Conclusions: Overall, the panel developed 29 recommendations for the delivery of non-pharmacological interventions to prevent falls in older adults in 3 different settings.

O-004
Impact of blood pressure lowering treatment on frailty in the HYpertension in the Very Elderly Trial (HYVET)

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Objective: Treating hypertension with antihypertensive medication has been shown to reduce cardiovascular events and mortality in older adults. Whether this transfers to a reduction of frailty is unknown. We assessed the impact of antihypertensive treatment on frailty in those aged 80 or more with hypertension as assessed by the frailty index (FI) in HYVET.
Methods: Participants in HYVET were randomised 1:1 to active treatment (indapamide sustained release (SR) 1.5 mg +/− perindopril 2–4 mg) or matching placebo. The FI was calculated at entry and on annual visits and based on fifty-seven potential deficits (same variables used at entry and annual visits). The FI did not include incident non-fatal cardiovascular events. Impact of active treatment on FI at 2 years was assessed using a 2-part model based on 1,665 participants with logistic regression to estimate risk of death and Poisson regression to model frailty (FI). Analyses were carried out using FI with and without patient reported side-effect data. Analyses were adjusted for age, sex, and region of recruitment.
Results: The mean increase in FI over 24-months was 1.53 (95% CI 0.97–2.10) in the placebo group and 0.79 (95% CI 0.26–1.32) in the active treatment group (p = 0.06, ttest). Initial results suggest this pattern is likely to remain when side-effects are included in the FI. Exploration using the 2-part model to take account of mortality over the 2-year period further supports this.
Conclusions: Initial findings suggest that the antihypertensive treatment employed in HYVET did not have an adverse effect on frailty and may even be beneficial.

O-005
ADAMO: validation of an algorithm for automatic monitor of physical activity in elderly population

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Objectives: ADAMO is a care watch from Caretek S.r.l. embedding an algorithm for the measurement of physical activity in elderly population. Its design has been carried out on behalf of the SPRINTT project, 9th Call IMI 2013. The aim of this study was to assess the accuracy in steps detection during various activity performed by elderly subjects.
Methods: Sixteen subjects (aged 68–91) wore the device on both wrists performing in random order the following activities: walking at slow, normal, and fast self-paced speeds; Timed Up and Go Test (TUG); ascending and descending stairs; step test. The criterion measure was the number of manually counted steps; absolute percent error scores were calculated as: %Error = [(ADAMO taken steps − manually taken steps)/(manually taken steps)]×100. Intra-class correlation coefficients (ICC) were also calculated.
Results: ADAMO care watch demonstrated high accuracy (the former value) and high ICC (the latter) in walking activities and step test: slow walking (−1.5%; 0.95); normal walking (−1.6%; 0.97); fast walking (−6.5%; 0.95); TUG (−1.8%; 0.90); step test (−5.5%; 0.95). Under the stairs conditions ADAMO showed a slightly higher error: ascending stairs (15.5%; 0.81); descending stairs (13.0%; 0.96).
Conclusions: On the base of these finding it is possible to claim that the ADAMO care watch demonstrated highly accurate measurement of steps in all activities, particularly in slow and very slow walking speeds. Hence we support the inclusion of ADAMO care watch in clinical and free living applications measuring steps of elderly persons with slow or extremely slow walking speed pace.

O-006
International normative data for grip strength across the life course: a systematic review and meta-analysis

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Background: Weak grip strength is a key component of sarcopenia and is associated with subsequent disability and mortality. We recently established life course normative data for grip strength in Great Britain, but it is unclear whether the cut-points for weak grip strength we derived are suitable for use in other settings.
Objective: To investigate differences in grip strength by world region using our data as a reference standard.
Methods: We searched MEDLINE and EMBASE for papers reporting items of normative data for grip strength. We extracted each normative data item and converted it on to a Z-score scale relative to our British centiles. We performed metaregression in STATA version 13 to pool Z-scores and compare them by world region.
Results: Our search returned 806 abstracts and 60 met inclusion criteria. All UN regions were represented although most papers (n = 43) were in developed regions. We extracted 730 items relating to 95,625 grip strength observations. The pattern of results was similar to our British centiles in terms of periods across the life course and gender differences. Normative data from developed regions were similar to our British centiles whereas those from developing regions were clearly lower, with pooled Z-scores of 0.12 (95% CI: 0.07, 0.17) and −0.86 (95% CI: −0.95, −0.77), respectively.
Conclusions: Normative data from developed regions were similar to that described in our British centiles, whereas those from developing regions were clearly lower. This supports the use of our British centiles and cut-points in consensus definitions for sarcopenia and frailty across developed settings.

O-007

Low Body Mass Index as predictor of hip fracture differs by age and gender in Cohort Norway. A NOREPOS study

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Objectives: To study whether the association between Body Mass Index (BMI) and hip fracture differs according to gender and age.
Methods: Cohort Norway comprises ten population-based health surveys (1994–2003). Information includes socio-demographic factors, lifestyle, health and diseases. Weight and height were measured. Hip fractures treated in Norwegian hospitals (1994–2008) were retrieved from patient administrative systems. Analyses were limited to 29,511 women and 32,276 men 50–79 years with valid baseline data. Regression models were used to estimate relative risk (RR) of hip fracture. Age-standardized fracture incidence rates per 1,000 person years were calculated.
Results: During follow-up (median 8.4 years) 1,603 women and 951 men suffered a hip fracture. Participants with BMI <22 kg/m^2 had a two-fold risk of hip fracture compared to overweight individuals (BMI 25–29.9 kg/m^2) (Women: RR = 1.85, 95% Cl 1.60–2.14, Men: RR = 2.16, 95% Cl 1.77–2.63).
In women 70–79 years the risk of hip fracture decreased in those with BMI above 25 kg/m^2. In all other categories of age and gender there was no significant corresponding decrease at BMI above 25 kg/m^2. The largest difference in absolute risk across BMI groups was found among women 70–79 years.
Conclusions: In this large prospective population-based study, a higher BMI was protective of hip fracture, but the association differed extensively with age and gender. To be thin (BMI <22 kg/m^2) was an important risk factor, and underweight should be monitored and prevented to avoid hip fractures.
No financial support, nothing to disclose.

O-008

Cutoff point of gait speed to predict falls, dependence, and mortality in Korean community-dwelling elderly: 3 year prospective finding from living profiles of older people survey in Korea

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Objectives: The mean of gait speed in Asian elderly including Korean is lower than in Western. For example, the cutoff of the lowest quartile in American elderly is 0.6m/sec in both men and women, while that in Korean elderly is around 0.5 m/s in men and around 0.4 m/s in women.
Methods: We analyzed with National Older People Survey in year 2008 (15,146 elderly participants aged 60 years or older) and its follow-up data in 2011. Using a multi-stage cluster sampling design, the elderly were selected from households stratified into 25 districts(seven metropolitan and 18 provincial). The gait speeds of the elderly in year 2008 were categorized by their quintiles and were analyzed in terms of mortality, falls, and instrumental activities of daily living in year 2011.
Results: The number of falls continuously decreased with gait speed increased. In western country, a Gait Velocity >1.1 m/s was considered normal and a cut-off <0.8 m/s predicts falls. The cut-off to predict falls in Korean elderly is lower than 0.8 m/s.
The number of indoor fallers decreased with gait speed increasing. The number of outdoor fallers decreased with gait speed increasing until the gait speed of 1.0–1.3 m/s, but slightly increased after that. Cut-off poinst of gait velocity in Korean elderly to predict mortality, falls, and instrumental activities of daily living after 3 years will be presented.
Conclusions: The cut-off point to predict adverse outcomes in Korean elderly seems to be lower than that in Western elderly.

O-009

Prevalence of sarcopenia in hip fracture patients and clinical associations

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Objective: Cross sectional analysis of sarcopenia in hip fracture patients.
Methods: Consecutive patients with hip fracture admitted 2011–2013 at three hospitals in Norway. Inclusion criteria were written informed consent, age >65, being able to walk, no unstable illness, a remaining life expectancy >3 months and living in the community. Sarcopenia status was determined at follow-up by the method of the European Working Group on Sarcopenia in Older People. Low muscle mass was determined by anthropometry by the method of Heymsfield, as ≤5.67 kg/m^2 for women and ≤7.25 kg/m^2 for men. Low handgrip strength was <20 kg for women and <30 kg for men. Low physical performance was by New Mobility Score of <5. Correlations with clinical associations were analysed with Spearman's rho.
Results: 1592 patients were admitted for hip fracture during the period of inclusion, 282 were included and 225 returned for follow-up. 37% of patients had low muscle mass, 51% had low hand grip strength and 21% had low physical performance. 64% had no sarcopenia, 9% pre-sarcopenia, 16% had sarcopenia and 9% had severe sarcopenia. Male gender (0.318), nutrition score of NRS2002 (0.256), medications on discharge (0.164), ASA score (0.201) and Charlson co-morbidity index (0.146) were associated with sarcopenia. Body mass index (0.401) and increasing Barthel ADL (0.148) was protective. There was no association with bone mineral density or vitamin D.
Conclusions: 25% of robust hip fracture patients have sarcopenia. Sarcopenia is correlated with increasing age, male gender, malnutrition, polypharmacy, high ASA score, co-morbidity and impaired activities of daily living.

O-010

Quality of life and physical components linked to sarcopenia: baseline data of the SarcoPhAge study

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Objectives: The sarcopenia diagnosis algorithm developed by the European Working Group on Sarcopenia in Older People and used in the present study needs further validation trough cross-sectional and longitudinal studies. The aim of the present study is to assess, using this algorithm, the prevalence of sarcopenia and the clinical components linked to this geriatric syndrome.
Methods: Participants were community dwelling subjects aged 65 years or older. Muscle mass was measured by DXA, muscle strength by a handgrip dynamometer and gait speed was assessed on a 4-meter distance. Large amounts of socio-demographic and clinical data were collected.
Results over one year: 534 subjects were recruited for this study (60.5% of women, mean age of 73.5±6.16 years), among whom 73 subjects were diagnosed sarcopenic (prevalence of 13.7%). Sarcopenic subjects were older, had a lower BMI, presented more cognitive impairments, more comorbidities, were more often

malnourished, and consumed more drugs. After adjustment for age, BMI, cognitive status, nutritional status, number of comorbidities and number of drugs, sarcopenic subjects had a worse physical health-related quality of life (SF-36) for the domain of physical functioning, were at higher risk of falls (Timed Up and Go test), were more frail (Fried), presented more often tiredness for the achievement of activities of daily living (Mobility-test), presented less fat mass and obviously less lean mass. Sarcopenic women were also more dependent for housekeeping and handling finances (Lawton scale) than non-sarcopenic ones.
Conclusion: Sarcopenia seems associated with many harmful clinical components making this geriatric syndrome a real public health burden.

O-011
Persistent decline over 3 y in physical function predicts 12 y mortality in ambulatory older men

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Objectives: Physical function measurements can predict important adverse outcomes in older persons, but little is known about the predictive value of longitudinal changes in these measurements. This study evaluated the effects of transient and persistent decline over three years from baseline in physical function on 12 year mortality.
Methods: This community-based cohort study included ambulatory men aged ≥71, living in the community of Merelbeke (municipality of Ghent, Belgium).
Participants' physical function and decline from baseline were assessed annually over three years using the following measurements and cut-off points: Timed Up and Go (2 sec), Chair Rise (1 sec), Balance (1 point), Grip strength (6 kg), General Health (Short Form-36 item; 15 points), Physical Function (Short Form-36 item; 20 points) and Activities of Daily Living (ADL; Rapid Disability Rating Scale-2 questions; 2 points). Decline was considered persistent or transient based on whether the decline was still present at the end of year three.
Results: Of 162 older men with complete annual physical function assessments from 1997 until 2000, 107 (66%) died within the subsequent 12 years.
Mortality risk increased with persistent decline in Timed Up and Go (HR = 2.15, 95% CI=1.24–3.73), Grip strength (HR = 3.39, 95% CI=1.45–7.93), Physical Function (HR = 2.51, 95% CI=1.43–4.41), General Health (HR = 3.07, 95% CI=1.69–5.60), and ADL score (HR = 3.30, 95% CI=1.43–7.63), compared with no decline. Decline in the last year in Chair Rise time (HR = 2.63, 95% CI=1.39–4.98) and Balance (HR = 2.39, 95% CI=1.10–5.18) also predicted death.
Conclusions: Persistent decline in physical function affects mortality risk in ambulatory older men.

O-012
Effectiveness of follow-up telephone calls to improve vitamin D +/− calcium compliance in elderly patients with hip fracture. a randomized study

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Objective: To assess the effectiveness of follow-up telephone calls (FUTC) to increase compliance of vitamin D +/− calcium after discharge from the hospital in elderly patients with hip fracture.
Methods: This is a prospective, randomized study in patients aged 64 years and older, admitted with fragility hip fracture to a university hospital from May 1, 2010 to August 31st, 2012. At discharge, patients were prescribed vitamin D +/− calcium, adjusted by plasma levels and clinical situation. Inclusion criteria were: not taking vitamin D and calcium before hospital admission, and not discharged to a nursing home. Patients were randomized at discharge. The intervention group received a phone call at three months after discharge reminding them of the importance of taking their medication. In all patients, additional phone calls were made at 6 and 12 months to determine compliance by patient report. The data were analyzed using the statistical program SPSS/PC 20.
Results: 124 patients met inclusion criteria (59 in the intervention group and 65 in the control group). Mean age was 84 (±6.4) years. At 6 months, 84% of patients in the intervention group and 60.8% in the control group reported taking vitamin D ($p < 0.01$). At 12 months there was no difference in compliance between the two groups (70.2% vs. 61.7%, ns).
Conclusion: A FUTC 3 months after discharge has a positive impact on vitamin D +/− calcium compliance at 6 months. At 12 months, the beneficial effect disappears.

O-013
Protein drink combined with Jaques-Dalcroze Eurhythmics improves gait speed and physical function in seniors

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Objectives: The NUDAL trial aimed to investigate the combined effects of 6-months once daily nutritional supplementation (150 kcal/119 ml, 20 g whey protein, 800 IU vitamin D), and weekly Jaques-Dalcroze Eurhythmics training (JDE) on the physical function in seniors as compared to the effects of 6-months JDE alone (placebo drink: 30 kcal, no protein or vitamin D).
Methods: Randomized parallel group trial in 110 community-dwelling Swiss seniors aged 65 years and older. Assessments: gait speed during normal walking (NW) and dual-tasking (DT) (GAITRite® electronic system) and physical functional performance (Continuous Scale of Physical Functional Performance (CS PFP-10®) test).
Results: Baseline NW speeds were 116.9 cm/s in the control and 119.1 cm/s in the intervention group; post-intervention 124.0 cm/s and 128.5 cm/s, respectively. Participants with low to moderate baseline fitness levels, according NW speed and CS-PFP-10 scores, had faster post-intervention NW speeds than those with very low or very high fitness levels.
Baseline DT speeds were 101.7 cm/s in the control and 106.3 cm/s in the intervention group; post-intervention 108.1 cm/s and 123.4 cm/s, respectively.
Baseline CS PFP-10 scores were 44.9 points in the control and 43.5 points in the intervention group; post-intervention 46.9 and 50.3 points, respectively.
Conclusion: Seniors receiving daily protein supplementation combined with weekly JDE movement training had better physical functional performance and faster gait speed than those who performed the JDE alone. Seniors with low to moderate baseline fitness levels profited more from the 6-months intervention than those with very low or very high baseline fitness levels.
Disclosure: Supported by an independent educational grant from Nestlé Health Science

O-014
Inverse relationship between body mass index and mortality in older nursing home residents: a meta-analysis of 19,538 elderly subjects

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Objective: Body mass index (BMI) and mortality in the elderly have been related in a U-shaped or J-shaped curve with increased risk among underweight and obese individuals. However, limited information is available for elderly nursing home populations. Therefore, we aimed to investigate the risk of all-cause and cause-specific mortality in underweight, overweight and obese vs. normal weight elderly nursing home residents.
Methods: PubMed/EMBASE/CINAHL/SCOPUS search from database inception until 05/31/2014 without language restrictions. All-cause and cause-specific fully-adjusted mortality hazard ratios (HRs) and unadjusted risk ratios (RRs) for underweight (BMI ≤18.5), overweight (BMI 25–29.9) and obesity (BMI ≥30) relative to normal weight (BMI 18.5–24.9) were extracted about prospective in nursing home residents aged ≥65 years.
Results: Out of 342 hits, 20 studies (n = 19,538, mean age=84.2 years, females=71.5%) with 5,223 deaths during 0.5–9 (median=2, interquartile range=1, 4.75) years follow-up were meta-analyzed. Compared to normal weight, all-cause mortality HRs were 1.41 (95% CI=1.26–1.58) for underweight, 0.85 (95% CI=0.73–0.99) for overweight and 0.74 (95% CI=0.57–0.96) for obesity.
These findings persisted in high-quality studies and European studies. Higher HRs for underweight and overweight were also confirmed in Australasian studies. Underweight was a risk factor for higher mortality due to infections [HR = 1.65 (95% CI=1.13–2.40)]. RR results corroborated primary HR results, with additionally lower infection-related mortality in overweight and obese than normal weight individuals.
Conclusions: Like in the general population, underweight is a risk factor for mortality in elderly nursing home residents. However, uniquely, not only overweight but also obesity is protective, which has relevant nutritional goal implications in this population/setting.
Funding: No funding was used for this work.

O-015
Health literacy is associated with frailty stage in community-dwelling elderly people

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Objectives: Preventing the progress of frailty is important for avoiding various adverse health outcomes. In addition, health literacy (HL) has attracted attention as a factor associated with health outcomes. The purpose of this study was to determine whether HL is associated with frailty in community-dwellers, especially focusing on frailty stage.
Methods: We enrolled 332 community-dwellers aged 60 years and older (mean age: 72.9±6.7, 253 women). We measured five domains (slowness, weakness, exhaustion, low activity, and shrinking) of the participants. They were classified into three stages according to the number of affected domains: nonfrailty = 0, prefrailty = 1–2, and frailty = 3 or greater. HL was assessed using the 14-item HL scale (HLS-14), a 70-point scale questionnaire. First, we conducted logistic regression analyses, in which the presence of prefrailty or frailty (cut-off value: ≥1) was the dependent variable and HLS-14 score was the independent variable. We also conducted logistic regression analyses, in which the presence of frailty (cut-off value: ≥3) was the dependent variable.
Results: In the logistic regression, in which the presence of prefrailty or frailty was the dependent variable, HLS-14 score was independently associated with the presence of prefrailty or frailty (odds ratio: 0.94, 95% confidence interval: 0.90–0.99, P = 0.010). However, logistic regression, in which the presence of frailty was the dependent variable, showed that HLS-14 score had no association with the presence of frailty.
Conclusions: Health literacy is associated with the early stages, but not with the later stage of frailty.

Comorbidity and multimorbidity

O-016
Usefulness of cerebrospinal fluid tap test as a treatment for idiopathic normal pressure hydrocephalus in the elderly: a pilot study

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Objective: To determine the usefulness of lumbar tap test (TT) in old people presenting with clinical signs and symptoms of idiopathic normal pressure hydrocephalus (iNPH) not eligible for ventriculoperitoneal shunt.
Methods: We enrolled and prospectively followed 38 subjects (58% male, mean age 83±5.6, range 70–95), admitted to the Department of Geriatrics of Ospedale Maggiore of Milan (Italy), from February 2011 until April 2015. They complained memory loss, gait difficulties and urinary incontinence. They were scheduled for repetitive tap test and evaluated at baseline, 1 week after the procedure, and monthly thereafter, by using Barthel Index (BI), Barthel continence, Mini-Mental State Examination (MMSE), Tinetti balance assessment Tool, Timed Up to Go (TUG). They were followed up for a mean time of 16.4 months.
Results: 28 patients (72.3%) showed variable grade of improvement of their symptoms after TT. 23 of them underwent more than one deliquoration (range 2–5).
The impact of the procedure was deeper on BI, TUG and Tinetti, showing an improvement after every tap test. MMSE and Barthel continence were less responsive to the tap test. In particular, MMSE improved only after the first two procedures and Barthel continence after the first one. Furthermore, BI, TUG and Tinetti remained almost stable from baseline until the third tap test (mean follow up of 10–12 months).
Conclusions: Tap test is a suitable option for treatment of elderly people with iNPH not eligible for surgical treatment.

O-017
Association of circadian blood pressure alterations and disease features in Parkinson's disease

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Objectives: Alteration of the circadian blood pressure rhythm is a common non-motor symptom of Parkinson's Disease (PD). It is one of the main manifestations of cardiovascular dysautonomia in these patients, potentially associated to several negative outcomes. Aim of the present study is to assess which PD specific feature is associated with higher degree of cardiovascular dysautonomia.

Methods: One-hundred-forty-nine subjects with PD consecutively admitted to a geriatric day hospital were enrolled. Participants underwent comprehensive evaluation and 24-hour ambulatory blood pressure monitoring. The percent (%) reduction in nocturnal blood pressure (dipping) was calculated and compared across terziles (TZ1, TZ2, TZ3) of PD duration, of Unified Parkinson's Disease Rating Scale (UPDRS) scores, of Hoehn & Yahr scores, of Levodopa Equivalent Daily Doses (LEDD) and between motor phenotypes (tremor vs. akinetic-rigid dominant).
Results: Among participants (mean age 73±8 years; 31% women), 71 (48%) presented with reverse nocturnal dipping. According to analysis of covariance (ANCOVA) only higher terziles of PD duration were associated significantly with lower adjusted means of systolic (TZ1 5.1%, TZ2 −0.6%, TZ3 −3.5%; p = 0.004) and diastolic dipping (TZ1 7.9%, TZ2 2.6%, TZ3 −1.2%; p = 0.003). A non-significant trend was found within terziles of Hoehn & Yahr (p = 0.585 for systolic and p = 0.548 for diastolic dipping) and none differences across terziles of UPDRS, LEDD and motor phenotype.
Conclusions: The present study suggests that cardiovascular dysautonomia, evaluated through the reduction of nocturnal dipping, is associated to longer PD duration and, more weakly, with higher disease severity (evaluated by Hoehn & Yahr scale). Further longitudinal studies should assess the pathophysiology of these findings.

O-018
Oral health in older patients admitted in a medical ward

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Objectives: Oral health is usually neglected in general medical care of older people, although its impact on nutrition, chronic diseases, comfort, self-esteem and quality of life. Our aim was to evaluate oral health of patients ≥75 years admitted in an acute medical ward of a general hospital.
Methods: Cross-sectional study during 1 day. Comprehensive geriatric assessment, dental examination and oral health questionnaire.
Results: 100 patients were included, average age 83.7 years, 63% males, 25% nursing home residents, average Cumulative Illness Rating Scale Geriatrics 11.2, average Barthel score before admission 62.6.
Patients presented an average number of teeth (ATn) of 6.7±8.4 (0.33) and 36% used oral prosthesis. Prevalence of total edentulism, caries and periodontal disease were 46%, 24% and 21%, respectively. 14% had neither teeth nor used prosthesis. Concerning oral hygiene habits: frequency of toothbrushing: 28% once/day, 36% twice/day, 18% once/month or never; 48% used toothpaste and 32% dental elixir; 15% were caregiver-dependent. 70% hadn't consulted the dentist for over five years. The ATn was higher in patients independent on oral hygiene (8.16 vs caregiver-dependent 2.87, p < 0.005), who brushed teeth daily (8.2 vs 3.5, p 0.06), used toothbrush (9.2 vs 4.6, p 0.02) and toothpaste (9.5 vs 6.1, p 0.01). The prevalence of caries was higher in patients who didn't use toothbrush, toothpaste and elixir (ns).
Conclusions: Teeth lost is prevalent in older people, which might be due to poor hygiene habits. Autonomy in oral hygiene and daily toothbrushing using toothpaste may prevent teeth lost and caries.

O-019
Multimorbidity among the elderly Polish deportees to the Soviet Union who suffer from posttraumatic stress disorder

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Objective: To assess multimorbidity and identify the most common chronic diseases in the elderly Polish deportees to the Soviet Union who suffer from posttraumatic stress disorder (PTSD).
Methods: Group consisted of the older adults who had been deported during World War II or born in exile in the Soviet Union, and have been diagnosed with PTSD according to the DSM-IV criteria.
Multimorbidity was defined as co-existence of two or more chronic conditions, and diagnosed based on the results of history taking, physical examination, and medical records, if available. We included diseases such as: coronary heart disease, hypertension, heart failure, valvular heart disease, arrhythmia, stroke, diabetes mellitus, dyslipidemia, neoplastic tumor (as a group), chronic pulmonary disease (asthma and/or chronic obstructive pulmonary diseases), osteoporosis, osteoarthritis, gastrointestinal diseases (as a group), thyroid diseases (as a group), and chronic kidney disease.
Results: 69 respondents (55.1% men); mean age:70.4±6.7 years (min–max: 60–88 years). 91.3% were diagnosed with multimorbidity. The patients suffered from 3 and 5, and 4 and 6 diseases most often, respectively: 15.9% and 13.0% of the respondents. Median number of chronic diseases was 5 (Q1; Q3: 3; 7); median number of drugs was 6 (Q1; Q3: 4; 8), with the maximum 23 medications. Women reported more diseases than men [6 (4; 8) vs 4 (3; 6), p < 0.01]. In patients with multimorbidity, most common chronic diseases were: osteoarthricular (95.2%), cardiovascular (95.2%) and metabolic (57.1%) illnesses.
Conclusions: Multimorbidity was reported in most of the examined senior patients with PTSD. Cardiovascular and osteoarthricular illnesses were demonstrated in almost all of the PTSD-multimorbid respondents.

O-020
Hypotension in nursing home residents on antihypertensive treatment: How significant is it?

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Objective: Prevalence of hypertension (HT) and use of antihypertensive medications increase by aging. Antihypertensive medication is a potential risk factor for hypotension for morbidity/mortality in elders. We aimed to assess prevalence of hypotension in nursing-home-residents receiving antihypertensive-medications.
Methods: Residents >60-years-of-age receiving antihypertensive-medications were included. Cooperation difficulty and bedridden-status were exclusion-criteria. Blood pressures (BPs) were measured supine and 3–5 min after standing to assess orthostatic hypotension (OHT). Also BPs recorded at nursing-home were studied retrospectively. At 60–80 years-of-age, systolic and diastolic hypotension were defined as SBPs ≤110 mmHg, DBPs ≤70 mmHg

respectively. For ≥80 years of age; cut-off points were SBPs ≤130 mmHg, DBPs ≤70 mmHg. Residents were evaluated for orthostatic symptoms, current BPs and comprehensive geriatric assessment.
Results: 69 were male (78%) and 19 were female (22%) from 88 eligible subjects. Mean age was 71.8+7.8 years. Supine systolic and diastolic hypotension prevalences were 34.6% and 47.4%, respectively. Ratios were 66.7% and 50% for ≥80 years of aged (n = 18), respectively. OHT prevalence was 26%. 55% had orthostatic symptoms. Most frequent symptom was dizziness on standing-up (45.5%). Mini-Mental-State-Examination scores were significantly lower in OHT group (26.4+3.7 vs 24.2+3.1; $p < 0.05$). 'Decreased attention' symptom was significantly higher in OHT group (n = 20/22 vs n = 30/45, $p < 0.05$). At past BP examination, systolic and diastolic hypotension ratios were 26% and 47.3% for 60–80 years of age and 73% and 49.3% for ≥80 years of aged, respectively.
Conclusion: Both supine hypotension and OHT are significantly prevalent in 'hypertensive' nursing-home-residents on antihypertensive-treatment and they are associated with impaired cognition.

O-021
Cardiovascular comorbidity in 29 000 patients with different dementia disorders

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Objectives: Cardiovascular diseases are leading causes of death and dementia patients are also affected by them. We aim to investigate associations between different dementias and cardiovascular diseases and determine their impact on mortality.
Methods: This study included 29 630 patients from the Swedish Dementia Registry SveDem (mean age 79 years, 59% women) diagnosed with Alzheimer's disease (AD), mixed dementia, vascular dementia, dementia with Lewy bodies (DLB), Parkinson disease dementia (PDD), frontotemporal dementia (FTD) or unspecified dementia. Records of cardiovascular diseases come from the Swedish National Patient Register. Multinomial logistic regression and cox proportional hazard models were applied.
Results: Compared to AD, we found a higher burden of all cardiovascular diseases in mixed and vascular dementia. Cerebrovascular diseases were more associated with DLB than with AD. Diabetes mellitus was less associated with PDD and DLB than with AD. Ischemic heart disease was less associated with PDD and FTD than AD. All cardiovascular diseases predicted death in patients with AD, mixed and vascular dementia. Only ischemic heart disease significantly predicted death in DLB patients (HR = 1.72; 95% CI=1.16–2.55). In PDD patients, heart failure and diabetes mellitus were associated with a higher risk of death (HR = 3.06; 95% CI=1.74–5.41 and HR = 3.44; 95% CI=1.31–9.03). In FTD patients, ischemic heart disease and atrial fibrillation significantly predicted death (HR = 2.11; 95% CI=1.08–4.14 and HR = 3.15; 95% CI=1.60–6.22, respectively).
Conclusions: Our study highlights differences in the occurrence and prognostic significance of cardiovascular diseases in several dementia disorders. This has implications for the care and treatment of the different dementia disorders.

O-022
Increased risk of hip fracture in people with self-perceived memory loss. A NOREPOS based prospective cohort study of 10449 individuals aged 67–78 years

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Objectives: The purpose of this study was to examine the prospective associations between self-reported memory-loss and subsequent hip fracture.
Methods: We obtained information on self-perceived memory loss and confounders from three regional heath surveys performed in Oslo and in two counties north of Oslo during 2000–2001. Four questions concerning indicators of memory loss were included, followed by a concluding question (asking if they considered memory loss as a problem in daily life) which was selected as exposure variable. We selected individuals 67–78 years old due to low incidence of memory complaints at younger ages. A total of 10,449 men and women were followed for a median of 7.8 years. Information on first hip fracture during follow up (a total number of 565) was retrieved by linkage to the NOREPOS (Norwegian Osteoporosis Epidemiologic Studies) hip fracture database.
Results: The risk of having a hip fracture was higher in those reporting memory loss as a problem for their daily life, with a relative risk (RR) of 1.84 (95% CI 1.34–2.51) in woman and a RR of 1.65 (95% CI 1.22–2.22) in men. After adjustment for possible confounders (including: self-perceived general health state, drug use, BMI and smoking) a significant association persisted, both in women (RR 1.54, 95% CI 1.10–2.14) and in men (RR 1.42, 95% CI 1.04–1.93).
Conclusions: Elderly reporting self-perceived memory loss have higher risk of suffering a hip fracture than those who did not report it. These possible important findings warrant further investigations.

Acute care

O-023
The reality of a Portuguese Emergency Department (ED) post fall evaluation: A retrospective analysis

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Objectives: This study aim is to characterize the population of adults aged 65 or older seen in our ED after a fall and the respective post fall management approach and follow up. Specific objectives are to identify consequences of the fall, define if fall circumstances were analysed, if fall risk factors were identified and if specific post fall evaluation was prescribed.
Methods: Retrospective observational study of routinely collected data from a general ED over a 15 days period. Only adults aged 65 years or older presenting after a fall were included. Clinical files were analysed and appropriate statistical analysis performed.
Results: 140 medical files were reviewed, 66% of the patients were females, the median age was 80 years, 37% of the patients had age between 75 and 84 years. The most common injuries related to falls were fractures (34%). Only 13% of this ED visits resulted in hospital admission, mainly due to fractures for Chirurgical treatment (67%). In 57% of the clinical files there was no reference to fall circumstances. Only 3 files had specific fall risk factors identified. There was no gait and balance test performed in any of the cases, nor specific orientation for post fall evaluation and prevention.
Conclusions: These results show that international recommendations for falls prevention and management in older persons are

not followed in our ED. Falls training is mandatory and urgent for clinical staff in our ED. It is critical to implement specific protocols for fall treatment and follow up.

O-024
Frailty in older patients attending an emergency department

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Objectives: Older patients represent an increasing proportion of those accessing acute hospital services. This study aimed to examine outcomes in frail older patients presenting to the emergency department (ED).
Methods: A prospective cohort study was carried out. Information was collected on patients aged ≥70 presenting between January and August 2014. Frailty was assessed using the SHARE Frailty index (SHARE-FI). Illness severity (Manchester Triage Category), delirium (CAM-ICU), admission rates, length of stay and mortality rates were examined.
Results: 212 patients had SHARE-FI assessment completed. 45.7% (97/212) were identified as frail and a further 22.2% (47/212) pre-frail.
Frail patients were older than non-frail (mean age 80.2 years vs 76.7 years). A similar proportion of all groups were identified as having a severe illness (MTC 1–3) at presentation (89.7% frail; 91.5%; pre-frail; 88.2% non-frail). Frail patients were more likely than non-frail to present by ambulance (42.3% vs 32.3%), remain in ED for over 6 hours (mean ED stay 11.4 vs 9.7 hours) and be admitted (69.1% vs 52.9%). 14.4% of frail patients had delirium at presentation. None of the non-frail group were delirious. Mean length of stay was 12.4 days for frail patients and 8.4 days for non-frail. Six-month mortality rates were higher for frail (18.5%% (18/97)) and pre-frail patients (14.9% (7/47)) than for non-frail (5.9% (4/68)).
Conclusions: Frail patients have higher admission rates, longer length of stay and higher mortality than non-frail. The SHARE-FI may be a useful assessment to identify patients at risk of decline in ED for enhanced gerontological assessment and intervention.

O-025
Non-invasive ventilation in acute care: a story of success in older adults?

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Objectives: Non-invasive ventilation (NIV) is increasingly used in older adults. However, its functional outcome is poorly understood. The authors describe NIV use in acute setting and analyse its effect on older patients.
Methods: Observational retrospective study of routinely collected data, over a 15-month period, in an acute medicine department of a University Hospital. Patients aged 65 years and older that had received NIV were included. Statistical analysis performed in SPSS v21.
Results: Amongst 99 identified patients, only 34 received NIV for an acute condition. Median age 81 (88–77) years old, 52.9% women (p=NS), length of stay 8.5 (15–3) days, Charlson Comorbidity Index 5 (7–3), and 23.5% mortality. NIV was introduced in the context of decompensated heart failure in 41.2% of cases, community-acquired pneumonia in 23.5%, and healthcare-related pneumonia in 8.8%. All patients presented with type 2 respiratory failure and received NIV for a median period of 3 (6–1) days. Complications and adverse events were common: 29.4% delirium, 26.5% need of physical restraint, 17.6% sedation, 8.8% pressure ulcers, 8.8% aspiration pneumonia. However, NIV did not affect risk of falls, pressure ulcers, or nutritional status at discharge (p=NS). Also, patients were more engaged in activities of daily living (p=.002).
Conclusions: This study confirms that NIV is a valid technique in a cohort with high comorbidity and produces good clinical outcomes in an acute setting. NIV did not have a negative impact on functionality. Delirium and physical restraints remain a critical concern and should be addressed when introducing NIV in an older patient.

O-026
Validation of the Identification Seniors at Risk Tool (ISAR) in acutely presenting older adults; the APOP study

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Objective: The Identification of Seniors At Risk (ISAR) tool has been developed for older Emergency Department patients to predict negative outcomes. However, clinical usefulness is debated by lack of accuracy and efficiency. In the present study we externally validated the ISAR tool.
Methods: We initiated the prospective Acutely Presenting Older Patient (APOP) study, in which we included all consecutive patients aged 70 and over 24h/7d presenting to the Emergency Department of a university teaching hospital (LUMC) in the Netherlands. ISAR is validated on ninety day mortality and ninety day functional decline, defined by 1 point increase in Katz ADL score and/or new institutionalisation.
Results: 757 patients were included from September 2014 until November 2014 with a mean age of 78.67 years. A positive ISAR score had a HR of 3.38 (95% CI 1.82–6.29) on mortality and an OR of 4.18 (2.83–6.18) on functional decline. Predictive performance on mortality showed a sensitivity of 0.83, a specificity of 0.41, a positive predicting value (PPV) of 0.13, a negative predicting value (NPV) of 0.96 and an area under receiver operating curve (AUROC) of 0.666 (95% CI 0.605–0.727) and on functional decline a sensitivity of 0.79, a specificity of 0.48, a PPV of 0.35, NPV of 0.87 and an AUROC of 0.675 (95% CI 0.627–0.723).
Conclusion: In our study ISAR is able to stratify patients at risk for adverse outcomes with moderate accuracy. Positive predictive value is low, whereas negative predictive value is high, suggesting that ISAR best performs to identify patients NOT at risk.

O-027
Chest ultrasound for the diagnosis of acute respiratory diseases in frail multimorbid hospitalized elderly

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Objectives: To compare the diagnostic accuracy of bedside chest ultrasound vs chest X-ray in a cohort of frail multimorbid elderly acutely hospitalized with respiratory symptoms.
Methods: 97 frail (Rockwood score≥4) multimorbid (≥3 chronic comorbidities) elderly (age≥65, median 84, IQR 78–89) admitted to an acute-care geriatric ward with sudden-onset respiratory complaints (cough, dyspnea, hemoptysis, pleuritic pain) were consecutively evaluated with a standard chest X-ray, carried out in a radiology unit, and a bedside chest ultrasound, performed by clinicians of the admitting ward. Chest contrast-enhanced CT was performed only if other tests' results were inconclusive. Ultrasound and X-ray results were blindly categorized as positive or negative by an expert clinician. Diagnostic accuracy, sensitivity and sensibility

of chest ultrasound and X-ray for the main diagnoses (i.e. heart failure, pneumonia, pleural effusion) were calculated.
Results: Overall diagnostic accuracy for pneumonia (46 patients) was higher for ultrasound (92%vs72%), that proved more sensitive than X-ray (92%vs53%) and similarly specific (98%vs94%). Similar results were also obtained for pleural effusion (21 patients, accuracy 94% ultrasound vs 67% X-ray, sensitivity 97%vs59%, specificity 96%vs96%), but not for heart failure, where diagnostic performance was equal (accuracy 84%vs83%, sensitivity 69%vs67%, specificity 97%vs97%). Chest CT was necessary for diagnosis only in 17% of cases, while in 44 cases out of 97 (45%) ultrasound allowed to establish diagnosis despite negative X-ray, thus preventing a CT prescription.
Conclusions: Bedside chest ultrasound can be an accurate and effective part of diagnostic workup for frail multimorbid elderly with respiratory symptoms, improving appropriateness in chest CT prescriptions.

O-028
Risk of hospital readmission following acute care in a geriatric unit

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Objectives: Recurrent hospitalizations threat the health and independence of vulnerable older adults. Our aim was to calculate the incidence and to identify risk factors of hospital readmission following acute hospitalization in a geriatric hospital.
Methods: We analyzed the discharge records of 764 patients (mean age 83.6 years, 70% females) treated in an acute care for elderly unit of a large Finnish community and discharged directly home. Mean follow-up was 7 months (range, 3–11). Incidence and risk factors for readmission were analyzed using Kaplan–Meier survival analysis and Cox regression analysis.
Results: The rate of hospital readmission was 6% at 7 days, 19% at 30 days, 35% at 90 days, and 45% at 180 days after discharge. Higher age (HR 1.02 for each year of age, 95% confidence interval 1.00–1.03), receiving home care (HR 1.71, 1.34–2.17) and earlier hospitalizations during the preceding six months (HR 2.33, 1.89–2.88) were associated with an increased risk of hospital readmission. Fewest readmissions occurred when the index hospital stay was 7–10 days (41%), whereas 52% of those hospitalized for >10 days had later readmission (HR 1.48, 1.10–1.99). Compared to patients treated for pulmonary disease who had fewest new hospitalizations (39%), cardiac (HR 1.53, 1.09–2.26) or urogenital disease (HR 1.59, 1.06–2.37) increased the risk of hospital readmission, whereas dementia diagnosis had not effect (HR 0.90, 0.70–1.16).
Conclusions: Our readmission rate is comparable to previous reports from non-geriatric units. Higher age, need for home care as well as long and repeated hospitalizations predispose to hospital readmission.

O-029
Association of impaired cognition and adverse outcomes in older patients presenting to the emergency department; the APOP study

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Objectives: Older patients attend the emergency department (ED) at higher rates and are at increased risk of adverse outcomes, compared to younger patients. Cognitive dysfunction associated with an even higher risks, but there is no feasible tool to screen for cognition in the acute setting. The present study investigates the association between cognition with mortality and functional decline in acutely presenting older patients.
Methods: A prospective follow up study among all patients aged 70 and over presenting to the ED of a university teaching hospital (LUMC) in the Netherlands. Descriptive data including cognition, measured by the Six-Item Cognitive Impairment Test (6CIT) was obtained. 6CIT is administered in 2–3 minutes and measures cognitive impairment. Follow-up data consisted of 90-day mortality and 90-day functional decline, defined by 1 point increase in Katz ADL score and/or new institutionalisation.
Results: 757 (76.6%) unique patients were included with a 93.3% follow up rate. The mean age was 78.7 years and 364 (48.1%) were male. Impaired cognition (6CIT >9) was significantly associated with both mortality (OR 3.51, 95% CI 1.96–6.27, p-value <0.001) and functional decline (OR 1.75, 95% CI 1.08–2.82, p-value 0.023) after adjustment for age, gender, level of education, dementia, number of different medication used at home and time of arrival.
Conclusions: We showed that impaired cognition measured with 6CIT in older patients presenting to the ED was associated with both mortality and functional decline after 3 months. These results emphasize the importance to screen systematically for cognitive dysfunction in acutely presenting older adults.

Geriatric education

O-030
Geriatric teaching in Spanish Medical Schools after the implementation of the European higher education area

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Objectives: To compare the prevalence and main characteristics of the teaching of Geriatrics at undergraduate level in Spain before and after the implementation of the European Higher Education Area (EHEA).
Methods: Review of the curricula and geriatric teaching programs of all medical schools using a national survey in 2014. Data were compared with those obtained in a similar survey performed in 2007.
Results: The number of medical schools increased from 28 in 2007 to 40 in 2014. Geriatric training was listed in their undergraduate curricula in 75% and 72.5% of the schools, respectively. The survey answer rates were 92.9% and 94.4%. The prevalence of real Geriatric training according to the surveys was 65.4% vs 73.5%, and it was mandatory in 73.7% vs. 92.9% of those schools with geriatric teaching. Geriatricians were involved in 42.1% of the teaching programs in 2007 and in 81.5% in 2014. Approximately 70% of the teaching at both time points included theoretical and practical aspects, training was done in geriatric care settings in 42.9% in 2007 and 100% in 2014.
A careful review of the content of teaching showed that in average only 50% of the recommendations of the UEMS European Undergraduate Curriculum were included, with few contents on patient respect, ethical issues and medication use.
Conclusions: An increase in the prevalence of Geriatric training and in the involvement of geriatricians and geriatric settings has been observed after the implementation of the EHEA. Some potential areas for improvement were identified, especially in the content of Geriatric teaching.

O-031
Learning by living: life altering medical education immersion research

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Introduction: Global increases in older adult populations and the paucity or decrease in geriatricians in many countries, makes it essential for all practitioners to be trained in older adult patient care. Yet these patients are viewed negatively. "Admitting" medical trainees into nursing homes for an extended period to live the life of a resident provides a unique learning environment and uncovers new models of care.
Methods: Learning-by-Living™ utilizes a qualitative ethnographic/biographic research design, whereby a "culture" is observed by the researcher (medical trainee) living within an environment (nursing home). Trainee volunteers (N = 33) were "admitted" into 10 nursing homes (2006–14) to live the life of an elder resident 24/7 for 2 weeks; complete with medical diagnoses and "standard" procedures of care (toileting, transferring, bathing, and feeding). Field Notes (data) included reporting objective and subjective observations, experiences, and resident encounters. Data were analyzed by thematic categorization and coding by manual and QSR-N-Vivo Research Software standard protocols.
Results: Data stages included arrival at the nursing home, first days, daily life, and leaving. Salient themes included friendship, dependence, routine, respect, and waiting. Trainee skill attainment included improved ability to communicate using voice tone/cadence, body language, word choices, touch, and eye contact. Age disparities, disease, and frailty were non-issues in forming interpersonal relationships.
Conclusion: Learning-by-Living challenges stereotypes about aging and expands medical trainees doctoring attitudes, skills and knowledge. Admitting medical trainees into nursing homes to live the life of an elder resident also increases their desires to work with older adults.

Geriatric rehabilitation

O-032
Associations between fallrisk measured with Downton Fallrisk Index and fall injuries in geriatric patients

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Objectives: The purpose of the study was to examine if there is an association between fall risk (Downton Fall Risk Index) during hospital stay at a geriatric clinic and a fall injury within 6 months after discharge.
Methods: A total of 6395 patients were included in the study. Data extracted from medical records during the inpatient stay and data on fracture or contusions after discharge retrieved from the Stockholm County Council's care database were analyzed with logistic regression.
Results: The study showed that 86% of the patients with a fall injury (n = 1378) had a high fall risk measured with Downton Fall Risk Index (>3 points). There were significant associations between fall injuries and a high fall risk and the modules previous falls and unsafe walking ability, respectively. There were no associations between number of continuous medications or specific medications such as SSR or Benzodiazepines with fall injuries. In addition there was no association between fall injuries and the module cognitive impairment. When stratifying for sex, men with a high fall risk had a higher odds of fall injury (OR 2.1, 95% CI 1.6;2.8) compared to women (OR 1.7, 95% CI 1.4;2.1).
Conclusion: The study showed that patients with previous falls and unsafe walking ability have a greater risk of fall injuries. This population should be the focus for individualized multifactorial case risk assessment and individualized multifactorial intervention.

O-033
Therapeutic validity of exercise therapy in RCTS

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Objectives: Reviews on RCTs studying the merits of exercise therapy use best-evidence synthesis to collate the best available evidence. Remarkably, only the risk of bias (RoB) of included studies is assessed, while the therapeutic validity of the interventions is neglected. The purpose of this study was to (1) develop a rating scale to assess the validity of exercise programs, and (2) study the validity of exercise therapy in people with chronic conditions.
Methods: In a Delphi study, consensus was reached among five exercise experts on which aspects define therapeutic validity in exercise therapy; resulting in the CONTENT scale (Figure 1). Consequently, we performed 5 systematic literature searches to identify RCTs that studied the merits of exercise therapy in people with endstage osteoarthritis, THR, RA, COPD, and MI. Two reviewers extracted data and assessed RoB (low if ≥60%) and therapeutic validity (high if ≥6).
Results: We identified 57 eligible RCTs. Inter-rater agreement (k) was >0.70 for both the RoB and therapeutic validity scores. 19 studies (33%) had low RoB, 11 studies (19%) had high therapeutic validity, and 7 studies (12%) had both low RoB and high therapeutic validity. The figure demonstrates that specially items 3, 5, 7, 8 and 9 scored poorly (<25%).
Conclusions: Only 12% of the RCTs had good RoB and therapeutic validity. One of the major concerns was the lack of a rationale for the exercise interventions, resulting in unclear patient selection and unclear exercise dosing. Future reviews on exercise therapy should address therapeutic validity in best-evidence synthesis.

O-034
Integrated music in nursing homes – an approach to dementia care

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The lecture will present the key findings from the PhD work Integrated Music in Nursing Homes – an Approach to Dementia Care, spanning 14 nursing homes with 602 residents in the period 2000–2012. The following points will be presented:
- An ethical and philosophical framework for dementia care.
- What works? A methodological approach to evaluate psychosocial interventions in a nursing home setting.
- A brief review of the research status of psychosocial interventions in dementia care with a particular emphasis on music modalities.
- Individual preference, foundation for successful psychosocial care.
- Individualized music – stages in the development of a method tailored to nursing homes.
- Applications of individualized music for agitation and depression.
- The role of music in wellbeing: Findings from a qualitative study.
- Integrating music in a nursing home setting: An implementation study in five nursing homes.

The presentation will be illustrated with clinical examples and video clips.

Organisation of care and gerotechnology

O-035
Monitoring primary health care utilization in order to prevent acute hospitalization of older patients

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Objectives: High age is associated with increased risk of hospitalisation. We have previously shown that home care utilization increases significantly prior to acute short-term admission. But is there a parallel increase in the use of primary care physicians?
Methods: Inclusion criteria: 70+ year old living in Svendborg municipality admitted acutely to the acute assessment unit (AAU) of Svendborg Hospital during 01.09.2012–31.08.2013 and discharged within 48 hours (N = 443). For each individual a linkage was made to the Danish National Health Insurance Service Registry retrieving data on the use of primary health care physician. Using the patients' unique ten digit social security number, these data were combined with previously gathered information on sociodemographics, clinical symptoms, AAU discharge diagnoses, and use (minutes) of home care. We present data on a subsample of citizens receiving home care 12 months prior to admission and who were alive six months after discharge.
Results: N: 157 patients; mean age 84.0 y (±7.2); 73.9% females. We found a significant increase in the monthly frequency of contacts to the individual's primary care physician, from 1.03 three months prior to 1.57 the day of admission ($p < 0.002$). Similar increases were found for house visits (from 0.27 to 0.53 times/month; $p < 0.01$), and for communication (phone/email) (0.84 to 1.12 times/month; $p < 0.01$). The average number of total services provided including e.g. blood sampling during consultations, increased from 3.39 to 6.29 services/month; ($p < 0.001$).
Conclusion: By sentineling increased primary health care utilization timely medical assessment and intervention may prevent acute hospital admissions of older adults.

O-037
Surveillance of adverse events in elderly patients: A study on the accuracy of applying natural language processing techniques to electronic health record data

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Objective: Measuring adverse events (AEs) is necessary for quality improvements but current detection methods are inaccurate. We determined the accuracy of a potential alternative, the natural language processing (NLP) of electronic health record data, for detecting three highly prevalent AEs in elderly patients: a) deep vein thrombosis (DVT), b) pulmonary embolism (PE) and, c) pneumonia.
Methods: A validation study was conducted at a university health network in Montreal (Canada). We randomly sampled 6,000 narrative radiology reports performed between 2008 and 2013; 2,000 from imaging studies that could diagnose DVT/PE, and 4,000 from imaging studies that could diagnose pneumonia. We manually identified DVT, PE and pneumonia within each report, which served as our reference standard. Using a nested cross-validation approach, we trained three support vector machine (SVM) models (one for predicting each of the three AEs of interest), and the average accuracy of each model was measured.
Results: On manual review, 324 (16.2%) reports were DVT-positive, 154 (7.7%) were PE-positive and 640 (16.0%) were pneumonia-positive. The SVM model predicting DVT achieved sensitivity of 0.80 (95% CI: 0.76–0.85), specificity of 0.98 (95% CI: 0.97–0.99) and positive predictive value (PPV) of 0.89 (95% CI: 0.85–0.93). The SVM model predicting PE achieved sensitivity of 0.79 (95% CI: 0.73–0.85), specificity of 0.99 (95% CI: 0.98–0.99), and PPV of 0.84 (95% CI: 0.75–0.92). The pneumonia model achieved sensitivity of 0.83 (95% CI: 0.78–0.88), specificity of 0.98 (95% CI: 0.97–0.99) and PPV of 0.88 (95% CI: 0.83–0.94).
Conclusion: Statistical NLP models can accurately identify AEs from narrative radiology reports. These models could assist with monitoring and prevention efforts.

Biogerontology and genetics

O-038
Genotypic and phenotypic study of complement receptor type 1 polymorphisms in Alzheimer's disease

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Objectives: To analyze the phenotypic structural (length) and expression aspects of complement receptor type 1 (CR1) in erythrocytes of Alzheimer's disease (AD) patients.
Methods: A case-control study (100 AD, 87 controls). A comparison between the phenotypic CR1 length polymorphism (LP) and the CR1 LP deduced from CR1 gene analysis was performed using Western blot at protein level and high-resolution melting at gene level. CR1 sites on erythrocytes (density) were enumerated by flow cytometry. Finally, a molecular analysis of the CR1 gene to type the rs6656401 and rs3818361 polymorphisms was performed.
Results: Phenotypic CR1 length and CR1 length deduced from the molecular analysis were concordant in 98.3% of cases. Our data suggested the existence of silent CR1 alleles. The CR1 density was significantly lower in AD patients expressing the CR1*2 isoform compared with controls ($p = 0.001$), demonstrating lower expression of CR1 in CR1*2 carriers. Finally, rs6656401 and rs3818361 were strongly associated with CR1 length polymorphism ($p < 0.0001$).
Conclusion: These findings indicate that AD susceptibility is associated with the long CR1 isoform (CR1*2), albeit at a lower density, suggesting that AD results from insufficient clearance of plaque deposits rather than increased inflammation. Variations in CR1 function via the CR1 LP/density polymorphism relationship deserve consideration in relation to the AD susceptibility mechanisms associated with the CR1 molecule. Qualitative and quantitative variations of CR1, depending of CR1 allele expression or the presence of silent CR1 alleles, and different behaviors of the CR1 molecule regarding its various functions might lead to an intricately complex picture of CR1 involvement in AD.

Metabolism and nutrition

O-039
IGF-1 as cross-road between nutritional and hormonal pathways in hospitalized older adults: the GLISTEN study

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Insulin like growth factor-1 (IGF-1) is such a cross-road molecule between hormonal and nutritional pathways being an important anabolic hormonal determinant of muscle mass and acting as nutritional marker in adults. We tested the hypothesized positive relationship between IGF-1 and nutrition markers in older hospitalized patients.
Methods: We used data of the multicenter Italian Study conducted by Gruppo Lavoro Italiano Sarcopenia – Trattamento e Nutrizione (GLISTEN) in 7 acute Geriatric Wards of University-Hospitals across Italy. We used here data of 77 women and 75 men hospitalized between October 2013 and 2014 in Parma, Messina, Ferrara, and Rome having serum available of patients at hospital admission and with complete CGA at hospital admission and discharge. Estimation of skeletal muscle mass was performed by bioelectrical impedance analysis (BIA). IGF-1 was measured in BRAC, Boston, USA.The relationship between IGF-1 and muscle mass and nutritional marker, was tested by multivariate regression models including age (Model 1) and age, IADL, cognitive and depressive status, multi-morbidity, hemoglobin, and WBC (Model 2).
Results: Mean Age±SD was 85±6.3 and 79.3±6.1 in women and men. Medians (IQR) for IGF-1 were 64.7 (35.7) and 81.9 (48.9) ng/mL. In age-adjusted analysis log(IGF-1) was positively associated with albumin in men (β±SE 0.37±0.12, p = 0.003),and women (0.40±0.14, p = 0.009). Log(IGF-1) was also positively associated with reactance in men (7.56±4.12, p = 0.04) but not in women (p = 0.46) at hospital admission. In Model 2 the association between IGF-1 and albumin was attenuated but still statistically significant in men (0.24±0.12, p = 0.049) and women (0.31±0.14, p = 0.03). Interestingly, in the Model 2, the association between IGF-1 and muscle reactance was even stronger in men (10.12±4.44, p = 0.01) but not in women (p = 0.64).
Conclusions: IGF-1 is an independent correlate of albumin in both sexes and of reactance in men in older hospitalized population enforcing its potential role as nutritional and anabolic marker also in this setting.

O-040
Dementia, malnutrition, functional status and pressure ulcers: an association analysis in hospitalized elderly with dementia

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Objectives: Pressure ulcers (PU) may increase the incidence of hospital complications, specially in patients with mild impairment. The Braden Scale primary stands out as a tool to assess the risk of PU.
The aim of this study is assess the correlation among Brass Scale with Mini Nutritional Assessment, Barthel Index and Mini Mental State Examination.
Methods: On 168 subjects (40m/128f; age 84±6.2 y), Pressure ulcer risk using Braden Score (BS) (16.2±3.8 unit), Nutritional Status using Mini Nutritional Assessment (MNA) (16.4±4.46 unit), Functional Status using Barthel Index (BI) (33.0±2.4 unit), and Mental Status using Mini Mental State Examination (22.2±6.1 mcUI/ml), were measured. A Pearson's correlation model, was applied to assess and quantify the associations between MNA, BI, MMSE and the Braden Index.
Results: This study showed a positive and moderate significant association among MNA (r = 0.31), MMSE (r = 0.48), BI (r = 0.81) with BRASS Score (P < 0.05).
Conclusions: Accurate identification and prevention of the risk factors such as malnutrition, disability and dementia, are prerequisites for determining appropriate strategies to prevent pressure ulcers, to improve quality of care for patient safety.

O-041
Serum retinol concentrations and risk of hip fracture in community-dwelling older Norwegians. A NOREPOS study

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Objectives: Findings from earlier epidemiologic studies have led to cautions against retinol from diet and supplements due to an anticipated increased fracture risk at high intakes and serum concentrations. We aimed to study the association between serum retinol and hip fracture, and whether high retinol may counteract a preventive effect of vitamin D.
Methods: A prospective case-cohort analysis was conducted in 21,774 men and women aged 65–79 who attended four community-based health studies during 1994–2001. Incident hip fractures occurring up to 10.7 years after examination were obtained from electronic hospital discharge registers. Retinol determined in stored serum was available in n = 1154 incident hip fracture cases and in a gender-stratified random sample (n = 1418).
Results: In Cox proportional hazards regression weighted according to the stratified case-cohort design, there was a modest increased risk of hip fracture in the lowest compared to the highest tertile of s-retinol: HR 1.30 (95% CI: 1.05, 1.61) adjusted for gender and study center. The association was attenuated after adjustment for BMI and serum α-tocopherol: HR 1.15 (95% CI: 0.91, 1.44). No statistical interaction with 25-hydroxyvitamin D was observed.
Conclusions: We found no evidence of an adverse effect of high serum retinol on hip fracture, nor any interaction between retinol and 25(OH)D. If anything, there tended to be an increased risk at low retinol concentrations, which was attenuated after controlling for confounders. We propose that cod liver oil, a commonly used food supplement in Norway, should not be discouraged as a natural source of vitamin D for fracture prevention.

O-042
Low serum vitamin K1 increases the risk of hip fractures only at low vitamin D status. A NOREPOS study

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Objectives: Studies have suggested a possible additive effect of vitamins K and D on bone. We aimed to investigate the association of serum-vitamin K1 and subsequent hip fracture according to vitamin D (25(OH)D) status in elderly Norwegians.
Methods: During 1994–2001, 21,774 men and women aged 65 to 79 years attended four community based health studies. Prospective hip fractures were identified during a median follow up of 8.2 years. The study was designed as a case cohort study. Vitamin K1 and 25(OH)D were determined in hip fracture cases with available frozen serum samples obtained at baseline (n = 1090), and in a randomly selected subcohort (n = 1318). Cox proportional hazards regression with quartiles of s-vitamin K1 as main explanatory variable was performed in stratified groups of s-25(OH)D according to the cutoff 50 nmol/L.
Results: In the group with s-25(OH)D ≥50 nmol/L hazard ratio (HR) for sustaining a hip fracture in lowest versus highest quartile of s-vitamin-K1 was 1.26 (95% CI: 0.91–1.74), adjusting for sex, age and study site. In the group with s-25(OH)D <50 nmol/L the corresponding figures were: HR: 1.81 (95% CI: 1.24–2.62), p for trend <0.001. After adjusting for smoking, BMI and α-tocopherol HR in highest compared with lowest quartile was 1.44 (95% CI: 0.97–2.14), p for trend 0.04.
Conclusions: Low serum concentrations of vitamin K1 is associated with hip fractures in elderly with s-25(OH)D <50 nmol/L. This is the first population-based cohort study to report an association between s-vitamin K1 concentrations and subsequent hip fractures.

O-043
Does nutritional follow-up after discharge, performed as home visit or telephone follow-up, prevent deterioration of ADL in malnourished geriatric patients?

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Introduction: Disease-related malnutrition affects older individuals negatively after discharge from hospital. With shorter hospital stays it is becoming increasingly important to initiate nutritional interventions after discharge to prevent and postpone further deterioration of functions.
Objective: To compare the effect of two nutritional follow-up intervention methods (home visits and telephone follow-ups) and no follow-up on prevention of deterioration in ADL.
Material and Methods: The study is a randomized clinical trial. Inclusion criteria were malnourishment or risk of malnutrition, age 75 years and older, home-dwelling, and living alone. Patients who suffered from terminal illnesses, cognitive impairment, and nursing home residents were excluded. At discharge the participants were randomized to 'home visit', 'telephone follow-up', or 'control group'. The intervention was individualized nutritional counseling at one, two, and four weeks after discharge. ADL (Barthel-100 score) was measured at discharge and eight weeks after. Data were analyzed using Fisher's exact test. Comparisons were made between randomization groups in relation to participants who maintained or improved ADL.
Results: A total of 208 patients were randomized, but only 157 participants completed the follow-up. More participants in the home visit group maintained or improved ADL (96%, n = 52), compared to the telephone (75%, n = 51) and control groups (72%, n = 54) (p < 0.01).
Conclusion: Nutritional follow-up after discharge, performed as home visits, substantially reduces the risk of deterioration of ADL in malnourished geriatric patients compared to follow-up by telephone or no follow-up. Telephone calls appear to have no effect.
Preserving independency has major importance when elderly who live alone want to stay in their homes.

O-044
Dietary carboxymethyllysine induces arterial aging in a RAGE-dependent manner in mice

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Objectives: Advanced glycation end-products (AGEs) are endogenously produced and are present in food. Nε-carboxymethyllysine (CML) is an endothelial activator via the receptor for AGEs (RAGE) and is a major dietary AGE. This work investigated the effects of a CML-enriched diet and RAGE involvement in aortic aging in mice.
Methods: After 9 months of a control diet or CML-enriched diets (50, 100 or 200 μg CML/g of food), endothelium-dependent relaxation (EDR), RAGE, vascular cell adhesion molecule-1 (VCAM-1) and sirtuin-1 (SIRT1) expression, pulse wave velocity (PWV) and elastin disruption were measured in aortas of wild-type or $RAGE^{-/-}$ male C57BL/6 mice.
Results: Compared to the control diet, EDR was reduced in the wild-type mice fed the CML-enriched diet (200 μg CML/g) (66.8±12.26 vs 94.3±2.6%, p < 0.01). RAGE and VCAM-1 (p < 0.05) expression were increased in the aortic wall. $RAGE^{-/-}$ mice were protected against CML-enriched diet-induced endothelial dysfunction. Compared to control diet, the CML-enriched diet (200 μg CML/g) increased the aortic PWV (86.6±41.1 vs 251.4±41.1 cm/s, p < 0.05) in wild-type animals. Elastin disruption was found to a greater extent in the CML-fed mice (p < 0.05). $RAGE^{-/-}$ mice fed the CML-enriched diet were protected from aortic stiffening.
Conclusions: Chronic CML ingestion induced endothelial dysfunction and arterial stiffness and aging in a RAGE dependent manner.

Infectious diseases and vaccines

O-045
Clostridium difficile infection and composition of gut microbiota in hospitalized elderly: case-control study

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Objectives: To compare the composition of gut microbiota in hospitalized elderly with and without *Clostridium difficile* infection (CDI).
Methods: 31 patients who developed CDI during hospital stay, 40 CDI-negative matched inpatients under antibiotic

treatment and 36 CDI-negative matched inpatients without antibiotic were consecutively enrolled (107 subjects, 53 M, age 81±9). A fecal sample was obtained for each participant under controlled dietary regimen, and subsequently processed for microbiota DNA extraction through a culture-independent polymerase-chain reaction approach. Partial sequencing of 16S rRNA gene and subsequent amplification were carried out to allow DNA concentration calculation and taxonomic classification of microbiota composition.

Results: As compared to CDI-negative patients, in silico analyses revealed a marked decrease in microbial diversity and species richness in CDI-positive patients, mainly due to a paucity of phylotypes within the Bacteroides phylum. The Firmicutes/Bacteroides ratio was increased significantly in patients with CDI but not in controls, possibly indicating a close association between CDI and faecal microbiota dysbiosis. CDI was also associated to depletion of normally abundant gut commensal organisms, such as the Ruminococcaceae, Bacteroidaceae and Lachnospiraceae families. In controls, antibiotic treatment was associated to a higher degree of fecal microbiota dysbiosis than no-antibiotic group, although much less significant than in CDI subjects.

Conclusions: In hospitalized elderly, CDI development is associated to significant alterations of gut microbiota composition. A better understanding of these issues could prompt new strategies of bacteriotherapy for both prevention and treatment of CDI.

All authors have no conflict of interest to declare.

O-046

Tolerance of subcutaneously administered antibiotics: a national, prospective and observational study

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Objectives: Subcutaneously (SC) antibiotic administration is common in France. The aim of this study was to determine the tolerance of such practice.

Methods: Prospective non interventional multicenter study including every adult patient treated at least one day with SC antibiotic from May to September 2014. Occurrence of local and systemic adverse effects (AE) and clinical evolution were collected until the end of treatment.

Results: 216 patients (83 [19–104] yo) were included in 50 centers. Ceftriaxone (n = 163 (74%)), ertapenem (n = 30 (14%)), teicoplanin (n = 10) and other antibiotics (n = 15) were prescribed mainly for urinary (n = 104 (48%)) and respiratory (n = 62 (28%)) infections. SC route was used because of impossible intravenous or intramuscular routes (65%), palliative care decision (32%), impossible oral route (21%), absence of active oral antibiotic (21%), patient's agitation (21%), to facilitate hospital discharge (21%) and avoid hospitalization (8%). 50 patients (23%) experimented at least one AE: pain (n = 29 (13%)), induration (n = 17 (8%)), erythema (n = 6 (3%)), hematoma (16 (7%)). Systemic AE occurred in 5 (2%) patients. AE lead to an increased hospital stay for 2 patients and a discontinuation of the SC infusion (n = 6). They were more frequent when the antibiotic was directly injected. No association was found with the prescription of antithrombotic treatment. In over 80% of cases, SC antibiotic was discontinued as planned and associated with a recovery.

Conclusions: SC antibiotic administration leads to local but slight reversible and benign AE. As It could be a safe alternative to the IV route, more studies are needed regarding efficacy and pharmacokinetics.

O-047

Norovirus-associated hospitalizations among older adults, Germany 2007–2012

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Objectives: Noroviruses (NoVs) are the most important cause globally of acute gastroenteritis (AGE) in all age groups, including older adults. There is extensive, but not universal testing for NoV in hospitalizations for AGE in Germany for cost reimbursement. Using these data, we aimed to estimate the number of hospitalizations for NoV AGE and the associated medical costs among the elderly in Germany.

Methods: The German Federal Statistics Office (DESTATIS) registers all hospitalizations in Germany. Data for patients aged 65 years and older hospitalized for AGE (ICD-10 codes A08-A09 as primary diagnosis) were extracted for the period 2007–2012.

Results: There were 301,869 hospitalizations among older adults for AGE (primary diagnosis) in Germany during the study period, of which 60,769 (20%) were associated with NoVs. The average annual number of hospitalizations for NoV AGE among the 65+ age group was 10,128, leading to an average annual incidence rate of 61 NoV AGE hospitalizations per 100,000 older adults in Germany. The total direct medical costs of NoV-associated hospitalizations was €43,195,258 for the years 2007 to 2009, with an average annual expenditure of €14,398,419.

Conclusions: NoVs are an important cause of hospitalization among older adults in Germany with a substantial financial burden in direct medical costs. The incidence of hospitalization in this study is higher than estimates in other European countries and similar to US estimates. However, the number of NoV-associated hospitalizations may be underestimated given use of primary ICD codes only and the lack of routine NoV detection among older adults.

O-048

Vaccination and survival in a population of older adult living in nursing home

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Objectives: Influenza and pneumococcal vaccines have been proved to be effective and safe in preventing and controlling infection among elderly, reducing morbidity and mortality. For this reason, in the last decades, influenza and pneumococcal vaccinations have been commonly recommended for high-risk adults and older adult. However, some evidences raised health concerns related to these vaccinations. Aim of the present study is to identify prevalence and outcomes related to influenza and pneumococcal vaccinations in a large European population of frail and old people living in nursing home.

Methods: We conducted a cross-sectional analysis of nursing home residents participating to the Services and Health for Elderly in Long TERm care (SHELTER) project, a study collecting information on residents admitted to 57 nursing home in 8 countries. Data were collected using the interRAI instrument for long-term care facilities. The impact of influenza and pneumococcal vaccination was analyzed with Kaplan–Meier curve and adjusted Cox regression analysis.

Results: 3901 patients were included in the study; 74.2% were women. The mean age was 84.6 years. 82.1% and 27.9% received influenza and pneumococcal vaccination, respectively. Overall 727 (20.71%) residents died during the 1 year follow up period. After adjusting for potential confounders, which included age, sex, comorbilities, depression and ADL, both influenza (HR = 0.75, 95% CI 0.62–0.90) and pneumococcal vaccination (HR = 0.79, 95% CI 0.67–0.95) were associated with a significant reduction in all cause mortality.
Conclusions: In a population of older adult living in nursing home influenza and pneumococcal vaccination were associated with a reduction in all cause mortality.

Pharmacology

O-049
An approach towards optimization of long-term pharmacotherapy of lower urinary tract symptoms (LUTS) in elderly people

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The drugs used to treat lower urinary tract symptoms are among the most prescribed medications to elderly people. Nevertheless, there is little evidence regarding their efficacy, safety and tolerability in elderly patients (≥65 years). As an approach towards optimization of pharmacotherapy of LUTS, a systematic review of the literature concerning urological drugs was performed for the most important and frequently used oral drug products. As a result, a total number of 16 drugs (5α-reductase inhibitors, α1-blockers, antimuscarinics, β3-agonists and phosphodiesterase type 5 (PDE5) inhibitors) were chosen. For oxybutynin, both the immediate release- as well as the extended release formulations were included. The initiators rated the selected drugs based on evidence from the existing literature, and the Summaries of Product Characteristics (SmPCs) according to the FORTA (Fit fOR The Aged) classification rules for drugs chronically used in the elderly (A: Absolutely; B: Beneficial; C: Careful; D: Don't). Finally, an international expert panel assessed the classification of these drugs in a two-step Delphi process which resulted in three drugs being assigned to FORTA B (beneficial), 9 drugs to FORTA C (questionable or careful) and 5 drugs to FORTA D (avoid or don't give). Hence, most of the selected drugs should be avoided or used with caution in older persons and the frail elderly, in particular the α1-blockers, a β3-agonist, a PDE5 inhibitor and most of the antimuscarinics for which classes range from B through C to D.

O-050
Incidence of benzodiazepine and related drug use in persons with and without Alzheimer's disease: the MEDALZ study

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Objectives: Although frequent benzodiazepine and related drug (BZDR) use has been reported in persons with Alzheimer's disease (AD), the incidence remains unknown. We investigated the incidence of BZDR use in a cohort of persons with and without AD during a five-year follow-up.
Methods: The study was based on the Finnish MEDALZ (Medication use and Alzheimer's disease) cohort. Persons diagnosed with AD during 2005–2011 (n = 70,718) were identified from the Special Reimbursement Register and the comparison persons without AD from a nationwide register including all residents. Incident use of BZDRs, including benzodiazepines and Z-drugs, was investigated from two years before to three years after the diagnosis of AD. Data on BZDR use were obtained from the Prescription register.
Results: The incidence of BZDR use was higher in persons with AD starting from one year before the diagnosis and peaked at six months after the diagnosis of AD (incidence rate ratio 2.5, 95% confidence interval 2.4–2.7). The use of benzodiazepines was predominant in persons with AD and, after the diagnosis, the incidence of benzodiazepine use remained three times higher than in the comparison persons.
Conclusions: Early symptomatic treatment for AD with BZDRs is not in line with treatment guidelines. BZDR use is recommended only if non-pharmacological and other pharmacological treatments have not been beneficial. More caution is needed as concomitant use of BZDRs complicates the monitoring of treatment with antidementia drugs due to their adverse effects on cognition. Furthermore, severe adverse drug events are associated with BZDR use in older persons.

O-051
Systematic review and meta-analysis: What is the evidence for oral iron supplementation in treating anaemia in older people?

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Objectives: Oral iron supplementation is used widely despite observational studies suggesting it is ineffective. Therefore, this systematic review determined if oral iron therapy is effective in elderly people with iron deficiency anaemia.
Methods: The systematic review was based on Cochrane Collaboration methods. MEDLINE, Embase and the Cochrane library were searched from inception up to 23rd January 2014. Only randomised controlled trials comparing oral iron with no iron supplementation or placebo and measuring the change in haemoglobin levels in elderly anaemic people were included. Length of hospitalisation, mortality and adverse effect data were also analysed.
Results: 6163 titles were screened but only three studies (total 440 participants, mean age 70–83 years old) met the inclusion criteria, all in an orthopaedics setting. Just one showed oral iron supplementation significantly raised haemoglobin level. However, meta-analysis showed oral iron supplementation increased haemoglobin levels more than placebo or no treatment after 4–6 weeks of treatment (weighted mean difference 0.35 g/dL, 95% CI 0.12–0.59, p = 0.003). There were no significant differences in adverse effects, length of hospitalisation or mortality.
Conclusions: Oral iron raises haemoglobin levels in elderly people with post-operative anaemia by about 0.35 g/dL after 4–6 weeks. However, only 3 studies in an orthopaedics setting met inclusion criteria. It remains unclear if the widespread practice of prescribing oral iron supplements results in tangible health benefits for older people.

Cognition and dementia

O-052

Brain amyloid deposition is associated with lower instrumental activities of daily living performance in older adults. Results from the MAPT study

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Background: Brain amyloid deposition is one of the key pathological hallmarks underlying the cognitive changes associated with Alzheimer's disease (AD). Growing interest has been given to the earliest clinical manifestations of amyloid plaques. However, the relationship between amyloid status and activities of everyday function remains largely unknown. In the present study, we examined the relationship between instrumental activities of daily living performance (using the ADL-PI score) and amyloid status in older adults.
Methods: Cross-sectional analyses of data from the Multidomain Alzheimer Preventive Trial (MAPT). Volunteers underwent a brain 18F-AV45 Positron Emission Tomography (PET) examination. Bivariate analysis and regression models were conducted to study the relationships between brain amyloid deposition and the total ADL-PI score.
Results: We included 271 participants (women=60%; age=76±4 years). Amyloid PET was positive (Standard Uptake Value ≥1.17) for 103 participants (38%). The ADL-PI score was lower in amyloid positive subjects than in their amyloid negative counterparts (38.8 vs. 40.3, $p = 0.007$). This association was also confirmed in regression models adjusted for age, gender and familial history of AD (Odds Ratio=0.94; 95% Confidence Interval 0.89–0.99; $p = 0.02$). This finding was consistent in cognitively normal individuals and in those with mild cognitive impairment, using the clinical dementia rating scale.
Conclusions: This study highlighted an association between early functional limitations and brain amyloid deposition in elderly subjects. These symptoms could be the clinical manifestations of amyloid plaques even in the absence of overt dementia. Further prospective studies are warranted for examining the evolution of ADL-PI score over the course of AD.

O-053

Role of anti-dementia drugs and multidimensional impairment on mortality rates in frail multimorbid older patients with dementia: results from the European MPI_AGE project

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Background: The role of anti-dementia drugs and multi-dimensional impairment on mortality rates in frail multimorbid older patients with dementia is still under debate.
Aim: To evaluate whether anti-dementia treatments, i.e. anticholinesterase and memantine, in older patients with dementia is differentially effective across strata of mortality risk assessed by the Multidimensional Prognostic Index (MPI).
Materials and Methods: In this cohort study, 6712 community-dwelling subjects aged 65 years and older with dementia were assessed for mortality risk using the MPI, a validated predictive tool for mortality calculated on information on age, sex, morbidity, cognitive status, disability in ADL and Barthel mobility, risk of pressure sores and social support. Participants were classified as having MPI-1 mild, MPI-2 moderate and MPI-3 severe risk of mortality and were followed up to nine years. Treated and untreated cohorts were also matched by age, sex, co-morbidity, drug use and all MPI domains.
Results: During the follow-up period a significant difference in mortality rates ($p < 0.0001$, Log-rank test) among the three MPI groups, MPI-1=43.7% (1812/4139 subjects), MPI-2=80.0% (1450/2193 subjects), MPI-3=85.2% (324/380 subjects). Multivariable analyses adjusted for age, sex, co-morbidity, drug use and all MPI domains demonstrated that higher mortality rates were associated with lower rates of anti-dementia treatments (HR 2.65, 95% CI 2.27–3.09) and higher multidimensional impairment (MPI-1 grade = reference; MPI-2 HR 2.26, 95% CI 2.16–2.43; MPI-3 HR 5.37, 95% CI 4.76–6.06).
Conclusion: The use of anti-dementia drugs and the multidimensional impairment are significantly associated with higher mortality in older community-dwellers subjects with dementia.

O-054

Methodological factors in determining rates of dementia and cognitive impairment in TIA and stroke: Applicability of short cognitive tests

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Objectives: Cognitive assessment is recommended after stroke but there are few data on the applicability of short cognitive tests to the full spectrum of patients. We therefore determined rates and causes of untestability in a population-based study of all TIA and stroke.
Methods: Patients with TIA or stroke prospectively recruited (2002–2007) into the Oxford Vascular Study had >1 of mini-mental-state examination (MMSE), telephone interview of cognitive status (TICSM), Montreal cognitive assessment (MOCA), and abbreviated mental test score (AMTS) with follow-up to 5-years.
Results: Among 1097 consecutive assessed survivors (mean age/sd 74.8/12.1 years, 378 TIA), numbers testable with a short cognitive test at baseline, 1, 6, 12 and 60 months were 819/1097 (75%), 760/947 (80%), 671/825 (81%), 612/762 (80%) and 381/544 (70%). Untestability was associated with older age, greater severity of index event and premorbid dependency. Over 90% (343/378) of TIA patients were testable at baseline compared to only 41% (120/290) of major stroke. Untestability was commonly caused by dysphasia (18%) and being too unwell (13%) at baseline whereas moving out of study area was common after 5 years (26%). Testing difficulties (eg dysphasia, poor vision) in otherwise testable patients were more prevalent at baseline (120/819; 15%) than thereafter: 57/760 (8%), 16/671 (2%), 7/612 (<1%) and 12/381 (3%) at 1, 6, 12 and 60 months.
Conclusions: Requiring completion of a cognitive test excludes those most at risk of cognitive impairment after TIA and stroke. Future studies should report data on untestable patients and on those with testing difficulties.

O-055

Recommendations for non-pharmacological interventions to prevent behavioural disturbances in older patients with dementia. Applying the GRADE approach. The SENATOR project ONTOP series

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Objectives: To develop explicit and transparent recommendations for non-pharmacological interventions to prevent behavioural disturbances in older adults with dementia.
Methods: A multidisciplinary panel was constituted comprising geriatricians, nurses and a clinical epidemiologist. The evidence was compiled from a systematic overview of published reviews. A Delphi method was used to establish critical outcomes. The Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach was used to rate the evidence and to formulate recommendations.
Results: The systematic overview identified 34 reviews. Behavioral disturbances was rated as critical outcome. Based on low quality of evidence, the panel formulated weak recommendations for Behavior Management Techniques (4 SRs; 7 RCTs; 791 participants), Person-centered care interventions (1 RCT, 289 participants), Reminiscence therapy (4 SRs; 6 RCTs; 235 participants), Music therapy (7 SRs; 10 trials), and Aromatherapy (4 SRs; 7 RCTs; 428 participants).
The panel also provided weak recommendations, supported by very-low quality of evidence, for Validation therapy (2 SRs; 3 RCTs; 153 participants), Snoelzen therapy (2 SRs; 3 RCTs; 311participants) and Exercise therapy (11 SRs; 3 RCTs; 268 participants).
Due to low/very low quality of evidence and conflicting results, the panel did not recommend the use of the following non-pharmacological interventions: Animal assisted therapy (2 SRs; 6 primary studies); Light therapy (3 SRs, 4 RCTs, 250 participants); Transcutaneous Electrical Nerve Stimulation (1 SRs; 9 trials).
Conclusions: The panel developed the most recent, systematic and transparent recommendations for non-pharmacological interventions to manage behavioral disturbances in patients with dementia.
Funding: European Union Seventh Framework Programme (FP7/2007–2013), grant no. 305930 (SENATOR).

O-056

Health-related quality of life in a multidomain intervention trial to prevent cognitive decline (the FINGER Study)

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Objectives: FINGER successfully demonstrated that a multidomain intervention can prevent cognitive decline. We investigated whether the intervention also affected health-related quality of life (HRQoL).
Methods: 1260 community-dwelling individuals aged 60 to 77 years at risk of cognitive decline were randomized to intervention (I, n = 631) and control (C), n = 629) groups. Two-year intervention included healthy diet, exercise, cognitive training, and vascular risk management and monitoring. HRQoL was assessed at baseline, 12, and 24 months using RAND-36 (SF-36) instrument, which includes 8 scales: Physical Function (PF), Role Physical (RP), Role mental (RM), Vitality (VT), Mental Health (MH), Social Function (SF), Bodily Pain (BP), and General Health (GH). The changes in scales were adjusted for age, sex, education, and MMSE.
Results: At baseline, the scores in all RAND-36 scales were considerably higher in the FINGER participants compared with Finnish population of similar age. During the 2-year intervention period mean scores in all scales decreased in C, but increased in I for VT (12 and 24 months), SF (12 months), and especially GH at both 12 and 24 months. The differences between I and C groups were significant for GH at 12 ($P < 0.001$) and 24 months ($P < 0.001$), PF at 12 months ($P < 0.01$), and RP at 12 months ($P = 0.03$). The net differences in GH scores between groups were >3 points, which is considered clinically meaningful in RAND-36.
Conclusions: In the FINGER study with good HRQoL at baseline, multidomain intervention to prevent cognitive decline had also positive effect on some scales of RAND-36, especially general health.

O-057

Periodic measurement of quality of life and perseverance in dementia care stimulates improvement

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Objectives: There is a lack of insight in care-outcomes for people with dementia. In this project we evaluated QoL of people with dementia and perseverance time and QoL of informal caregivers. The objective is to stimulate use of these outcome indicators for continuous improvement.
Methods: We developed a questionnaire that measures QoL (Schölzel), perseverance time (Kraijo) and Subjectively Experienced Health (Bloem). The care professional that coordinates or provides most care asks these questions during regular contacts two times a year. Subsequent measurements follow changes over time.
The outcomes are shared with care professionals and their organizations**, stimulating dialogue about the care provided.
Results: Preliminary results on 200 cases* show:

- People with dementia living independently, experience fewer problems compared to inpatient care.
- People with dementia score their QoL higher than informal and professional caregivers
- Slightly more than half of the informal caregivers reported a perseverance time of more than two years.
- Perseverance time seems better after institutionalization of the person with dementia.
- There is a relation between caregivers perseverance time and their QoL.
- Caregivers associate their good QoL with words as: peace, enjoy, cozy, nice. Restlessness and anger are associated with bad Qol.
- A first comparison between six organizations** shows significant differences in QoL of people with dementia, suggesting there is room for improvement.

*The final analysis on more than 1.000 cases is work in progress.
**Organizations are health care providers and regional dementia care networks.
Conclusions: The dialogue on QoL and perseverance time helps care professionals to decide on appropriate care, stimulates advanced care planning and shared decision making. We expect that subsequent measurements and comparing results between organizations** stimulates further improvement of daily practice.

O-058
Forget me not: Understanding "Dementia" through films

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Objectives: Dementia is a significant universal health and social challenge. Films can act as a popular, easily-accessible medium for understanding the experience of patients with dementia and their carers, as well as an effective training and educational resource, promoting the delivery of compassionate, dignified care in hospitals and care home settings. The objectives of this survey were to identify films exploring dementia, and summarize emerging themes.
Methods: An internet search was undertaken using terms: dementia, film, movie, nursing homes, care homes, older people, over the last 10 years using Google advanced search, EMBASE, IMDB and Pubmed.
Results: Sixteen films were identified from five continents with the following themes: evolving phases of dementia (denial, grief, acceptance and eventual loss of identity: Still Alice, USA 2014, Cairo Time, Egypt 2014, The Iron Lady, UK 2011), role reversal of children acting as parents and interdependency (Radiator, UK 2014, Nebraska, USA 2013, Black, India 2005), rewarding aspects of caring (A Simple Life, Hong Kong 2011, Robot and Frank, USA 2012), potential for abuse and carer burden (A Separation, Iran 2011, Coming Forth by Day, Egypt 2012), placement issues (Away From Her, UK 2006, The Savages, USA 2007), ethical dilemmas in feeding and end of life decisions (Amour, France, 2012, Volcano, Finland, 2011) and the role of arts and humanities (e.g. music and photography) in patients' well-being (Alive inside, USA 2014, Love, loss and laughter, Australia 2013).
Conclusions: Films offer a rich medium for teaching and training healthcare professionals about the complexity of dementia.

O-059
Heterogeneity of cognitive ageing in older Britons: latent class trajectories of cognitive scores in ELSA 2002–2013

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Objectives: Healthy cognitive ageing is desired in an ageing population, requiring tremendous demand for health resources and social care. An effective response to this demand must recognise the heterogeneous experiences of cognitive ageing unfolding in the population. To capture this heterogeneity we aim to derive latent classes of age trajectories of cognitive scores of older Britons aged 50 and over. These are then profiled in terms of sex, education and cohort.
Methods: From the English Longitudinal Study of Ageing 2002–2013 (N person-year = 49,981), cognitive scores capturing memory and executive functions are derived. We applied latent class trajectories method where the population likely clustered into a limited number of classes. Each class is distinct from another based on the way cognition changes as its members age.
Results: The method yielded four latent classes of age trajectories of cognitive scores. One of the classes displayed an advantageous trajectory since for its members the onset of cognitive scores decline does not start until 60. The profile furthermore shows that among its members women are more likely than men to belong to this class. Cohort effect is also apparent with the Post War cohort members likely to be found in the advantageous latent class.
Conclusion: Cognitive ageing of older Britons can be pictured using four age trajectories uncovered using latent class trajectory method. Public programme to support healthy cognitive ageing should consider the possibility of tailoring any programme accordingly. This research is funded by the MRC and NIHR.

O-060
Social factors predict cognitive outcomes cross-sectionally, but not longitudinally, among older Irish adults

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Objectives: Evidence exists of an association between social factors and cognitive functioning in later life. We wanted to investigate whether (a) this association holds when health behaviours and mental health status are controlled for, and (b) whether the association is present in cross-sectional and/or longitudinal data.
Methods: Data from 8504 older (aged 50+) participants in waves 1 and 2 of the TILDA (Irish Longitudinal Study on Ageing) dataset were analysed using hierarchical linear regressions. Outcomes were immediate and delayed word recall, and scores on the Mini Mental State Examination (MMSE). Age, gender, education level, health factors (blood pressure, waist-hip ratio, smoking and alcohol intake, exercise, triglycerides), and mental health (depressive and anxiety symptomatology) factors were included as covariates. Predictors of interest were social participation, social connectedness, and loneliness.
Results: Controlling for covariates, social factors predicted immediate recall (Loneliness $\beta = -0.064$, $p < 0.01$; Social participation $\beta = 0.045$, $p < 0.01$), delayed recall (Loneliness $\beta = -0.08$, $p < 0.01$; Social Participation $\beta = 0.034$, $p < 0.05$) and MMSE outcomes (Loneliness $\beta = -0.064$, $p < 0.01$; Social Participation $\beta = 0.056$, $p < 0.01$), cross-sectionally, but not longitudinally. We investigated potential reverse causality (cognition predicting change in social factors over time) but this possibility was ruled out.
Conclusions: There is a cross-sectional but no longitudinal association between social participation, loneliness, and cognitive outcomes among older Irish adults. Social factors may have a short-term impact on cognition only, or potentially a key confound was not considered in this analysis. Further research is warranted to investigate other potential confounds of the association.

Comprehensive geriatric assessment

O-061
A comprehensive geriatric assessment in the emergency department reduces admissions and length of stay

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Objectives: OPAL (Older Persons Assessment and Liaison) is a service which has been developed at the University of South Manchester to review frail patients who present to the Emergency Department (ED). OPAL consists of a geriatrician and therapists. Patients undergo a Comprehensive Geriatric Assessment (CGA) within the ED with the intention for a safe and quick discharge to the community, referral and timely review by appropriate community health and social services can be arranged. The aim of OPAL is to reduce inappropriate admissions and provide increased support to those most vulnerable.
Methods: The outcomes of all patients were reviewed over the last nine months since the service began.
Results: A total of 990 patients underwent a CGA by the OPAL team. Of these 383 were admitted, 39% conversion rate, compared to a 66% conversion rate of age matched controls. The patients who were admitted by the OPAL team had a shorter length of stay, 9.93 vs 10.18. The majority of patients discharged from ED were referred to a community service
Conclusions: Often staff in the ED do not feel confident in managing complex and frail patients and therefore the safest option is

admission. Once admitted these patients have long lengths of stay and can develop hospital acquired complications ie infections, falls, delirium (BGS 2012). An early CGA reduces hospital admission and enables patients' access to community services that are able to support and improve independence. An early CGA also decreases length of stay if admission is necessary.

O-062
Multidimensional frailty indicators in a nationwide GP database predict mortality in the elderly: MPI_Age results

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Objectives: To identify multidimensional indicators and evaluate their additional value in a previously developed primary care morbidity score (QOF) for the prediction of one month and one year mortality in elderly persons, using The Health Improvement Network (THIN), a UK nationwide general practice (GP) database.
Methods: Patients ≥65 were identified in THIN during 2000–2012. THIN was mined to identify multidimensional indicators of older people. Then, 1-month and 1-year mortality were predicted using Cox models with following covariates: model 1) age+sex; model 2) age+sex+QOF score and model 3) age+sex+QOF score+multidimensional indicators. Discriminatory power of prediction models was assessed by computing the c-statistic.
Results: 1,193,268 subjects aged ≥65 years were identified in THIN. The most frequently registered multidimensional indicators were mobility (4.6%), accommodation (1.98%), cognition (0.55%) and dressing ability (0.44%). Model 1 had a lower discriminatory power for mortality prediction than model 2. A significant improvement on 1-year and 1-month mortality prediction was seen by adding accommodation into the model 2: from c=0.71 to c=0.75 ($p < 0.001$) and from c=0.72 to c=0.78 ($p < 0.001$), respectively. 1-year mortality predictions for dementia patients improved from 0.62 to 0.64 ($p = 0.004$) adding the accommodation indicator.
Conclusions: Multidimensional indicators were not frequently recorded in the THIN database but improved the accuracy of a model incorporating age, sex and QOF score to predict 1-month and 1-year mortality among community-dwelling older people; prediction was less marked for dementia patients. The use of such indicators in GP databases is a newer approach which may improve mortality prediction among elderly persons.

O-063
Drug prescribing in the elderly hip fracture patient – results from The Trondheim Hip Fracture Trial

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Objectives: To investigate patterns of drug prescription in the Trondheim Hip Fracture Trial.
Methods: Elderly home-dwelling patients with hip fractures were randomized to traditional orthopaedic care (OC) in an orthopaedic ward or comprehensive geriatric care (CGC) in a geriatric ward. Drugs used at admission and discharge were analyzed with regard to drugs started or withdrawn during the hospital stay, polypharmacy (≥5 drugs), anticholinergic burden using the Anticholinergic Risk Score (ARS) and the Duran scale, and drugs increasing fall risk, and drugs used for osteoporosis, pain and constipation.
Results: 397 patients were enrolled, 199 to OC and 198 to CGC. Mean age was 83 years, 73.4% were females. Mean number of drugs at admission and discharge were 3.8 and 7.1 in the CGC group versus 3.9 and 6.2 in the OC group, $p = 0.0015$ at discharge. At discharge significantly more patients in the CGC group used analgesics, laxatives, vitamins and drugs for osteoporosis. Use of the Duran scale (non-validated) showed a statistically significant higher anticholinergic burden in CGC patients, while using the ARS (clinically validated) showed no significant difference.
Conclusion: Drug prescription patterns and routines for review of drug regimens were different between the OC and the CGC group in the Trondheim Hip Fracture Trial. Surprisingly, at discharge patients in the CGC group used more drugs than the OC patients, while potentially less favorable anticholinergic profile in CGC patients was dependent on measurement method. Whether these differences are related to the more beneficial outcomes in the CGC group is unknown.

O-064
Into the black box of Geriatric Assessment – From assessment to outcomes

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Objectives of the study: Life-expectancy is surely rising. In the search for a solution for increasing morbidity and health-care consumption, integrated elderly care is extensively studied the last decade. Part of it is a comprehensive geriatric assessment. We implemented a multi-domain CGA with emphasis on patient empowerment for which frail and pre-frail home-dwelling elderly are invited. Until today effects of integrated care projects are falling short and their efficacy is not thoroughly understood. For developing efficient and effective care projects we unraveled the steps taken to come to effects in our intervention.
Methods used: Home-dwelling elderly eligible for our intervention (65+ and (pre)frail, measured by Groningen Frailty Indicator and case-complexity (Intermed)) and their general practiotioners were interviewed about their role in the CGA and their motivation for participation. Data was transcribed and analysed by thematic analysis with Atlas.ti
Results obtained: From CGA to effects multiple sequential steps can be distinguished for an advice to be executed: receiving, remembering and understanding, discussing, accepting and complying. They all need to be overcome to come to effects. These steps are looked to different by patient and their doctor and they sometimes have opposed expectations in their role in these.
Conclusions reached: To get from CGA to effects a difficult path with multiple steps lies ahead, with lack of clarity who is in the lead. The GP is not feeling full responsibility because 'non-medical' topics are attended. Improving patient self-management skills can help getting the patient to follow the path towards better CGA outcomes.

O-065
How Finnish geriatricians perform comprehensive geriatric assessment in clinical practice?

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Objectives: Comprehensive geriatric assessment (CGA) is one of the most important evaluation tools in geriatrics. In this study we aimed to clarify how Finnish geriatricians apply CGA in their clinical practice.

Methods: We organized a web-based survey among the members of Finnish Geriatricians (n = 248). The questionnaire included items about usage and content of CGA. Evaluated domains were: assessment of cognition, malnutrition and functional ability, evaluation of depression and measurement of orthostatic blood pressure.
Results: Altogether 121 physicians (49%) responded, and the present analysis included 95 geriatricians performing clinical work. Majority of the responders (94%) evaluated older patients using CGA. Of them, 38% performed CGA to all new patients and 62% to selected patients. Ten responders (11%) incorporated all five domains into CGA. Other responders selected domains according to their clinical judgment. Greater proportion of female than male physicians included evaluation of depression (39% vs. 16%, p = 0.045) and assessment of functional ability (48% vs. 24%, p = 0.01) always in CGA. Those responders, who applied CGA to all new patients, incorporated nutritional assessment (68% vs. 34%, p = 0.002) and measurement of orthostatic blood pressure (76% vs. 54%, p = 0.04) always into CGA more often than those who performed CGA to selected patients only. Responders' opinions about health care for older people and about their own work were not associated with the application of CGA.
Conclusions: Majority of the responders performed CGA to their patients. The content of CGA varied between geriatricians. Incomplete evaluation may lead to inadequate detection of geriatric syndromes and other problems.

O-066
Profiling of geriatric patients by using a comprehensive geriatric assessment

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Introduction: Long-term care patients generally demonstrate a dependency in activities of daily living and are characterized by a high prevalence of cognitive and emotional dysfunctions. The organization and the provision of individualized and patient-centred care are limited by the complexity of the clinical heterogeneity of the geriatric sample. With the present research we aim at reducing the heterogeneity in our sample by regrouping patients into several different subsamples by their respective clinical profile.
Methods: A total of 391 patients (mean age: 85.0, SD=7.1 years) from 4 different long-term care institutions were assessed using a comprehensive geriatric assessment. The assessment was composed of measures of functional and cognitive impairment, emotional status, grip strength, mobility, and pain. Data collection was organized over a 6 month period.
Results: Using cluster analysis as an exploratory data analytic tool for organizing observed data into meaningful, yet initially unknown groups of patients, we found four relatively homogeneous groups of geriatric patients. The four clusters differ significantly from each other on a number of observed parameters, suggesting that each cluster is characterized with a different pattern of health concerns.
Conclusion: The present research demonstrates an approach to reduce the heterogeneity included in geriatric samples. By using the cluster analytic approach, individuals with similar characteristics on the respective variables are included in the same subsample. We discuss how the identified profiles may serve the clinician and other health professionals to adequately structure patient-centred care and support.

O-067
Implementation of geriatric consultation teams (GCT) in acute hospitals in three European countries

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Objective: To understand how implementation of multidisciplinary GCTs on non-geriatric hospital units was facilitated in the Netherlands, France and Belgium.
Methods: Scoping review and cross-sectional survey.
Results: GCT implementation was supported through a Senior Friendly Hospital (SFH) Quality Label in the Netherlands, and legislation in France and Belgium. Forty-six (47%) hospitals in the Netherlands were awarded the Quality Label in 2013 and 82 (83%) had a GCT. The majority (n = 56, 68%) of the GCTs scored 75% on the GCT criterion, a minimal standard for SFH eligibility. The Dutch National Society for Clinical Geriatrics specifies different ways to implement consultation-based interventions. In 2002, the Ministry of Health in France decreed on the Geriatric Care Network (GCN) for better elderly management, stating that the GCN should consist out of a GCT and a geriatric unit, short-stay unit, day hospital and rehabilitation unit. It also regulated GCT activities and provided the possibility for out of hospital consultation. In 2011, 216 French public acute care hospitals (31%) had a GCT. In Belgium, a Care Program for Older Hospitalized Patients was published in 2007: acute hospitals should have an acute geriatric hospitalization ward, outpatient's clinic, and day care hospital, a GCT, and an external liaison service. Over 90% of Belgian acute hospitals have a GCT. Structural financing for GCT activities is provided since 2013.
Conclusions: Although a heterogeneous approach for patient screening, assessment, and follow-up was observed, legislation and quality labels were facilitators to promote GCT implementation on a national level.

Delirium

O-068
Plasma melatonin levels in older hip fracture patients and the occurrence of delirium: signs for a phase shift?

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Objective: Delirium is characterized by circadian rhythm disturbances. Melatonin plays a major role in maintaining circadian rhythm. The aim of this study was to compare melatonin levels in patients with and without delirium.
Methods: From 2008–2012 all consecutive older hip fracture patients who were acutely admitted to the hospital were included in a randomized controlled trial investigating melatonin suppletion for the prevention of delirium. Data of the placebo group of this study were used. If patients consented to blood withdrawal 1–4 blood samples were obtained during hospitalization at 11:00 am. Delirium was assessed daily by trained staff using the Confusion Assessment Method (CAM). At baseline demographic data, comorbidity, cognitive and functional status were recorded. Melatonin was measured by radio immunoassay (RIA).

Results: We analyzed 510 samples of 194 participants. Mean age was 83.6 years and 63 (32.5%) patients developed delirium during admission. Median melatonin level in persons that experienced delirium was 51.4 pg/ml (IQR 57.2) and in those who did not 41.0 pg/ml (IQR 34.0), p-value 0.137. In a mixed model analysis, adjusted for CAM score, pre-existing cognitive impairment, age, type of anesthesia, prior delirium and benzodiazepine usage, melatonin levels were associated with the day in relation to surgery.
Conclusion: No association of delirium with plasma melatonin levels could be demonstrated in this study. Melatonin is associated with the perioperative period, suggesting that the secretion patterns of melatonin could have changed. More research with multiple blood sampling daily is needed to unravel the secretion patterns of melatonin during delirium.

O-069
Physiological melatonin levels in healthy older people

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Objective: Melatonin plays a major role in maintaining circadian rhythm. Its secretion pattern and levels can be disturbed in persons with dementia, psychiatric disorders, sleep disorders or with cancer and possibly in older age. As melatonin suppletion is often applied in older persons as sleep medication, it is important to know if melatonin levels decrease in healthy ageing and/or secretion patterns change. The objective of this study is to both determine physiological levels and secretion patterns of melatonin in healthy older people.
Methods: We performed a systematic review and searched PubMed and Embase from 1980 up to November 2014 for studies that measured melatonin in healthy older people aged 65 years and older.
Results: 19 studies were retrieved. The number of participants ranged from 5 to 60 per study. Melatonin was mostly measured by radioimmunoassay (RIA) and the number of measurements per twenty-four hours varied from 1 to 96. Sixteen studies showed a secretion pattern with a clear peak concentration, mostly at 02:00 or 03:00 am. Maximal concentrations varied greatly from 11.2 to 91.2 pg/ml. The maximal melatonin level in those mean aged 65–70 years was higher when compared to those aged 75 years and older, 53.1 pg/ml and 22.5 pg/ml respectively, p-value <0.05.
Conclusion: The secretion pattern of melatonin does not change in healthy ageing, but the maximal nocturnal peak concentration of melatonin might decline. It is important to take this into account when prescribing melatonin suppletion to older people.

O-070
Heterogeneous cognitive trajectories in the first year after hip fracture

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Objectives: Heterogeneous patterns of cognitive change have been identified in patients with mild cognitive impairment, Alzheimer's disease and after prolonged hospitalization. Hip fracture is associated with subsequent cognitive impairment, especially when delirium co-occurs. We examined the heterogeneity of cognitive trajectories in the first year after hip fracture surgery in a population of older patients.
Methods: We enrolled 360 consecutive patients aged 65–102 years old, who were admitted for surgical repair of a hip fracture. The Mini Mental State Examination (MMSE) was obtained at admission, discharge, and three and 12 months after discharge. Cognitive trajectories were identified with Group Based Trajectory Modelling (GBTM), using MMSE as outcome measure. For comparison, mixed modelling was performed to estimate the rate of change in MMSE score for the entire group.
Results: 185 (51.4%) patients had prior cognitive impairment and 114 patients (31.7%) experienced delirium during admission. Three distinct cognitive trajectories were identified and labeled based on initial MMSE score and course: (1) 27 moderate increase (54.9%), (2) 19 slow increase (25.1%) and 8 slow decline (20.0%), with an annual rate of MMSE change of 2.00, 1.30 and −1.50 points respectively. This did not correspond to the overall annual increase rate of 0.76 MMSE point that was estimated for the group as a whole with mixed modelling.
Conclusion: Our results extend the observation that heterogeneous patterns of cognitive change exist in elderly, to a population of hip fracture patients. Over half of older patients undergoing acute hip fracture surgery show a favorable cognitive outcome.

O-071
Feasibility study of the long term impact of acute illness, hospitalisation and delirium on cognitive outcomes after TIA and stroke

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Objectives: Post-stroke dementia is multi-factorial but previous studies have tended to focus on the impact of cerebrovascular disease alone. Delirium, associated usually with acute general medical illness, predicts poor cognitive outcome in Alzheimer's disease and appears to worsen cognitive trajectory, but there are no large studies of its impact on long-term outcome in cerebrovascular disease. We aimed to determine the feasibility of studying the impact of systemic illness, hospitalisation and delirium on long-term cognitive outcome after TIA and stroke.
Methods: We studied all surviving TIA and stroke patients recruited previously (2002–2012) into a UK population-based study. From 01 July 2013, all patients admitted to hospital for any reason were prospectively assessed. Co-morbidities, physiological and blood parameters, abbreviated mental test score, delirium screen, diagnosis and length of stay were recorded.
Results: 1565 of the TIA and stroke patients initially recruited (mean age 68.9+13.3, range 21–102 years, 751 female, 676 TIA) were still alive on 01 July 2013. During the subsequent 4 months, there were 139 admissions in 123 patients (mean age 77.6+11.7 years, 57 female), of which 122 (88%) were unplanned: 88 (72%) to acute medicine; 10 other medical; 16 surgery; 7 trauma. Among acute medicine admissions, delirium occurred in 29/88 (30%).
Conclusions: Older patients with previous TIA and stroke have very high rates of hospital admission for acute medical illness and associated delirium. There is therefore considerable potential for delirium to contribute to cognitive decline and occurrence is sufficiently frequent for prospective longitudinal studies to be feasible.

O-072
Characteristic and outcomes of clinical subtypes of delirium in old patients admitted in a sub-acute care unit

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Objectives: To examine incidence, characteristics and outcomes of clinical subtypes of delirium in older patients hospitalized in a sub-acute intermediate care unit after an emergency room visit.
Methods: Prospective observational study of patients aged ≥65 years admitted to the sub-acute care unit of Parc Sanitari Pere Virgili, Barcelona, during 3 months of 2015. Comprehensive geriatrics assessment using standardized instruments including the confusion assessment method (CAM) was performed. Patients were

observed daily recording incident delirium, subtypes of delirium, use of pshychoactive medication, adverse outcomes, length of stay and discharge destination.
Results: Out of 262 patients, 119 (45.5%) developed delirium (median age +SD of 87.1+6.1; 69.4% women), being delirium hyperactive in 27.7% hypoactive in 29.4% and mixed in 42.9% of cases. Patients with hypoactive delirium showed increased mortality and institutionalization at hospital discharge (p 0.055), worse functional status (p 0.011) but less use of physical restraints (p 0.002). Patients with hyperactive delirium were more likely to receive neuroleptic medication ($p < 0.001$), to have history of delirium (p 0.045), and to present falls and injurious behaviour that interfered with the treatment (p 0.021) however the duration of the syndrome was shorter (p 0.050).
Conclusions: In this study, incidence of delirium was high. Mixed delirium was the most common subtype. Hypoactive delirium was significantly associated with poor functional status, greater mortality and less return home. Strategies to prevent and early manage delirium, according to subtypes, might be evaluated to prevent undesirable outcomes and measures such as neuroleptic medications and physical restraints.

Psychiatric symptoms and illnesses

O-073
Association of depressive symptoms with circadian blood pressure alterations in Parkinson's disease

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Objectives: To assess whether among patients with Parkinson's disease depression, a common non-motor symptom associated with reduced survival, is associated with cardiovascular dysautonomia.
Methods: One-hundred-twenty-five subjects with PD consecutively admitted to a geriatric day hospital were enrolled. All participants underwent comprehensive evaluation, fasting blood sampling and 24-hour ambulatory blood pressure monitoring. The percent reduction in nocturnal blood pressure (dipping) was calculated. Depressive symptoms were assessed through the 15-item Geriatric Depression Scale (GDS); a score ≥5 identified moderate to severe symptoms.
Results: Within the study sample (mean age 72.7±7.8 years, 32% women) 61 subjects (49%) presented with a GDS score ≥5. When compared with other participants, subjects with a GDS score ≥5 had reduced adjusted levels of systolic (−2.6±2.7% vs 4.7±2.5%; $p = 0.003$) and diastolic dipping (0.6±2.8% vs 7.4±2.6%; $p = 0.007$). After adjusting for potential confounders, depressive symptoms were associated with reduced systolic (OR 0.94; 95% CI 0.89; 0.98) and diastolic dipping (OR 0.94; 95% CI 0.90; 0.99).
Conclusion: Depressive symptoms are prevalent, and independently associated with cardiovascular dysautonomia among patients with Parkinson's disease. This might explain the remarkable incidence of sudden death, as well as the association of depressive symptoms with reduced survival reported in these patients. The finding of depressive symptoms in subjects with Parkinson's disease should therefore prompt assessment of cardiovascular autonomic function.

O-074
Antidepressant use and cognitive decline in elderly people

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Objectives: To prospectively examine the association between antidepressant use and cognitive decline in community-dwelling elderly people.
Methods: The sample included 4210 non-demented participants (40.3% men) of the 3-city cohort aged 65 and over and followed-up during 10 years. Baseline antidepressants were grouped into three classes: the non-selective monoamine reuptake inhibitors (TCA class), the selective serotonin reuptake inhibitor and the serotonin and noradrenaline reuptake inhibitor (SSRI and SNRI class) and the other antidepressants. A battery of tests assessed different cognitive domains at each examination: Isaacs Set Test for verbal fluency, Benton's Test for visual memory, Trail Making Tests A and B (TMT-A and TMT-B) for psychomotor speed and executive function and the Mini Mental State Examination for global cognitive function. Longitudinal associations were analyzed using linear mixed models (LMM) and LMM with latent processes.
Results: After adjustment for demographic and behavioral factors, physical comorbidities, disabilities, apolipoprotein E genotype, other psychotropic drugs, anxiety, sleep disorders and depressive symptoms antidepressant use was only associated with baseline lower cognitive performances but not with a cognitive decline over time. At baseline compared to non-users, the SSRI or SNRI users had lower Isaacs scores (−3 word, $p = 0.0006$) and were slower on TMT-B (+9 seconds, $p = 0.02$). The TCA users were slower on both TMT-A (+8 seconds, $p = 0.02$) and TMT-B (+22 seconds, $p = 0.003$).
Conclusion: Our findings suggest antidepressants are not a risk factor for cognitive decline after multiple adjustments; the question remains whether the loss observed at baseline occurred before or at the moment of treatment initiation.

Geriatrics in organ disease

O-075
Burden of comorbidity of older subjects on dialysis: the QiN registry

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One of the growing healthcare problems of elderly subjects is chronic kidney disease. A substantial proportion of these require thrice weekly dialysis, which is associated with a significant disease burden. Most dialysis units are currently poorly prepared to deal with geriatric syndromes. This analysis was done to describe characteristics of incident dialysis patients aged 80 years or older in Germany.
The Curatorium for Dialysis and Kidney Transplantation (KfH) comprises 191 nephrology clinics across Germany covering the needs of ca. 25% of the whole German dialysis population; KfH has established a quality registry (Qualität in der Nephrologie; QiN), which regularly analyzes and reports clinical and epidemiological characteristics of the dialyzed population. In this retrospective cohort study, patients initiating dialysis aged 65–79 or ≥80 years, respectively, were analyzed in the period 2007–2013.

There were 13872 patients eligible for analysis, 9998 subjects aged 65 to 79 and 3874 80 years old and over. Older patients were significantly more female (47.3%, $p < 0.0001$), more underweight (3.5% vs. 2.4%, $p < 0.001$) and more hypoalbuminemic (serum albumin <35 g/L, $p < 0.002$). Importantly, subjects aged 80 years and older had significantly more comorbidities (55.8% >4 concomitant diseases), in particular heart failure ($p < 0.0001$), cardiovascular disease ($p < 0.0001$), cancers ($p < 0.004$), and cerebrovascular episodes ($p < 0.0001$). Prevalence of renal anemia (i.e. Hb <10 g/dl) despite treatment was not significantly different among groups. Older subjects on dialysis are an extremely vulnerable population. Therapeutic concepts are currently focused predominantly on nephrologic issues and should be expanded to cover geriatric syndromes and rehabilitative approaches.

O-076
Health related quality of life (HRQOL) in older patients waiting for kidney transplantation in Norway

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Introduction: Both incidence and age of patients developing end stage renal disease (ESRD) are increasing. Consequently, an increasing number of older patients become potential candidates for kidney transplantation (KTx). While waiting for KTx the patients carry the burden of ESRD and are often in need of dialysis. This affects HRQOL. There is a lack of studies measuring HRQOL in older recipients enlisted for KTx. The aim of this study is to measure changes in HRQOL longitudinally in patients >65 years of age, from time of enlisting until KTx.
Methods: Patients >65 years listed for transplantation at our centre were asked to answer the SF36 questionnaire when accepted for the waiting list and thereafter every 6th months until transplantation.
Results: A total of 180 patients have been included from Jan 2013. Mean age 70.6 years (65–82), 68.3% male. 75 and 39 patients fulfilled the baseline + 6 months and baseline + 12 months questionnaires. So far, 100 patients are transplanted. Compared to the age-matched Norwegian population there were no difference in SF36 scores at baseline. At baseline the mean score for social function was significant lower for patients in dialysis compared to patients not in dialysis. This difference was not significant after 6 and 12 months. Females had significant lower scores for vitality at baseline and after 1 year.
Conclusion: Our preliminary findings indicate that elderly patients enlisted for KTx have no significant decrease in HRQOL during first year on the waiting list and HRQOL is comparable to the normal population.

O-077
Failure in osteoporosis management after hip fracture

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Objectives: Osteoporosis is a frequent disease with high mortality and morbidity rates, especially after hip fracture. Anti-osteoporotic drugs are efficient to reduce secondary osteoporotic fracture but little is known on rates of prescription after hip fracture in France. The goal of this study was to measure anti-osteoporotic drugs therapy prescription over a 1-year period following a hip fracture, the 1-year mortality and the readmission rate after the fracture.
Methods: This retrospective cohort study in a large French urban area recruited patients of 65 years old and older, hospitalized for hip fracture between 1 July 2012 and 30 June 2013. Follow-up lasted one year. Data concerning treatment were provided by public health insurance agency.
Results: Out of the 561 patients discharged for hip fracture, 367 were included and 345 were followed-up for 1 year. Over the 1-year period, 15 patients [4.3%, 95% confidence interval (CI) 2.5–7.1%] received antiresorptive drugs at any time, 51.6% (95% CI 46.2–57.0%) and 16.5% (95% CI 12.8–20.9%) for vitamin D and calcium respectively. During the 1-year follow-up period, 105 patients (28.6%, 95% CI 24.3–33.5%) died. Readmissions have been reported in 195 patients (56.5%, 95% CI 50.5–62.5%) in the year following the fracture.
Conclusions: Our findings indicate that anti-osteoporotic treatments after hip fracture remains very low in France as the mortality rate remains high over the first following year after hip fracture. Reasons for reluctance of these treatments should be considered in future studies.

Pre- and postoperative care

O-078
Muscle mass and postoperative recovery after major oncological abdominal surgery

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Objectives: Low muscle mass and related functional mobility and physical activity affect the ability of a person to cope with major abdominal surgery. The objective is to establish the association of preoperative muscle mass with postoperative mortality after major oncological abdominal surgery and to determine the relationship between preoperative muscle mass and functional mobility and physical activity.
Methods: Prospective cohort study of 84 patients. Skeletal muscle mass area (SMI) was determined by analyzing computer tomography (CT) scans. Functional mobility was assessed as "timed up-and-go" (TUG) and physical activity was assessed by a questionnaire (LAPAQ).
Results: Hazard Ratio (HR) for overall mortality was 1.55 (95% CI 0.83–2.88) for low SMI, 2.38 (95% CI 1.26–4.49) for low functional mobility (TUG) and 1.92 (95% CI 1.20–3.05)for low physical activity (LAPAQ). Correlation coefficients between SMI and TUG and LAPAQ were −0.14 and 0.10, respectively and not significant. Subanalysis of in-hospital mortality showed a HR of 0.80 (95% CI 0.19–3.36) for low SMI, 4.18 (95% CI 1.55–11.24) for low functional mobility, and 3.13 (95% CI 0.99–9.89) for low activity. HR for post-discharge mortality was 1.65 (95% CI 0.83–3.29) for low SMI, 1.53 (95% CI 0.75–3.11) for low functional mobility and 1.60 (95% CI 0.95–2.69) for low activity level.
Conclusion: This study did not reveal a significant association between muscle mass and overall mortality after major abdominal oncological surgery. It seems that muscle is more associated with the long term course of this patient group and functional mobility and physical activity with the short-term in-hospital recovery.

O-079
Nutritional status as measured by the Mini Nutritional Assessment Short Form as a predictor of hip fracture outcomes

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Objectives: We examined the association of nutritional status as measured by the Mini Nutritional Assessment Short Form (MNA-SF)

with the outcomes of mobility, institutionalization and death after hip fracture.
Methods: Population-based prospective data were collected on 472 consecutive hip fracture patients aged 65 years and over between January 2010 and December 2012. Declined vs. same or improved mobility level, institutionalization and death during the four-month follow-up were the outcomes. Age, gender, American Society of Anesthesiologists scores, pre-fracture diagnosis of a memory disorder, mobility level, living arrangements and MNA-SF scores at baseline were the independent variables. Age-adjusted and multivariate logistic regression and Cox proportional hazards models were conducted.
Results: At baseline, 41 (9%) of the patients were malnourished and 200 (42%) of the patients at risk of malnutrition according to the MNA-SF. During the follow-up, 90 (19%) had died. In the multivariate Cox proportional hazards model, malnutrition (HR 2.16; 95% CI 1.07–4.34) was associated with mortality. In the multivariate binary logistic regression analyses, risk of malnutrition (OR 2.42;95% CI 1.25–4.66) and malnutrition (OR 6.10;95% CI 2.01–18.5) predicted institutionalization while risk of malnutrition (OR 2.03; 95% CI 1.24–3.31) was associated with decline in the mobility level.
Conclusions: Malnutrition or risk of malnutrition as measured by the MNA-SF were independent predictors of major negative outcomes after hip fracture. Patients at risk of malnutrition as measured by the MNA-SF may constitute a patient population with mild to moderate malnutrition and are in need of specific attention when nutritional interventions are designed after hip fracture.

O-080
Correlation between age, physiological fitness and peri-operative risk

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Objectives: To investigate the effect that age has on physiological fitness and perioperative complications in major surgery.
Methods: One hundred and seventy-two patients presenting for major surgery underwent a cardiopulmonary exercise (CPEX) test before surgery. Patients performed a standardised ramp protocol (10 Watt/Kg/min) until they reached peak oxygen uptake (VO2 peak). All patients were followed up by note review at 30 days.
Results: VO2 peak and anaerobic threshold (AT) did not correlate, whereas the ventilatory equivalent for CO2 (VE/VCO2) and ASA did correlate with age (r= 0.264 and r = 0.18 respectively). Thirty-one percent of patients suffered a complication. The most common complications were respiratory (28%). All cause complications were independent of age, however, the mean age of those suffering a respiratory complication was slightly higher (70 vs 74 years) but was not significant ($p = 0.06$). Complications were significantly higher in patients with a lower VO2 peak; lower AT and a higher VE/VCO2 ($p < 0.05$).
Conclusions: Physiological fitness is a powerful predictor of perioperative morbidity and with an ageing population there is a perception that those presenting for surgery will naturally be at higher risk of complications. We have found that advanced age does not predispose those presenting for major surgery to complications. VE/VCO2 was weakly correlated to age suggesting lung efficiency declines with age. Physiological fitness is an independent predictor of complications during the perioperative period and currently aids risk stratification, decisions around levels of care and discussions concerning individual risk.

O-081
"The last chance" – a qualitative study about patient experiences of decision-making preceding Trans-catheter Aortic Valve Implantation (TAVI)

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Objectives: Little is known about older TAVI patients' motivation regarding the procedure. This study explores their experiences of the preceding decision-making process.
Methods: We conducted a qualitative study with semi-structured interviews of ten TAVI-patients postprocedure (median 23 days), aged 73–89, six of them women. A purposeful sample was made regarding diversity in age, gender and complications. Analysis was by systematic text condensation.
Results: The patients experienced not having sufficient knowledge to make an independent decision despite thorough information preceding TAVI, and trusted their doctors' treatment recommendations. They felt they did not have a real choice due to their condition's severity, yet they experienced the decision being based on their motivation and having the opportunity to decline operative treatment. Several patients reported ambivalence facing risk information associated with the procedure and differed substantially regarding the level of details of which they required knowledge. They had difficulties knowing what would be best for them, and found it important that the doctor remained both honest and optimistic. Patients appeared with lease of life when TAVI treatment was decided, mobilizing hope trough fellowship with others and a positive view on themselves. They did not report worries about dying, viewing death as something that could happen at any time in their age.
Conclusions: Older patients are in a vulnerable and perplexed position trying to make a proper choice regarding TAVI, despite displaying resilience and courage. Cardiologists should consider this when delivering information about this procedure to ensure a valid informed consent.

O-082
Early return home after hip fracture is not unsafe – evidence from the National Hip Fracture Database in the UK

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Objectives: Swedish patients discharged within 10 days of hip fracture appear to be at increased risk of dying [Nordström et al. BMJ 2015;350:h696]. Given recent UK success in reducing length of stay after this injury, we set out to examine the observation's relevance to NHS patients.
Methods: The National Hip Fracture Database (NHFD) collated information on >60 year olds presenting with hip fracture in England, Wales and Northern Ireland during 2013.
Results: During 2013, data on 65,535 people indicated higher risk 30 day mortality for those discharged before 10 days (2.7% cf. 1.4%) – with 104 'excess deaths' in this group. However, we addressed confounding factors by examining mortality among people admitted from their own home who successfully returned there. Those discharged home before 10 days actually showed lower mortality (0.4% cf. 0.6%).
The appearance of 'excess deaths' was entirely accounted for by other patient subgroups. A third (32) were people admitted from their own home and discharged to care in an acute hospital,

rehabilitation unit or hospice. Half (51) occurred in people admitted from care homes who returned there within 10 days. The remainder were in people admitted from home but discharged to care homes.
Conclusions: Patients discharged to care homes before 10 days were at increased risk, but this is a complex group of individuals. The small absolute numbers of deaths do not justify cautioning against allowing people to return to their care home when the patient, their family and the multidisciplinary team agree this is appropriate.

Ethics and end of life care

O-083
Euthanasia and physician assisted suicide – a survey among Danish geriatricians

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Objective: Euthanasia (EU) and/or physician assisted suicide (PAS) is legal in some countries and discussed in others. The aim of this survey was to study the attitudes to EU/PAS among Danish geriatricians.
Method: An online questionnaire with 22 questions was mailed to all members of the Danish Geriatric Society. The answers where anonymised.
Results: 46% (120/259) responded. 23% agreed and 56% disagreed that euthanasia is ethically defendable if a suffering patient explicitly and repeatedly express a wish to die, for PAS responses were 19% and 64% respectively. 13% agreed and 74% disagreed that euthanasia should be offered as an alternative to palliative care, for PAS responses were 15% and 77% respectively. 68% of respondents have received explicit requests to end a patient's life. Twenty physicians (20%) had complied on one or more of these request, and of these 7 reported they were aware of acting outside the Danish laws, 5 were unsure. That a legalization of EU and PAS would have a positive effect on the physician/patient relationship was the opinion of 13% while 62% found the effect to be negative, for PAS opinions were 11% and 64% respectively.
Conclusion: The majority of Danish geriatricians are against EU and PAS. Many have experienced patients asking for EU/PAS, but only a few have complied with the request.

O-084
Evaluating the policy of prescribing and deprescribing during the last 48 hours on acute geriatric wards in Flanders

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Objectives: Pharmacological management is considered as a quality indicator during end of life care. This study wants to describe the pharmacological management the last 48 hours of life on acute geriatric wards.
Methods: A retrospective cross-sectional descriptive study in 23 acute geriatric wards in 13 hospitals in Flanders (Belgium) based on a structured after death questionnaire, filled in by the treating geriatrician. Following data were collected: demographic characteristics, underlying diseases, cause of death, ability to communicate, expected death by the physician, anticipatory prescription and deprescription of potentially inappropriate medication during the last 48 hours of life.
Results: Two hundred ninety patients (mean age 85.7 years old) were included. There was an anticipatory prescription of medication in 65.4%, more specifically morphine in 45.5%, benzodiazepines in 15.5% and scopolamine in 13.8% of the dying patients. The likelihood of having anticipatory prescription was significantly higher in patients where death was expected by the physician (OR 19.2; CI 9.4–39.8; $p < 0.0001$) and significantly lower in patients with dementia (OR 0.3; CI 0.2–0.7; $p < 0.006$). A deprescription of medication was noted in 67.9% of the patients. The likelihood of having medication stopped is higher in patients where death is expected (OR 20.7;CI10.0–42.9;$p < 0.0001$) and in patients dying from an oncological disease (OR 7.0; CI 1.1–45.6;$p = 0.042$).
Conclusions: Anticipatory prescription and deprescription of potentially inappropriate medication at the end of life in older inpatients can be improved. A well-developed intervention to guide the care during the terminal phase can be a first step to improve quality of care.

O-085
Conceptualising the participation of older people in clinical research

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Objectives: The inclusion of older people in research can be enhanced by engaging older people in a 'patient and public involvement' (PPI). This work reviews the literature on the exclusion of older people from clinical research. We apply a novel conceptualisation of PPI to clinical research with stroke patients in one UK hospital, using the four principles approach to medical ethics.
Methods: (1)We conducted a systematic literature search in EMBASE, MEDLINE, CINAHL, Cochrane Database of Systematic Reviews. Key search terms around 'older people', 'clinical trials' and 'exclusion' were used. (2) We applied the four principles of Respect for Autonomy, Beneficence, Non-Maleficence and Justice to explore the impact of PPI in a study conducted in 2013 of art therapy in stroke rehabilitation.
Results: The literature search yielded a variety of articles. The predominant reasons cited for the exclusion of older people were upper age limit, performance status, and stringent organ function restrictions. Several recommendations to reduce non-recruitment bias have been proposed.
Using the four principles as a conceptual framework can demonstrate both moral and practical value to improve research outcomes. PPI in our study of art therapy in stroke rehabilitation enabled us to implement a study that respected the participants autonomy, optimised benefit and minimised the risk of harm during the research.
Conclusion: There is a need for greater involvement of older people in clinical research. The Four Principles approach can form an acceptable conceptual framework to consider both the moral and practical impact of PPI in research involving older people.

Longevity and prevention

O-086
A cross-sectional study of physical activity correlates in older adults (70–77 yrs): The Generation 100 study

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Objectives: Physical activity (PA) is an important factor for improved and sustained health in older adults, but few meet current PA recommendations. Therefore, knowledge about factors

(correlates) that are associated with PA in older adults is needed. The aim of this study was to identify how demographics and physical activity history, environmental- and biological correlates are associated with objectively measured PA in older adults.
Methods: PA was assessed objectively in 850 older adults (70–77 years, 405 females) using the Actigraph GT3X+ activity monitor. Demographics (gender, age, education) and activity history (PA at 40 years), environmental correlates (i.e. social support and neighborhood) and heart disease were self-reported, while cardiorespiratory fitness (CRF) and BMI were directly measured. Hierarchical multivariable regression analysis was used to identify important PA correlates.
Results: The complete set of correlates explained 27.0% of the variance in overall PA level in older adults. CRF, gender and season were the most important correlates, explaining 10.1%, 3.9% and 2.7% of the variance, respectively. Females were more physically active than males and PA declined with age for both genders. Furthermore, education was positively associated with PA for males, not for females.
Conclusions: This is the largest correlates study combining objectively measured PA and directly measured CRF in older adults. Our findings provide new knowledge of how different correlates are associated with overall PA. The main finding was that CRF, measured as VO2peak, was the correlate with the strongest association to overall PA.

O-087
Objectively measured physical activity in older adults (70–77 yrs) – The Generation 100 study

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Objectives: Accelerometers are commonly used to assess physical activity (PA) on a population sample. To assess the proportion of the sample meeting PA recommendation, data are analyzed using an absolute intensity-cut-point for moderate-to-vigorous PA (MVPA), regardless of gender and cardiorespiratory fitness (CRF). However, as CRF normally declines with age, older-adults are often unable to reach MVPA defined in absolute terms. To enlighten this problem this study present MVPA using both relative and absolute intensity-cut-points on the same sample of older-adults. The secondary aim was to present a comprehensive description of PA in an elderly Norwegian population.
Methods: PA was assessed using the Actigraph GT3X+ accelerometer in 1179 older-adults (606 females) age 70–77. CRF was directly measured as VO2peak. The absolute MVPA cut-point selected was 2691 triaxial counts-per-minute (CPM). The relative MVPA cut-point was based on categorized VO2peak (low-medium-high) and gender, and ranged from 669 to 3048 triaxial CPM.
Results: Forty and seventy percent met the PA recommendations when absolute and relative MVPA cut-points were applied to the same population sample of older-adults, respectively. Females spent significantly more time in higher relative intensities, compared to males. Overall PA declined with age, while minutes in higher intensities were stable. Moderately and highly fit individuals were more physically active, while the unfit spent more time in the higher relative intensities.
Conclusions: This is the first study comparing absolute and relative cut-points in older adults illustrating how PA surveillance based on absolute intensity MVPA could underestimate PA in those with low CRF.

O-088
Exploring relationships between chronic inflammation and vascular ageing

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Objectives: The chronic immune competent HIV-1 infected population are at increased risk of cardiovascular disease (CVD), whether chronic inflammation contributes to the premature development of CVD is yet to be established. Arterial stiffness is an independent sub-clinical marker of CVD and directly correlates with age.
Methods: 74 HIV positive males on antiretroviral treatment, with undetectable viral loads, were recruited and grouped according to their cardiovascular risk (Framingham score). They underwent assessment of arterial stiffness, as measured by carotid femoral pulse wave velocity (CFPWV). A one way ANOVA was performed to determine the difference in CFPWV in each group. Multiple regression was performed to consider further predictors of CFPWV.
Results: A one-way ANOVA demonstrated a linear trend, $F(2,31) = 11.46$, $p < 0.001$, $\omega = 0.4$, between CFPWV and Framingham risk group. Multilinear regression, with CFPWV as a dependent variable and classical cardiovascular risk factors as predictors, demonstrated that age ($b = 0.06$, $p < 0.01$), diabetes ($b = 2.37$, $p < 0.01$) and systolic blood pressure ($b = 0.04$, $p < 0.01$) were significant predictors of CFPWV. A second regression, with HIV related factors; years with HIV ($b = 0.01$, $p = 0.72$), years on anti-retrovirals ($b = 0.01$, $p = 0.86$), nadir CD4 ($b = 0.001$, $p = 0.63$) provided no additional predictive power to the model.
Conclusion: In this HIV-positive cohort, CFPWV is positively associated with Framingham score. The differences between the low and high risk cardiovascular groups, appears to be due to traditional cardiovascular risk factors, with HIV related factors adding no predictive power to the model.

O-089
Impact of social determinants in oral health in older patients admitted in a medical ward of a general hospital

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Objectives: In some countries oral health status (OHS) is still underestimated by national healthcare systems (NHS). Low reimbursement of oral healthcare (OHC) may cause OHS asymmetries between different social classes. Socio-economically disadvantaged elderly may be most affected. Our aim was to evaluate the impact of social determinants in OHS among patients ≥75 years admitted in a medical ward.
Methods: Cross-sectional study during 1 day. Comprehensive geriatric assessment, dental examination.
Results: 100 patients were included, average age 83.7 years, 63% males, 62% widowed, 25% nursing home residents (NHR), average Cumulative Illness Rating Scale Geriatrics 11.2, average Barthel 62.6. Prevalence of cognitive impairment and malnutrition were 31% and 70%. Average number of teeth (ATn) was 6.7±8.4, 36% used oral prosthesis. Prevalence of total edentulism, caries and periodontal disease were 46%, 24% and 21%. In patients with higher education professions there was a higher ATn (Graffar 1/2 9 vs Graffar 3/4 7.5 vs Graffar 5 5.9, ns), a lower prevalence of caries (Graffar 1/2 16.6% vs Graffar 3 22.2% vs Graffar 4/5 23.5%, ns) and usage of dental prosthesis (Graffar 1st 0 vs 3rd 5.6% vs 5th 61%, ns). ATn was lower in analphabets (4.88 vs 7.36) and widowed (p 0.04), and higher among community-dwelling patients (7.6 vs NHR 4.1, p 0.08).

Prevalence of caries was the same in community-dwelling and NHR patients.
Conclusions: Socioeconomic determinants such as education, profession and place of living were determinants of OHS. NHS should reimburse oral healthcare in order to prevent poor OHS in older people.

O-090
Intensity of physical activity and daily energy expenditure in athletic older adults

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Objectives: Time spent in moderate-to-vigorous activity (MT) in young adults predicts daily caloric expenditure (CE). Conversely CE is best predicted in older adults by time spent in light activity (LT). We examined highly active older adults to examine the biggest contributors to energy expenditure in this population.
Methods: 54 community dwelling men and women >65 years of age (mean 71.5 years) were enrolled in this cross-sectional observational study. All were members of the Senior's Whistler Ski Team and all met current American guidelines for physical activity. Activity levels (ST, LT and MT per day) were recorded with accelerometers worn continuously for 7 days. CE was measured using accelerometry, galvanic skin response, skin temperature and heat flux (SenseWear armband). Significant variables were then entered into a stepwise multivariate linear model containing activity levels, age and gender.
Results: The average daily non-lying sedentary time was 564±13 minutes (9.4±0.2 hours) per day. The main predictors of higher CE were time spent in moderate-to-vigorous activity (MT, Standardized β 0.360±0.086, $p < 0.001$) and male gender (Standardized β 1.421±0.171, $p < 0.001$). A model containing only MT and gender explained 66 percent of the variation in CE. An increase in MT by one minute per day was associated with an additional 25 calories expended in physical activity.
Conclusions: The relationship between activity intensity and CE in athletic seniors is similar to that observed in young adults. Active older adults still spend a substantial proportion of the day engaged in sedentary behaviours.

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Poster presentations

Acute care

P-001
Increased mortality in a Norwegian nursing home after implementation of the Coordination reform

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Objectives: The Coordination Reform (CoR) was implemented in Norway January 2012 with a major aim to treat more elderly patients in their local community. However, there has been concern that older patients, as a result of this, are discharged too early from the hospitals, and that more patients die after transfer to short-time nursing homes (STNH). Our aim was to compare mortality in patients admitted from hospital to a STNH, before and after implementation of the Coordination reform.
Methods: This was a retrospective study from a single 35 bed nursing home ward that received patients from the two hospitals in Bergen. Home-dwelling patients aged ≥70 years transferred before (n= 186) and after (n = 177) the Co R were included and compared.
Results: The patients that were transferred from hospital after implementation of the CoR were older, median 88 compared to 85 years, $p < 0.001$ and more patients died after transferal to the nursing home; 27% versus 13% of the patients, $p = 0.002$. Median number of days in the nursing home before death were 14 days after, and 12 days before the CoR (n.s).
Conclusion: The present study, though limited in size and from a single institution, support the concern that after the implementation of the Co R, more elderly patients die after transferal to STNH during the initial period. This may imply both a higher patient turnover and increased demand for nurses and doctors to spend more time with patients and their families concerning end of life decisions and care.

P-002
Medical admissions through the emergency department: Who, how and how long?

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Objectives: The study aims to describe the clinical characteristics of elderly patients admitted to medical wards through the emergency department (ED).
Methods: In a first part, we described demographic changes in the uptake area and ED visits of older patients in a 900 bed university hospital in Central Copenhagen from 2004–2014.
In a second descriptive-retrospective part we studied clinical characteristics of patients >65 years admitted to the medical wards through the ED in january 2014 (n = 132). We collected data on presenting symptoms at admission, medication, comorbidity, admission rates to stationary wards and mean length of stay.
Results: The number of ED visits of persons >65 years increased by 28.3% during the study period whereas the number of persons aged ≥65 years in the uptake area remained stable.
The most frequent symptoms at ED admission were infections (36.4%), falls/dizziness (18.9%) and lung diseases (15.2%). 69.4% of patients had polypharmacy receiving a mean number of 9.4 medications. 72.7% were characterized by multimorbidity with ≥3 comorbidities, cardiovascular and endocrine diseases being the most frequent.
38.4% of the patients were transferred to the pulmological department and 21.1% to the geriatric department. Mean length of stay was 9 days.
Conclusion: The growing number of older ED patients are characterized by multimorbidity and polypharmacy. They are often in the need of early specialized care and geriatric assessment should therefore be available in the acute clinical setting.

P-003
Comparison of FRAX and QFracture use in an osteoporosis clinic population in determining whether to treat or not to treat in fallers versus non-fallers

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Objectives: The UK National Institute for Health and Care Excellence (NICE) guidelines for the assessment of fracture risk in osteoporosis recommends the use of one of two web-based fracture-risk tools: Fracture Risk Assessment Tool (FRAX) or QFracture. Unlike FRAX, falls history is included as a variable in Qfracture. Our study aim was to compare the outputs of these tools in fallers and non-fallers.
Methods: We collected information required to populate both fracture-risk tools from women consecutively attending osteoporosis clinics. 10-year major osteoporotic (MO) and hip fracture risks were calculated for both tools. We used a 20% intervention threshold (MO) to determine treatment recommendation differences between FRAX and QFracture, and assessed concordance between the tools in fallers (at least 1 fall previous year) compared to non-fallers.
Results: 100 women (mean age=70.1; SD=11.3 years; 61 fallers) were studied. The mean (95% Confidence Interval) 10-year MO and hip fracture risks in FRAX were 18.8%(11.1–26.5) and 7.1%(2.1–12.1), and that of Qfracture were 22.4%(14.2–30.6) and 16.8%(9.5–24.1) respectively. Concordance between the tools on whether or not to treat was 67.2% in fallers and 82.1% in non-fallers. Qfracture treated 52.5% in the fallers group compared to 49.2% with FRAX, while in the non fallers group 23.1% and 20.5% were treated respectively.
Conclusion: Concordance between the tools was better in non-fallers, with more fallers recommended treatment with Qfracture compared to FRAX. Qfracture may thus be more appropriate to use in fallers and this requires further study.

P-004

Urinary tract infection versus asymptomatic bacteriuria: an audit on an important clinical dilemma

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Objectives: Urinary tract infection (UTI) is common in the elderly, and it is important to appropriately diagnose and treat it. However, in view of the alarming increase in antibiotic resistance, it is crucial to differentiate true UTI from asymptomatic bacteriuria (AB), which is also common in the elderly but should not be treated. The objective of this retrospective audit was to evaluate whether the screening for UTI (using dipsticks) in a district general hospital adhered to the international guidelines, in particular in elderly patients.
Methods: 100 clinical notes of patients of both sexes, aged ≥18 years, admitted to the acute medical take in November and December 2014, were randomly selected. Data were collected and analysed to find common patterns of screening and diagnosis of UTI versus AB. The majority of the sampled population was aged ≥65 (74%). Data were compared to the standards set by the European Association of Urology.
Results: Screening for UTI was inappropriately performed in 56.6% of patients aged ≥65, and in 75% of them AB was misdiagnosed and treated as UTI. No unifying criteria were found in the way screening was performed and its results interpreted by clinicians.
Conclusions: Screening for UTI was substandard and AB was too often treated as UTI, leading to inappropriate use of antibiotics, especially in the elderly. A clinical staff education programme is proposed in order to raise awareness of the difference between AB and UTI and reduce the risks of antibiotic resistance and opportunistic infections such as *Clostridium difficile*.

P-005

The application of team resource management for effective multidisciplinary team working in the emergency department in a community hospital in Southern Taiwan

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Objectives: Patient safety in an important issue in the emergency department (ED), especially facing the growing ageing population with complex conditions. The purpose of this study was to evaluate the effectiveness of the application of team resource management (TRM) in ED.
Methods: The implements of TRM were applied in the ED of Foo-Yin University Hospital, a community hospital in southern Taiwan. The workshop and standard lectures on organizational/leadership skills, team solidarity, communication and teamwork were given for all staffs since 2011. The instructor taught different strategies and tools monthly to promote the effective multidisciplinary team working environment. Safety Attitudes Questionnaire based on 2008 Medical Design III Hospital Patient Safety Attitude Scale from Taiwan Joint commission on Hospital Accreditation were used for all ED staffs before and after TRM training program.
Results: There are 4 physicians and 16 nurses completing the TRM training program. The results of six categories of Safety Attitudes Questionnaire improved after the TRM training program, including teamwork climate (33.3% to 66.7%), safety climate (31.8% to 77.8%), job satisfaction (31.8% to 77.8%), stress recognition (63.6% to 72.2%), perception of management (18.2% to 44.4%) and working condition (25.0% to 55.6%). Moreover, the annual quitting rate of nurses decreased from 33.3% to 12.5%, and the rate of positive feedback from patients increased from 2.6% to 57.1%.
Conclusions: The Application of TRM in ED could improve the effectiveness of multidisciplinary team working and patient safety. Facing the growing ageing population, further study is needed to confirm the effectiveness of TRM in ED.

P-006

The effectiveness of comprehensive geriatric assessment-based intervention reducing frequent emergency department visits in a tertiary medical center in Southern Taiwan

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Objectives: The purpose of this study was to evaluate the effectiveness of comprehensive geriatric assessment (CGA)-based intervention for emergency department (ED) frequent visitors.
Methods: From January to November 2013, older people visiting the ED of Kaohsiung Veterans General Hospital for three times within 30 days were recruited for study. Those with critical condition or pass away in ED, cancer in terminal stage or NG tube dislocation were excluded. The staffs in ED would evaluate those frequent ED visits first and consult our geriatric team for performing CGA and geriatric intervention. Number of ED visits, admission time and death in 1, 6 and 12 months were recorded for comparison.
Results: Overall, 137 frequent ED visitors (mean age 80.3±7.2 years, 73.7% males) were enrolled for study, and 26 (19.0%) were treated with CGA-based intervention. There were no significant difference between geriatric intervention and non-geriatric intervention groups for age, gender, triage and tentative diagnosis. Comparing with non-geriatric intervention group, those with geriatric intervention would more likely to be admitted (50.0% versus 21.6%, $p = 0.003$) in ED, to visit ED for less times within 1 month (0.81±0.85 versus 1.75±1.16, $p < 0.001$) and within 6 months (2.23±2.56 versus 3.97±3.17, $p = 0.010$).
Conclusions: For frequent ED visitors, the CGAt-based Intervention could reduce the times of ED visits within 1 and 6 months significantly. Further randomized control trial with standard inclusion/exclusion criteria is needed to confirm the effectiveness of CGA-Based Intervention among frequent ED visitors.

P-007

Massive hematemesis due to fistula between an artery of the intrathoracic goiter and the middle esophagus in an elderly patient

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Introduction: Relatively few case reports have been published on bleeding due to fistula in relation to thyroid pathology.
Method: Literature review and patient clinical documentation
Results: An 81 year-old-man was admitted to the Geriatric Deparment because of pneumonia. She had a history of hypertension, recurrent goiter after a subtotal thyroidectomy in 1979 for multinodular goiter, chronic renal failure.
Treatment: Levothyroxine, furosemide,omeprazole, amlodipine.
During hospitalization presents hematemesis, she received transfusion of packed red cells and underwent a gastroscopy

showing bleeding in the mid-esophagus. To arrest bleeding an injection of epinephrine was administered.
A control gastroscopy showed pulsatile bleeding in the mid-esophagus, three clips were placed.
CT angiography: arteriography of the right subclavian artery is identified where thyrocervical trunk with branch supplying the goiter, with active bleeding and esophageal contacting area where hemostatic clips are evident. That branch is embolized
Conclusions: There are multiple hemodynamic changes that occur with giant goiters; we describe a rare case of hematemesis due to fistula as a result of recurrent goiter.

P-008
Association of renal function with cognitive and functional status in older patients presenting to the emergency department; the APOP study

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Objective: Older patients represent a growing population in the Emergency Department (ED). These patients are especially vulnerable for experiencing negative outcomes and deterioration in functioning. Furthermore, the prevalence of impaired renal function increases with age, which may be an additional risk factor for poor clinical outcome. In the present study we aim to study the association of renal function with cognitive and functional status in older patients presenting to the ED.
Methods: We initiated the prospective Acutely Presenting Older Patient (APOP) study, in which we included patients aged 70 and over presenting to the ED. Data collection included renal function, Six Item Cognitive Impairment Test (6CIT) for cognition, and Identification Seniors At Risk score (ISAR) and Katz Index of Independence in Activities of Daily Living (Katz-ADL) for functional status.
Results: In 570 out of 757 included patients (75.3%) kidney function was measured. Odds ratios for cognitive impairment, adjusted for age and gender, were 1.80 (95% CI 1.11–2.92) with eGFR 30–60 and 1.85 (95% CI 0.79–4.30) with eGFR <30 (p for trend 0.018).
Adjusted odds ratios with ISAR were 1.83 (95% CI 1.23–2.74) with eGFR 30–60, and 3.22 (95% CI 1.36–7.63) with eGFR <30 (p for trend <0.001). Adjusted odds ratios with Katz-ADL were 1.31 (95% CI 0.82–2.09) with eGFR 30–60 and 4.26 (95% CI 2.07–8.76) with eGFR <30 (p for trend 0.001).
Conclusion: Impaired renal function is associated with cognitive and functional impairment in older patients presenting to the ED. In the future, early identification of these vulnerable patients may enable a more tailored trajectory

P-009
Palliative sedation in an acute Geriatrics unit

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Objectives: To describe the characteristics and evolution of patients who died during admission to an Acute Geriatric Unit (AGU). To determine the use of palliative sedation in them.
Methods: Descriptive, longitudinal and retrospective study of patients who died in an AGU from 2013 to 2014. Medical records were reviewed to assess the dying and sedation process.
Results: 137 patients died (13.9% of total admissions). Mean age 91.3±5.0 years. 55.8% dependent for all BADL, 60.2% had severe dementia (GDS≥6). 30.1% were living in a nursing home. Main diagnosis on admission: respiratory infections (48.2%) and heart failure (10.9%). Mean hospital stay: 6.7±6.0 days.
Most frequent immediate cause of death: infection (61.3%). Of those who died, in 14.3% palliative sedation was started at the emergency department, 16.8% died within 24 hours of admission. 17.5% died unexpectedly. 65% received symptom treatment, 30% of whom required palliative sedation, started 5.7±1.0 days after admission (by the geriatrician in 71.4%). Primary refractory symptoms treated with palliative sedation were dyspnea (69%) and pain (16.7%), midazolam was always used for sedation. In 95.5% the decision was agreed with the family. Amongst sedated patients, other treatments were limited in 95.2%, mostly the antibiotics (52.4%).
Conclusions: Most patients who died in Acute Geriatric Care had total functional dependency and advanced dementia. The main cause of death were lung infections. One fifth died during the first 24 hours of admission. Palliative sedation was used in a relevant number of subjects after a shared decision making process that involved family members.

P-010
Multidisciplinary evaluation of elderly people – experience of an internal medicine ward

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Introduction: Nineteen percent of people in Portugal are 65 years of age or older, with around fifty percent of the hospitalised patients belonging to the same age group. Only a holistic evaluation can help treating this population to higher standards.
Objective: We have proposed to analyze the cognitive, functional and nutritional state, as well as the risk of falling in a group of elderly patients admitted to an Internal Medicine ward.
Methods: The Mini Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA), the Mini Nutrional Assessmente (MNA)] and 2 scales [the Geriatric Depression Scale (GDS) and the Morse Fall Scale (MFS)] were applied, between the 1st of March and the 30th of September 2014, in the first forty-eight hours following admission.
Results: 163 people (aged between 73 and 97 years) were approached, but 70 (42.9%) were excluded. Sixty-eight (73.1%) were women. 34 patients (36.6%) had cognitive impairment according to the MMSE, a score that was higher when using MoCA [72.0% (67)]. The MNA retrieved that 21.5% (20) of people suffered undernutrition and 30.1% (28) had a normal nutritional status. Only 23.7% (22) of people were not found to be at risk of depression. The majority had a mild dependence [58.1% (54)] with 6.5% (6) suffering a severe dependence. In MFS, 53.8% (50) had a high risk of falling whilst only 3.2% (3) did not present any risk.
Conclusion: Most elderly patients admitted to the Hospital presented with a range issues, which should be taken into consideration when assessing these patients.

P-011
Long-term survival after hospital discharge in centenarians

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Objectives: In the last census conducted in 2011, were identified 1791 centenarians, from a total of 10 million inhabitants of Portugal. The increase of centenarians requiring hospitalization is a reality. The main purpose of the study was to analyze the long-term survival of centenarians after hospitalization for acute illness.

Methods: A cohort of 63 patients, 100 years of age and older, admitted to Internal Medicine, from 2008 to 2012, were retrospectively studied. Demographic information, comorbidities, recent admissions, clinical and laboratory data were recorded from each patient.
Results: Of these 63 patients, with a mean age of 101.1 years, 57 (90.5%) were women. The main reasons for admission were respiratory infection (68.3%), especially healthcare-associated pneumonia (38.1%), and urinary infection (12.7%). The most commonly identified comorbidities were hypertension (58.7%), heart failure (54.0%), atrial fibrillation (33.3%), severe chronic renal disease (28.6%), respiratory disease (28.6%), diabetes (15.9%) and pressure ulcers (12.7%). Cumulative in-hospital, 30- and 90-day, 6- and 12-month mortality rates were 36.5%, 60.3%, 74.6%, 81.0% and 85.7%, respectively. After one year 9 patients survived. Of these, only 1 patient was institutionalized, none had diabetes, pressure ulcers or severe chronic kidney disease. Laboratory tests associated with mortality at 12 months were renal biomarkers (creatinine, BUN) and fasting glicemia.
Conclusions: Centenarians are usually very fragile patients, hospitalization for acute illness often seems to have devastating consequences in this population. In our study, short and long-term mortality among hospitalized centenarians was extremely high. Long-term poor outcome was associated with institutionalization, kidney function and blood glucose levels.

P-012
Double-knotted jejunal tube of a percutaneuos endoscopic jejunostomy

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Background: Enteral tubes are a common clinical practise for administration of nutrition, fluids and drugs. A knotted jejunal tube of a PEJ is a rare but serious complication and a double-knotted tube isn't described yet.
Case: A 72 years old man received a PEGJ in May 2013 for fluctuation of his motor function due to Parkinson's disease which was diagnosed 15 years earlier. In June 2013 therapy with continuous levodopa enteral infusion (Duodopa®) was started and well tolerated. In July 2014 the patient worsened again and an occlusion of the jejunal tube was detected and the tube was replaced. X ray control stated a correct position of the jejunal tube tip. Five weeks later the patient worsened again and endoscopy revealed a double-knotted tube end located in correct position. The tube was retracted in the stomach and unknotted with a forceps. After unknotting and full retraction a new jejunal tube was inserted without complication and the patient was discharged home. No further complication occur until today.

P-013
Choosing Wisely and geriatric medicine

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In 2011 the American Board of Internal Medicine (ABIM) started the Choosing Wisely campaign to promote more discussions between physicians and patients (or proxies) about decision making in medicine and to reduce procedures and therapies which are not necessary or harmful for patients. The American Geriatrics Society (AGS) and the American Medical Director Association (AMDA) participated in this initiative and AGS (JAGS2013;61:622–631 and 2014;62:950–960) and AMDA (JAMDA 2013;14:639–641 and http://www.choosingwisely.org/clinician-lists/) both published 10 recommendations about things that should discussed and avoided. Furthermore some scientific societies published recommendatios regarding elderly patients too. In Germany a similar initiative started in 2015 by the German Society of Internal Medicine (DGIM) and will address topics of overuse and underuse. The German Society of Geriatrics (DGG) was invited to adress possible points for the German health care system for elderly patients and a first meeting of the DGIM and her specialities was held in May 2015 in Berlin. In parallel there are activities of the German Union of Medical Scientific Societies (AWMF) to adress this point to. The different approaches to this topic will be discussed in this Poster presentations and all participants of the meeting are invited to participated on a survey at the Poster presentations board to rate the US recommendations.

P-014
Age differences in acute stoke: a retrospective comparison study across geriatric and non-geriatric patients

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Objectives: The incidence of stroke is increasing primarily in relation to the aging population. Numerous studies have reported associations between age and poor outcomes. However, it is important to know the clinical differences between geriatric and non-geriatric patients to organize a better acute stroke care. The aim was to compare differences between geriatric and non-geriatric patients with acute stroke.
Methods: Medical records of patients with stroke, who were hospitalized from October 2011 to October 2013, were extracted from the medical registry database of the university hospital. Information about age, gender, stroke type, tissue plasminogen activator treatment, aphasia, length of stay, number of co-morbidities, physiotherapy, and muscle strength at onset were recorded.
Results: In total, the records of 906 patients were included in the study. There were 663 (73.2%) geriatric (age≥65 years) and 243 non-geriatric patients. The prevalence of ischemic stroke was 88.6%. The muscle strength of upper and lower limbs at onset were significantly lower (Mann–Whitney U test, $p < 0.001$), number of comorbidities and female patients, and presence of infection were significantly more (t-test and chi-square test, $p < 0.001$) in geriatric patients than non-geriatrics. There were no significantly differences between the groups in terms of stroke type, tissue plasminogen activator treatment, aphasia, physiotherapy referral, and length of stay (chi-square test and t-test, $p > 0.05$).
Conclusions: Geriatric patients with acute stroke are mostly female and have poor muscle strength, higher number of comorbidities, and prevalence of infection after stroke. These factors should be taken into consideration in the acute stroke care of geriatric patients.

P-015
Development of patient satisfaction questionnaire evaluating 'Early Discharge – Hospital at Home' in elderly

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Objectives: Early Discharge – Hospital at Home (EDHH) is a care model designed to deliver acute medical care in the patient's home as a substitute for acute hospitalization. Patient satisfaction is of major importance to evaluate EDHH. The aim of this study was to develop a patient satisfaction questionnaire.
Methods: Target population was 75+ year-old acute medical patients, admitted to medical emergency ward at Aarhus University Hospital, transferred to a geriatric ward, and/or to EDHH. Ten semi-structured interviews were undertaken and led by a neutral investigator. Each interview lasted 45 minutes and took place in the patient's home approximately 2 weeks after discharge. All interviews were tape-recorded and transcribed. Categories of importance were grouped into themes. A 5-point Likert scale was

applied to develop a 15-item satisfaction questionnaire based on the relevant themes. Cognitive well-functioning elderly were included and received the questionnaire by mail. As a reminder, the patients were contacted by telephone to provide help if needed to fill in the questionnaire.
Results: The themes of importance were: cooperation between patient and health-care professionals, communication, information, feeling safe at home, and inclusion of relatives in treatment decisions. In total, 99 patients returned the questionnaire which was 56% of the possible responders. Cronbach's alpha coefficient, based on all items, was 0.89 which means good internal consistency. One item was removed. Baseline characteristics of the responders were equal to the non-responders'.
Conclusion: With a reasonable response-rate we were able to develop a valid questionnaire to evaluate patient satisfaction with EDHH.

P-016
Evaluation of delirium screening tools in geriatric medical in-patients: A diagnostic test accuracy study

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Objectives: It is currently unclear what clinicians should do as a first step in the identification of delirium in older, hospitalised in-patients.
To evaluate brief cognitive assessment tools for delirium recommended for routine clinical practice.
Methods: A semi-consecutive cohort of 500 non-elective, elderly-care (>65 years) hospital in-patients admitted to geographically defined beds in the geriatric medical assessment unit in an urban teaching hospital.
Reference assessments of delirium (DSM-V criteria) and dementia (prior diagnosis or DSM-IV criteria) were performed by 6 senior geriatricians. Abbreviated Mental Test (AMT 10, AMT 4), 4 A's Test (4AT), brief Confusion Assessment Method (bCAM), months of the year backwards and informant Single Question in Delirium (SQiD) were conducted within 2 hrs of the reference assessment by an independent researcher, blinded from reference assessment.
Results: 500 patients, mean age of 83 years (range = 66–101) were assessed over 8 months. 93/500 (18.6%) of patients were diagnosed as delirium, 104/500 (20.8%) possible delirium and 277/500 (55.4%) no delirium. 266/500 (53.2%) were identified as definite or possible dementia.
The brief cognitive assessments varied in sensitivity for definite delirium from 70.3% for the bCAM (specificity 91.4%) to 92.6% (specificity 53.7%) for the AMT-4 (score of <4/4). Months of the year backwards had a sensitivity 91.3% and specificity 53.1% using cut-point of <5/12 correct. The 4AT (score <4/12) had a sensitivity of 81.9% and a specificity of 78.3%.
Conclusions: Brief cognitive assessments such as the AMT-4 and months of the year backwards have good sensitivity but low specificity as screening assessments for delirium in older inpatients.

P-017
Early geriatric follow-up – a quasi-RCT

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Objectives: To reduce length of hospital stay and the frequency of readmissions in elderly (+ 75 years) admitted to the emergency medical ward without compromising the safety or the satisfaction of the patients.
Methods: The study was made as a quasi-RCT with a daily randomization.
The intervention consists of a visit to the patients' home the day after discharge from hospital. This visit is done by a geriatrician and a nurse. The team may provide acute hospital-at-home help if necessary.
The intervention group is compared to a similar group discharged from hospital without geriatric follow-up. These patients are visited by the patients' GP about one week later.
Results: A total of 547 patients was included. The length of hospital stay was 3 days shorter in the intervention group (2 vs. 5 days) $p = 0.005$.
The readmission rate was also reduced in the intervention group (13% vs. 25%) $p < 0.001$.
30-days mortality was 10% in the intervention group vs. 14% in the control group, $p = 0.17$.
Conclusion: We found, that an early visit to the patients' home after discharge from hospital significantly reduces the length of hospital stay and the readmission frequency.
There were no negative consequences for the safety of the patients. A slight but insignificant reduction in 30-days mortality was observed. The data for patient satisfaction remain to be assessed.

P-018
Multiple neoplasms including hematological malignancies of the more than 80 years elderly

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Objectives: Progress of therapy and supporting therapy improved a prognosis. Synchronous type patients were difficult to treat. We reviewed synchronous type of multiple neoplasms including the hematological malignancies of more than 80 years old.
Methods: In the case that hematologic malignancy was diagnosed in our hospital from 1988 to 2013, we intended for double cancer 304 cases including hematological malignancy. We reviewed 12 multiple neoplasms of synchronous type of the more than 80 years. The examination factors are kind of the hematological malignancy, treatment, gender, tactics of therapy.
Results: All cases were 12 cases, but 1 case diagnosed autopsy, so we investigated 11 cases. In 11 cases, including male 9 cases, female 2 cases, number of malignancies, double 10 cases, triple 1 case, hematological malignancies to constitute were non-Hodgkin's lymphoma (NHL) 7 cases, multiple myeloma 1 case, myelodysplastic syndrome 2 cases, macrogloblinemia 1 case, about solid cancer, gastric cancer 3 cases, prostate carcinoma 2 cases, lung cancer 2 cases, colon cancer 2 case, pancreatic cancer 1 case, cholangioma 1 case, duodenum cancer 1 case. About therapy, chemotherapy for cure (CTx-C)+CTx-C 1 case, CTx-C+Operation for cure (Ope-C) 6 cases, CTx-C+palliative therapy 1 case, CTx for palliative(CTx-P)+Ope-C 1 case, best supporting care 1 case, CTx-C+observation 1 case. About cause of death, 6 death cases, hematological malignancy 5 cases, solid cancer 1 case.
Conclusions: Even if more than 80 years old synchronous multiple neoplasms, they have chance to survive.

P-019
Malignant lymphoma more than 80 years old cases

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Objectives: Because of aging society, the number of non-Hodgkin's lymphoma (NHL) patients were increasing. So we investigated NHL of more than 80 years.
Methods: The subjects in this study were 52 patients who were histopathologically diagnosed as malignant lymphoma and more

than 80 years old, from January 2003 to December 2012. Survival curves and the median survival times were estimated by the Kaplan–Meier method and any significant differences between the two groups were evaluated by the Log rank test. The authors and coauthors have no conflict of interest to disclose.
Results: All cases were 52 cases including male 25 cases, female 27 cases, median age was 82 years. Pathological findings, Hodgkin's lymphoma 2 cases, non-Hodgkin's lymphoma(NHL) 50 cases, in NHL,diffuse large B cell lymphoma (DLBCL) 32 cases, intravascular large B cell lymphoma 2 cases, peripheral T cell type 3 cases and others 15 cases (10 diagnosises). Therapy policy for NHL, curative chemotherapy(CTx) 43 cases, palliative CTx 3 cases, curative radiation therapy(RTx) 1 cases, palliative RTx 1 cases, best supporting care(BSC) 4 cases. Kind of therapy, CHOP or CHOP like therapy were 14 cases, RCHOPor RCHOP like therapy were 27 cases, AVD therapy 1 case, C-MOPP therapy 1 case, RTx alone 2 cases, other CTx 3 cases, BSC 4 cases. In DLBCL, median survival time was 51.1%, 5 years overall survival time was 51.2%.
Conclusions: Even if elderly patients, especially 80 years old patients, it is not necessary to give up to cure.

P-020
Syndrome of inappropriate secretion of antidiuretic hormone during induction therapy for lymphoma

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Objectives: Hyponatremia is electrolyte abnormality to be often found to inpatients. Frequency of hyponatremia Grade3 or more is around 3.7% who received chemotherapy with 3.7%. We reported 3 cases that hyponatremia is detected during treatment of the non-Hodgkin's lymphoma, and were diagnosed with Syndrome of inappropriate secretion of antidiuretic hormone (SIADH) of the elderly.
Methods: The subjects were 572 patients who were diagnosed as malignant lymphomafrom January 2003 to December 2014. Criteria of hyponatremia is evaluated in accordance with the National Cancer Institute Common Terminology Criteria for adverse Events (version 4.0). We investigated more than 70 years old cases.
Results: The patients who were diagnosed SIADH, 3 patients were more than 70 years, including male 1 case, female 2 cases, histopathological findings, 2 cases were non-Hodgkin's lymphoma diffuse large B cell type, 1 case was adult T cell lymphoma. 2 received R-CHOP therapy and 1 received mLSG15. There was multiple first manifestation in each case, general fatigue 2 cases, appetite loss 3 cases, nausea 1 case. The time when it presented hyponatremia, all cases presented after first course of induction therapy. The treatment followed fluid restriction or 3% hypertonic saline infusion and lead to rapid and efficient correction of both clinical symptoms and plasma sodium level. We were able to perform next course without postponing it.
Conclusions: We can accomplish chemotherapy without changing schedule if we discover it early and are adjusted.

P-021
Hyponatremia in non-Hodgkin's lymphoma diffuse large B cell type of the elderly

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Objectives: Hyponatremia is very popular complication with hospitalized patients. In malignancies, hyponatremia sometime lead to poor prognosis. So we investigated hyponatremia patients in non-Hodgkin's lymphoma diffuse large B cell lymphoma (NHL DLBCL) of the elderly.
Methods: The subjects in this study were 141 patients who were treated with combination chemotherapy including rituximab who were histopathologically diagnosed as NHL DLBCL from January 2003 to December 2012. Criteria of hyponatremia is evaluated in accordance with the National Cancer Institute Common Terminology Criteria for adverse Events (version 3.0). Survival curves and the median survival times were estimated by the Kaplan–Meier method and any significant differences between the two groups were evaluated by the Log rank test. The authors and coauthors have no conflict of interest to disclose.
Results: Hyponatremia cases were 78 cases including male 41 cases, female 37 cases, median age was 71 years. We separated 141 cases in 3 groups, that were normal serum Na level, hyponatremia before chemotherapy (CTx), and hyponatremia after CTx, CRR were 81%, 51.9%, 74.5% respectively, 5 years overall survival (OS) rate were 61.8%, 61.9%, 73.5% respectively. It seemed that hyponatremia before CTx group were poor risk group, but there were not significant differences about OS time in 3 groups.
Conclusions: Some authors suggested that hyponatremia led to poor prognosis. Our study indicated that hyponatremia before chemotherapy led to low CR rate.

P-022
Primary central nerve system lymphoma of the elderly

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Objectives: Primary central nerve system lymphoma (PCNSL) is less than 1% of all non-Hodgkin's lymphoma(NHL). PCNSL accounts for 2–4% of extra nodal lymphoma. We report that we reviewed CNS lymphoma which we experienced in our department.
Methods: From 2003 to 2013, period of 10 years, we intended for 446 patients whom malignant lymphoma was diagnosed in detail by histopathology. We targeted more than 65 years old patients. Clinical stage is determinded by Ann Aobor classification. And we investigate about PCNSL cases and studied age, gender, pathological findings, clinical stage, therapy, prognosis.
Results: All cases were 11 cases including 8 cases that age was more than 65 years. 1 case was relapse cases. In 7 cases, male 6 cases, female 1 case, median age was 72 years (ranged 65 to 75 years), all cases were NHL, 6 cases were diffuse large B cell lymphoma,1 case Burkitt lymphoma. About Humman immunodeficiency virus (HIV) infection, there were no patient that infected HIV. The policy of therapy end point were 6 cases cure and 1 case palliative, in 6 cases, high dose methotrexate were 3 cases, radiation therapy alone 2 cases, radiation therapy + methotrexate 1 cases. Median survival time was 5 months.
Conclusions: The risk factor of PCNSL is only human immunodeficiency virus infection. About 3,600 times are easy to come to develop in comparison with the non-infectee. PCNS lymphoma of the elderly were poor prognosis even if Japan PCNS case was not related HIV infection.

P-023
Incidence of hospital falls in the geriatric inpatient population in 2013 and 2014 at Mayo Clinic Hospital, Phoenix, Arizona, USA

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Hospital falls is a potentially preventable morbidity with unfavorable sequelae. We recently conducted a two year retrospective study on the incidence of geriatric inpatient falls in two separate medical units at Mayo Clinic Hospital in Phoenix, Arizona between 2013 through 2014.

For Unit A, the annual fall rate (AFR) was 3.3 in 2013 and 2.9 in 2014. The average age was 76 years. Of those who fell, 48% in 2013 and 42% in 2014 were identified as at-risk using the Hendrich II Fall Risk Model. Over the two years there was a decrease in unassisted falls from 3.36 per 1000 patient days to 1.06; the annual fall with injury rate was 0.9 in both years.
For Unit B, the AFR was 2.4 in 2013 and 3.3 in 2014. The average age was 85 years. Of those who fell, 66% in 2013 an 64% in 2014 were identified as at-risk. Over the two years there was an increase in unassisted falls from 2.00 per 1000 patients days to 4.00; the annual fall with injury rate was 0.8 in 2013 and 1.4 in 2014. The majority of falls were unwitnessed, and involved patients using the bathroom and those that fell trying to get out of bed. There is no statistically significant reason to explain the differences observed between the two inpatient units.
In our study the Hendrich II Fall Risk Model identified only 42 to 66% of patients that fell. We need to continue to develop and incorporate further screening and prevention protocols.

P-024
Are admissions to hospital from an integrated health and social care hospital avoidance scheme preventable …

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Background: HomeFirst; a multidisciplinary team integrating health and social care was established in Hertsmere, United Kingdom in January 2013, with the aim of reducing hospital admissions by providing rapid response (RR) and virtual ward (VW) services in patients' homes. Whilst data exists for Hospital readmissions, data on hospital admission from hospital at home services is sparse. We looked at admissions from Homefirst to hospital to define the characteristics of admission and determine its appropriateness in order to identify trends we could learn from as a team.
Methods: A retrospective study looking at all admissions from Homefirst to hospital over an 8 month period from May 2014 to January 2015 was done. Demographics and hospital diagnosis and appropriateness was determined by 2 clinicians using a spreadsheet.
Results: 92 patients were admitted to hospital over the 8 month period. The age range was 57–99. 62% (57) were deemed unavoidable; being admissions for acute medical and surgical emergencies or situations requiring patients to have immediate further investigations. Infections requiring intravenous antibiotics (18) was the commonest reason. 11% (10) were admitted for inpatient rehabilitation, whilst 15% (14) were deemed to be avoidable. The avoidable admissions were for infections requiring oral antibiotics (8), medication adjustment (1), hypotension (1), specialist opinion (1), syncope (2) and hemorrhoids (1).
Conclusions: Some hospital admissions from an admission avoidance service are unavoidable. It is important that community teams regularly review reasons for admission to hospital so that they can learn from this and prevent this from happening in the future.

P-025
Hospital admission avoidance; data from 1392 patients referred to the rapid response service

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Objectives: The uk population is ageing and increasingly models of care which cater for older patients in the community are needed. Qualitative studies suggest that older adults would prefer to be treated in their own home and this may be associated with better health outcomes. Home-first; a multidisciplinary team integrating health and social care was established in hertsmere, united kingdom with the aim of reducing hospital admissions by providing a rapid response (rr) and virtual ward (vw) service in patients homes. We examined the impact of the rr arm of the service on the care of older adults in hertsmere.
Methods: Retrospective data analysis were conducted for all patients referred to rr between january 2013 and february 2015. Patient demographics, referral source, diagnosis, readmission rates, admission rates per 1000 population were analysed.
Results: 1392 rr referrals were received of which 90% were appropriate. The mean age was 83.9 years with a female predominance. 29–74 patients were seen monthly. Most referrals were seen at home with 1 hour (90%) with falls, infections (chest, urinary and skin), carer breakdown, frailty and delirium accounting for the majority of referrals. The median length of stay is 13.7 days with 5–8 patients being admitted to hospital monthly from the home-first service. Emergency admission rates are lower than neighbouring boroughs.
Conclusion: Integrated health and social care teams providing a rapid response service in the community offers a way forward to care for older patients with multi-morbidity in their own homes.

P-026
Impact of falls and adverse drug events on health resource utilization among older adult Singaporeans

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Objectives: This study aimed to (i) evaluate health resource utilization (HRU) associated with falls and adverse drug events (ADE) and (ii) characterize their causes and consequences among older adult Singaporeans.
Methods: Six month retrospective study done on patients age 65 years and above who visited Singapore General Hospital. Records of emergency visits and hospital admissions were obtained using ICD-9 E-code series. Patient demographics, reasons for visit, costs and length of hospital stay (LOS) were retrieved from electronic databases. Summary statistics were used to report patient characteristics, common causes and consequences of falls and ADE, and HRU. Multiple linear regression was utilized to evaluate factors associated with increased HRU.
Results: A total of 1810 and 171 cases of falls and ADE occurred respectively during the study period. Among 881 (43.7%) falls and 162 (94.7%) ADE that resulted in hospital admission, the mean (SD) LOS was 9.4 (11.8) and 5.9 (7.2) days correspondingly. The HRU cost of these incidences amounted to $3,105,812.00. Mean (SD) costs for falls and ADE were $2,981.86 and $2,434.43 respectively. The most prevalent cause of fall was 'fall on same level from slipping, tripping or tumbling' (n = 976, 56.6%). Concussion (n = 221, 12.2%) and intracranial injury (n = 165, 18.7%) were common consequences of falls. ADE were mostly unspecified at the point of diagnosis (n = 113, 66.1%), commonly implicated agent was anticoagulants (n = 51, 29.8%).
Conclusion: Falls and ADE resulted in substantial HRU associated costs among older adult Singaporeans. Multidisciplinary interventions are needed to reduce the incidence of falls and ADE in this population.

P-027

The use of a proforma to improve the quality of ward round documentation in care of the elderly medical wards

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Objective: Ward rounds are complex clinical activities, critical to the provision of high-quality, coordinated care. Thorough and appropriate documentation of ward rounds is essential to facilitate multidisciplinary team communication and enhance patient safety. This quality improvement project (QIP) investigated whether the introduction of a ward round proforma improves documentation quality on two medical wards, predominantly caring for older patients, at a busy London district general hospital.
Methods: A proforma was developed with domains for diagnosis, observations, examination, assessment, and plan. It also prompts the attending clinician to review current medication, nutrition, skin integrity, catheters and lines, and escalation care plans. Ward round documentation was reviewed before and after introduction of the proforma for evidence of an assessment of these domains. The proforma was used daily for six weeks. Three ward rounds were examined per inpatient. Weekends, and the first 24 hours of admission, were excluded.
Results: Data were collated (n = 89 pre-proforma, n = 91 post-proforma introduction). An improvement in documentation was demonstrated across 34 of the 36 domains reviewed. Of particular importance are the improvements in documentation of an assessment/impression (27% vs. 71%), cardiopulmonary resuscitation status (4% vs. 78%) and antibiotic use (18% vs. 77%).
Conclusion: This QIP demonstrates that the use of a proforma improves the quality of ward round documentation. This is consistent with guidance issued by the Royal College of Physicians on medical record keeping. Furthermore, by providing structured review prompts, it ensures vital areas of the bedside assessment are not neglected, enhancing patient experience, safety and care.

P-028

Early recognition of cognitive impairment in the ED: a pilot study

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Introduction: Cognitive Impairment (CI) is present in up to 40% of older adults who use the services of the Emergency Department (ED). Despite reports that acute delirium confers the same mortality rates as acute coronary syndromes, is still missed in up to 80% of cases by emergency physicians.
Methods: We performed a prospective, point prevalence study of CI using a combination ot 4AT and AMT10. All patients over the age of 16 were eligible for inclusion over a 24 period in the department with the exception of those who were too ill to be interrogated or for whom a language barrier made it impossible.
Results: Of the 147 patients who visited our ED during the 24 hour study period who were eligible for inclusion 62(43%) had a cognitive assessment. The male/female ratio was 65/82 and the average age was 56.6 years. Out of the 51 patients who were assessed with the 4AT, 7 (14%) had cognitive impairment (cutoff ≥1). Of the 11 patients who had a AMT10 done 9(81.8%) had CI (cutoff <8). Overall we found that 16/147 (10.8%) patients had signs of cognitive impairment in the first screening while only 6/147 (4%) had known previous dementia.
Conclusion: We found Cognitive Screening to be a 'high yield' step with 10% of all those screened found to have impairment. Our main purpose in conducting this study was to raise awareness about the prevalence of CI within our ED and encourage screening prior to our next audit cycle.

P-029

Geriatrician input at the Medical Assessment Unit

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Introduction: People aged 65 years and older comprise a high proportion of patients in the Medical Assessment Unit (MAU). They have multiple comorbidities, complex intricate health and social needs and are expected to stay in hospital longer than younger people.
Methods: Geriatrician input at the MAU was trialed in a UK teaching hospital. The impact of the service was prospectively audited.
Frail elderly patients or those with multiple co-morbidities were identified in the MAU by the consultant acute physicians during the post take round or by the MAU team during the whiteboard round and referred to Care of Elderly (CoE) team. Elderly care nurse specialist assessed the referred patients using frailty criteria to identify the most frail patients for the geriatrician rounds. The geriatrician reviewed the identified patients, provided advice or transferred the patient to CoE ward as deemed appropriate.
Results: In the 5 months trial period, 853 elderly patients were admitted to CoE wards of which 264 (31%) patients were reviewed by a geriatrician on MAU before later transfer to CoE wards. Other patients were sent from the MAU or short stay wards.
Mean age of patients seen by the geriatrician was three years older than the other group (83.9 vs. 80.6 y) however there was no significant difference in the mean Length of stay between the 2 groups (20.7 vs. 20.5 d).
Conclusion: Geriatrician input at MAU provides early specialist care to the frail elderly with potential positive impact on the length of stay.

P-030

Provision of ambulatory emergency care for the very elderly population in Barnet, London, October 2013 – March 2015

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Objectives: In the United Kingdom (uk), the number one issue facing the national health service is the unsustainable rise in emergency hospital admissions. Ambulatory emergency care (aec) is an evolving approach in which appropriate adult emergency patients can be diagnosed, treated and discharged from hospital on the same day. Data regarding the role of aec in the care of the very old is sparse. This study reviewed the characteristics of the very old patients referred to a uk hospital's aec service from october 2013 to date.
Methods: Retrospective data analysis of patients aged 90 years and above seen by aec from october 2013 to march 2015 was conducted.
Results: 96 patients aged 90–104 (mean age 93) were identified. 5 were centenarians. The majority (81%) were female. Sources of referral were General Practitioners (35%), medical take (30%) and emergency department (28%). 47% lived alone; 14% lived in care homes and 18% lived with family/live-in carer at home. 32% of patients were independent, 35% needed some help in activities of daily living, 14% needed carers and 3% were fully dependent. Comorbidities ranged from 0–4 with heart disease and osteoarthritis commonest. Leg swelling/pain (51%) (of these 6% were diagnosed with a dvt) was the most common referral reason followed by infections (7%), anemia (6%), rash (4%) and others (22%).

Conclusion: This study shows that aec is suitable for patients aged 90 years and above regardless of their functional status. Aec services must therefore be inclusive of the very old in their design.

P-031
Urinary tract infection – what are the barriers to accurate diagnosis?

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Urinary tract infection, 'UTI', is commonly applied to older people, but is it correct, was urine testing indicated and why are we so quick to label patients with the diagnosis?
We surveyed the notes of 28 adult patients seen in the Emergency Department. Of the 15 (54%) given a diagnosis of UTI, 9 (32%) had typical symptoms. Seventeen of the 28 patients (61%) underwent urine dipstick testing with 8 (29%) having a positive result for nitrites/leucocytes. Eighteen of the 28 patients (64%) had urine sent for culture with 4 (14%) growing a urinary pathogen.
This demonstrates that clinicians are over-diagnosing UTI, performing urinary dipstick testing inappropriately and misinterpreting the results. Possible reasons for this include poor understanding of existing guidelines, resistance to changing previous practice and fear of adverse outcomes.
Subsequently, a mapping review was undertaken aimed at identifying the barriers to correctly diagnosing UTI in adults. A search of MEDLINE, CINAHL and EMBASE databases was conducted using the following terms: UTI OR urinary tract infection OR urin* infection OR urine dip OR urine AND dipstick OR urinalysis. Titles and abstracts were reviewed, inclusion/exclusion criteria applied and papers analysed using a thematic approach.
Several themes emerged including the role of human factors and behaviours but there is a paucity of evidence in this area. We aim to better define the problem using qualitative interviewing on a one-to-one basis exploring the behavioural factors impacting upon UTI diagnosis. By identifying these factors, a more robust solution to this problem may be devised.

P-032
Tumour in a tumour

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Case report: 76-year-old man presented with left sided weakness. Past medical history included castrate resistant metastatic prostate cancer for which he had escalating modalities of treatment from 2003 to 2014, TURP in 1998 and subsequently in 2001 he had rise in prostate specific antigen for which he was on watchful waiting till he was started on harmone manipulation in 2003. On examination he had left arm and leg weakness. CT head scan showed a 2 cm lesion in the right fronto-parietal region possibly meningioma or metastasis. Subsequent MRI brain was still unclear. As the diagnosis was unclear the scans were discussed at the regional neuroradiology meeting and the outcome was to obtain histological confirmation which showed evidence of meningioma and prostate adenocarcinoma secondary. The patient has since been started on third line chemotherapy. He is currently in a hospice.
Conclusion: This case brought forward the rare event of brain metastases in prostate cancer, to an even rarer event of metastases to an existing meningioma, which was not previously diagnosed. While this turn of events was of great academic interest, it presented a diagnostic uncertainty, and required careful multidisciplinary deliberation before commencing treatment.

P-033
An interesting case of facial pain

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Case report: 81-year-old lady presented with facial pain and fever. She had multiple visits to dentist and GP with no clear diagnosis. Past history included hypertension and osteoporosis. Threre was nil significant on examination. Investigations showed raised CRP, eGRF 72 ml/min/1.73 m^2 (baseline for her). Urine dipstick was negative. On further enquiry she gave recent history of bilateral hearing loss. CT head showed diffuse sinus opacification. Oral and maxillofacial team found no cause for the symptoms. ENT team advised to treat for sinusitis and continue intravenous antibiotics. She continued to spike temperature, CRP continued to rise and renal function gradually deteriorared (eGFR worsened to 18 ml/min/1.73 m^2). Repeat urine dipstick was positive for blood and protein. Vasculitis screen showed positive C ANCA(1:320) and Anti-PR3 (184.0 U/ml). She was commenced on prednisolone by rheumatologist and care taken over by Renal team for renal biopsy and they commenced cyclophosphamide. Renal biopsy was in keeping with acute vasculitis due to Wegener's. CT Chest demonstrated multilple nodules likely granulomas. With treatment there was some evidence of disease supression. The condition had left her with mixed sensorineural and conductive hearing loss. Audiology team was arranging hearing aids. Patient was not keen on renal replacement therapy if her condition deteriorated.
Conclusion: This is an interesting case of Wegener's granulomatosis presenting with facial pain. Facial pain can be a manifestation of various infectious and inflammatory conditions. One should also think of rare causes like systemic vasculitis when patient presents with facial pain.

P-034
Primary percutaneous coronary intervention in a centenarian woman. A case report

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A 101-year-old female, partially dependent in BADL (lost 2 areas) and in IADL, with no cognitive impairment (MMSE 25/30) and history of hypertension and one minor stroke, at 10 p.m. complained of a sudden onset of resting chest pain. Alerted the Emergency Local Service, on arrival of the doctor the electrocardiogram showed a ST-segment elevation in leads V1-V4 (10:40 p.m). In the local hospital pPCI (primary Percutaneous Coronary Intervention) was not performed. So, after an alert to the Emergency Department and Geriatric Cardiology Department of Careggi University Hospital, the patient was transferred to this hospital for pPCI. On arrival (10:59 p.m.), the patient was still symptomatic for angina. Coronary angiography (femoral access) demonstrated total thrombotic occlusion in the proximal Left Anterior Descending artery (single vessel disease). Load of clopidogrel 600 mg was administered. Primary PCI was performed by thromboaspiration, pre-dilatation of the residual lesion and BMS implantation with good angiographic final result. "Door-to-balloon": 30 minutes. The patient was transferred in Geriatric Coronary Care Unit: the patient's condition stabilized, Troponin I levels increased to 226.27 ug/L. Blood tests showed moderate renal failure. The echocardiography revealed left ventricular dysfunction (EF 40%), moderate mitral and tricuspid regurgitations. After 6 days the patient was discharged. Two years later the patient was still

in good health and hemodynamic compensation, without loss of functional autonomy compared to the pre-infarction period. When the clinical management of a patient is efficient even centenarians can enjoy the best treatment with great and, in our opinion, appropriate benefit.

P-035
Emergencies in primary care for digestive disorders

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Objective: To evaluate the prevalence of emergencies in primary care for digestive disorders; to implement quality control plan and continuing education for emergency care digestive pathology.
Methods:
1. Cross-sectional study of emergencies in primary care for digestive disorders, served in a period of one year.
2. Were recorded and analyzed a total of 774 cases treated in emergency primary care, from different points of view:
   – age.
   – Sex.
   – Classification As under ICD-9-CM (The International Classification of Diseases, Ninth Revision, Clinical Modification).
   – Degree of urgency.
3. Motion Control Plan and Continuing Education for Urgent Care Respiratory include: Logging diagnosis and emergency treatment of the most common diseases, goal setting as indicators assessed by a computerized system (completion of protocols, frequency and estimate the percentage of mild cases sent urgently) and control them through periodic clinical sessions.

Results: n = 774. Age: ≤65 years: 76%, ≥65 years: 24%. Gender: Male: 37.34%, Female: 62.40%. Heading ICD-9: Digestive Pathology: 12.75%. Degree of urgency: Urgent 8.97%, Semi-urgent 37.86%, Not Urgent 51.58%.
Conclusions: The urgency for digestive diseases are 12.75% and about 88% are semi-urgent or non-urgent. Control Plan is proposed and Continuing Education for Urgent Care Digestive through periodic clinical sessions (every three months) in the health centers.

P-036
Hospital at Home for acute geriatric patients

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Introduction: In the future there will be an increasing number of acutely ill geriatric patients but fewer hospital beds. The solution could be to hospitalize these patients at home with medico-technological monitoring.
Objectives: Feasibility of a "Hospital at Home" (HH) supported by medico-technological solutions.
Method: Within the first 48 hours after admittance geriatric patients are assessed to see if they can be included in HH – that is, not too ill to be cared for at home but in need of hospitalization. After inclusion the patients are installed in their own home along with the technology. The municipality nurse takes care of medicine, cooking and other activity of daily living. The hospital is responsible for the treatment and patients are assessed daily by a geriatric doctor and nurse. When ready the patients are discharged to their GP. Telemedicine is used for security when the patient is alone. Monitoring of falls, wireless measurements of vital values and direct patient-nurses contact via speakers and webcams is used. A call-center to achieve and react on alarms is placed in the geriatric ward.
Results: The Model for Assessment of Telemedicine is used:
- Health problem and technology
  – Description of the acute ill elderly patient and the technical set-up
- Safety
  – Mortality, readmission.
- Clinical case study
  – Description of the study design
  – Clinical impact
- Patient perspective
  – Participants satisfaction
- Economy
- Organizational
  – Evaluation of changes in the organization
- Legal/ethical
  – Is HH compliant with regulations?

The project is financed by public and private non-commercial foundations.

P-037
Severe metformin-associated lactic acidosis – a case report

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Introduction: Metformin is a widely used oral antihyperglycaemic drug utilized in the long term treatment of type 2 diabetes mellitus. A potential complication of metformin treatement is the development of non-hypoxic lactic acidosis. Although it is a rare condition (estimated prevalence of one to five cases per 100,000 population) it has a reported mortality of 30–50%. Dehydration in patients taking metformin can lead to this potentially fatal condition.
Clinical case: A 78-year-old male is brought to the emergency department (ED) because of 72 hour history of vomiting and progressive lethargy. He denied diarrhoea, fever, respiratory or genitourinary complaints. He was obese, had long term diabetes and was recently diagnosed arterial hypertension. He was medicated with telmisartan/hydrochlorothiazide 80/12.5 once daily and vildagliptin/metformin chloridrate 50/1000 twice daily.
At the admission to the ED he was conscious but disoriented, dehydrated, hypotensive, complaining of abdominal pain. His blood work showed elevated serum creatinine levels (6 mg/dl), hyperkalemia (6.7 mmol/L), blood acidemia (pH 7.11) with elevated lactate (>15 mmol/L) and decreased levels of bicarbonate (7.6 mmol/L). Thinking of acute kidney injury and metformin-associated lactic acidosis he immediately began dialysis.
After reviewing his medical files we discovered he had a known diabetic nephropathy without proper medical follow-up.
Conclusion: The authors present this case as a reminder that despite being the first line treatment in overweight diabetics, the use of metformin demands a careful monitoring of renal function, especially in older patients. The initiation of antihypertensive drugs should also prompt renal function evaluation.

P-038
Detection of frailty among older patients in a Finnish county hospital emergency department

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Objectives: Frailty in older people is associated with serious complications including recurrent emergency department (ED) visits and increased mortality risk. Several tools have been developed for ED staff to recognize frailty in older patients. We analyzed the usefulness of Identification of Seniors At Risk (ISAR) and Triage Risk Screening Tool (TRST) instruments in a large Finnish county hospital ED.

Methods: Between 1 March and 31 May, 2014, all patients aged ≥75 years admitted to ED by paramedics were included to the study. ISAR and TRST tests were done at admission. ICPC- and ICD-10 codes were recorded with discharge data from ED. 90-day mortality and recurrent ED visits were related to ISAR or TRST positivity (≥2 points).
Results: We recruited 775 patients (mean age 84, SD 5.4) with 820 visits. ISAR test was performed in 533 and TRST in 816 visits. Overall 90-day mortality was 14%. ISAR-positive had more ED visits than ISAR-negative (P = 0.002) during follow-up, whereas 90-day mortality risk was raised among TRST-positive (P < 0.001). In Cox multivariate analysis ISAR positivity was linked to recurrent ED visits (hazard ratio [HR] 1.4, 95% confidence interval [CI] 1.0–1.8), and TRST positivity to mortality (HR 3.4, 95% CI 1.5–7.7).
Conclusions: Our results support using both ISAR and TRST for risk stratification in older ED patients. TRST seemed to be more useful in mortality prediction and ISAR in recurrent visit prediction. Tests may be generated as part of electrical patient database software making them more easily introduced in everyday ED work.

P-039
Prevalence and etiology of anaemia in older persons

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Objectives: Anaemia is an important clinical problem in older persons and the etiology is unknown in a significant number of patients. Aim of this study is to determine the prevalence of anaemia, the spectrum of underlying etiologies and the prevalence of unexplained anaemia (UA) in hospitalized older patients.
Methods: We conducted a cohort study with retrospective data collection, including all patients aged >75 years admitted to the geriatric ward of a university hospital between 01/01/2014 and 31/05/2014. Anaemia was classified according to the WHO criteria. Demographic and clinical data, length of stay (LOS) and standard laboratory measures were compared between patients with a clear cause of anaemia (ACC) and those with UA.
Results: Of the 203 included patients, 64% (n = 130) were anaemic. Anaemic patients had a mean age of 84.9±5.4 years and were mostly female (63%). UA accounted for 19.2% of cases. The most common etiologies in ACC were chronic inflammation (33%), chronic kidney disease (13%) and iron deficiency anaemia (12%). Haemoglobin levels were lower (mean±SD 10.0±1.6 vs. 10.8±1.0 g/dL; p = 0.006), platelet counts were higher (mean±SD 268.2±103.5 vs. 212.2±86.0×10^9/L; p = 0.015) and LOS was longer (mean±SD 14.9±9.6 vs. 10.6±7.4 days; p = 0.04) in patients with ACC versus UA, respectively.
Conclusions: This study confirms that anaemia and UA are common in hospitalized older patients. Anaemia is more severe and LOS is longer in patients with ACC than UA.

P-040
Acute functional decline in patients admitted for acute geriatric care

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Background: Acute functional decline often cause hospitalization of older people. The aim of this study was to find characteristics of patients admitted to our acute geriatric ward with symptoms of acute (during the last 2 weeks) functional decline such as impaired mobility, falls, delirium, food and fluid deficiency, and incontinence, in order to develop efficient care pathways.
Material and Methods: This is a prospective observational cohort study with the aim to improve quality of care, of acutely admitted older (65+ years) patients. Patient administrative data and patient record information including main diagnoses and characteristics were included in a quality database. Acute functional decline was defined as episodes of falls, rapid cognitive decline and/or reduced general condition leading to ADL impairment within two weeks prior to admission.
Results: Of all patients admitted to our geriatric ward in 2014 (614), (262, 63.9%) were female, mean age was 84.9, and 410 (66.7%) had acute functional decline. Most common main diagnoses were infections in the respiratory (42, 10.2%) and urinary tract (35, 8.5%) system, cardiac disorders (56, 13.7%), and cognitive impairment (dementia and delirium) (40, 9.7%). Other main diagnoses were cerebrovascular events, injuries, malignancies, alcohol-related, anemia, dehydration and electrolyte disturbances as well as adverse drug effects.
Interpretations: Many patients have acute functional decline when admitted to an acute geriatric ward. Infections and cardiac disorders and different cognitive problems were the most common main diagnoses in these patients. A care pathway should include a broad medical as well as comprehensive geriatric assessment.

P-041
Geriatricians at the front door: pilot scheme in the emergency department of Salford Royal NHS Foundation Trust

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Objectives: Advanced age is a strong predictor for Emergency Department (ED) attendance and hospital admission. Older people experience higher complication rates and longer lengths of stay compared with their younger counterparts.
We hypothesised that a consultant geriatrician employing Comprehensive Geriatric Assessment (CGA) within the ED would deliver significant clinical benefits.
Methods: Between 30th June and 1st August 2014, older adults presenting to ED between 10am and 8pm with a geriatric syndrome and/or frailty received timely geriatrician review, structured CGA and targeted multidisciplinary interventions.
Results: 168 patients with mean age 84.9 years were included. 102 (61%) were female. Mean number of co-morbid conditions were 2.47 (1–7), 71 (42%) had dementia, 67 (40%) were from care homes and 102(61%) were dependent for activities of daily living. Mean length of stay was 6.5 days (0–55 days), with a 30-day readmission rate of 10.1% (cf 18.2% for all over-80s presenting in 2013). The conversion rate was 68.6% (cf 70% for all over-80s presenting in 2013). 30 day mortality rate was 1.79%.
Median length of time to see a geriatrician from presenting in ED was 1hour 52-minutes (compared with 32-hours in July 2013). Patients were assessed by a mean of 1 doctor prior to seeing a geriatrician (compared with 4 in July 2013).
Conclusions: For frail older people, prompt geriatrician involvement and MDT targeted interventions impact on clinical outcomes such as length of stay, readmission rates and mortality, as well as improving quality of care and patient experience.

P-042

Providing clear structure and leadership to an assessment area can reduce patient length of stay (LoS) and enhance staff experience

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Background: In September 2014, the Geriatric department took over the management of a medical assessment ward at Nottingham University Hospitals. A large team of consultants provided daily senior cover. Staff morale was low, patient care disjointed and there was a lack of leadership and consistency in ward processes.
Objective: To provide leadership and improve consistency of ward processes to reduce LoS and enhance staff experience.
Methods: A clinician lead and dedicated project manager were appointed to provide leadership and engage the team in the process redesign. Consultant job plans were modified to ensure daily geriatric presence. A standardised operating procedure (SOP) including roles and responsibilities was developed with the team.
Through a series of Plan Do Study Act (PDSA) cycles we introduced:

- A 9am "huddle" for staff allocation and safety and process messages.
- Morning and afternoon board rounds.
- "One stop" ward rounds.
- Prioritisation sheets (identifying patients medically unwell or ready for discharge).
- Optimised IT resources.

We ran focus weeks where aspects of the SOP were score boarded to embed the process and enhance accountability.
Results: LoS reduced from 35 to 29 hours. Morning and afternoon board round consistency increased (from 18% to 80% and from 24% to 60% respectively). Prioritised ward rounds increased from 18% to 100%. Consultants reported being clearer about their role (37% to 76%). The ward team felt happier coming to work (29% to 65%) and felt valued (18% to 59%).
Conclusions: Clear leadership structure and guidance on roles, responsibilities and processes reduced length of stay, improved flow and improved staff experience.

P-043

Older fall patients in the acute medical department: A descriptive cohort study

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Objective: Fall upon admission in older patients is frequent and often due to underlying disease, but little is known about this patient group. The aim of this study was to describe the clinical characteristics, complexity and illness-severity of a cohort of older fall patients admitted to the acute medical ward.
Methods: We included 21 patients (>65 years old) who were admitted to the acute medical ward in October 2013 with the ICD-10 diagnosis fall (R29.6/7) or as a direct consequence of falling.
The cohort was studied retrospectively and data was collected from the hospitals electronic journal system. We registered the number of acute diseases diagnosed or treated within the first three days after admission, vital parameters (EWS), 30-days mortality rate and length of stay. Furthermore we registered 30-day re-admission rate, comorbidity and polypharmacy.
Results: 33.3% of our patients had died 30 days after admission. 43.3% had been admitted to hospital 30 days before or after the study period.
On average 3.9 acute diseases were diagnosed or treated during the first 3 days after admission. The mean EWS-score was 4.2 indicating a medium observation level. Our patients received on average 7.4 medications and had 6.0 comorbidities.
Conclusions: Older fall patients in the acute medical ward are characterized by acute medical conditions, multi-morbidity and polypharmacy. Mortality and admission rates are surprisingly high, indicating that there should be focus on these patients in the acute clinical setting.
Further studies need to be done in order to proof our results in larger cohorts.

P-044

Rates and potential risk factors for hospital readmissions of older patients

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Objectives: To determine potential risk factors and hospital readmission rates within 6 months following an index hospitalization and test the association with the LACE (LI) and SCHONBERG indexes (SI).
Methods: Retrospective observational study in a tertiary care hospital, extracting clinical data from a computerized database. Were included 369 patients more than 75 years hospitalized from the emergency department (ED) during the first semester of 2014, and assessed by the geriatric liaison team.
Results: The readmission rates was 34% (95% CI: 29–40) at 6 months from the index stay. Characteristics not significantly associated with readmissions where: ISAR score, polypharmacy, a previous fall in the past 6 months, living place, dementia and a low body mass index. Six months readmissions were however associated with: a previous ED visit (OR: 35.0; $P < 0.001$), male gender (OR: 2.7; P: 0.001), marital status (OR: 2.1; P: 0.003), assistance for ADL (OR: 1.6; P: 0.039) and iADL (OR:1.6; P: 0.042), a high Charlson Comorbidity Index (OR: 1.2; $P < 0.001$), younger age (OR: 1.1; P: 0.018), a high level of LI (OR: 1.1; P: 0.004) and a high level of SI (OR: 1.1; $P < 0.001$).
Conclusion: In our cohort one third of the older patients where readmitted within the 6 months after discharge. A previous ED visit strongly predicted readmission, as other factors or scores as the LACE and SCHONBERG indexes.

P-045

Evolution of patients of 80 years and over after a stay in intensive care unit: a retrospective study

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Objectives: Aging has led to an increase in the number of elderly patients admitted to intensive care.
Methods: Retrospective study in Intensive Care Unit at Saint-Dizier Hospital including patients older than 80 years, during 1 year.
Results: 69 patients were admitted, 34 were women. The mean age was 84.1 years (80–94). The majority of patients were from the Emergency (42 patients). 13 patients lived at home without help, while 35 patients lived at home with assistance and 19 were living in institutions. Charlson score means in our series was 7.1 (4–9). Cardiovascular history was the most represented (97.1%). Dementia "known" for 10 patients (14.5%). Principal reason for admission in Intensive Care remains acute respiratory failure (36 patients). The mean SAPS II score is valued at 46.8 ± 24.2 (18–113). The average length of stay was 9 ± 9.9 days (1–58 days). Therapeutic limitation decision was made to 35 patients. 27 patients died in the intensive care unit, which makes 39.13% of intra-ICU mortality. A total of

30 patients died in the hospital. At 6 months, 33 patients died, with an average survival of 40.2 days. The SAPS 2 seems to be a major prognostic factor in the mortality of patients aged over 80 years ($p < 0.0001$). The SAPS II and hospitalization in intensive care were significant prognostic markers. It was difficult to assess the previous autonomy of patients included.
Conclusions: A future prospective study will provide a detailed analysis of the autonomy of patients aged over 80 years.

P-046
Geriatric care: how the Bouchon's 1, 2, 3 model in geriatrics become important, about a case

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Objectives: In Geriatrics, issues in the care of frail elderly are crucial and the cascade of events can be faster, despite appropriate therapeutic approach.
Methods: We illustrate this problem by a clinical case.
Results: A 83-year-old patient is admitted for fall, without loss of consciousness, with biological rhabdomyolysis. He is followed for a treated ischemic heart disease, hypertension treated. Discovery of a meticillin-sensitive *Staphylococcus aureus* prostatitis which needed antibiotics treatment. During his hospitalization, finding a right knee edematous, hot and painful. The knee joint puncture finds a turbid liquid with a bacteriological culture, finding a meticillin-sensitive *Staphylococcus aureus* infection, which is complicated by an atrial fibrillation. Therapeutic approach combining oxacillin-aminoglycosides is prescribed. No prescription of anticoagulants because of a discovery of a rectal bleeding (investigations for melena may be realized after the decrease of septic context). No endocarditis is discovered. At 10 days, sudden onset of right lower limb with pulselessness. The CT angiography revealed acute ischemia of the right leg, which led to a thrombectomy. Medically, prescription of anticoagulants is realized but causing acute blood loss by the increase of melena. Despite support transfusion, the patient died a few days later.
Conclusions: The occurrence of acute ischemia, urgent medical and surgical pathology can combine fibrinoid and septic events. In addition, the cascade of medical events in a frail elderly is a source of high morbidity and mortality. This shows the temporal dimension of the model of the frailty and importance of its early detection in the elderly.

P-047
Hypervitaminia B12: Cross study in an acute geriatric unit over a period of three months

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Objectives: No consensus to date defines what to do in front of the discovery of a hypervitaminia B12, especially in the elderly.
Methods: Prospective study in an acute geriatric unit between March 26 and June 30 2014 collecting all patients over 65 years with hypervitaminia B12, as defined by the biochemistry laboratory of the University Hospital of Reims (>663 pg/ml).
Results: 190 patients were hospitalized, 48 had a hypervitaminia B12 (25.3%). 10 patients had vitamin B12 deficiency (5.3%). The sex ratio of the population having increased vitamin B12 was 0.5. The average rate was 1085 pg / ml The average Charlson score was at 7 ($\pm$ 2.4). In univariate analysis, the significant related factors for hypervitaminia B12 were: acute renal failure ($p = 0.0002$); liver disease (acute or chronic ($p < 0.0001$); acute liver disease ($p < 0.0001$), chronic liver disease ($p = 0.029$). solid neoplasm ($p = 0.0030$) Hepatic metastases were at the limit of significance ($p = 0.0622$). No significant difference for chronic renal failure, malnutrition, the red cell folate, or level of comorbidity (Charlson score). In multivariate analysis, the variables independently related to hypervitaminia B12 were: acute renal failure (odds ratio = 6.3; $p < 0.0001$); liver disease (odds ratio = 5.4; $p < 0.0001$); hematological diseases (odds ratio = 5.7; $p = 0.0017$).
Conclusion: Hypervitaminia B12 is associated mainly to solid neoplasms and liver diseases. Hypervitaminia B12 could be a real marker in the diagnosis and prognosis orientation of these disorders in the elderly.

P-048
Hyperuremia in the elderly: Think about upper gastrointestinal bleeding

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Objectives: Hyperuremia in the upper gastrointestinal bleeding is unknown, despite a pathophysiology explained.
Methods: We report the case of a patient of 83 years illustrating this problem.
Results: The patient is sent to Emergency for hypotension and delirium. The diagnosis of acute aplastic anemia is made with hemoglobin 7.6 g/dl, in the context of cardiovascular collapse.
His treatment was two gastrotoxic: aspirin and celecoxib. The review find no externalized bleeding, only epigastric tenderness. Biology shows no inflammatory syndrome, normal creatinine (63 micromol/l) and increased urea (22.9 mmol/l). Fluid resuscitation and transfusion of packed red blood cells are both begun. A peptic ulcer is suggested by taking two major gastrotoxic and elevated urea with normal creatinine. An inhibitor of proton pump treatment is introduced. A gastroesophageal gastroduodenal endoscopy is recommended in emergency but refused by gastroenterologists because of lack of stronger arguments. Unfortunately, he was admitted to the ICU for hemorrhagic shock secondary to a gastroduodenal ulcer perforation and ischemic colitis. He died because of infectious complications.
Conclusions: Blood protein digestion produces amino acids which are reabsorbed in the proximal gastrointestinal tract, causing increased blood urea (urea is used in the Glasgow-Blatchford score). Studies should be conducted to examine the intrinsic and extrinsic values hyperuremia for unexplained acute anemia. This biological sign must attract attention, especially if there are other risk factors for peptic ulcer, and could serve as an orientation particularly in the elderly. It should not be directly linked on an extra-cellular dehydration, while renal function is preserved.

Biogerontology and genetics

P-049
A short leukocyte telomere length predicts insulin resistance

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A number of studies have shown leukocyte telomere length (LTL) to be inversely associated with insulin resistance and shorter in type 2 diabetes mellitus. The aim of the present longitudinal study, utilizing a twin design, was to assess whether shorter LTL predicts insulin resistance or is a consequence thereof.

Design: A longitudinal twin study with baseline and follow-up measurements of LTL and insulin resistance (HOMA-IR) over an average follow-up of 12 years.
Setting: A subset of the population-based national Danish Twin Registry
Participants: 338 twin pairs of the same sex (184 MZ and 154 DZ) aged 37.4±9.6 years at baseline examination.
Main outcome measure: Relationship between LTL and HOMA-IR and changes in both measurements during the follow up period.
Results: Baseline HOMA-IR was not associated with changes in LTL (attrition) over the follow up period, whereas baseline LTL was associated with changes in HOMA-IR during this period. The shorter the LTL at baseline the more pronounced was the increase in HOMA-IR over the follow-up period ($p < 0.001$); this effect was additive to that of BMI. The co-twin with the shorter baseline LTL displayed a higher HOMA-IR at follow-up than the co-twin with the longer LTL. A larger difference in LTL between the co-twins at baseline was associated with a greater probability that the co-twin with the shorter LTL would develop a higher HOMA-IR at follow-up.
Conclusion: These findings suggest that individuals with short LTL are more likely to develop insulin resistance later in life.

P-050
Independent predictors of hospital admission in emergency department patients younger and older than 70 years of age

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Introduction: Independent predictors of hospital admission have been investigated in patients on the Emergency Department (ED), but it is unknown whether these predictors are different for patients above and below 70 years old. In this study we compared patient characteristics between patients younger and older than 70 years and investigated whether independent predictors of hospital admission are different in these patient groups.
Method: A retrospective cohort study of all ED visits in a tertiary hospital in 2012. Patient characteristics including way of arrival, presenting complaint and urgency of the complaint were analysed and stratified into age groups. Multivariable logistic regression was used to identify independent predictors and discriminative performance was quantified by area under the curve (AUC) analysis in both groups.
Results: 4255 patients >70 years and 17319 patients <70 years were included. 45% of the older patients were hospitalized and 25% of the younger patients. Between age groups the same independent predictors were found such as triage category and amount of registered vital parameters, mostly reflecting illness severity. The prediction model for hospitalisation had a higher discriminative performance in young patients with an AUC of 0.85 (0.84–0.85), the model in old patients had an AUC of 0.76 (0.75–0.78), with both models having good predicting capabilities.
Conclusion: Independent predictors of hospital admission are similar in patients younger and older than 70 years in the ED, but perform better in younger patients. This suggests that in older patients other factors such as cognition and functional status, may play a role.

P-051
Leukocyte telomere length is associated with lean mass: data from the Berlin Aging Study II (BASE-II)

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Background: Age-related loss of muscle mass is an increasing problem in in our aging society, affecting physical ability. Telomere length has been recognized as a marker of biological age on the population level.
Objective: Here we evaluated the rarely examined relationship between lean mass and relative leukocyte telomere length (rLTL) in 1,398 participants of the Berlin Aging Study II (mean age 68.2±3.7 years, 49.6% men).
Methods: The determination of rLTL was carried out by real time PCR. Lean mass was estimated by dual X-ray absorptiometry and examined as leg lean mass (LLM), appendicular lean mass (ALM), and ALM corrected for body mass index (ALMBMI).
Results: Highly significant correlations ($p < 0.001$) of rLTL and ALM ($r = 0.248$), ALMBMI ($r = 0.254$), and LLM ($r = 0.263$) were found. Associations remained significant in linear models adjusted for age, gender, BMI, low-grade inflammation, life style factors and morbidities: ALM ($\beta = 0.844$, $p = 0.009$), ALMBMI ($\beta = 0.032$, $p = 0.011$), and LLM ($\beta = 0.967$, $p < 0.001$). Shorter rLTL, advanced age, female sex, sedentary lifestyle and elevated CRP level were associated with lower lean mass.
Conclusion: Short telomeres were associated with low lean mass. Our results indicate that rLTL may be a risk factor for loss of lean mass. To confirm the association between telomere attrition and loss of LLM and ALMBMI, which are highly relevant for physical ability, further research should examine this subject in a longitudinal context.

P-052
Loss of fertility in aging males due to increased testicular estradiol production

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In aging man, other mammals and birds, loss of fertility is accompanied by high levels of plasma estradiol and concomitant reduced levels of both plasma LH and testosterone. Hormonal levels are regulated by the negative feedback mechanism as follows: (1) plasma testosterone is aromatized to estradiol in the brain, (2) which attaches to hypothalamic estradiol-receptors; (3) the estradiol-receptor complex results in the reduction of GnRH secretion (4) that leads to decrease in plasma LH and FSH levels and the consequent reduction of testicular testosterone level. We examined fertility changes in the aging rooster, an animal that reaches peak fertility at a relatively young age. In addition, we examined fertility changes in aging roosters treated with clomiphene citrate, an anti-estrogen.
We collected pituitary glands of high fertility (32 weeks), and aged roosters (70 weeks) with and without clomiphene citrate treatment to determine number of gonadotrophs in the pituitary. In addition, plasma, LH, testosterone and 17β-estradiol were measured using radioimmunoassays.
In 70 week old males, the number of gonadotrophs per mm^2, plasma LH concentrations and plasma testosterone concentrations were reduced by 56%, 39% and 40%, respectively, when compared to 32 week old roosters. However, the clomiphene citrate treated males had similar measurements as the 32 week old roosters.

We concluded that in aged males, the high levels of testicular estradiol caused a constant negative feedback of gonadotrophin release and testosterone production. This conclusion was enforced by removing the negative feedback due to estodial by use of an anti-estrogen, clomiphene citrate.

P-053

Telomere attrition during old age can't explain the relation between short telomere and atherosclerosis

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Objectives: Short leukocyte telomere length (LTL) is associated with atherosclerosis and diminished survival in the elderly. The prevailing view is that LTL serves as a biomarker of cumulative inflammation and oxidative stress during life. However since LTL dynamics are mainly defined during the first 20 years of life, short LTL could precede atherosclerosis and act more as a determinant. We examined whether LTL attrition during old age can affect individuals' LTL ranking in relation to their peers and which clinical or lifestyle factors can predict it.
Methods: We measured LTL by Telomeric Restriction Fragment Southern Blot in samples donated 8 years apart on average by 76 subjects aged 60 to 85 years.
Results: Mean LTL attrition was 27 bp/year. No clinical or lifestyle risk factors seem to exert significant effect on LTL attrition. We observed a close relationship ($r = 0.88$) between baseline and follow-up LTL values. Ranking individuals by LTL deciles revealed that 87.5% showed no rank change or only one decile change over time. We observed relations between values of LTL and BMI as well as between LTL and carotid atheroma. No such relationship was observed between LTL and smoking status or pulse wave velocity.
Conclusions: In elderly people LTL ranking changes very little over time. Accordingly, the links of LTL with atherosclerosis and longevity appear to be established earlier in life. It is therefore unlikely that lifestyle and its modification during old age exert a major impact on telomere length that should be considered as an independent risk factor.

Cognition and dementia

P-054

The increasing burden of dementia in Chile

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Background: Chile is ageing rapidly with a consequent increase in the frequency of chronic diseases, among which probably the most devastating is dementia.
Objective: To describe the prevalence of dementia and its contribution to the burden of dependence in Chilean older people.
Design: Cross-sectional survey, in a Chilean representative sample of 4867 (63.2% women) community dwelling people ≥60 y selected with a probabilistic, stratified, multi-stage sampling design. Dementia was defined with a validated test consisting in MMSE score <22 and Pffefer Activities Questionnaire score >5. Dependence was defined as need of assistance for ≥1ADL/≥2IADL or dementia.
Results: Total crude prevalence of dementia was 7.0% (women 7.7%; men 5.9%; $p = 0.15$) yielding estimates of 181,761 cases of dementia in Chile 2015 and 221,523 in 2020. Prevalence was higher in rural than in urban sample (10.3% vs. 6.3%; $p = 0.002$) and increasing the higher age reaching 32.6% in people ≥85 y old. A strong association with education was observed being the prevalence in illiterates 25.2% vs. 1.2% in people with ≥13 school years. The fraction of dependence attributable to dementia was 32.6%. The age and gender adjusted model for dementia showed association with rurality (OR = 1.42; 95% CI 1.02–2.01) and low education (OR = 2.76; 95% CI 1.54–4.94).
Conclusion: The growing number of people with dementia poses a huge challenge to our country. It is imperative to anticipate the demand for a particularly vulnerable group usually forgotten and discriminated. Early detection and design of programmes aimed to fight against reversible risk factors while stimulating protector factors should be a priority for the public health policies in the country
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P-055

Sleep apnea syndrome, hypertension, CSF and dementia

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Objective: To quantify the respiratory, cardiac or hemohydrodynamic alterations in patients with dementia. Many authors show the role of vascular factor. Likewise, that hypertension alters in the CSF, the protein béta42 rate, marker of Alzheimer Disease (AD). Sleep apnea syndrome (SAS) promotes nocturnal elevations of intracranial pressure. According to a recent study, Phase-Contrast magnetic resonance imaging (PC-MRI) makes the differential diagnosis between hydrocephalus, called "normal" pressure with AD.
Methods: 21 patients aged 85±8 years, suffering from dementia, with MMS average at 21±5 have been recruited in the geriatric department of Saint Quentin Hospital (France). Each included patient has a biological, neuropsychological and standardized geriatric assessment, a blood pressure holter, polygraphy and PC-MRI, in aim to calculate the stroke volume in the internal carotid and vertebral arteries and quantify the oscillatory volumes of CSF during the cardiac cycle.
Results:

- 2 patients did not stand the polygraphy. 15 of 19 included subjects had sleep apnea, none of them had a pneumological history.
- 1 patient did not stand the blood pressure holter. 12 of 20 included subjects had known and treated hypertension and 11 of these 12 also had SAS.
- 4 patients did not stand MRI, 4 of 17 included subjects had altered LCS dynamic indicating an active hydrocephalus being investigated and 3 patients showed impairment in cerebral vascular flow.

Conclusion: The systematic search of SAS and hemohydrodynamic disorders in elderly patients with neurodegenerative pathology is needed to better identify, understand and heal.

P-056

Telematic application for the cognitive valuation, diagnosis and personalized intervention in cognitive impairment and dementia

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Objectives: Cognitive stimulation programs are developed for rehabilitation of persons with impairment without considering the

objectives, level of cognitive functionality, or guided neuropsychological exploring. We have designed a telerehabilitation innovative system that faces the clinical and technological challenges.
Method: The initial and final evaluations have been carried out after an intervention period of 6 months.
The target population was 115 persons at the beginning and 63 at the end, from which 25 (X=81, 38 years) lived in elderly population residences and 38 (X=77, 13 years) in the community. The cognitive profile was classified in 4 levels.
The satisfaction was evaluated with validated questionnaires analyze telemedicine programs according to the Model for Assessment of Telemedicine Application and the levels of life quality according to the health questionnaire EUROQOL 5D.
Results: The average cognitive level of the residential population was 1.72 and in the community, 2.50. The final level was 1.80 and 2.47, respectively.
The satisfaction degree was considered to be excellent in 60% and good in 40%. The tool was considered to be recommendable in 80%. In the life quality of the residential population, 68% had a mobility issue, and 42% presented pain; meanwhile, in the communal population, 33% had a mobility issue and 42% presented pain.
Conclusions:
- Excellent acceptance of the tool
- Usefulness of the tool to increase the life quality, without affecting the self-care
- Decelerate the cognitive impairment in residential population. Minor improvement.

P-057
Association between left ventricular diastolic function and cognitive performance in adults with Down syndrome

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Objectives: Down syndrome(DS) is characterized by high rates of early-onset age-related disorders and in particular persons with this condition are at high risk of experiencing Alzheimer disease(AD). Subjects with DS are also known for very low prevalence rates of cardiovascular disease, but attention is growing on increased prevalence of left ventricular diastolic dysfunction in adults with DS. Interestingly, studies on AD are now investigating the relationship between heart and brain function. Aim of the present study is to evaluate the association between left ventricular diastolic dysfunction and cognitive impairment in adults with DS.
Methods: We enrolled 27 adults with DS followed at the Day Hospital of Geriatrics at the Policlinico Gemelli, Università Cattolica del Sacro Cuore in Rome. Left ventricular diastolic function was evaluated through echocardiography with measurement of trans mitral flow and Tissue Doppler Imaging (TDI). Diastolic dysfunction was defined as an E/e′ >8. Cognitive impairment was evaluated with Raven Matrices and Wechsler Adult Intelligence Scale(WAIS) including verbal scale and performance scale.
Results: In our sample (mean age 37.1±9.2 years; 78% females), 14 (52%) subjects showed diastolic dysfunction with a mean score in Raven matrices and WAIS scales (verbal and performance) of respectively 12.8±5.6, 9.1±4.1 and 8.9±4.2. After correction for age and gender, participants with diastolic dysfunction showed lower scores in the three cognitive performance scales as compared with those without diastolic dysfunction and: Raven matrices 10.8±1.1 vs. 15.8±1.4 ($p = 0.011$); WAIS verbal scale 7.5±0.7 vs. 10.1±0.7 ($p = 0.017$); WAIS performance scale 7.8±1.0 vs. 9.8±1.0 ($p = 0.190$).
Conclusions: Left ventricular diastolic dysfunction is independently associated with reduced cognitive performance in adult subjects with DS.

P-058
A better diagnostic differentiation between mild and major NCD when measuring everyday functioning

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Objectives: According to DSM-V, differentiation between mild and major neurocognitive disorders (NCD) – or mild cognitive impairment (MCI) and dementia – is based on the preservation of everyday functioning. However, no established standards exist for measuring functional limitations for diagnostic purposes. Therefore, an evaluation for basic (b-) and instrumental (i-) activities of daily living (ADL) has been developed which assesses individualized functional impairment by distinguishing underlying causes of limitation. Expressed as percentages, it distinguishes a Global (DI), Cognitive (CDI) and Physical Disability Index (PDI) for both b- and i-ADL.
Methods: The (construct and discriminative) validity and inter-rater reliability was evaluated in 154 community dwelling older persons (mean age 79.8; SD ±7.0), classified based upon a standard clinical evaluation as cognitively healthy (CH; n = 47) (controls), Mild Cognitive Impairment (MCI; n = 43) (mild NCD) and mild to moderate Alzheimer's Disease (AD; n = 64) (major NCD). Separately, the new evaluation was administered.
Results: The CDI showed accurate differentiation ($p < 0.05$) with a mean b-ADL-CDI of 0.0% for CH, 2.8% (SD ±7.1) for MCI and 8.9% (SD ±11.3) for AD, and a mean i-ADL-CDI of 1.8% for CH (SD ±5.7), 21.3% for MCI (SD ±19.7) and 50.9% for AD (SD ±22.8). The DI and PDI were only different between CH and patients ($p < 0.001$). ROC curves showed satisfactory results for DI and CDI of both b- and i-ADL, with an AUC ranging 0.687 to 0.992. Inter-rater reliability for all indices showed an ICC ranging 0.944 to 0.994.
Conclusions: By distinguishing causes of limitations, evaluation of everyday functioning allows an accurate diagnostic classification in NCD.

P-059
Creativity in Alzheimer's Disease

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Objectives: In Alzheimer's Disease, despite limited brain activity, it may still to express creativity.
Methods: We have examined some examples of creativity and dementia reported in scientific documents and several patients with Alzheimer's Disease, living in nursing home, that have expressed their creativity by many paintings.
Results: In old age, Immanuel Kant presents signs of cognitive decline. He appears to be aware of his disorder, expressing the pain of changes, the need to secure environmental and emotional reference points. His decline continues relentlessly, but he keeps his style, his cultural achievements, his feelings of gratitude, understanding and affection.
Cary Smith Henderson, a professor of history, writes his journal, expressing his experience with Alzheimer's disease. In advanced stages of the disease, he is able to grasp the meaning of situations and relationships; despite the difficulties and communication problems, he continues to have feelings and ideas that he would like to share with others.
William Utermohlen, a painter, stricken by Alzheimer's disease, continued to compose portraits following the inexorable progression of his decay; he has witnessed the decline of his cognitive functions, maintaining until the end a kind of artistic core. Utermohlen seems aware – at least in emotional terms – of what is happening to him.
Many institutionalized elderly people express their creativity, their emotion, their thought drawing and painting. Sometimes their interesting works recall portraits of famous painters.

Conclusions: People with dementia think, have feelings, may be creative; several institutionalized elderly people with dementia demonstrate creative and innovative skills.

P-060
Describing the population with dementia in a general hospital setting

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Objectives: Around 12,500 people with dementia are admitted to Leeds Teaching Hospitals Trust (LTHT) per year.
Rates of somatic and psychological symptoms, in people with dementia in hospital are around 60% and 70% respectively. Delirium is common in around 66% of admissions. Persistent symptoms can cause distress, the minimisation of which is a treatment goal.
In order to minimise distress in dementia, one must first identify those with dementia and recognise the symptoms that cause distress.
This project aims to describe the accuracy of reported dementia, and frequency of symptoms commonly associated with dementia that cause distress in people on general hospital wards.
Methods: I conducted a retrospective case notes review of 100 patients admitted to LTHT who have a known diagnosis of dementia. I hand searched each patients psychiatric and medical notes, identifying how accurately dementia diagnoses were recorded and all episodes of documented somatic symptoms, psychological symptoms, behaviour associated with distress.
Results: 81% of dementia diagnoses were recorded accurately in the medical notes. 39% of patients were documented to be in pain. 13% had documented psychological symptoms of which, 4% had depression, 3% anxiety, 4% delusions and 4% hallucinations. Delirium was documented in 13% of cases.
Conclusions: This work demonstrates deficits in the recording of known dementia diagnoses, and an under reporting of symptoms commonly associated with dementia, that are potentially treatable. It highlights the need for further work identifying barriers and facilitators to distress reporting, which I intend to carry out using semi-structured interviews with healthcare professionals.

P-061
Effects of music therapy in institutionalized elderly with dementia

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Number of people affected of dementia continues to growing. Within the framework of Positive Psychology, we'll study the positive effects of musictherapy on QoL of people with dementia. The main objective is to analyse, compare the effects of musictherapy (experimental group), and reminiscence (control) in institutionalized elderly. To evaluate the effect of musictherapy program vs. reminiscence program on cognitive functioning, mood and participation-interaction of individuals in moderate/advanced stages of dementia.
Method: Quasi-experimental study. Pre-post test design with a control group. Participants were 24 people with dementia in phases 5 and 6 who were randomly assigned to a musictherapy group or a reminiscing group. Both groups received 12 sessions, 2 sessions per week. Instruments included: Cognitive functioning: BIMS (Brief Interview Mental Status); Self-Perception Scale mood OERS (Observed Emotion Scale); Observations of the therapists and video analysis (sessions 1, 6, and 12).
Results: It should be noted that individuals involved in the music therapy group had a gradual increase in cognitive scores (attention, memory, temporal orientation) throughout the duration of the study, while the recreation/reminiscing group decreased. The score of the participants in both groups indicate a more positive mood before and after the sessions and a noticeable increase in interaction between participants. Behaviors and apathy also decreased in the advanced dementia musictherapy group.
Conclusions: Musictherapy seems to contribute to maintain and improve cognitive, behavioral and socio-emotional aspects of older people with dementia in moderate to advanced stages to a higher level than reminiscence-recreation.

P-062
Physical restraints reduction program

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Objectives: To demonstrate that he use of restraint has no benefits in the care of people with dementia. In Spain, the average of use of restraints is around 20% in big care home companies. Sanitas Residencial, in 2011 started an ambitious program to reduce restraints in all 40 care homes
Methods: An all staff training program in dementia started in 2011. One of the main issues was restraints and how to eliminate them. During all this years, all care homes developed an ambitious program to reduce physical restraints.
Data was obtained from a review of electronical clinical records and benchmark data from AESTE (a Spanish benchmark company). Historical evolution of use of restraints and falls was necessary.
Results: The use of restraints in sanitas residencial in the beginning of 2012 was 27.8% and in Spain at around 25.4%.
At present day Sanitas Residencial has only 1.3% (the average in Spain is around 20%) of residents with physical restraints. 28 care homes (out of 40) certified free of restraints by an external audit company (23 with final certify).
During this period, fall rates and its complications (most severe hip fractures) hasn't increased due to fall prevention program.
Conclusion: People suffering from dementia don't need, as a common, the use of physical restraints. Deliver high quality care without using restraints is possible. Fall and consequences are not increasing because not using physical restraints. Infections, constipation, fall risk improves by not using physical restraints

P-063
Relationship between oral health and cognition in older patients admitted in a medical ward of a general hospital

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Objectives: Previous studies suggested that there is an association between cognitive impairment, teeth loss and periodontal disease. Our aim was to evaluate the relation between cognition and oral health status (OHS) among patients ≥75 years admitted in an acute medical ward.
Methods: Cross-sectional study during 1 day. Comprehensive Geriatric Assessment (including Global Deterioration Score and/or subjective assessment of cognition, Mini Nutritional Assessment and Barthel score). Dental examination by a dentist.
Results: 100 patients were included, average age 83.7 years, 63% males, 25% nursing home residents (NHR), average Cumulative Illness Rating Scale Geriatrics 11.2, average Barthel score 62.6, 70% malnourished. Prevalence of mild cognitive impairment (MCI) and dementia were 12% and 19%, respectively. Average number of teeth (ATn) was 6.7 ± 8.4 (0, 33), 36% used oral prosthesis. Prevalence

of total edentulism, caries and periodontal disease were 46%, 24% and 21%, respectively. There was a higher ATn in patients with better cognitive function [normal cognition (NC) 7.68 vs MCI 5.83 vs Dementia 4.42, ns). There was a lower prevalence of caries (NC 22.7 vs cognitively impaired 25.8%, ns) and periodontal disease (NC 19.7 vs cognitively impaired 22.6%, ns) in patients with better cognition. Although cognitively impaired patients presented lower ATn, the usage of dental prosthesis was similar in cognitively preserved and impaired patients (36.4% vs 35.5%). Malnutrition was more prevalent among cognitive impaired patients (74.2% vs 66.7%).
Conclusions: Cognitive impairment is associated with poorer OHS. Difficulty in oral hygiene must be assessed as it might justify poorer OHS and contribute to malnutrition.

P-064
Vitamin B12, folate and depression evaluated with geriatric depressive scale (GDS) in elderly with dementia

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Objectives: Several nutrients may have preventive/ameliorative roles in depression. Previous studies have shown conflicting results on the deficiency of vitamin B12, homocysteine and folic acid are associated with depression.
This study investigated the association among folate, B12, and depressive symptoms in elderly Italian populations with mild cognitive impairment.
Methods: The study was a cross-selectional study conduced on 35 elderly (mean 80.72: ds 7.71) subjects (24 females, 11 males) with Mini Mental State Examination (19.5±1.5). Laboratory values of folate, vitamin B12 were examined for their independent relationship with depressive symptoms [Geriatric Depression Scale (GDS) score ≥5].
Results: The regression model showed only one significant evidence for the effect of vitamin B12 levels on GDS ($B = -0.003$; $P < 0.05$). A relevant association but no significant between folic acid and geriatric depression scale was found ($B = -0.56$; $P = 0.278$).
Conclusion: Decreasing and low levels of folate and deficient levels of B12 were associated with greater risk of depressive symptoms in elderly Italian with dementia.
Vitamin B12 plays a protective rule in the progression of depression. In this way a supplementation can be fitting in the prevention of symptoms.

P-065
Feasibility of the cross-cultural dementia screening

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Introduction: In the Netherlands the number of elderly immigrants with dementia is growing. Language barriers and illiteracy are obstacles in intercultural dementia diagnostics. Recently, a neuropsychological test that overcomes these obstacles, the Cross-Cultural Dementia Screening (CCD), became available. The CCD is a neuropsychological screening to detect cognitive disorders indicative for dementia. This pilot study evaluates the feasibility of the CCD in a geriatric outpatient clinic of a teaching hospital.
Methods: This study was conducted in all, not-Dutch speaking, patients, >55 years, who consulted the outpatient clinic because of cognitive complaints, between December 2014 and March 2015. The geriatrician decided if assessment with the CCD by a well-trained neuropsychologist was needed. Feasibility was tested by timing the duration of the administration of the CCD and by interviewing the psychologist and patients about their experiences.
Results: 7 patients were included, 2 patients completed the CCD, within 40 minutes. The results of the CCD distinguished between MCI and dementia in these patients. In 5 patients the diagnosis of dementia was clinically obvious, further neuropsychological testing had no added value. Administration of the CCD is complex, different tasks need to be done simultaneously, apart from observing the patient. A caregiver is still needed to interpret the goal of the test. Both patients appreciated to be tested in their native language.
Conclusion: These findings suggest that the CCD is suitable to use in elderly immigrants with a diagnostic dilemma concerning cognitive impairments. Motivated patients, involved caregivers and a well-trained neuropsychologist are prerequisites for testing.

P-066
Vitamin D deficiency reduces the clinical response to memantine in older adults presenting with moderate to severe Alzheimer's disease

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Objectives: To determine whether vitamin D status affects clinical response to memantine in elderly with moderate-severe Alzheimer disease.
Methods: We considered 49 community-dwelling older adults, aged ≥70 years, presenting with moderate-severe Alzheimer disease, starting memantine and not receiving vitamin D supplements. The following data were collected: age, gender, baseline functional status (basic and instrumental activities of daily living), baseline 25-hydroxyvitamin D serum concentration (25OHD), baseline and 6-month Mini Mental State Examination score (MMSE). Patients were stratified according to 25OHD in two groups: ≤10 and >10 ng/ml. The primary outcomes compared between two groups were: absolute change of MMSE and proportion of patients who gained at least one point of MMSE at 6-month.
Results: Mean±SD age was 80.6±5.1 years, 10 patients were men and mean±SD MMSE score was 14.3±4.7. The 57.1% of patients presented with 25OHD ≤10 ng/ml. The two groups defined according to 25OHD had similar baseline characteristics. After six months of memantine, absolute change (±SD) of MMSE was −0.6±3.3 in patients with 25OHD ≤10 ng/ml and +2.0±2.9 in those with 25OHD >10 ng/ml ($p = 0.011$). When we considered the proportion of subjects who gained at least one point of MMSE, the respective figures were 35.7% (≤10 ng/ml) and 66.7% (>10 ng/ml; $p = 0.045$). A positive correlation between 25OHD and absolute MMSE change was found: Spearman $r = 0.436$ ($p = 0.001$).
Conclusions: Severe vitamin D deficiency is associated with poor clinical response to memantine in moderate to severe Alzheimer disease. If confirmed these data support vitamin D supplementation during memantine treatment to optimize clinical response.

P-067
Hyponatremia due to SIADH and dementia

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Introduction: Hyponatremia is a very common condition in hospitalized elderly patients and SIADH is one of the most important causes. Vascular dementia has emerged as one of the leading health problems nowadays and is responsible for at least 20% of cases of dementia.
Methods: Case 1: Male, 80 years old, dependent, admitted for convulsive crisis, hyponatremia and pneumonia. Medical history includes vascular encephalopathy with epilepsy and ischemic and hypertensive cardiopathy. Laboratory findings: seric Na 112 meq/L; seric osmolality 234 mOsmol/kg; urinary Na 108 mEq/L. Case 2: Female, 82 years old, admitted for severe

hyponatremia (112 mEq/L). Medical history includes vascular dementia, hypertension and previous pulmonary tuberculosis. The etiologic investigation revealed: urinary Na 110 mEq/L; urinary osmolality 285 mOsmol/kg; seric osmolality 257 mOsmol/kg; ADH 9.2 pcg/mL. In both cases, hypothyroidism, hypocortisolism and iatrogenic causes were excluded and hyponatremia was reversed with fluid restriction. As so, in both cases, SIADH was assumed as the cause of hyponatremia.

Discussion and Conclusion: Both nosologic entities (SIADH and vascular dementia) are relatively common among elderly patients and can have a common cause: a vascular insult. However, SIADH is still being overlooked as the etiology of hyponatremia in detriment of causes such as congestive heart failure, acute kidney injury and drugs.

With this article, we want to point out the association between these two distinct pathologies with the same etiology and the importance of its correct diagnosis and treatment.

P-068
Systematic evaluation of neuropsychiatric symptoms is warranted in Alzheimer's disease – ALSOVA follow-up study

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Objectives: In addition to progressive cognitive and functional deficits, neuropsychiatric symptoms (NPS) are common in Alzheimer's Disease (AD). These behavioural and psychological symptoms may affect well-being of persons with AD and their caregivers more than cognitive problems, but less attention have been paid on them. We monitored the progression of NPS during a five-year follow-up.

Methods: We analyzed the five-year follow-up data of ALSOVA study participants with very mild (CDR-0.5 group) or mild (CDR-1 group) AD at baseline. Of 236 included subjects, 73 participated in the last follow-up visit. NPS was measured with Neuropsychiatric inventory (NPI) and dementia severity with the Clinical Dementia Rating Score (CDR).

Results: Neuropsychiatric symptoms increased along with dementia severity. Persons with very mild AD (CDR 0.5) at baseline exhibited less NPS after three years than CDR-1 group had had at baseline, even they had more severe disease. Statistically significant difference between CDR-0.5 and CDR-1 groups maintained during a five-year follow-up period. We also present the prevalence of each neuropsychiatric symptom in annual visits during a five-year follow-up. Some symptoms increased, while others declined or fluctuated during the follow-up.

Conclusion: Even if the total score of NPS increases during the five-year follow-up after diagnosis, the prevalence of single symptoms vary. Persons who were diagnosed in the early phase of the disease, had less NPS during the first three years of the follow-up than others at baseline. The results emphasize the importance of the early detection of AD, and systematic evaluation of NPS during a follow-up.

P-069
Grip strength and walking speed as indicators of cognitive impairment among older people

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Objectives: To examine the association of grip strength and walking speed with cognitive impairment in community-dwelling older adults.

Methods: Data were from the 2008 Living Profiles of Older People Survey, with 10,106 aged 65 years or older living in South Korea. Cognitive impairment was defined as more than 1.5 SD below the age, gender, and education-specific mean on the Mini-Mental State Examination. Grip strength and walking speed were measured. Multiple logistic regression analysis was performed adjusting for health-related covariates.

Results: Of the participants 25.6% (31.2% of men and 21.9% of women) were cognitively impaired. Compared with women, men exhibited a higher grip strength (28.3±8.9 kg versus 17.2±6.2 kg) and gait speed (4.7±2.6 m/sec versus 5.8±2.8 m/sec). Those with a higher grip strength (odds ratio [OR]: 0.53, 95% confidence interval [CI]: 0.45–0.62 for highest quartile [Q4] versus lowest quartile [Q1]) and faster walking speed (OR = 0.84, 95% CI: 0.71–0.98 for Q4 versus Q1) had a lower likelihood of cognitive impairment (p for trend <0.001). Whereas grip strength was significantly associated with cognitive impairment in both genders, walking speed was significant only in women.

Conclusions: In both men and women, higher grip strength was associated with a lower odds of cognitive impairment. Faster walking speed was, however, significantly associated with a reduced likelihood of cognitive impairment only in women. Grip strength may be a more sensitive indicator than walking speed in identifying older adults who are cognitively impaired.

P-070
Pneumonia and intake problems: inherent to advanced dementia?

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Objectives: We explore how pneumonia and intake problems affect survival in nursing home residents with variable stages of dementia, and whether and how dementia severity is related to pneumonia, intake problems, and mortality.

Methods: Data were collected as part of a longitudinal observational study (DEOLD), with up to 3.5 years of follow-up (28 facilities, 372 nursing home residents). Physicians registered any incident pneumonia and intake problem. Dementia severity was measured semi-annually with the Bedford Alzheimer Nursing Severity-Scale. We examined relationships of dementia severity with mortality, pneumonia and intake problems using joint modelling, Cox models with time dependent covariates and mediation analyses.

Results: Pneumonia occurred in 28% (hazard rate during first year 0.27; 95% CI: 0.20–0.33), and intake problems in 34% of the residents (hazard rate during first year 0.29; 95% CI: 0.23–0.35). The 1-year mortality rate was 0.45 (95% CI: 0.37–0.53). Incident pneumonia and incident intake problems were more strongly associated with mortality risk (Hazard ratio (HR) 4.1; 95% CI: 3.1–5.4 and HR 8.4; 95% CI: 6.4–11, respectively) than dementia severity (HR 1.19; 95% CI: 1.14–1.23). Both incident pneumonia and incident intake problems mediated the relationship between more severe dementia and mortality ($p = 0.026$, $p < 0.001$, respectively).

Conclusions: The 1-year mortality rate was high, and mortality risk, compared to dementia severity, depends more strongly on the development of pneumonia and intake problems. A focus on palliative care needs is therefore important in all stages of dementia, and advance care planning may help patients and families prepare for the future.

P-071

Retrospective study of comorbidities and prescripction in psychogeriatric patients (2012–2014)

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Objectives: Patients admitted in a Psychogeriatric Unit of Long-term care institutions have common characteristics: cognitive impairment, behavioral and psychological symptoms of dementia, balance disorders, polypharmacy and comorbidities. Thus, the purpose was to review the population characteristics in order to establish improvements in our healthcare.
Methods: Retrospective observational study 2012–2014. Data in the electronic medical records were reviewed. Study variables: demographic data, cognitive impairment and tests, comorbidities and drugs at admission. Exclusion criteria: Patients without cognitive impairment, length of stay under 7 days, palliative or previous psychiatric pathology.
Results: Included 85 patients (51% women). Average age 84.27 years old. Mean length of stay 69 days. Mean (MMSE) 15: moderate cognitive impairment. Mean Barthel Index 35: severe-moderate dependence. At admission, 76% polymedicated (8.8 drugs/patient (2–20 drugs)).
Dementia: 38% not completed study, 30.6% Alzheimer, 17.6% Vascular, 4.7% secondary Parkinson disease, others 7.1% and Mixed dementia 1.2%.
Comorbidity: aggression/agitation 85.5%, ischemic heart disease 22.4%, hypertension 31.8%, diabetes 24.7%, chronic obstructive pulmonary disease 4.7%, arrhythmia 23.5%, heart failure 9.4%, cerebrovascular disease 23%, renal impairment 7.1%.
Medication: 88% had psychoactive drugs and 70% more than one. Distribution: 56% antipsychotic, 25% benzodiazepines and 19% antidepressants. Of whom 29% had more than 1 benzodiazepine, 19% more than 1 antidepressant and 44% more than 1 antipsychotic.
Conclusions: Risk reduction should include multidisciplinary team involvement at admission and follow-up. Medication review is an essential component of comprehensive risk assessment.
A guideline has been developed for medications assessment that includes recommendations to discontinue medications, decrease dosage and reduced risk treatments in dementia patients.

P-072

Self-rated and caregiver-rated quality of life in Alzheimer's disease: 5-year prospective ALSOVA cohort study

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Objective: Examine and compare self-and caregiver-rated measures of Quality of Life (QoL) in relation to disease progression in patients with very mild or mild Alzheimer's disease (AD) and at what disease stage patient's ability to respond to QoL questionnaires with or without assistance begins to diminish.
Methods: 236 patients with very mild or mild AD and their family caregivers from three Finnish hospital districts participated in this prospective, longitudinal study with five years of follow-up. Three patient-reported wellbeing and life satisfaction instruments were used to assess health-related QoL – a generic 15D, the Quality of Life in Alzheimer's Disease (QoL-AD), and the Visual Analogue Scale (VAS) as well as one caregiver-rated assessment of patient QoL (QoL-AD). AD severity was evaluated with the Clinical Dementia Rating Scale – Sum of Boxes (CDR-SOB).
Results: All self- and caregiver-rated QoL estimates correlated with AD severity. The self- and caregiver-rated QoL scores began to diverge even with very mild cognitive impairment after CDR-SOB reached 4, value that corresponds with a Mini-Mental State Examination (MMSE) score of 25–30. Patients also began to need assistance in responding to questionnaires at very early stages of AD (CDR-SOB 4–6). Furthermore, their ability to respond to QoL-questionnaires with or without assistance declined after CDR-SOB reached 11 points, value that correlated with an early moderate stage of AD and MMSE 11–20.
Conclusions: It is challenging to assess QoL in patients with AD, because even at very early stages of AD, patients have difficulty comprehending or communicating their health status.

P-073

The prevalence, determinants and long term effects of resilience in family caregivers of persons with dementia. A longitudinal analysis of multiple studies

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Objective: Although caring for a person with dementia can be stressful, some carers appear to experience few negative consequences to their well-being. This could be interpreted as a sign of resilience. This study aimed to (1) examine how many carers demonstrate resilience, (2) identify determinants of their resilience, and (3) test to what extent resilience is related to carers' health outcomes over time.
Methods: Data were derived from four longitudinal studies including 1,311 family caregivers of community-dwelling persons with dementia. Caregivers' resilience was defined as having relatively low levels of care distress in the face of high care demands at baseline. High care demands included caring for a relative with severe dementia, problems with self-care, and/or behavioural problems. Regression analyses were performed to identify significant determinants of resilience and test its relationship with caregivers' health over time.
Results: Between 29 to 61% of all caregivers demonstrated high resilience levels for each adversity. Cohabiting status, patient gender, a good quality of the carer-patient relationship, sense of competence, mastery, use of day care, carer mental health and quality of life were significant determinants of resilience across samples. Baseline resilience was not significantly related to changes in carers' mental health or quality of life over time.
Conclusion: Resilience in carers was present across multiple studies, even if operationalized in different ways. Results point to the importance of the carer (mental) health and the quality of the caregiver-care recipient relationship since these factors emerged frequently as determinants of caregivers' resilience.

P-074

Resilience in informal carers of people with dementia. An exploration of the concept using a Delphi consensus method

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Objectives: Living at home with help from family members will become increasingly common for persons with dementia. Insight in resilience regarding the challenges of being a dementia caregiver might contribute to finding support strategies which enable them to cope in their role. This study aimed to explore the concept of resilience in dementia caregiving and identify its essential features.
Methods: A Delphi consensus study was conducted, consulting a multidisciplinary panel of informal caregivers and experts with relevant professional expertise in dementia or resilience. Panelists rated the relevance of various statements addressing essential components of resilience; 'adversity' and 'successful caregiving' for informal caregivers on a 5-points Likert scale. Based on the median and Inter Quartile Range, the most relevant statements with moderate consensus were proposed in round 2 in which panelists selected up to five statements in order of importance.
Results: Moderate consensus was reached for all statements after two rounds. Patients' behavioural problems and feeling competent as a carer were selected by both caregivers and professionals as essential features of resilience. Furthermore, caregivers emphasised the importance of social support, the quality of the relationship with their relative and spending time together in an enjoyable way, while professionals considered coping skills, experiencing positive aspects of caregiving, and a good quality of life of caregivers most relevant.
Conclusion: The perspectives of informal caregivers and professionals regarding the most important elements of caregiver resilience varied. This should be taken into account when developing more focused and effective support strategies for informal caregivers.

P-075

Relationship of physical function and executive function in elderly people with mild cognitive impairment (MCI)

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Purpose: The aim of this study was examined MCI and the association with attention executive function.
Method: The subjects that average age was 82 years 22 people nursing home residents. The measurement used executive function with Flanker task as cognitive function. And, was performed at 4 second intervals round in random order total 120 enforcement of 60 enforcement both stimulation challenge, were calculated error rate and median reaction time. In addition, it also evaluated the physical function with timed up and go test (TUG) and (IADL) instrumental activities of daily living. A partial correlation make an analyzed between with the relationship and various parameters and was divided into two groups at the cut-off value by TUG.
Result: TUG and grasp power and Flanker task congruent error and was not significantly. However, there were significant differences item when it was a cut-off value of TUG 10.9 seconds or more, there was a significant difference in the IADL ($p < 0.05$).
Conclusion: We have a indicated that the probability to progress to Alzheimer's dementia, especially backward inhibition is thought to be involved when quickly converted to a different problem from the one task performance conditions with 8.5% MCI. It was suggested that there is a possibility of finding a drop in early stage cognitive function by carefully observing the IADL.

P-076

Fortuitous discovery of a syphilitic infection in the elderly: report of a case

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Objectives: Sexually transmitted infections in the elderly remains a taboo subject.
Methods: We illustrate this problem in that clinical case.
Results: A patient of 84 years was addressed to an assessment of cognitive impairment lasting for several months. This was a foreign patient, interrogation was not possible due to a language barrier; autonomy was limited (transfer bed / chair with human help). An additional assessment has been required. Syphilis serology (part of the balance of a demential disease) was positive. Clinical examination of the patient was normal elsewhere.
A review of sexually transmitted diseases was conducted after approval of the patient and the family. Serology HIV 1 and 2, hepatitis B, C, E and *Chlamydia trachomatis* returned to be negative. Confirmation of positive syphilis serology. The FTA assay (IgG + IgM), are respectively 200 and <0.9, compatible with an old syphilitic infection untreated, discovered incidentally. Lumbar puncture with syphilitic research was negative. The husband of the patient had died several years ago, the diagnostic information was given to the family.
Brain MRI finds cortical atrophyl predominant in the frontal lobes associated with stenosis with post-stenotic ectasia of the right middle cerebral bifurcation. Radiological image did not correspond to a syphilitic disease, this confirmed by an infectious view. No syphilitic gums were found.
Cyclins antibiotics were prescribed for 15 days.
Conclusions: Syphilitic disease is a rare entity; its diagnosis is difficult, especially in the elderly.

P-077

Abbreviated Mental Test (AMT) 10; Specificity and sensitivity of the questions

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Introduction: AMT, 10-question test, is a commonly used cognitive screening tool. A score of <8 indicates cognitive impairment. AMT4 (Age, Date of birth, year and place) is a frequently used shorter version.
Objective: To study the specificity and sensitivity of the 10 AMT questions in predicting a score <8.
Methods: AMT4 was performed, in a UK teaching hospital, on all admitted patients 75 years and older, who did not have a diagnosis of dementia and had no delirium. AMT10 was performed for patients who have a wrong answer for any of the AMT4 questions or if the patient (as noticed by patient/relative/carer) had been more forgetful in the past 12 months to the extent that it had significantly affected his/her daily life. Results of consecutive patients over a 17-month period were retrospectively collected and correlation analysis was done.
Results: 1174 admitted patients fulfilled the criteria, 67 patients were excluded because of incomplete data. 1107 patients were included; 675 female, 431 male, 1 not recorded. The mean age was 85.2 years. Results are summarised in the table.
Conclusions: Excluding the questions of the Monarch and Second World War (to minimise the effect of education and culture): Recall of a previously given address, year, counting back from 20 to 1 and

place are the most sensitive questions in the AMT10. Date of birth, recognition of two persons, age and place are the most specific. It may be worthwhile to create other versions of the AMT4.

Question	Sensitivity (%)	Specificity (%)
Recall of a previously given address	92	45
Year	85	72
Date of 2nd WW	69	81
Count back 20 to 1	48	90
Place	33	96
Time	27	94
Age	27	98
Monarch	20	98
DoB	12	100
Recognition of 2 persons	6	100

P-078

Low rates of primary care re-assessment of cognition in older patients identified as at-risk of dementia during hospital admission

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Objectives: Routine dementia screening for older people (>75 years) hospitalised as an emergency is mandatory in England with onward referral for specialist assessment in those identified as at-risk. In the Oxford University Hospitals NHS Trust, patients have the Abbreviated Mental Test (AMT/10) and general practitioners (GPs) are informed on discharge if AMT≤8/10. We undertook an audit to determine actions taken in primary care.
Methods: Questionnaires were sent to GPs on consecutive patients aged >75 years admitted to the acute medicine service at least 6 months earlier who had AMT≤8/10. GPs were asked whether they had coded the low AMT score, seen the patient since discharge, done a cognitive assessment, and made a referral to a memory clinic or diagnosis of a cognitive disorder.
Results: 77/198 questionnaires (39%) were returned. Six patients were deceased and 4 had transferred to another practice. In 53/67 (78%) available surviving patients, the abnormal score was recorded in the primary care notes. 12/67 (18%) had a re-assessment of cognition (GP-Cog, MMSE, 6-item-CIT, informal assessment) after which 6 (9%) were referred to a specialist clinic, 3 (4%) of whom had dementia. Reasons for lack of reassessment included patient unwell/clinically inappropriate (n = 9), patient already diagnosed with dementia (n = 6), no concerns expressed by patient (n = 5), referral/reassessment declined by patient/family (n = 1), with no reason given in the majority.
Conclusions: The primary care record was updated for the majority of patients, but few had a cognitive re-assessment in the community, probably resulting in under-diagnosis of dementia.

P-079

Comprehensive cognitive assessment in centenarians from the Sardinian longevity blue zone

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Objectives: We assessed the neuropsychological (NP) profiles of centenarians living in the village of Villagrande Strisaili, in the long-lived area of Sardinia Island (Italy) which holds the world record for male longevity.
Methods: Cognitive testing was performed by using DSM-5 criteria. Home interviews lasted 2–4 hours per person and were entirely video recorded to allow a close analysis of respondents' performance. Informed consent was obtained from all subjects and their caregivers.
Results: The 6 centenarians tested so far (2 women, 4 men) showed fluent bilingualism (Italian and Sardinian) without language impairment (integrity of pragmatics, phonetics/phonology, semantics). None of the subjects displayed buccofacial or ideomotor apraxia, visual or tactile agnosia. A slightly reduced short- and long-term memory was found in 3 subjects, whereas autobiographical memory was unaffected in all individuals. Visuo-motor abilities were performed rather slowly by all subjects.
Conclusions: Our preliminary results underline the importance of a multidimensional evaluation to assess cognitive functions in individuals who have reached the extreme limit of human life. Overall, the performance obtained with this NP approach allows to better evaluate cognitive status when compared with the traditional MMSE test only. Unbiased assessment, likely, requires more testing sessions in 2–3 days to prevent early occurrence of fatigue resulting in the underestimation of the subject's cognitive performance.

P-080

Cognitive and functional status in older people with chronic bronchopulmonary disorders

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Objective: Aim of the study was to identify cognitive and functional disorders that accompany chronic bronchopulmonary conditions in elderly.
Material and Methods: It is an descriptive and observational study based on functional and cognitive evaluation. A total of 251 older patients with chronic bronchopulmonary disorders have been included and a sample of age-matched 260 patients without bronchopulmonary diseases were controls. Mini Mental Status Examination, Clock-Drawing Test and Geriatric Depression Scale evaluated cognitive function. Barthel ADL scale and Lawton IADL scale were used for functional status.
Results: IADL scores were lower for men with chronic bronchopulmonary conditions as compared to women and control group ($p < 0.01$). Functional impairment was higher in older group: 75 years and over ($p < 0.05$), both on IADL and ADL scale. Cognitive impairment was more severe in women with chronic bronchopulmonary disorders, but also in women without chronic respiratory conditions. This is consistent with a higher prevalence of dementia in women, but this was even higher if chronic bronchopulmonary disorders were present. Nevertheless, masculine gender with chronic bronchopulmonary disorders has a more severe degree of cognitive impairment ($p < 0.01$), even though its general prevalence is lower. Cognitive dysfunction is more prevalent after 75 years if a chronic bronchopulmonary condition is present.
Conclusions: Chronic bronchopulmonary disorders have a significant impact on cognitive and functional status in older people. The negative effect is more intense in older age groups. Cognitive function is more severely affected in women, while functional status is more frequently affected in men, although the degree of impairment is higher in women

P-081

Characteristics of nursing home residents with extreme vocally disruptive behavior: a part of the WAALBED III Study

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Objective: Although vocally disruptive behavior (VDB) is a common feature in nursing home residents with dementia and some have extreme VDB, hardly any literature about the characteristics of these residents is available. The Waalbed III study explores the prevalence and characteristics of this group and the current presentation will show the differences of residents with extreme vocally disruptive behavior as compared to those without extreme VDB.
Methods: Data of four studies in nursing home patients with dementia was combined into one dataset of 2076 residents: the Waalbed-I study (cross-sectional study, n = 1332), the Waalbed-II study (longitudinal; n = 290), the Dementia Care Mapping study (randomized controlled trial; n = 318), and GRIP on challenging behavior (randomized controlled trial; n= 659). Residents with extreme VDB were defined as those having a score of 6 or 7 on the CMAI-items 'screaming' and/or 'making strange noises' compared to residents without VDB, i.e. having a CMAI total score of 1 on both items.
Results: In the extreme VDB group (n = 239), mean age was lower (81.5 years vs. 82.9, p = 0.01), duration of stay was longer (34.2 months vs. 26.6, p = 0.00) and severity of dementia was different (p = 0.00), with more residents in Global Deterioration Scale (GDS) stage 7 and less in GDS 4, 5 and 6 compared to residents without VDB. The prevalence of psychotropic drug use was higher in the extreme VDB group (73.7% vs. 59.8%, p = 0.00).
Conclusion: When comparing a group of nursing home residents with dementia having extreme VDB to a group without VDB several important differences emerge.

P-082

Validity of consent in patients over 75 on an acute general medicine unit undergoing procedures and contrast imaging

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Objectives: UK guidelines recommend routine cognitive screening for older people (>75 years) admitted as an emergency to the general hospital. These data should inform the need for capacity assessment in patients undergoing procedures for which formal written informed consent or discussion of risk/benefit is required. We therefore undertook an audit to determine the number of older patients undergoing a procedure who had a cognitive test and the nature of the consent process in those with cognitive impairment.
Methods: A consecutive sample of notes from current acute medicine patients aged >75 years were reviewed over two days in February 2015. The number undergoing procedures requiring consent or contrast CT scans was recorded together with the abbreviated mental test score (AMTS/10, AMTS <8 = abnormal) and consent documentation.
Results: Among 105 patients, 30 underwent procedures and/or contrast CT scans. 21/30 had a documented AMTS, 11 of which were low. Twelve patients underwent procedures; 5 of these had abnormal AMTS but standard consent, with no documentation of capacity. Documented consent was missing in 2 cases (AMTS normal n = 1; AMTS missing n = 1). Discussion of the risk of acute kidney injury was not documented prior to any of 26 contrast scans in 22 patients, of whom 7 had low AMTS and 8 had no AMTS documented. Two patients had a subsequent eGFR reduction of ≥25%.
Conclusion: Although a majority of older acute medicine patients undergoing procedures had had a cognitive test, these results were not used to inform the consent process, resulting in suboptimal consent in many cases.

P-083

Effects of acetylcholinesterase inhibitors on nutritional status in elderly patients with dementia: a 6 month follow-up study

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Objectives: Nutritional status is one of the factors that affect disease progression, morbidity and mortality in elderly patients with dementia. The present study aimed to evaluate effect of acetylcholinesterase inhibitor (AchEI) therapy on nutritional status and food intake in the elderly.
Methods: Newly diagnosed patients with dementia, who underwent comprehensive geriatric assessment (CGA) and followed at regular intervals, were retrospectively evaluated. A total of 116 patients, who began to receive AchEI therapy and have completed 6-month follow-up period under this treatment, were enrolled in the study. Socio-demographic characteristics and data on comorbidity, polypharmacy, cognitive function, depression, activities of daily living and nutritional status (weight, Body Mass Index (BMI), Mini Nutritional Assessment (MNA)-Short Form) were recorded.
Results: The mean age of the patients was 78.0±8.9 years. There was no significant difference between baseline and 6-month BMI, weight and MNA scores of dementia patients that received AchEI therapy (p > 0.05). With regard to the relation between changes in BMI, weight and MNA on the 6th month versus baseline, and donepezil, rivastigmine and galantamine therapies, no difference was determined (p > 0.05). However, a change in favor of improvement was observed in food intake (kappa: 0.377). It was determined that donepezil and galantamine therapies did not significantly influence food intake, but rivastigmine patch did positively (p < 0.05).
Conclusion: AchEI therapy has no unfavorable effect on nutritional status in elderly, but food intake is likely to be improved in those treated with rivastigmine patch.

P-084

Relationship between the Four Square Step Test and cognitive function in community-dwelling older women

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Introduction: Previous research has reported that the Four Square Step Test (FSST) was easily to scored, quickly administered and required little space and no special equipment as a dynamic balance test. At the same time, the FSST is demanding remembering sequence. Thus, the FSST may be associated with cognitive function and may be useful to assess it in older adults. The purpose of this study was to examine the relationship between the FSST and cognitive function in community-dwelling older women.
Methods: Seventy-three community-dwelling older women (mean age of 72.4±4.9 years) performed the FSST and cognitive function testing using Test Your Memory (TYM). The FSST was measured not only by completed time; step start time for each square was also calculated by recorded video camera. Pearson's correlation coefficient was used to investigate the relationship between the

FSST and cognitive function. Multiple linear regression analysis was used to examine whether the FSST can predict cognitive function.
Results: TYM showed significant correlations with step start time ($r = -0.27$, $P = 0.023$) rather than completed time ($r = -0.16$, $P = 0.183$). A multiple regression analysis revealed that TYM was also associated with step start time ($\beta = -0.257$, $P = 0.019$), adjusted for education.
Conclusion: These results suggest step start time may slow in conjunction with cognitive function for older women. The FSST may contribute to the evaluation of cognitive status in community-dwelling older women.

P-085
A variety of cognitive activities in a single lesson leads to improved cognitive functions in MCI patients

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Objectives: There are different strategies of cognitive training. Many medical reports confirms that multi domain cognitive training is effective in improving cognitive functions in patients with Mild Cognitive Impairment (MCI). In strategies of cognitive training is often used lesson "mono activities" where activities do not vary during lesson. The purpose of our study is to determine if cognitive activities vary during a single lesson brings the best results in improving cognitive functions.
Methods: We created two groups each of 36 participants aged ≥73 years, who scored between 24 and 26 on the Mini-Mental State Examination (MMSE). We established the four cognitive activities. Group A used these activities one at a time per lesson; Group B varied four cognitive activities chosen by us during single lesson. It was proposed to them to perform an hour of activity twice a week for 16 weeks.
Results: All participants in both training groups showed improvement in all tests. The average values obtained before and after treatment in the following tests in each group: Group A: Digit Span Forward: 2.7–3.3; Rey Auditory Verbal Learning Test (first attempt): 3.8–5.1; TMT-A: 86.6–75.4. Group B: Digit Span Forward: 2.9–4.3; Rey Auditory Verbal Learning Test (first attempt): 3.9–5.7; TMT-A: 84.1–70.5. Group B participants showed significant improvement on MMSE (mean 1.91, $p < 0.001$) compared to Group A (mean 1.18, $p = 0.07$).
Conclusion: A variety of cognitive activities inside a single lesson leads to greater improvement in cognitive functions in patients with Mild Cognitive Impairment.

P-086
Executive dysfunction and falls. The Toledo study and healthy aging

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Introduction: The association of falls and dementia is well known. Nevertheless, the association between executive dysfunction and falls have not been evaluated.
Our hypothesis is that executive dysfunction, assess with Luria and Go-no-Go test is associate with recurrent falls.
Methods: We used data from the Toledo Study for Healthy Aging a prospective Spanish cohort study.
Recurrent falls was defined as two or more falls in the past year. The motor cortex function was assessed by the Luria's test and Go-no-Go test. Mild motor cortex dysfunction was stated as the disability to complete at least 3 series by himself for the Luria's test and do 3 or more mistakes for the Go-no-Go test.
Two logistic regression models were used to assess the relationship between recurrent falls and each of the two frontal tests using BMI, age and sex as possible confounders.
Results: 1744 subjects, 771 (44.2%) men and 973 (55.8%) women completed the psychological and nursing interviews.
After adjustment by confounders, both test were significant risk factors for recurrent falls, OR (95% CI), 1.650 (1.131–2.408) and 1.692 (1.139–2.515) for the Luria's test and Go-no-Go test, respectively.
Conclusions: Executive dysfunction measured by Luria and Go-no-Go test are independent risk factors of recurrent falls. Further studies, including longitudinal analysis, should evaluate these findings.

P-087
The Balance and the Mind study: baseline data

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Objectives: The purpose of the study was to establish falls risk factors for people with mild cognitive impairment and mild dementia.
Methods: Survey of 76 people recruited from Memory Clinics (n = 56), Falls Services (n = 12), Community Geriatricians (n = 4), Cognitive Stimulation Therapy groups (n = 2), and a Rehabilitation Unit (n = 2). The assessments included falls risk, the Falls Efficacy Scale International (FESi), the Montreal Cognitive Assessment (MoCA) as well as neuropsychological tests.
Results: Mean age was 80.9 years (SD 6.5, age range: 67–94 years). The sample included 45% men, 98% had a white ethnic background and 48% lived alone. Mean MoCA score was 20.95 (SD 3.6), and 26 people (34%) had between 1 and 24 falls (mean 3.04; SD 4.65). Regarding any fall participants had in the past, 41% sustained an injury, 36% needed medical attention and 32% had been admitted to hospital as a consequence of a fall.
The mean FESi score was 27 (SD 10.6) with 59% scoring >23, which is associated with a high fear of falling. The mean Timed Up and Go score was 16.0 seconds with 44% scoring ≥13.5 seconds, which is associated with high risk of falling. The mean Berg Balance score was 46 with 28% scoring ≤40, which is associated with a 100% chance of future falls. All assessments were acceptable to the particpants.
Conclusions: The proportion of falls and falls risk factors was quite high in this population, which reflects findings from similar studies. Specialized falls prevention intervention should take these factors into account.

P-088
Recruitment of people with dementia in primary care – experiences from the HIND study

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Objectives: A purpose of the Hypertension in Dementia feasibility study was to explore recruitment of people with dementia and essential hypertension in primary care practices to prepare a withdrawal study of their antihypertensive medication.
Methods: Primary care practices were invited by phone to support the study, which would entail screening their databases to identify people with diagnoses of both dementia and essential hypertension, and sending out letters to these people asking them to indicate their willingness participate in the feasibility withdrawal study. Practice

managers or GPs from practices that declined to support the study were asked to give their reasons.

Results: All primary care practices in Nottingham and Nottinghamshire were contacted (n = 145). Of those, 12 (8%) practices agreed to support the study. Between them they identified and sent out a total of 249 letters to potential participants. Of these 19 (7%) people responded and only 6 (2%) met the eligibility criteria for withdrawing antihypertensive medication. 80/133 (60%) non responding practices gave reasons for why they did not support the study: the most common responses were that 31 (39%) were 'too busy', staff changes or short staffed were cited in 11 (14%) and "too time consuming" was cited in 7 (9%).

Conclusions: Recruitment of a sufficiently large and representative population for a larger trial would not be feasible in primary care practices using these methods, due to the high workload in UK primary care.

P-089
Is the Mini-Cog the way forward in cognitive testing?

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Objectives: To evaluate the value of Abbreviated Mental Test Score (AMTS), Montreal Cognitive Assessment (MOCA) and Mini-Cog in screening for dementia in secondary care, and to assess which test correlated best with a bedside geriatric assessment.

Methods: 40 elderly care inpatients in a London hospital underwent AMTS, MOCA and a Mini-Cog assessment. A consultant geriatrician also provided a 2-minute bedside assessment. Fisher's test was applied to test for statistical significance between groups. Exclusion criteria: delirium, impaired speech, sight or writing. 40 controls subjects underwent a MOCA.

Results: 35% patients had an abnormal AMTS. All 40 patients had a MOCA ≤26 (range 2–25). All patients with an abnormal AMTS scored abnormally in all assessments. Of those with a normal AMTS, 69% had abnormal Mini-Cog and 46% had an abnormal bedside assessment.

Of 40 controls, 42% had an abnormal MOCA.

83% of the patients showed correlation between the Mini-Cog and the bedside geriatric assessment. There was a significant difference in the bedside assessment results for patients with normal and abnormal clock draw, ($p < 0.001$) and normal and abnormal recall ($p < 0.001$).

Discussion: The AMTS tends to over-score patients while the MOCA under-scores. The Mini-Cog correlates best with bedside geriatric assessment, is quicker and bypasses cultural barriers. Therefore the MOCA and AMTS could be replaced by the Mini-Cog test when screening for dementia in hospitals.

P-090
Should the treatment of hypertension in people with coexisting dementia be attenuated?

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Objectives: The benefits of antihypertensives may be unchanged in people with dementia (PwD), but the incidence of antihypertensive side effects (ASEs) may be greater and so the risk-benefit ratio for antihypertensives in PwD is less clear. By examining the size and nature of potential risks this study aims to inform decision making in this group.

Methods: 181 participants with hypertension and dementia were recruited from seven sites in the UK via memory clinics and GP practices to an observational cohort study. After baseline assessment participants were followed up at monthly intervals for six months.

Results: Data from 118 participants were available for interim analysis: 64 (54%) female; mean age 81; residence: 99 (84%) own homes, 19 (16%) institutional care; mean MMSE 21/30. The majority (94, 80%) were taking ≥1 antihypertensive. 104 (88%) were taking 4 or more medications, 23 (19%) 10 or more. Over three months 37 (31%) saw the district nurse, 72 (61%) saw their general practitioner, and 11 (9%) had a hospital admission. Those taking antihypertensives were less likely to report a fall in the preceding three months ($p = 0.009$) and during three months of follow up reported less ankle-swelling ($p = 0.023$), anxiety/nervousness ($p = 0.005$) and MI ($p = 0.042$).

Conclusions: We found no evidence that participants given antihypertensives had a higher incidence of potential ASEs than participants not given antihypertensives. On the basis of these data there is no reason to think that ASEs in PwD will outweigh the potential benefits of treatment, and hence no reason to modify the treatment of hypertension in PwD.

P-091
Relationships among chronic musculoskeletal pain, cognitive status and body awareness in older adults

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Objectives: Chronic musculoskeletal pain (CMSP) is a common health problem and it often leads disabling condition among older adults. In addition to this, it affects cognition and body awareness. The aim was to show the relations among chronic musculoskeletal pain, cognitive status and body awareness in older adults.

Methods: The sample consisted of 311 older adults (134 females; 177 males) aged 65 and over (mean age; 72.27±6.42 years) living in their own homes. 263 (84.6%) reported musculoskeletal pain (234 with lower extremity pain; 207 with spinal pain; 138 with upper extremities pain). Pain intensity was evaluated using Visual Analog Scale (VAS). Cognition (Hodkinson's Abbreviated Mental Test-HAMT) and body awareness (Body Awareness Questionnaire-BAQ) were also evaluated.

Results: The mean CMSP VAS score was 6.13±1.6 cm. The mean HAMT score was 8.3±1.6. The mean BAQ score was 81.5±19.3. While a significant positive mild relationship between cognitive status and body awareness was found ($r = 0.392$; $p = 0.0001$), there was a significant negative poor relationship between cognitive status and CMSP score ($r = -0.240$; $p = 0.0001$). On the other hand, a significant negative poor relationship between body awareness and CMSP scores ($r = -0.249$; $p = 0.0001$).

Conclusions: The results indicate that pain intensity, cognitive status, and body awareness affect each other from poor to mild in older adults.

The study did not have any financial support.

P-092
Integrated one-stop cognitive assessment clinic for elderly

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Introduction: Patient-centred care planning is vital to cognitively impaired patients. Multidisciplinary approach ensures continuity of care and unification of care goals. In a district hospital in Hong Kong, an integrated cognitive assessment clinic was established in 2013, operating with a novel collaborative model of providing a one-stop service to cognitively impaired patients.

Objective: To launch an integrated one-stop service for cognitively impaired patients by an interdisciplinary team

Methodology: An interdisciplinary team comprising geriatricians, nurses with special interest in dementia care, occupational therapists and physiotherapists was established in 2013.
In the first consultation patients are assessed on various domains by members of the team. Related investigations including structural imaging are performed beforehand. Geriatricians are responsible to establish the clinical diagnosis. In the case conference conducted at the end of each clinic session, care planning and goals are aligned and formulated. Anti-dementia medications were prescribed to suitable patients. Cognitive rehabilitation including mind-body exercise was arranged whenever appropriate. Community resources were introduced and recommended so that patients and caregivers could receive maximal community support.
Results: In the recent 12 months, a total of 124 cases were attended. 71 (57.2%) were diagnosed dementia and 47 (37.9%) were mild cognitive impairment. Among those with dementia, 47 (37.9%), 17 (13.7%) and 7 patients (5.6%) were respectively graded as mild, moderate and severe. 31 patients (43.7%) received anti-dementia medications, 62 patients (50%) completed cognitive rehabilitative training, and 35 patients were recruited for Mind-Body exercise programme.
Conclusion: An integrated one-stop cognitive assessment clinic could provide holistic, people-centred framework in managing patients with cognitive impairment.

Comorbidity and multimorbidity

P-093
Impact of contact isolation on life-quality in elderly inpatients colonized by multidrug-resistant organisms

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Objectives: Caring for patients colonized with multidrug-resistant organisms (MRO) rises concerns about burden for life-quality contributing to prolonged hospital treatment and impaired outcome.
Methods: 50 elderly inpatients (age 65years and over) with proven colonization and 50 controls matched for age, gender and functional limitations were recruited from acute care wards of a large university hospital. Comprehensive geriatric assessment was performed and quality of life was assessed by the SF-12 instrument.
Results: Median age in the case cohort was 75 years (controls 76years). With the exception of hand-grip strength (16 kg in case cohort vs. 21 kg in controls) there were no significant differences in geriatric assessment between both groups. Surprisingly there were also no significant differences in quality of life between both groups concerning the two subscales in SF-12: SF-12s 30.88 in case groups vs. 33.61 in controls; SF-12p 46.38 in case group vs. 47.03 in controls. Subsequent multivariate analysis in all patients revealed also no independent and significant influence of contact-isolation on SF-12 scores. Pain-level remained the only significant factor with regard to the subscale SF-12s (somatic) and depression with regard to the subscale SF-12p (psychological).
Conclusion: Although contact-isolation is inconvenient and may leave the patient depressed and with reduced level of life-quality, this could not be proven in this case-control study with elderly inpatients. Main determining factors in this setting were pain-control and depression. However, these results should not be taken to omit improvements in order to alleviate the consequences of contact isolation for patients from multimodal treatment concepts.

P-094
Venous thromboembolism in elderly people is a matter of multimorbidity

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Objectives: Venous thromboembolism (VTE) occurs across generations. With increasing age, the incidence of VTE increases exponentially. By analysis of dispensary patients with VTE, we tried to determine the difference between the incidence of primary and secondary risk factors in young adults and elderly people.
Methods: We observed risk factors in 219 (21–90 years) patients of Outpatient Department of Angiology with VTE: family history of VTE, malignancy, trauma, surgery, chemotherapy, radiotherapy, travelling, immobilisation, inflammatory disease and all patients underwent genetic analyses of inherited thrombophilia.
Results: 21.6% of seniors and 13.3% of young adults suffered from pulmonary embolism (Fisher's exact test with $p = 0.476$). We identified recurrence of VTE in 52.3% of elderly and 28.9% of young adults ($p = 0.018$). 42.2% of young adults and 28.4% of elderly in our study group had more important thrombophilia mutations ($p = 0.336$). 11.4% of elderly and 22.2% of young adults reported VTE in relatives ($p = 0.113$). 34.1% elderly had malignant disease but only 4.4% of young adults, difference is statistically significant ($p < 0.000$). 17.0% of elderly and 24.4% of young adults suffered from VTE in the context with trauma ($p = 0.589$). 11.4% of elderly and 8.9% of young adults developed a perioperative VTE ($p = 0.575$). 4.4% of young adults and 4.5% of elderly developed VTE regarding to travelling, difference is not statistically significant ($P = 0.426$).
Conclusions: The presence of secondary risk factors in the elderly is more pronounced than in young adults. This fact strongly modifies management of VTE but same way appears to be a challenge for prevention of VTE.

P-095
Self-perception of general and oral health status and importance of oral health among older people admitted to a medical ward of a general hospital

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Objectives: Although poor oral health status (OHS) in older people is associated to physical and cognitive impairment and higher mortality, older people tend to underestimate its importance considering teeth loss, caries and periodontal disease inevitable consequences of ageing. Our aim was to evaluate self-perception of OHS of patients ≥75 years admitted in a medical ward, comparing to self-perception of general health status (GHS).
Methods: Cross-sectional study during 1 day. Clinical and social characterization, including cognition, functional and nutritional status assessment. Dental examination and questionnaire about GHS and OHS. Statistical analysis by SPSS.
Results: 100 patients were included, average age 83.7 years, 63% males, average Cumulative Illness Rating Scale for Geriatrics 11.2. Average Barthel score at admission 63.6. Prevalence of cognitive impairment and malnutrition were 31% and 70%, respectively. Average number of teeth was 6.7 ± 8.4 $(0, 33)$, 36% used oral prosthesis. Prevalence of total edentulism, caries and periodontal disease were 46%, 24% and 21%, respectively. 27% of patients considered their OHS better than age-matched subjects,

8% the same and 11% worse. 21% of patients considered their GHS better than age-matched subjects, 9% the same and 22% worse. Considering the principal role of dentition 57% mentioned mastication, 7% aesthetics and 20% weren't able to mention any function.
Conclusions: Despite poor OHS, few patients considered their OHS worse than other age-matched subjects, while the double considered that GHS was worse. A significant proportion of elderly failed to recognize any function to denture, possibly explaining poor OHS.

P-096
Patients with Parkinson's Disease and Lewy Body Dementia are at high risk of developing complications during admission for hip fracture

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Objective: Patients with Parkinson's disease (PD) are at risk of falling and have an increased risk of complications and prolonged recovery during hospitalization. The aim of this study is to investigate the rate of complications and recovery related to a hip fracture.
Methods: All patients with PD and Dementia with Lewy bodies (DLB) admitted to the department of orthopedics, Copenhagen University Hospital, Herlev with a hip fracture 18 months from January 2013 were evaluated. Data regarding duration of admission, complications, timing of administration of anti-parkinson medication, and level of mobility at discharge were obtained from patient files. Data were compared to patients admitted with a hip fracture and COPD.
Results: 27 patients with PD or DLB, and 46 patients with COPD were registered. Mean age of PD/DLB 77.7 years, COPD 80.7 years ($p < 0.05$). Comorbidity score using Charlson index was for PD/LBD 0.9, and COPD 2.6 ($p < 0.05$). PD/LBD were admitted for 12.2 days; COPD for 10.2 days (ns). 31% of PD/DLB were treated for delirium, 13% of COPD (ns). Infections were treated in 55% of PD/LPD, and in 69% with COPD (ns). 66.7% of PD/DLB were discharged without being ambulatory, 58% of COPD (ns). <50% of anti-PD medication were given within $\pm$1 hour of schedule.
Conclusions: Patients with PD/LBD are at high risk of developing complications during admission for hip fracture, and their course and recovery after surgery is equivalent to that of patients with COPD, even though PD/LBD are significantly younger and have a significant lower degree of comorbidity.

P-097
Factors associated with comorbidity in geriatric inpatients

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Objectives:
1. To quantify of comorbidity in inpatients in our unit.
2. To evaluate the typology of the associated factors.
3. To analyse the relationship between dependency and comorbidity in our patients.

Methods: This is a descriptive, prospective, transversal study. Patients with inpatient care from June to November 2014. Analysed variables: sociodemographic, medical background (MB), ufunctional assessment (Barthel index, IB), comorbidity (Charlson Index, IC), biochemical parameters, and inpatient death. Statistical analysis: SPSS.
Results: 318 patients. 68.2% female. Admission from emergencies: 84%. Programmed admission: 16%. Mean age 85.89 (89.6% over 80 years old). Charlson Index in admission (median 3): IC 0 13.5%. IC 1–2 39.6%, IC 3–4 28.3% and IC ≥5 18.6%. SPMSQ: 5.22. BI in admission: median50; BI in discharge: median 25. BI in admission <45 (53.1); BI in discharge <45 53.3%. Mortality: 16%.
We found significant differences between CI and origin (emergency/programmed) <0.013; MB cardiovascular <0.014; MB pulmonary <0.000; MB nephro-urological <0.000; former renal disease <0.000; MDRD GFR in admission <0.016; creatinine <0.012; anaemia <0.028 and mortality <0.020 and previous BI <0.000.
Conclusions: The comorbidity among the elderly inpatients in our service is high in an elevated proportion of the sample. There is significant association between high comorbidity and a worse functional situation. The Charlson Index in our patients predicts an early mortality. High morbidity is associated with other fragility predictors such as functional loss and anaemia.

P-098
Long term fracture risk in elderly with a normal or osteopenic bone mineral density

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Objectives: The aim of this study is to examine the ten year fracture risk in patients aged 70 years and older with a T value >−2.5 on the dual-energy x-ray absorptiometry scan.
Methods: A comprehensive literature search in Medline via PubMed and Embase was conducted using synonyms for domain, i.e. elderly, determinant, i.e. DXA, and outcome, i.e. fracture risk. Absolute risks (AR) and 95% confidence intervals (95% CI) were calculated for all included studies for both the group with osteoporosis and the group without osteoporosis.
Results: 566 articles were identified. After full-text screening, nine studies were critically appraised. Five studies were included in the final results. The absolute risk of fracture for patients with a DXA T value >−2.5 ranged from 8.7 (95% CI 7.8–9.5) to 19.8 (17.9–21.7) in three to ten years. For patients with osteoporosis the absolute risk of fracture ranged from 18.6 (95% CI 16.3–21.0) to 44.0 (95% CI 39.6–48.4).
Conclusions: Although the risk of fracture is higher in patients with osteoporosis, the risk of fracture in patients with normal or osteopenic bone mineral density should not be ignored.

P-099
Trends in incidence of *Clostridium difficile* enterocolitis in elderly – futile struggle or victory?

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Age is one of the risk factors for development of *Clostridium difficile* enterocolitis (CE). In year 2008 92.86% pacients with positive antigen and toxin and 86.36% in 2014 were in geriatric age.
We compared the incidence of (CE) at the Department of long term ill in the years 2008 and 2014. We tested the stool specimens for CD antigen and toxin in every patient with diarrhea.
From 275 hospitalised patients in 2008 in 28 (10.2%) the toxin of CD was positive and the diagnosis CE was confirmed. Bronchopneumonia and urinary tract infections were the most frequent reasons for antibiotic therapy. Ciprofloxacin was the most used first line antibiotic in patients with afterwards determined CE. Combined antibiotic therapy was a risk factor for resistance to metronidazol. From 258 patients hospitalized in 2014, 58 had diarrhea. In 22 patients (8.5%) were antigen (GDH) and

toxin positive, in 24 patients (9.3%) was antigen positive and toxin negative. Ciprofloxacin was still the most used antibiotic in departments of previous hospitalisation and our's too. Only 48% patients with diarrhea used probiotics during hospitalization on previous departments, but up to 95% on our. We analysed several other risk factors.
The most used antibiotics didn't change over the years. The occurrence of CE with positivity of toxin seems to decrease from 10.2% to 8.5% (not statistically significant, p = 0.554), this slight decrease encourages us to stay vigilant. Further changes in rational antibiotic prescription, use of probiotics and strict hygienic measures have to be done consistently.

P-100
Special features of deep venous thrombosis complicated pulmonary embolism topics in the elderly

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Introduction: Deep vein thrombosis (DVT) is a frequent clinical situation at the origin of morbidity and mortality still too high. Since it may be complicated by pulmonary embolism can be life-threatening.
Our goal is to study the clinical, paraclinical and complicated evolutionary characteristics PST pulmonary embolism (DVT/PE) in the elderly.
Materials: We performed a retrospective descriptive study of patient records hospitalized for DVT/PE over a period of 18 years. We compared patients with a DVT/PE (G1) versus those who had not had pulmonary embolism complicating PST (G2).
Results: We collected 424 cases of DVT. The DVT/PE (G1) were observed in 101 patients. They were 51 women and 50 men. Uncomplicated DVT pulmonary embolism (G2) were observed in 323 patients. They were 200 women and 123 men. On thrombotic risk factors, there was no significant difference between the 2 groups. The frequency of recurrence were similar between the 2 groups. There was also no significant etiological difference between the 2 groups. Indeed, neoplasia was observed in 15patients G1 and 62 patients in G2 (p = 0.9). Thrombophilia, Behçet's disease and hyperhomocysteinemia was observed respectively in 2, 3 and 8 patients in group G1 versus 6, 4 and 13 patients in G2. The idiopathic DVT in 38 patients remained in G1 and 86 patients in G2 (p = 0.6).
Conclusion: Pulmonary embolism is a common and serious complication of DVT hence the interest to know well the risk factors predisposing to this complication

P-101
The etiologies of deep venous thrombosis in the elderly

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Introduction: Deep vein thrombosis is common clinical situation requiring etiological investigation because it may be the first manifestation of an underlying disease. Indeed, thromboembolic disease is multifactorial and multigenic, the etiological investigation differs depending on the age and ground.
Materials and Methods: We performed a retrospective, descriptive and analytical in a series of 424 cases of venous thrombosis, conducted internal medicine department of the University Hospital Rabta Tunis over 18 years (1997–2015). The objective of our study is to investigate the different etiologies of venous thromboembolism in the elderly.
Results: It was 424 patients, mean age 65.5 years including 223 women and 201 men. All patients were hospitalized for etiological investigation with an average stay of 10, 31 days and an etiological diagnosis time of 6.125 months. The main risk factors for thromboembolism in the elderly were smoking and bed rest in respectively 32.85% and 29.78%. The DVT was paraneoplastic in 77 cases of which 66 were revealing. The hyperhomocysteinemia was responsible for deep vein thrombosis in 4.95%. Among our patients, seven had a Behcet's disease and eight had thrombophilia. The DVT remains undetermined etiology in 29.24%.
Conclusion: The variety of etiologies it difficult diagnostic algorithm. Nevertheless, apart from the obvious iatrogenic causes a complementary examination must be performed as venous thrombosis are in most cases revealing underlying neoplasia.

P-102
Osteoarticular manifestation of Horton Disease (Giant-cell arteritis, GCA): report of 47 cases

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Introduction: Horton disease is granulomatouse panrarteritis. The common rheumatic manifestation is polymyalgia rheumatic (PMR) observed in 47% of cases. The other joint manifestations are less common
Our study was aimed at determining, clinical, therapeutic profile of osteoarticular manifestation during Horton disease
Patients: A retrospective study of the all cases of Horton disease during a period 20 years. Horton's disease diagnosed according to American College of Rheumatology criteria.
Results: 80 Cases with a Horton disease were observed, these were 38 males and 42 females with mean age of 70 years. Osteoarticular manifestations were seen in 47 of patients, including 23 females and 24 males. They inaugurated the clinical picture in 26 cases. The circumstances of exploration were headache in 75 cases, ocular signs in 30 cases, general signs in 19 cases. Typical medical picture of polymialgia rheumatica was presented in 35 of cases, 4 of them were presented with isolated involvement of shoulder girdle. PMR presented with the focal neurologic signs in 18 cases. Neck pain was observed in 38 of cases, and myalgia in 15 of cases.
Temporal artery biopsy was done for all of the patients. It was positive in 38 patients.
Biologic inflammatory syndrome was seen in 58 cases. Corticosteroids were prescribed at the dose of 0.5 to 1 mg / kg / day. methotrexate has been used in combination with corticosteroids in 19 patients.
The evolution of the osteoarticular manifestations in Horton disease was marked by the disappearance of clinical signs with mean period of 22 days.

P-103
Giant cell arteritis in Tunisia: demographic, clinical and laboratory characteristics: analysis of 90 patients

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Purpose: Giant-cell arteritis is an immune-mediated diesease characterized by granulomatous infiltrates in the wal of médium-size and large arteritis To study the demographic,clinical and laboratory characteristics of temporal arteritis Tunisian patients, we performed a retrospective review of all cases diagnosed as temporal arteritis in in a department of internal Medecine in over a 30-years (1986–2015). All patients fulfilled the criteria of the American College of Rhumatology.

Results: 90 patients with temporal arteritis were retrospectively enrolled. There were 60 men and 30 women with an averge age at the onset disease of 76 years.
Unilateral biopsies of temporal artery were performed in all patients; bilateral biopsies were performed in 5 patients. 75 patients was classified as temporal arteritis, they had transmural cellular in 40 cases. Fragmentation of internal elastic lamina was seen in 45 cases. Giant cells were seen in 35 cases, fibrinoid necosis in 12 cases and thrombolization in 12 cases. The mean values of Westergen erythrocyte sedimentation rate (ESR) were found at 95 mm/hour, the mean values of C-reactive protein were found at100 mg/l and The mean values of concentration of alpha 2 globulins, at 14gr/l. anemia was found in 35% of patients. Eleved serum levels of liver enzymes, gamma glutamyl transferase and alkaline phosphatase were found in 26%, 45% and 20% respectively.

P-104
The prevention of fragility fractures in patients with type 2 diabetes mellitus

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Aims: Evaluate Lifestyle in patients with type 2 diabetes mellitus, controlled primary health care for prevent fragility fractures.
Methodology: The authors conducted a cross sectional study applied to selected patients [n = 104, 52 men (M) and 52 women (W)] chosen by non-probability sampling in a row, among type 2 diabetic patients attending our clinic included in the Service Care for diabetic patients Portfolio Services Primary Sacyl. Is evaluated: Calcium diet and physical exercise, as protective factors for osteoporosis and fragility fractures. Data are collected on a Excel spreadsheet and analyzed using SPSS 9.0 for Windows.
Results:
1. T2DM age: 90–<95 (1M, 0W), 85–<90 (1M, 2W), 80–<85 (7M, 5W), 75–<80 (7M, 7W), 70–<75 (4M, 11W), 65–<70 (10M, 10W), 60–<65 (16M, 9W), 55–<60 (2M, 3W), 50–<55 (4M, 5W).
2. Consumption of daily milk and dairy products:
   – 76% T2DM: 1–2 times a day.
   – 14.1% T2DM: >3 times a day.
   – 9.9% T2DM: Never
3. Daily physical activity: Sitting (29.80%), standing (32.69%), walking (32.69%), 21 men, 29 women).
4. Practice sport: yes (11.53%), no (88.47%).

Conclusions: It is concluded that diabetic patients studied, 76% of patients consume only one or two servings of dairy and 88.47% do not practice sports and about 30% sitting most of the day.
From these results a *clinical improvement plan* for prevention of fragility fractures, program Health Education states:
1. Starting a regular exercise program,
2. A balanced diet rich in calcium
3. Making home safe from the point of view of lighting, unobstructed floor, stairs with handrails, toilets, smoke detector
4. Use cane or walker if you need
5. Review newspaper view
6. That your doctor check pharmacological treatments.

And secondly conducting multidisciplinary preventive activities from our Primary and Specialty Care.

P-105
Clinical and functional features in pluripathological patients in primary health care

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Objectives: This study was carried out with the aim of establishing future strategies for better treating of pluripathological patients (PP) by determining the prevalence, clinical and functional features in Primary Health Care setting.
Methods: Cross-sectional study. 865 patients with chronic diseases in home care programmes in Almería (Spain). Data were collected on the state of the patients' health (primary disabling process, initial and final functional assessment and Barthel Index); details of physiotherapy treatment, and number of sessions. The rehabilitative methods were multidimensional, and individually designed and implemented. The goal of the home visit program was to support and motivate individual coping and well-being through physical exercises and psychological and social activation.
Results: A total of 865 patients were included, the mean age was 78 years and 65% were female. Inmobilization effects were the most prevalent cause (29%); stroke (E category, 13.7%) and chronic obstructive pulmonary disease (2.6%). The two main variables that determine that one is a multiple disease patient are age and disease causing the admission at rehabilitation program. A major goal of rehabilitation programs designed for elderly persons is to assist them to manage in activities of daily living without assistance (for kinesiotherapy and carer education).The mean number of sessions was 13.
Conclusions: The supportive home visit program was feasible and improved the functional ability and delay the need for institutional care among them. A brief, practicable interdisciplinary educational programme for primary care professionals postponed functional decline in pluripathological patients.
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P-106
Impact of urethral catheterization on geriatric inpatients at a tertiary center

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Objectives: Urinary Tract Infection (UTI) remains one of the most common healthcare-associated infections. Although urethral catheterization (UC) is a routine medical procedure, it carries important risks, such as UTI, especially in the elderly. The most important factor for preventing catheter-associated UTI (CAUTI) is limiting their use to appropriate indications.
The purpose of this study was to evaluate the impact of iatrogenic UC on UTI rate in hospitalized geriatric patients at a tertiary center.
Methods: Retrospective review of all geriatric patients (65 years or older) admitted to an Internal Medicine ward at our center from January to March 2015. Data were analyzed using SPSS v.21.0.
Results: We analyzed 201 clinical records (87.6% were male; mean age 81.9 years). Pneumonia was the most common cause of hospital admission. UC was performed in 95 patients (47.3%): 18 had chronic UC (19%) and 77 had UC during hospital stay (81%). Among these 77 patients, median UC duration was 7 days, most patients had no absolute indication for its use (56.8%) and the most common reason for inappropriate UC was monitoring urine output (55.8%).

Patients with a longer duration of UC were more likely to develop CAUTI ($p < 0.001$). There were no statistically significant differences between patients who had CAUTI and those who didn't, concerning sex, age or UC indication.
Conclusions: Most patients had inappropriate UC. Duration of catheterization is the most important risk factor for developing CAUTI. Avoidance of unnecessary catheterization and catheter removal when it's no longer indicated, should be effective strategies to reduce infectious complications of urethral catheters.

P-107
Insomnia, falls and sarcopenia in older adults: preliminary results from the FALL-Aging-SLEEP Study

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Objectives: Sleep disturbances increase the risk of falls among older people. We aimed to examine the association between insomnia and sarcopenia among older patients with and without falls.
Methods: Hospitalized geriatric patients aged ≥75 were proposed to participate to the FALL-A-SLEEP Study since March 2015. Patients with severe cognitive impairment, short life expectancy or bedridden were excluded. Subjective sleep questionnaires (reported sleep duration, sleeping habits, insomnia severity index (ISI) and drug use e.g benzodiazepine/hypnotics), handgrip strength and short physical performance battery (SPPB) were performed in a stabilized medical condition.
Results: Complete evaluation was available for 18 patients (mean age 85.2, 13 women). Five patients never fell. Between fallers and non-fallers, reported sleep duration (7.8 hrs vs 7.3 hrs, $p = 0.43$), insomnia complaint [46% vs 40%, odds ratio (OR) = 1.27, 95% confidence interval (CI) 0.10–20.14) such as the mean ISI (6.8/28 vs 5.2/28, $p = 0.48$) or drug use (38% vs 20%, OR = 2.38, 95% CI 0.16–147.21) were not statistically different. Mean handgrip strength was higher among fallers (19.7 kg vs 13.5 kg) but non-fallers were only women. Mean SPPB was lower among fallers (4.8/12 vs 8.3/12, $p = 0.17$). Reported sleep duration was not different between patients with SPPB ≤8 and SPPB ≥9 (7.9 hrs vs 6.7 hrs, $p = 0.35$) as for the ISI (6/28 vs 4.7/28, $p = 1.0$).
Conclusions: These preliminary data showed that elderly fallers patients seem to suffer more from insomnia, and to be more sarcopenic. More data are needed and inclusion is still ongoing in the FALL-A-SLEEP Study, including Dual Energy X-ray absorptiometry body composition.

P-108
Sleep apnea, falls and sarcopenia in older adults: preliminary results from the Fall-Aging-Sleep Study

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Objectives: Sleep disturbances increase the risk of falls among older people. We aimed to examine the association between sleep apnea (SA) and sarcopenia among older patients with and without falls history.
Methods: Acute care setting patients aged ≥75 were proposed to participate to the Fall-A-Sleep Study since March 2015. Patients with severe cognitive impairment, short life expectancy or bedridden were excluded. Subjective sleep questionnaires (e.g Epworth Sleepiness Scale (ESS)), nocturnal polygraphy (SA defined by apnea hypopnea index AHI >15/hr), handgrip strength and short physical performance battery (SPPB) were performed in a stabilized medical situation.
Results: Complete evaluation was available for 16 patients (mean age 85, 12 women, mean body mass index 21.7 kg/m^2). 4 patients never fell. ESS was higher among fallers (8/24 vs 5/24). Fallers had more SA than non-fallers (75% vs 33%; with 83% of obstructive SA, odds ratio (OR) = 4.95, 95% confidence interval (CI) = 0.17–409.9). Mean AHI was 32.6/h among fallers. Nocturnal hypoxemia was higher among fallers (5.5% of sleep time with arterial oxygen saturation <90% vs 0.5%). Mean handgrip strength was higher among fallers but non-fallers were only women (19.7 kg vs 13.5 kg). Mean SPPB score was lower among fallers (4.8/12 vs 8.3/12) who had more sarcopenia (91% vs 33%) according to the SPPB score.
Conclusions: These preliminary data showed that elderly fallers patients seem to present more sleep apnea, and to be more sarcopenic. More data are needed and inclusion is still ongoing in the Fall-A-Sleep Study, including Dual Energy X-ray absorptiometry body composition.

P-109
Fall diagnoses in a geriatric clinic

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Objectives: To evaluate reasons for falls by diagnose in patient referred to a falls clinic and to compare to similar findings in the literature.
Methods: Patients referred according to ICD-10 (International Classification of Diseases version 2010) diagnosis code R296 during 2014 were analysed with the purpose of evaluating the combined set of diagnoses found during the examination of the patients.
The evaluation is done for the calendar year 2014 and contains the main diagnosis code as well as the secondary diagnosis codes.
Data sampling is done from the local patient data registration system.
Results: In total 321 patients were referred. As explanatory primary diagnoses were falls and osteoporosis. Additional 689 secondary diagnoses were calculated and related to the R, M, I and F diagnostic groups. The findings are compared to literature search results.
Conclusions: The primary diagnosis seems to offer little explanation to the reasons related to the falls.
Of the known risk factors related to fall incidents; sarkopenia, use of rollator, cane or similar, reduced balance and coordination capabilities, reduced eye sight, former falls, depression, fear of falling and signs of dementia (ref.), seems to be reflected in a clustering of the secondary set of diagnosis code groupings, e.g. I, E, F and M.
(ref. sundhedsstyrelsen.dk/publ/publ2006/cff/forebyg_fald/faldptt_klin.pdf).
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P-110
Investigating normal pressure hydrocephalus in a medicine for the older person day hospital: two case reports

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Introduction: Normal pressure hydrocephalus (NPH) is a potentially reversible cause of gait abnormality and cognitive impairment. The cerebrospinal fluid (CSF) tap test (TT) is a prognostic test to assess candidacy for shunt placement. This procedure is proven to have a high positive predictive value when correlated with successful shunt surgery and is recommended in many neurosurgical centres as a key tool it the diagnosis of idiopathic NPH. Older patients frequently present with mobility problems, urinary incontinence and cognitive deficits. The aetiology

of these symptoms is often multifactorial. It is possible, however, that NPH may go undiagnosed and untreated unless the diagnosis is considered and a trial of CSF removal is performed.
Case presentations: We discuss two patients who were referred to our service for assessment of poor mobility. One had urinary incontinence while the other had significant memory impairment. Both patients had MRI brain scans showing a prominence of the ventricular system, suspicious for NPH. Both patients subsequently underwent TTs with removal of up to 50 mls of CSF. Simple pre and post procedure assessments demonstrated remarkable improvements in gait speeds and cognitive function. They subsequently were referred for CSF shunt procedures. One patient has undergone a ventriculo-peritoneal shunt with complete resolution of her symptoms.
Conclusion: Performed in a day hospital setting, a CSF TT is simple, safe and has prognostic implications in investigation of potential normal pressure hydrocephalus. The development of a simple standard guideline for this procedure in an outpatient or day hospital setting is warranted.

P-111
Factors associated with orthostatic hypotension in hospitalized elderly patients

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Objective: To assess the factors associated with orthostatic hypotension (OH) in hospitalized elderly.
Design: Prospective observational single center study.
Setting: One French academic center.
Participants: One hundred thirty-one patients without OH symptoms who underwent OH testing.
Measurements: The blood pressure was measured when patients recovered and after a 10-minute rest while the patients were sitting then standing at 1 and 3 minutes. Demographic data, co-morbidities, current medications and biological parameters were recorded.
Results: The mean patient age was 84.3±7 years. The mean CIRS-G score was 10.6±3.8. The OH test was performed 6.3±3.9 days after admission and was positive in 39 (29.8%) patients (95% confidence interval (CI) = 22–38) and positive at 1 minute in 87.2% of cases. Multivariate analysis showed that OH prevalence was correlated with diabetes (odds ratio (OR) = 4.23; 95% CI = 1.10–16.24; P = 0.03), serum 25-hydroxyvitamin D <20 ng/ml (OR = 3.38; 95% CI = 1.36–8.42; P = 0.008), use of tranquilizers (anxiolytic and hypnotic) (OR = 2.96; 95% CI = 1.18–7.4; P = 0.02), CIRS-G score (OR = 1.15; 95% CI = 1.01–1.31; P = 0.03) and lack of diuretics (OR = 0.20; 95% CI = 0.06–0.63; P = 0.005).
Conclusion: In older adults OH is often misdiagnosed because asymptomatic. As practitioners may be reluctant to perform the OH test because of time constraints, targeting a subgroup of patients with a higher risk of OH, should be worthwhile to prevent further OH complications.

P-112
Anaemia in the elderly, do we diagnose them all?

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Objectives: Anaemia among elderly people is correlated to enhanced morbidity and mortality. The purpose of this study is to examine whether elderly patients with anaemia, admitted to an internal medical ward for any reason, starts initial diagnosis of their anaemia during admission.
Methods: Cross-section retrospective study of all patients above 73 admitted to Department of Internal Medicine, Glostrup university Hospital, in 2012. Haemoglobin at admission, age and ASA-score were registered. Information, of additional blood samples for diagnosing anaemia, and whether follow up on these tests was performed, were extracted from patient records. Regression analysis, with diagnosing anaemia as dependent variable and age, ASA and haemoglobin level as factors, was performed.
Results: Out of 1101 patients 42% (462) were anaemic when admitted, of these 48% (221) had blood samples taken to characterise their anaemia. Regression analysis showed that low haemoglobin level ($p < 0.001$) and high ASA-group ($p = 0.02$) were responsible for triggering investigation of patients anaemia. Age was not. Of the 221 who started characterisation of their anaemia only 88 where followed up with a conclusion on their blood samples.
Conclusion: Less than half of elderly hospitalised patients start examination of their anaemia during admission. Less than one fifth of the patients with anaemia ends up with an initial diagnose. Knowing that all anaemia is correlated with enhanced morbidity and morbidity we must make a greater effort to diagnose our elderly patients.
Conflict of interest: The authors have no conflicts of interest. The study has received no financial support.

P-113
Bone mineral density in patients with stroke

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Aim: The aim of the research is to define the bone mineral density in patients, with stroke.
Methods: We examined 26 women with stroke and 26 healthy women of appropriate age; 27 men with stroke and 27 healthy men of appropriate age.
Results: BMD of women after stroke was significantly lower compared with BMD of women of control group on the level of total body (Z-score = −0.02±0.21 vs. 0.67±0.21, F = 5.92, p = 0.018) and at the distal forearm (Z-score = −0.65±0.24 vs. 0.45±0.25, F = 9.7, p = 0.003). In men with moderate and severe it was obtained significant differences in BMD at total body (Z-score = −0.35±0.25 vs. 0.59±0.23, F = 7.4, p = 0.09), lumbar spine (Z-score = −0.48±0.42 vs. 0.68±0.26, F = 6.0, p = 0.02), total hip (Z-score = −0.16±0.27 vs. 0.51±0.15, F = 5.4, p = 0.03), distal forearm (Z-score = −0.03±0.33 vs. 0.99±0.30, F = 4.7, p = 0.04).
Conclusion: BMD in patients with stroke was significantly lower than in healthy people of the same age. In women the difference was significant at the level of the total body and distal forearm. In men, the difference was significant only in the group of the patients with moderate and severe paresis.

P-114
Bone mineral density in women with Parkinson's disease

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Aim: The aim of the research is to define the bone mineral density in patients with Parkinson's disease.
Methods: We examined 12 women with Parkinson's disease and 12 healthy women of appropriate age (average age: 63.6±6.25 vs 62.2±6.83 years, p = 0.5). The duration of Parkinson's disease was at least 5 years. All patients reseived levodopa.
Results: BMD of women with Parkinson's disease was significantly lower compared with BMD of women of the control group on the level of total body (T-score = −1.86±1.32 vs. −0.71±1.48, $p < 0.05$; Z-score = −0.35±0.93 vs. 0.51±1.05, $p < 0.05$), lumbar spine (T-score = −1.56±1.22 vs. 0.10±1.63, $p < 0.05$; Z-score = −0.66±0.87 vs. 0.72±1.53, $p < 0.05$) and at the distal forearm (T-score = −1.87±1.32 vs. 0.71±1.47, $p < 0.05$; Z-score = −0.51±1.05 vs. 0.38±1.22, $p < 0.05$). Hip BMD was not different from control

group. It is important to note that one woman with Parkinson's disease has two hip endoprostheses after femoral neck fractures.
Conclusion: BMD in women with Parkinson's disease is significantly lower than in healthy women of the same age.

P-115
Comorbidities in osteoarticular diseases in older people

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Objective: Osteoarticular diseases are very often seen in elderly. Their impact is complicated by comorbidities in older people. Aim of the study was to identify such conditions.
Material and Methods: 353 older patients consecutively admitted were included: 68% women, 32% men, mean-age 77.06 years, 77.47 for women, 76.11 for men. Two age groups were considered: 65–75 years, and 75 years and over. It was a retrospective study investigating various localization of degenerative joint disease together with associated diseases and complications.
Results: Knee osteoarthritis was more prevalent in younger age group (57%), while hip osteoarthritis was more frequent (60%) beyond 75 years. 53% of patients had a fall, 31% having a fall each month, more prevalent in women. Frequency of falls was significantly higher ($p < 0.01$) in older age groups. 54% of patients had a fracture secondary to walking difficulties due to joint conditions, more prevalent in women ($p < 0.01$). Fractures correlated with age. Another comorbidity was urinary incontinence favored by altered walking patterns secondary to osteoarthritis. Urge incontinence was most prevalent and it was most frequent in women (62%). All types of incontinence were more prevalent in older age groups (>80 years). There was a high prevalence of osteoporosis, increasing with age, associated with falls and fractures. Falls, fractures and urinary incontinence were most prevalent beyond 80 years.
Conclusions: Osteoarthritis in older people is often complicated or complicates a series of conditions like: urinary incontinence, instability and falls sometimes followed by fractures. These comorbidities should always be considered together and carefully assessed for proper intervention.

P-116
Health risk factors linked to retirement in older people

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Objectives: Retirement represents an important moment for elderly, associated with changes in economical-social status and life-style that can impact on health conditions. Aim of study was to identify influence of various factors linked to retirement on health status in older people.
Material and Method: We analyzed 793 older patients, 34% men, 66% women, women mean-age 70.35, men 73.24 years; 75% subjects from urban area; 46% with lower income, and 17% with high pensions. We analyzed following factors: financial situation before and after retirement, access to medical services, degree of medical costs coverage, family support, social support, financial means for social activities, health conditions around retirement, depression, retirement adjustment duration, level of education.
Results: Prevalence of cardiovascular diseases was more prevalent in higher pensions group, possibly also due to better access to medical services. Osteoarticular diseases had similar frequency in all groups. Post-retirement depression was more prevalent in lower income group ($p < 0.05$), but all categories had a very high frequency of depression (>50%). Reduced family support had an important impact on health conditions in retired people ($p < 0.01$), especially for those living alone. Prevalence of mood disorders was significantly higher in those without social activities (13%) as compared to those that maintained social implication (5%). Depression was negatively correlated with duration of retirement. A very high percentage could not cover entirely costs of their medical needs (81%).
Conclusions: Several factors that accompany retirement have an important influence on health conditions in older people. They need careful attention and specific measures to counteract their effects.

P-117
Differences of health status and determinants of health level among robust, frail, disabled elderly in community-dwelling Korean elderly

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Objectives: The aim of this study was to identify the differences in health status and determinants of health level among the community-dwelling Korean elderly.
Methods: Subjects were 7,358 community-dwelling elderly people. The health level of elderly was classified into 3 groups (robust, fail, and disabled) based on the ADL, IADL disability. Data was obtained from the 2011 Korean National Elderly Survey. We investigated differences of health status among groups and analyzed the determinants of health level.
Results: The frail group had the highest number who had five or more chronic diseases (R 12.4%, F 27.4%, D 25.3%) and took five or more medications (R 4.9%, F 14.4%, D 12.2%). The rate of fall was 47.5% in the disabled group. The frail group had symptoms of depression in 51.3% (vs R 24.3%) and weak muscle strength in 34.5% (vs R 7.8%). The frail group had significantly lower MMSE scores than the robust group (F 20.0, R 23.9). In the analysis of the determinants of the perceived health status, all the elderly showed significantly high ratios of "bad" perceived health status when they had higher numbers of chronic diseases (OR: R 10.8 vs F 6.4) and higher numbers of medications (R 2.9 vs F 5.2), lower depression scores (R 1.8 vs F 3.1). and lower level of physical activities.
Conclusions: Differences of the determinants of health status among the three groups were not significant, but the influence of the determinants was significantly different.

P-118
Spirometry in primary care case-identification, diagnosis and management of COPD an urban health center in Castile and León

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Objective: Spirometry in primary care case-identification, diagnosis and management of COPD
Method: Cross-sectional study from clinical records of Primary Care. Setting: An urban health care center. Population and Sample: Patients >40 years (total according to inclusion criteria, years 2012/2013, 10,109/10,144) with Chronic Obstructive Pulmonary Disease (COPD) (years 2012/2013) ($n = 510/512$).
Patients with COPD should be assessed by annual spirometry. Spirometry is the proper technique for the diagnosis of COPD and its severity rating. COPD is a progressive disease, monitoring of

patients should be based on periodic assessment, by conducting annual spirometry.
- COPD patients smokers should quit smoking.
- COPD patients who are smokers should receive anti-smoking advice.

Results: Compliance criteria (by year):
- COPD prevalence, 5.04%/504%,
- COPD annual spirometry, 59%/60%.
- anti-tobacco interventions, 54%/57%.
- active smokers, 45%/58%.

Conclusions: The uptake of COPD patients is well below the expected prevalence (10.3%). The COPD prevalence in men 4.12%/4.13%, and COPD prevalence in women 0.92%/0.91%, lower than those of the community, which are 15% and 5.5% respectively. This represents an underdiagnosis of 76.61%. Results largely in line with IBERPOC Study (COPD prevalence in Spain, 1997) and the EPI-SCAN study (COPD prevalence in people 40 to 80 years in Spain, 2007) in which Underdiagnosis record of 78% and 73% respectively.
There is a large group of patients with normal spirometry in which we should review the adequacy of diagnosis.
The percentage of current smokers COPD is very high.
The frequency of smoking in our COPD is maintained.
Improving care for COPD should focus on the recruitment, especially considering women smokers, and improved diagnostics by conducting annual spirometry and active smoking intervention and individualized.

P-119
Neuropathic pain questionnaire in diabetic elderly patients

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Objective: Degree and duration of hyperglycemia is a risk factor for the development of neuropathy. We aimed to determine the relationship between diabetic neuropathic pain (NP) and HbA1c, fasting blood glucose (FBG), postprandial glucose (PPG), vitamin B12, serum lipid profile on diabetic patients over 50 years of age.
Methods: Participants ≥50 years old were taken into the study from Ege University Internal Medicine Clinic. The participants were evaluated for sociodemographic data, biochemical results. Neuropathic pain diagnostic questionnaire (DN4) were applied to patient. According to questionaire, ifscore is ≥4, there is very high probability of NP. Data were evaluated using analysis of SPSS 21.0 software package.
Results: 58 diabetic patients were included into our study. Mean age was (62±8)(range, 50–96) years; 67% were women, median diabetes duration was 9 (4–22) years. Diabetic NP score was <4 in 36 patients (62.1%) and ≥4 in 22 patients (37.9%). FBG, PPG and HbA1c values were higher in patients with high probability of diabetic NP. But this was not statistically significant ($p = 0.214$, $p = 0.295$, $p = 0.315$, respectively). There was no significant relationship between the probability of diabetic NP with triglycerides and LDL-cholesterol levels. Probability of diabetic NP was higher in patients with low vitamin B12 levels. But this was not statistically significant. ($p = 0.609$).
Conclusions: Fasting blood glucose, postprandial blood glucose and HbA1c levels were higher and vitamin B12 levels were lower in patients with high probability of diabetic neuropathic pain. Larger studies are needed in this area confirming the diagnosis with objective methods.

P-120
Postprandial hypotension among patients from an acute geriatric ward: results from a pilot study

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Objectives: To determine the prevalence of postprandial hypotension (PPH) and risk factors among patients admitted to a geriatric ward.
Methods: During a 2 months period, after informed consent, 56 patients were prospectively enrolled and tested for PPH using a standardized protocol. PPH was defined as a drop in systolic blood pressure (SBP) of more than 20 mmHg or a drop below 90 mmHg (if preprandial SBP was above 100 mmHg) within the following 90 minutes of a dinner of more than 400 kccal.
Results: Overall, 42% (n = 41/97) patients were excluded from the study. The prevalence of PPH was 52% (95% CI: 38–65%; n = 29/56), while a symptomatic PPH was less frequently reported (23%; 95% CI: 13–36%). No differences ($P > 0.10$) were observed between the two groups (PPH+ and PPH−) for age, sex, BMI, MNA-SF, Charlson Comorbidity Index, diabetes, concomitant orthostatic hypotension and grip-strength. The following risk factors tended to be associated with PPH: nursing home residents (OR: 4.8; P: 0.064), antiarrhythmic drugs (OR: 1.6; P: 0.103) and a timed get-up and go test below 20 s (OR: 2.6; P: 0.083). Consumption of more than 1 hypotensive drugs (OR: 3.8; P: 0.019) and a good level of ADL score (OR: 6.9; P: 0.002) were strongly associated with the occurrence of PPH.
Conclusion: This pilot study confirms that PPH is prevalent in an elderly hospitalized population but symptomatic PPH is less frequently observed. Beside the small sample size leading to a type II error risk, we confirm that consumption of >1 hypotensive drug is a strong risk factor.

P-121
Readmission rates is not related to physical condition or comorbidity but maybe to the amount of patients admitted

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Objectives: Readmissions are a major problem in healthcare, as it is associated with increased morbidity, mortality and expenses. In our department we found a disturbing rising number of readmissions over a two-year period. In the period with rising number of readmissions, we had more patients admitted to the ward. Our hypothesis was that the increased readmission rate could be explained by a patient group with more comorbidities and poorer physical condition, simultaneously with decreasing length of stay. The purpose of the study was to identify factors influencing readmission rate, modifiable for future interventions.
Methods: All patients discharged from geriatric unit were included. We collected data from the Danish Geriatric Database. Patients readmitted of all courses within 30 days were identified and their medical records were retrospectively assessed. Physical condition was assessed using Barthel Index.
Results: We found no significant difference between the readmitted and the not-readmitted patients with regard to length of stay, Barthel, comorbidity or whether they were discharged to home or an institution. Monthly readmission rates showed a 6 months period in 2013 with significantly lower readmission rates (9% vs. 18%, $p = 0.025$). In this period we had less patients admitted. Overall readmission rate in 2013+2014 were median 17%.
Conclusions: We could not find data to support our hypothesis, but in periods without excess number of patients we managed to half the readmission rate. Overall we kept low rates compared to local and international data, most likely, because we have implemented several interventions at discharge to reduce readmissions.

P-122

Longer duration of Parkinson's disease is associated with reduced prevalence of hypertension

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Objectives: Contrasting evidence suggests that Parkinson's Disease (PD) patients present with lower cardio-metabolic risk than the general population, and that lower blood pressure levels are associated with reduced risk of incident PD. Indeed, PD is characterized by an abnormal blood pressure control (cardiovascular dysautonomia) that makes treatment of hypertension challenging in such patients. The aim of the present study was to assess the prevalence of hypertension according to the duration of PD.
Methods: Two-hundred-three consecutive PD patients, referred to a geriatric day hospital, underwent comprehensive clinical evaluation. Diagnosis of hypertension and pharmacological treatment were assessed. The odds of suffering from hypertension were obtained for tertiles (TZ) of PD duration.
Results: Among participants (mean age 73±8 years; 37% women; median PD duration 4 [IQR 1.5–6.2] years), 120 (59%) had hypertension. The prevalence of hypertension declined across increasing tertiles of disease duration (TZ1 75%, TZ2 61%, TZ3 46%; p = 0.005). Similarly, prevalent use of antihypertensive agents decreased. After adjusting for potential confounders, patients in TZ2 and TZ3 were less likely (TZ2 OR 0.45, 95% CI 0.20–0.98; TZ3 OR 0.27 95% CI 0.11–0.63) to suffer from hypertension as compared with those in TZ1.
Conclusions: The present study suggests that the likelihood of suffering from hypertension might decrease along the course of PD. Further longitudinal studies should assess the pathophysiology of this phenomenon, as well as the impact of reduced blood pressure levels on the survival and functional ability of patients with PD.

P-123

Elderly patients with hip fracture and inappropriate drug use – testing the STOPP-2 vs the STOPP-1 criteria

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Objective: To investigate the extent of inappropriate prescribing to elderly patients admitted with hip fracture, and further, to assess the revised STOPP-2 (Screening Tool of Older People's Potentially Inappropriate Prescriptions) versus the original STOPP-1 criteria with special focus on drugs with risk of falls (DF).
Method: Prospective study at the orthogeriatric unit, Diakonhjemmet Hospital. Patients ≥65 years hospitalized and operated for hip fractures in the period October 2014 to January 2015 were consecutively included. Medication reconciliation was performed to verify the drug list at admission. The drugs were recorded according to the ATC (Anatomic Therapeutic Chemical) system. Relevant clinical data were recorded from the patient record to assess if the drugs belonged to a STOPP criterion or not.
Results: A total of 105 patients, mean age 85.5 years (range 65–101), 75.2% female, were included. According to the STOPP-2 criteria 77.1% of the patients had at least one inappropriate drug at admission versus 62.9% of the patients according to the STOPP-1, p < 0.05. Drugs for the nervous system (ATC N), and cardiovascular drugs (ATC C), were the most frequent drugs identified in STOPP-2 and not in STOPP-1. With regard to the specific DF listed in STOPP-2, 53.3% of the patients had at least one of these drugs, and 36.2% according to the STOPP-1, p < 0.05.
Conclusion: Nearly 80% of the elderly patients hospitalized with hip fracture used inappropriate drugs according to STOPP-2. STOPP-2 revealed significant more DF than STOPP-1 and would be an important tool in clinical practice.

Comprehensive geriatric assessment

P-125

Daily practicalities and challenges of elderly-care medicine in a busy NHS district general hospital

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Bed pressures in NHS hospitals are rising yearly on elderly-care wards, leading to out-of hour transfers and the need for better streamlining of the discharge process. Elderly-care wards have negative perceptions attached to them and patients there are often deemed as 'bed-blockers'. We aimed to assess the daily practicalities and challenges faced by staff and patients by collecting data for all patients transferred and cared for on an elderly-care ward in a busy district general hospital in the UK. Ward admissions were monitored for 60 days between February and April, and patients followed up for 3 months.
A total of 106 patients were cared for, 69 female (mean age 86.6) and 37 male (mean age 85.3). 71% of patients were moved to the ward out of normal working hours. A consultant had reviewed 80 (75.5%) patients prior to transfer. The mean and median length of stay was 20.7 and 16 days respectively. Urosepsis (20%), Pneumonia (17%) and fall (7%) were the most common discharge diagnosis. Readmission rate was 18.9% in the following 3 months. We found no correlation between age and readmission.
In conclusion we found that we need to improve continuity of care and transfers out of hours. We recommend development of the same standard of care for every elderly care ward which includes: prioritising discharges with early morning discharges, quicker access for specialty input, investigations and planning end of life care. We proved that the role of an early comprehensive Geriatric assessment is crucial in implementing best practice.

P-126

Ortho-Geriatrics out the Hip Fracture. A description of 2,484 orthopaedic patients requested to Geriatric Team over 20 years

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Objective: To describe the patients' characteristics and the destination at discharge of the orthopaedic patients requested to geriatrics in a 1,100 bed university hospital; and to determine the convenience of geriatric follow-up in them.
Methods: This is a descriptive study of patients over 65 years of age admitted to the orthopaedic unit from January 1995 to December 2014 and requested to a Geriatric Team. Hip fracture patients were excluded. Geriatric management included comprehensive assessment, clinical monitoring and medical treatment as necessary. Barthel Index (BI), Red Cross Mental Scale (RCMs) and Pfeiffer's Questionnaire (SPMSQ) were used.
Results: We analyzed 2,484 patients. Mean age was 81.3 years and 77.3% were women. Mean hospital stay was 16.4 days (±14.6 days) and mean time from admission until geriatric request was 4.9 days (±9.7). Among them, 1,593 (64%) patients needed a clinical follow-up until discharge. Previous median BI was 90 (IQR 70–100), mean RCMs was 0.7 (±1.1). At admission median BI was 25 (IQR 5–40) and RCMs was 1 (±1.6). Mean SPMSQ was 3.2 (±3.1). The most frequent diagnoses were prosthesis implant or revision

(895, 36%), lower limb fractures (386, 15.5%) and pelvic fractures (218, 8.8%). Functional and cognitive impairment was greater in patients referred to long-term stay units, nursing homes and in patients who died ($p < 0.001$).
Conclusions: Orthopaedic patients requested to Geriatrics met criteria for Geriatric patients. Two thirds of them need clinical follow-up until discharge. Geriatric assessment classified them in different profiles at discharge.

P-127
Algoplus® performance to detect pain in depressed and/or demented old patients

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Background: Algoplus® detects acute pain in uncommunicative elderly with good psychometric properties. However, depression or dementia might modify the Algoplus® score and/or item expression. Algoplus® performances on demented and/or depressed old populations were tested.
Methods: This multicenter cross-sectional study included patients ≥65 years old with or without pain assigned to depressed, demented, depressed & demented or control groups. Each group was subjected to the Numerical Rating Scale (NRS) and behavioral scales (Algoplus®, Doloplus®). Depression and/or dementia status was rated and confirmed by blinded experts. Algoplus® psychometric properties tested were: discriminant validity, convergent validity, item analysis, sensitivity to change after pain treatment and threshold determination.
Results: The analysis concerned 171 patients (mean age 82.3±6.3 years). Patients with and without pain in each group were comparable. The mean Algoplus® score was significantly higher for patients with than without pain, regardless of group assignment (Wilcoxon signed-rank test, $p < 0.001$). Algoplus® and NRS or Doloplus® had high convergent validity (respective Spearman correlation coefficients: 0.79 and 0.87). The mean Algoplus® score decreased significantly after starting pain management, regardless of group assignment. Some behaviors (i.e., "look") occurred more often in depressed patients, even those without pain. A threshold of 2 yielded respective sensitivity and specificity values of 95% and 96% for dementia patients, 62% and 79% for depressed patients, 96% and 71% for demented & depressed patients, and 80% and 100% for controls.
Conclusion: Algoplus® accurately detected pain in depressed and/or demented patients; and was sensitive to change after pain treatment.

P-128
Nurses' roles and responsibilities in inpatient geriatric consultation teams (IGCTs) in acute care hospitals

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Objective: A scoping review was conducted to explore nurses' roles and responsibilities in IGCTs internationally. IGCTs are interdisciplinary teams assessing frail older patients and advising healthcare professionals in acute care hospitals for geriatric care.
Methods: An electronic database search in Ovid MEDLINE, CINAHL and EMBASE and hand search were applied for identification of descriptive and experimental studies published in English, French or Dutch until April 2014. Thematic reporting with descriptive statistics was performed and study findings were validated through interdisciplinary expert meetings.
Results: Forty-six papers reporting on 25 IGCT services in eight countries were included. Nurses were core members in all IGCTs and 80% of teams required nurses to have completed geriatrics training. Advanced practice nurses were only team members in 44% of IGCTs. Only 32% of teams used formal screening to identify patients amendable for IGCT intervention, applying heterogeneous screening methods and scarcely providing information on the responsibilities of IGCT nurses. Nurses were widely involved in the medical, functional and psychosocial assessment of patients, either in a leading role (24%) or collaboratively with other disciplines (48%). Responsibilities of IGCT nurses regarding in-hospital follow-up of consulted patients or transitional care at hospital discharge were infrequently specified (16% of teams).
Conclusion: Despite nurses being put forward as key members of IGCTs, limited information on their specific roles and responsibilities in IGCT care was identified. More research in this area is required in order to inform health care policy and practice oriented recommendations to improve the effectiveness of the IGCT care model.

P-129
Functional assessment of hospitalized elderly in an internal medicine ward

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Introduction: Functional capacity refers to autonomy in performing activities of daily living (ADL) and has a prognostic value in elderly patients. We aimed to assess functional capacity of hospitalized elderly using the Barthel index (BI), its association with primary diagnosis and prognostic impact on length of stay and mortality.
Methods: Retrospective study of a convenience sample of elderly patients hospitalized in an Internal Medicine ward of an university hospital for 6 consecutive months. The BI was applied on admission and discharge.
Results: We studied a sample of 95 patients with mean age of 82.3±7.5 years old. The average length of stay was 9.1±5.2 days, the mortality rate was 13.7% and 42.7% of patients were previously institutionalized. On admission, 41.1% of patients were totally dependent for ADL, 23.2% were moderate or severely dependent, 13.7% had mild dependency and 22.1% were independent. We verified a positive correlation between age, previous institutionalization, mortality and greater dependence ($p < 0.05$). No statistically significant differences were observed between the length of stay, primary diagnosis and prior functional status. The BI remained unchanged in 72.6% of patients while a functional improvement was achieved in 13.7%, with an average gain of 17.7 points ($p < 0.05$).
Conclusions: A large proportion of elderly patients in this Internal Medicine ward were highly dependent for ADL when evaluated by BI. Greater dependence was associated with advanced age and worse vital prognosis. The percentage of elderly who improved their functional capacity was reduced and this highlighted the need to endorse strategies that promote functional recovery.

P-130

Multidimensional geriatric assessment in the decision for treatment of older severe aortic valve stenosis patients

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Objective: The aim of this study was to evaluate if the multidimensional geriatric assessment could objectify the decision for treatment (surgical aortic valve replacement, transcatheter aortic valve implantation (TAVI) or conservative treatment) made by the multidisciplinary heart team for older patients, with severe, symptomatic aortic valve stenosis (AVS).
Methods: Older patients with severe, symptomatic AVS, receiving a treatment option by the Heart Team, underwent multidimensional geriatric assessment. This assessment included the following domains: (1) quality of life (EQ5D); (2) independency (Katz); (3) nutritional state (Mini Nutritional Assessment short form <12); (4) cognition (Mini Mental State Exam <27) and depression (Geriatric Depression Scale <5); (5) function (gait speed) and frailty (according to Fried). The heart team evaluated the patients and advised treatment, independently of the results of the geriatric assessment.
Results: One hundred and thirteen patients with severe, symptomatic aortic valve stenosis were included in this study. Age was 82±5 years. The heart team advised 34, 48 and 31 patients to surgery, TAVI and conservative treatment, respectively. Patients referred for conservative treatment, were significantly older (85±4), had more limitations in their daily activities (no problems: 6.5%) and were more dependent (25.8%). More patients in this group were at risk for depression (50.0%), undernutrition (96.7%) and impaired cognition (90.3%), had limited functionality (0.44 (0.39–0.59) m/s) and were more frail (61.1%).
Conclusion: Multidimensional geriatric assessment can objectify the multidisciplinary heart team decision in high risk older patients with severe, symptomatic AVS.

P-131

Sympathetic neuropathy diagnosed by the heat-washout method in fall patients

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Objectives: The veno-arteriolar reflex (VAR) is a local sympathetic cutaneous reflex that is expected to be missing in subjects diagnosed with orthostatic hypotension and neuropathy. Ten patients admitted to the Falls Clinic and diagnosed with neuropathy were examined for the presence of orthostatic hypotension and VAR.
Methods: Four women, mean age 75.3 years, and 6 men, mean age 75.8 years, were examined for the presence of the VAR with the heat-washout method (HWM). Cutaneous blood flow rate (BFR) was measured in the forefoot with the foot placed at heart level, respectively 50 cm below heart level. A reduction in BFR of >30% with the foot placed below heart level indicates that the VAR is present. Orthostatic blood pressure was measured according to the guidelines of the clinic.
Results: In 6/10 patients the results of HWM and the presence of the VAR were consistent with findings made when examining for orthostatism. In three patients the accordance was only present in one foot.
Conclusion: Orthostatic hypotension indicates that an autonomic dysfunction is present, and the lack of a VAR indicates that the peripheral sympathetic nervous system is damaged due to neuropathy. The presence of both increases the risk of falling. The examination for the presence of VAR by HWM is an objective method compared to common methods as monofilament and biothesiometry, and is therefore useful as an alternative when examining elderly and especially cognitively impaired patients that find it difficult to cooperate sufficiently during examination with the existing methods.

P-132

Increasing age has detrimental effect on balance and functional capacity in patients with stroke

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Objectives: An advanced age is a factor associated with a poorer functional prognosis following a stroke. Individuals with stroke have more impairment such as motor, sensory and vision deficits resulting from their strokes than the average elderly.These deficits can affect their balance and functional capacity and motor function. The purpose of this study was to investigate the effect of age on balance, functional capacity and motor function in stroke patients.
Methods: Forty-eight sub-acute and chronic stroke patients (18 female, 30 male) participated in this study. Inclusion criteria were ability to walk 10 meter and obtained a score ≥22 on the Revised Standardized Mini Mental Examination Test. Subjects were classified into two age groups; geriatric (age≥60years), non-geriatric (age <60 years). Balance [Timed Up and Go Test (TUG)], functional capacity [6 Minute Walk Test (6 MWT)], motor function [Stroke Rehabilitation Assessment of Movement Measure (STREAM)] were evaluated.
Results: Median age with Inter Quartile Range (25–75%) was 69.0 (64.0–80.0) in 31 geriatric patients and 51.0 (44.0–55.0) in 17 non-geriatric patients. Geriatric patients had worse balance scores than non-geriatric groups and their functional capacity and motor function scores were lower than non-geriatric group (Mann–Whitney U test, $p < 0.05$).
Conclusions: In conclusions, geriatric stroke patients have more balance and motor problems than nongeriatric patients. Because of these problems geriatric stroke patients are less active in their daily life.

P-133

Lower half of leg length influenced 30 seconds chair stand test in community-dwelling older adults

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Objectives: Chair stand test (CS) is to assess lower body strength. CS is easy to perform, requires simple equipment and can be used in various settings. Use of a fixed height chair for CS may limit extent of the test to reflect lower body strength for each individual. The purpose of our study was to examine the influence of lower half of leg length (LLL) on the CS in community-dwelling older adults.
Methods: This study included 15 individuals (72.3±6.3 years and 86.7% of whom were female). Participants' height and their LLL (distance from lateral knee joint line to floor in standing) were measured.
CS was performed according to Jones and Rikli method. Participants rose to a fully standing position from the sitting position in a 42 cm high chair, and then returned to the fully seated position. Performance was evaluated by number of full standing in 30 seconds.
Muscular strength of knee extension (MS) assessed using hand-held dynamometer. Data for MS was calculated the average of both legs.
Results: The mean±SD of participants' height was 150.4±7.2 cm, LLL was 30.8±1.6 cm, CS was 22.6±6.0 times, and MS was 177.9±67.1 N.

After adjusting for age, the correlation coefficient between CS and LLL was −0.74 (p = 0.002), and between CS and height was −0.40 (p = 0.16).
Conclusions: These results indicate that when interpreting the score for the CS for older adults with shorter LLL, the CS may overestimate their lower body strength.

P-134
Efficacy and safety of training program concentrating on the Garfinkel method as a tool for reducing polypharmacy in nursing home residents

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Background: Polypharmacy (PP) and potentially-inappropriate-prescribing (PIM) is increasing globally in elderly. Most strategies suggested for detecting PIMs just report numbers of PIM, with very limited data regarding real benefits of these approaches on elder's health or economic outcomes. A different approach based on ethical, clinical principles was suggested by Garfinkel. In related two studies, substantial drug discontinuation(DD) was safe and associated with significant-beneficial-clinical-outcomes.
Methods: We organized a training program evaluating the-impact-of-Garfinkel-method on health professionals. The 3 day educational program for MDs included lectures on-the-first-day and workshops on-the second-and-third-days concentrating on the-Garfinkel-method. Impact-of-these-training-programs on physicians'-prescribing-habits and functionality, nutritional-status, depression, cognition and economics was later assessed.
Results: The study comprised 302 elders in Kayisdagi-Darulaceze-Nursing-Home. Follow-up time was 13-months. In 112 (37%) elders, medications were discontinued. Mean-age was 76.1±10.4. Number of medications at the beginning and at the end of the study was 8.6±3 and 6.8±2.8, respectively. No side-effect was reported. The results of patient evaluation before and after the study are summarized in Table 1.There was statistically significant improvement in activities-of-daily-living (ADL) and Mini-nutritional-Assessment (MNA) scores ($p < 0.05$, $p < 0.005$; respectively). Annual-rates-of-falls decreased very significantly ($p < 0.001$). Minimum net drug-cost-benefit-of-deprescribing was $1130 per month and $14690 for the 13 months study period. As the number of elderly residents in Turkey nursing homes are around 21000, the potential minimum drug cost benefit would be $2,500,000/year.
Conclusion: Interactive education with Garfinkel method could be an effective and safe way to minimize polypharmacy in nursing-home residents.

P-135
Comprehensive geriatric assessment in practice: From the point of patients

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Objective: Comprehensive geriatric assessment (CGA) improves the coordination of overall health of elderly. Because of its 'comprehensive' nature, patients may get tired while performing high number of tests. Also the doctor may not be eager to perform all components of CGA. We aimed to assess the satisfaction of patients with performing CGA.
Methods: We included the elders admitted to outpatient-geriatric-clinic at February 2015 who underwent previous CGA. All subjects were asked to fill satisfaction survey questions. A geriatric nurse helped the patients with filling the questionnaire. Those points were especially clarified for patients: the answers will never influence patient's treatment-strategy and it will be a substantial feed-back for us. We assessed both frequency of geriatric syndromes and the satisfaction-expectation resulting from performing major components of CGA.
Results: 150 subjects were asked to participate and all accepted. 39 were male (26%); 111 were female (74%).Mean age was 73.6±6.9 years. 148/ 150 were satisfied with performing CGA. Main results were follows: 49% had urinary incontinence. 19% declared that they would not mention incontinence in case it was not particularly asked. 97% of subjects were satisfied with mini mental state examination. 98% of elders were satisfied with 'falling test' and if it has never been asked, 23% of total subjects signed that they would not mention it.
Conclusion: Although CGA is a long and time-consuming process, it is satisfactory for patients. It lets to identify frequently unrecognized geriatric syndromes.

P-138
Gait and patient characteristics that discriminate fallers from non-fallers in a geriatric population

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Objectives: Walking speed and spatio-temporal gait parameters are related to falls in community dwelling elderly. In the geriatric population, however, walking is effected by multiple factors, such as multi-morbidity, polypharmacy, and cognitive function. The objectives of the present study were to model in a population of geriatric outpatients (1) which gait characteristics discriminate best fallers from non-fallers, and (2) examine if the sensitivity and specificity of the model improve when other patients characteristics were added to the model.
Methods: Sixty-one patients (79±5.0 years) walked 160m at self-selected speed while trunk accelerations were recorded. Walking speed, mean and variability of stride parameters, and magnitude, frequency content, smoothness of medio-lateral and anterior-Poster presentationsior trunk acceleration signals were calculated. Furthermore, fall incidence, cognitive functioning, comorbidities and grip strength were registered. The two objectives were examined using Partial Least Squares Discriminant Analyses (PLS-DA).
Results: Twenty-five participants (41%) reported ≥1 falls. The first PLS-DA model (sensitivity: 54%; specificity: 72%; AUC: 0.76) showed that stride time variability, smoothness (Harmonic Ratio) and magnitude (Root Mean Square) of the trunk acceleration patterns were the gait characteristics discriminating fallers form non-fallers. The second PLS-DA model, adding other patient characteristics, revealed improved sensitivity and specificity (78%; and: 76%; respectively AUC: 0.88). In particular, cognitive function was an important factor in the relationship between gait characteristics and falling.
Conclusion: The results may contribute to the development of an assessment including instrumented gait analysis, together with

other factors relevant to the geriatric population, to identify older patients at risk for falling.

P-139
Older People Assessment and Liaison Service (OPAL) impact in patients admitted to Medical Assessment Unit (MAU) at Ashford & St. Peter's NHS Trust

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Objectives: Elderly patients are frequent users of our emergency care pathway. These patients do not have a comprehensive geriatric assessment (CGA) and have high re-admission rates and length of stay (LOS). The Trust's vision was to ensure that every "older person" gets the highest quality of care and treatment to meet their needs
Methods: The OPAL team was set up in Oct 2013 and is based in MAU 8am-6pm. It involves early CGA (2hrs during the day and 14hrs at night) by a geriatrician, nurse, therapist, dietician and pharmacist. All patients >85 and patients >75 with 3 or more frailty triggers are seen.
Results: During the 1st 6 months, 1148 patients (over 85s) were seen with average age 88 yrs. Conversion from MAU to ward was 81.2% compared to 90% previously (Oct 12-March 13). LOS has reduced from 10.1 to 9.1 days. This is significant as each bed costs the Trust £260, potential saving of £300,000. We have reduced readmissions from 20.7% to 15.3%.
2 separate snapshot audits pre OPAL (Aug 2013) of 18 patients and post OPAL (May 2014) of 23 patients are shown in the table.

	Pre OPAL	Post OPAL
Assessed by geriatrician	17%	100%
Timely CGA	12.5%	84%
Falls risk assessment in 24hrs	29%	75%
Lying/Standing BP	0%	63%
Medication Review	43%	87%
Physiotherapy within 24hrs	14%	100%
Occupational Therapist in 24hrs	0%	62.5%
AMTS documented	50%	89%
Collateral history obtained	35%	100%
Incontinent management plan	17%	100%

Conclusions: Early CGA in MAU is cost effective and helps to reduce conversions from MAU to ward. It also reduces LOS and readmissions.

P-140
Pericardial effusion, and falls: case report

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Objectives: To assess the effects of geriatric approach in patients with falls.
Introduction: Falls are a common problem in the elderly. An error in their management is that injury from the fall is treated, without finding its cause. Thus a proactive approach is important to screen for the likelihood of fall in the elderly. Fall assessment usually includes a focused history and a targeted examination. Pericardial effusion is a relatively common finding in everyday clinical practice. Sometimes the clinical picture of the patient leads directly to the search for pericardial effusion.
Case report: 89-year-old female, depression on tab escitalopram, presented with a 3 months of falls and 5 episodes of unconsciousness. The syncopal episodes lasted for 30 seconds to 1 minute with complete recovery, 15 days history of cough associated with mucopurulent expectoration. On admission, a pulse rate of 80/min, blood pressure of 167/119 mm of hg. On physical examination, breath sounds were decreased bilateral, aortic murmur. Hemoglobin level was 12.4 g/dL, leukocyte count of 7270/cmm. The chest x-ray showed right cardiomegaly small amount of pleural effusion. Transesophageal echocardiography: large pericardical effusion the intrapericardical pressure was elevated. We perform a pericardical drainage 600 cc. of serum liquid.
Conclusion: Falls are the leading cause of unintentional injuries and injury-related disability, morbidity and mortality in the geriatric population. Therefore, they may also lower quality of life.
The most frequent etiologies of pericardial effusion were: neoplastic (36%), idiopathic (32%), and uremic (20%).

P-141
Classification of behaviors in dementia based on theories of compliance and aggression

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Objective: There is vast heterogeneity in use of terminology and classification of behaviors in dementia with no universally accepted classification system. The objective is to classify behaviors in dementias based on impairment in theories of compliance and aggression.
Methods: Criteria proposed by Davis, Buckwalter and Burgio (1997) were identified as the basis for classification of behaviors in dementia. A review of literature was done with a view to identify the "Specification of the Theoretical Construct" (STC) to justify aggregation of similar behavioral symptoms into clinically meaningful categories.
Results: STC identified for these behavioral categories are theories on compliance and aggression. Behavioral categories emanating from this construct are; Oppositional Behaviors (OB) and Physically Aggressive Behaviors (PAB).
Conclusions: OB is the result of non-compliance to the directions being given by the care provider. The types of OB are determined by the level of developmental sophistication or conversely by the degree of cognitive impairment in patients with dementia. PAB are the result of perceived impediment by the patient in goal attainment. This results in the emergence of negative emotions. These emotions are 'out of proportion' to the stimulus. The purpose of this behavior is to warn the care provider of the noxious nature of their involvement in the present situation.

P-142
Classification of behaviors in dementia based upon theories of regulation of emotions

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Objective: There is vast heterogeneity in use of terminology and classification of behaviors in dementia with no universally accepted classification system. The objective is to classify behaviors in dementias based on impairment in theories of regulation of emotions.
Methods: Criteria proposed by Davis, Buckwalter and Burgio (1997) were identified as the basis for classification of behaviors in dementia. A review of literature was done with a view to identify the "Specification of the Theoretical Construct" (STC) to justify aggregation of similar behavioral symptoms into clinically meaningful categories.

Results: STC identified for these behavioral categories are theories on regulation of emotions. Behavioral categories emanating from this construct are; Emotional Behaviors (EB), Fretful/Trepidated Behaviors (FTB) and Vocal Behaviors (VB).
Conclusions: EB are based in expression of the emotion of melancholy and discontentment. EB based in melancholy provide the patient with a measured catharsis to allow for decompression from pain. EB based in discontentment provide the patient with protection from pain. FTB are based in the expression of emotion of fear. FTB make caregivers aware of the insecurity needs of the patient. VB are based in the expression of emotions of anger and joy. They highlight the 'out of proportion' nature of responses in patients. This response may or may not be associated with functional motor activity (FMA).

P-143
Classification of behaviors in dementia based in "motivational" and "needs based" theories

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Objective: There is vast heterogeneity in use of terminology and classification of behaviors in dementia with no universally accepted classification system. The objective is to classify behaviors in dementia based on impairment in "motivational" and "needs based" theories.
Methods: Criteria proposed by Davis, Buckwalter and Burgio (1997) were identified as the basis for classification of behaviors in dementia. A review of literature was done with a view to identify the "Specification of the Theoretical Construct" to justify aggregation of similar behavioral symptoms into clinically meaningful categories.
Results: "Specification of the Theoretical Construct" identified for these behavioral categories are motivational and needs based theories. Behavioral categories emanating from these constructs are: Apathy Behaviors (AB), Goal Directed Behaviors (GDB), Motor Behaviors (MB), and Importuning Behaviors (IB).
Conclusions: Apathy behaviors are the result of a decrease in the motivational drives with an absence of any need fulfillment. Goal-Directed Behaviors are the result of an increase in motivational drives with increase in detection and fulfillment of "belongingness" needs. Motor behaviors are the result of varying degrees of changes in motivational drives and are concomitants to other behavioral categories. Importuning behaviors are the result of preserved motivational drives in detection and fulfillment of "physiological needs".

P-144
Classification of behaviors in dementia based on theories of information processing

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Objective: There is vast heterogeneity in use of terminology and classification of behaviors in dementia with no universally accepted classification system. The objective is to classify behaviors in dementia based on impairment in theories of information processing.
Methods: Criteria proposed by Davis, Buckwalter and Burgio (1997) were identified as the basis for classification of behaviors in dementia. A review of the literature was done to identify the "Specification of the Theoretical Construct" (STC) to justify aggregation of similar behavioral symptoms into clinically meaningful categories.
Results: STC identified for these behavioral categories are those based in theories on information processing (TIP). Two behavioral categories emanating from pathological changes in TIP are: Disorganized Behaviors (DOB), and Misidentification Behaviors (MiB).
Conclusions: DOB is the result of an alteration in the physiological status of the patient. This result in changes in arousal and attentiveness and this, in turn, leads to impairment of the sequential organization of information processing thereby giving way to fragmentation of the process at many different levels of the brain. MiB are the result of a specific breakdown in two specific steps of TIP; schema identification and pattern recognition. This result in the failure of the usual pairing of old and new information with an altered sense of relatedness between self and persons, places, objects and events.

P-145
Reliability and validity of LuBAIR scale to measure behavioral and psychological symptoms in dementia (BPSD)

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Objective: Establish the reliability and validity of Luthra's Behavioral Assessment and Intervention Response (LuBAIR) Scale. It is hypothesized LuBAIR Scale will be less labour intensive, more comprehensive and offer improved categorization of behaviors into clinically meaningful categories.
Methods: 120 residents with a dementia diagnosis from seven long term care facilities were recruited for the study. Sixty residents exhibiting BPSDs were included in the study group and sixty participants not displaying BPSDs were in the control group. Pittsburg Agitation Scale was used to screen for presence of BPSDs. Two registered nurses (RN) completed LuBAIR, BEHAVE-AD, and Cohen-Mansfield Agitation Inventory (CMAI) for each participant in the study group. This was done to establish inter-rater, Construct and Criteria Validity. Fourteen days later, the same RN completed LuBAIR Scale again for each participant for intra-rater reliability. A Clinical Utility Survey (CUS) was developed to evaluate the nurses' viewpoints on the usefulness of LuBAIR Scale on three variables: less labor intensive, more comprehensive and better categorization of behaviors in clinical meaningful categories.
Results: Intra-rater reliability was established for 8 of 12 and inter-rater reliability for 10 of 12 behavioral categories. LuBAIR Scale had comparable Construct and Criteria Validity. CUS findings showed 23% of nurses found LuBAIR less labor intensive, 77% found it more comprehensive and 98% agreed LuBAIR helps understand behaviors in clinically meaningful ways.
Conclusions: LuBAIR Scale has acceptable inter- and intra-rater reliability and Construct and Criteria Validity. It is more comprehensive and is better able to categorize behaviors in clinically meaningful categories.

P-146
Results of geriatric cardiac surgery co-management of older patients with valvular heart disease

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Objectives: The growing burden of valvular heart disease (VHD) in older populations demands a substantial change of the current management of this condition. The present work reports preliminary results of a multidisciplinary approach for the care of older patients with VHD.
Methods: Data are from an ongoing prospective study analysing clinical outcomes of older VHD patients admitted to the Heart Valve Clinic (HVC) of our Centre. All patients underwent multidisciplinary evaluation including echocardiography, cardiac surgeon consultation, multidimensional geriatric assessment, and neuropsychological testing. Other consultations were performed as needed. Demographic characteristics and clinical outcomes of older

VHD patients undergone valve replacement surgery before and after HVC implementation were analysed.
Results: Twenty-height older VHD patients admitted to the HVC between April 2014 and February 2015 underwent cardiac surgery. HVC patients were older relative to those treated in 2013 (n = 121) (79.1±4.3 vs. 76.5±4.2 years; p < 0.01), with no differences in gender distribution, VHD type and severity, NYHA class or number of co-morbid conditions. The total length of hospital stay was unvaried, despite longer time spent in postoperative intensive care unit by HVC patients (159.4±166.7 vs. 86.0±70.0 hours; p < 0.001). The number of specialist consultations was reduced after HVC implementation (0.8±1.0 vs. 2.5±1.9; p < 0.0001). None of HVC patients died during hospitalisation, whereas 4 patients died in 2013 (p = 0.7).
Conclusion: The implementation of a multidisciplinary clinical pathway dedicated to geriatric patients with VHD allows extending eligibility to surgery to older and frailer subjects and optimising the use of resources, without impacting mortality or length of hospitalisation.

P-147
The relationship between oncological (ECOG PS), geriatric [Comprehensive Geriatric Assessment (CGA), and Rockwood Frailty Index (IF)] evaluation: preliminary results in a cohort of oncogeriatric patients

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Objective: CGA is the gold standard for elderly assessment to optimize cancer treatment and to stratify their biological condition (frail, pre-frail, fit). However, the method is time-consuming and of specialist expertise. Other tools did not provide the same specificity. We plan to compare different evaluation scales to assess the best predicting oncogeriatric tool.
Methods: First visit included ECOG PS, CGA, IF, Short Form Health Survey-36 (QoL). Patients were assessed after 1 month for mortality, 3/6 and 12 months for QoL, functional status, performance status and overall mortality.
Results: Fifty-two patients (29 females, 23 males), with solid tumour, mean age of 79±1.0 years were enrolled from January 2015 in an Italian hospital. Respectively, 10% of pt by ECOG PS, and 35% of pt by CGA were frail. By IF, 28 pts were frail (55%), 23 pre-frail (45%) and 1 was fit. The correlation between the last two tools was moderate (R=+0.60, p < 0.001).
CGA unmasked several clinical problems: delirium (8%), depression (35%), insomnia (4%), pain (33%), malnutrition (35%), lack of social support (6%), cognitive deficit (14%), osteoporosis (10%), rehabilitation need (15%),others (8%).
The overall mortality was of 7% (4/52 patients). The 30-day mortality after surgery was of 14% (3/21 pts) with 3 patients assessed as frail by both CGA and IF and one patient assessed as fit by CGA and pre frail by IF.
Conclusions: The preliminary comparison between CGA and IF showed different predicitivity. The larger enrolment and follow up will contribute to identify the best predicting tool in oncogeriatrics.

P-148
Transcatheter aortic valve implantation may modify the expected risk of mortality according to the Multidimensional Prognosis Index

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Objective: To assess the impact of transcatheter aortic valve implantation (TAVI) on expected prognosis according to the frailty status.
Participants: Consecutive patients who underwent TAVI and a complete comprehensive geriatric assessment (CGA) between January 2013 and September 2014.
Measurements: Baseline Demographic data and a cardiologic evaluation were recorded. The CGA included information on functional, cognitive and nutritional status; risk of pressure sore; comorbidities; medications; and social support network; the information was used to calculate the multidimensional prognostic index (MPI) for mortality using a previously validated algorithm. The final MPI score is divided into three levels of mortality risk: MPI-1, low risk (MPI ≤0.33), MPI-2, moderate risk (from 0.34–0.66); and MPI-3, high risk (MPI ≥0.66).The vital status was assessed in March 2015 through visits or phone calls to the general practitioners.
Results: 50 patients were enrolled; mean age: 86.5±4.2 years and mean European system for cardiac operative risk evaluation (EuroSCORE): 18.35±11.58. Thirty patients (60%) were in the MPI-1 group, 19 (38%) in the MPI-2 group and 1 patient in the MPI-3 group. The rate of mortality was 26% 1 year after TAVI. No association between EuroSCORE, age or MPI-score was found (p = 0.19; p = 0.52 and p = 0.51 respectively).
Conclusion: In this study including very old patients, frailty was not associated significantly with increased mortality after TAVI. However, the results showed the effectiveness of this innovative procedure that may decrease the expected mortality between the most frail and the least frail according to the MPI.

P-149
Are all the former Siberian deportees with posttraumatic stress disorder patients at risk?

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Objective: The primary aim of the analysis was to assess the group of elderly people suffering from the post traumatic stress disorder (PTSD) with the Identification of Seniors at Risk (ISAR) tool. The secondary aims were to test the relationships between ISAR and the Canadian Study of Health and Aging Clinical Frailty Scale (CSHA-CFS), muscle strength, and mobility according to the Timed Up and Go (TUG) test.
Methods: The group consisted of the outpatients aged ≥60 years who had been deported during World War II or born in exile in the Soviet Union. PTSD was diagnosed according to criteria of the DSM-IV. Additionally, ISAR tool and the CSHA Clinical Frailty Scale were used, and the muscle strength and mobility were measured.
Results: The mean(±SD) age of 68 patients:70.4±6.8 years (min.-max.:60–88 years); 55.9% men. ISAR (median; Q1,Q3): 3.5 (2,5) points; with higher results for women [4 (3,5) vs 3 (2,4) for men;p = 0.02]. At risk was 85.3% and 70.6% of the group, according to the threshold of two and three points, respectively. The three most common complaints: sight problems (77.9%), using >3 medications/day (76.5%) and serious memory problems (52.9%). There were significant correlations between ISAR and CSHA-CFS (r = 0.718, p < 0.001), and muscle strength (r = −0.433, p < 0.001), and the results of TUG (r = 0.415, p < 0.001), respectively.
Conclusions: The application of ISAR tool revealed that most of the elderly patients with PTSD were vulnerable and at risk for future adverse outcomes. ISAR correlated well with the CSHA Clinical Frailty Scale as well as with the muscle strength and mobility.

P-150

Geriatric deficits among the elderly Polish deportees to the Soviet Union who suffer from posttraumatic stress disorder

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Objective: To assess the prevalence of geriatric deficits in the elderly Polish deportees to the Soviet Union who suffer from posttraumatic stress disorder (PTSD).
Methods: Group comprised of the elderly outpatients who had been deported during World War II or born in exile in the Soviet Union, and have been diagnosed with PTSD according to the DSM-IV criteria. Depression was rated with the Hamilton Rating Scale, frailty syndrome with the Fried's criteria. Medical interview with the assessment of falls, dizziness, pain, vision and hearing problems was conducted.
Results: 69 respondents (55.1% men); mean age:70.4±6.7 years (min–max: 60–88 years). All the patients were diagnosed with PTSD – 49.3% presented moderate, 31.9% severe and 18.8% mild symptoms. Depression was suspected in 72.7%; pain was reported in 87%, falls and dizziness in 52.2% and 26.1%, respectively; 20.6% of the patients were frail and 61.8% pre-frail. Vision impairment was diagnosed in 78.3%, hearing deficits in 15.9%. 31.9% of the patients had 4 out of 7 examined deficits, 27.5% had 3 problems, and with the same frequency, 2 and 5 deficits – 14.5% of the patients. There was no patient who was free of any geriatric problems.
Conclusions: All examined patients presented some geriatric deficits, with pain, depression, and vision impairments being the most common problems. As the most frequent geriatric complaints were potentially curable, our results suggest that there is a need for a routine comprehensive geriatric assessment. Additionally, there was a high rate of those with pre-frail status who might benefit from geriatric interventions.

P-151

Features of neuropathic pain in the elderly patients with muskuloskeletal diseases

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Neuropathic pain (NP) caused by the musculoskeletal diseases has recently been the focus of numerous studies. The role of aging on the development of neuropathic pain is still unknown.
The aim of this study was to reveal the presence of neuropathic pain component in elderly patients suffering from the musculoskeletal diseases and compare frequency of NP between elderly and younger patients.
Material and Methods: We examined 73 patients aged 45–85 years (average age 68.1±1.2 years). Patients were divided into 3 groups: A, patients with osteoporosis (n = 30), B, patients with low back pain (n = 23), C, patients with osteoarthritis of knee joints (n = 22). To assess the NP component, we used the painDETECT, LANSS, DN4 questionnaires. To assess intensity of pain, visual analogue scale was used. According to their age into the groups of 45–59, 60–74, and 75–89 year-olds. For statistical analysis of results ANOVA, correlation and regression analysis were applied.
Results: Regression analysis shows correlation between the questionnaires: LANSS and painDETECT (r = 0.76, p = 0.000001), DN4 and painDETECT (r = 0.8, p = 0.000001). The intensity of chronic pain did not change significantly with aging. In the group of elderly patients over 75 years with osteoporosis and low back pain the NP component significantly decreased by the DN4 scale ($p < 0.05$).In patients with OA over 75 years, there was a tendency to elevation of pain intensity and increasing of NP features.
Conclusion: Thus, in patients with musculoskeletal diseases the pain syndrome may include NP features. Frequency of NP under muskuloskeletal diseases varies with aging and depend on the nosology.

P-152

Gender features of vertebral pain syndrome depending on bone mineral density

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The aim is to study the frequency of vertebral pain syndrome in men and women of older age groups depending on the bone mineral density (BMD).
Materials and Methods: We have examined 1934 people aged 50–89 years, among them 1697 women and 237 men. The frequency of back pain syndrome was studied depending on the BMD (osteoporosis, osteopenia, and norm). BMD at all sites was measured by DXA using a Prodigy densitometer (GE).
Results: The frequency of pain syndrome among older age groups is significantly higher in women compared with men (88.3%(1499/1697) vs 84.8%(201/237), accordingly, p = 0.01). In women of 50–89 years, with osteoporosis and no fractures in their anamnesis, pain syndrome in the thoracic and lumbar spine is significantly higher in comparison with women who have osteopenia (p = 0.01) and normal BMD (p = 0.02) and compared to men with a similar BMD state (osteoporosis; (91.8%(337/367) vs 76.2%(16/21), accordingly, p = 0.01)). The frequency of pain syndrome in the thoracic and the lumbar spine in women is associated with BMD. The presence of osteoporosis increases the risk of pain syndrome in the thoracic spine (RR = 1.27, 95% CI: 1.12–1.44, p = 0.0001). In older women, the presence of low-energy fractures significantly impacts the increasing frequency of pain in the thoracic region regardless of the BMD state.
Conclusion: The frequency of pain among older age groups is significantly higher in women compared with men. In women of older age groups, the presence of low-energy fractures significantly increases the frequency of pain in the thoracic region, regardless of the state of BMD.

P-153

X-ray absorptiometry indexes for women in postmenopausal period with osteoporotical fractures

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Aim: To estimate structural and functional condition of bone in women in postmenopausal period with osteoporotic fractures, compare the results to referent data for Ukrainian population and to compare the results of X-ray absorptiometry to the fracture risk rate, assessed by FRAX for women in postmenopausal period with osteoporotical fractures.
Methods: 39 women in postmenopausal period aged 50–89 years with forearm (18) and proximal hip (21) fractures, who were on treatment the Traumatology Department #1 of Lviv City Clinical Hospital of Ambulance. They were divided into 4 categories by age (50–59 [13]; 60–69 [12]; 70–79 [9]; 80–89 [5]).
Nordin Index was measured with the "Osteolog" workstation, developed in the Institute of Gerontology AMS Ukraine under the direction of professor Povoroznyuk V.V. Fracture risks were estimated using FRAX.
Results: We found lower cortical indexes for women in postmenopausal period with osteoporotic fractures for 50–59 (Common IN = 0.41), 60–69 (Common IN = 0.40), 70–79 (Common IN = 0.36), 80–89 (Common IN = 0.33) age groups in comparison to referent data for Ukrainian population. Also we found lower cortical

indexes for women in postmenopausal period with higher risk of osteoporotic fracture, assessed by FRAX, independent of age.
Conclusion: Thus, low cortical indexes, measured with the "Osteolog" workstation are reliable predictors of high fracture risk. There is a significant correlation between low cortical indexes and high fracture risk, assessed by FRAX.

P-154
Trabecular bone score and bone mineral density in Ukrainian men with vertebral fractures

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The aim of this study is to evaluate the trabecular bone score (TBS) and bone mineral density (BMD) in men with osteoporotic vertebral fractures.
Materials and Methods: We examined 243 men aged 30–89 years, divided according to the gerontologic classification: 30–44 yrs (n = 46), 45–59 yrs (n = 83), 60–74 yrs (n = 86), 75–89 yrs (n = 28). The basic group consists of 52 men with osteoporotic vertebral fractures in the anamnesis and control group – of 191 men without fractures. The BMD of PA lumbar spine and proximal femur were measured by the DXA method (Prodigy, GEHC Lunar, Madison, WI, USA) and PA spine TBS were assessed by the TBS iNsight® software package installed on our DXA machine (Med-Imaps, Pessac, France).
Results: We have observed a significantly lower TBS (L1-L4) in the basic group (30–44 yrs: 1.083±0.187; 45–59 yrs: 1.025±0.248; 60–74 yrs: 1.084±0.170; 75–89 yrs: 0.951±0.170) as compared to the control group (30–44 yrs: 1.276±0.121; 45–59 yrs: 1.226±0.156; 60–74 yrs: 1.150±0.175; 75–89 yrs: 1.183±0.174); F = 1.56; p < 0.001. We also found the lower BMD of lumbar spine in the basic group of patients – 30–44 yrs: 0.981±0.125 g/cm^2; 45–59 yrs: 1.028±0.184 g/cm^2; 60–74 yrs: 1.014±0.158 g/cm^2; 75–89 yrs: 0.970±0.183 g/cm^2 (F = 1.52; p < 0.001) and of the proximal femur – 30–44 yrs: 0.854±0.149 g/cm^2; 45–59 yrs: 0.873±0.139 g/cm^2; 60–74 yrs: 0.823±0.136 g/cm^2; 75–89 yrs: 0.716±0.107 g/cm^2 (F = 1.10; p < 0.001) compared to the control group.
Conclusion: Subjects with vertebral fractures have TBS and BMD parameters significantly lower than the healthy men.

P-155
Implantable loop recorder: A syncope unit experience

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Aim: To test the Implantable Loop Recorder (ILR) in syncopal and non-syncopal transient loss of consciousness (TLoC) and in detecting atrial fibrillation (AF) in cryptogenic stroke.
Methods: 182 patients were implanted between January 2003 and May 2014. 81 (45%) syncope; 3 (1.6%) pseudo-syncope; 32 (18%) epileptics; 35 (19.2%) unexplained falls; 6 (3.3%) patients with syncope/fall; 5 (2.7%) suspected AF; 20 (11%) cryptogenic stroke.
Results: The mean age was 70±14.2 years. After a follow-up of 19±16 months, 109 patients (59.9%) relapsed. Asystole was detected in 51.9% of the syncope, in 100% of the epileptics, in 53.9% of the fallers, in 20% of the syncope/falls and in 33.3% of the strokes. AF was confirmed in 80% of the suspected cases, in 66.7% of the strokes, in 40% of those with syncope and falls. Diagnosis was made in 70.4% of the syncope, in 59.4% of the epileptics, in 74.3% of the fallers, in 100% of the syncope/falls, in 66.7% of the pseudo-syncope, in 50% of the strokes and in the 100% of the suspected AF. No arrhythmia was recorded in 64 patients, in 49 of these the monitoring is ongoing. Pacemaker was implanted in 22.2% of the syncope, in 18.8% of the epileptics, in the 20% of the suspected AF. Oral anticoagulation was started in 60% of AF patients, in 20% of the strokes, in 16.7% of the syncope and falls.
Conclusion: ILR is useful in detecting arrhythmias both in high risk patients and in the TLoC diagnostic pathway.

P-156
Safety and tolerability of Tilt Testing and Carotid Sinus Massage in the oldest old

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Objectives: To evaluate the safety and tolerability of Tilt Testing (TT) and Carotid Sinus Massage (CSM) in the oldest old (patients aged 80 and older) and in younger patients with unexplained syncope and/or falls.
Methods: 1170 patients referred to our Syncope Unit for unexplained syncope or falls were enrolled. 549 patients were 80 or older and 621 were younger. TT and CSM were performed according to the European Society of Cardiology Guidelines. Complications were evaluated in each group. An early interruption of TT was defined intolerance and considered as a negative response.
Results: Complications after TT were observed in 5.3% of the older patients and in 2.4% of the younger ones (p = 0.01). Most of the complications (88.6%) were minor, as persistent hypotension; serious ones occurred in 2.3% of the cases. Minor complications were the most frequent in both groups (93.1% in the older patients and 80% in the younger ones). Orthostatic hypotension was a predictor of complications. No complications occurred after CSM. Intolerance was reported in 2.7% of the older patients and 1.1% of the younger ones (p = 0.04); in most cases (68.2%), the test was stopped because of orthostatic intolerance.
Conclusions: Complications after TT were more common in older patients, probably due to a higher prevalence of orthostatic hypotension. No complications occurred during CSM. Intolerance was very low in each group, mainly due to orthostatic intolerance. TT and CSM are safe and well tolerated in the oldest old.

P-157
Physical performance measures compare favorably with geriatric assessment in elderly oncological patients

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Objective: In oncology there is a growing interest in geriatric assessment (GA). In a sample of older oncological patients, we evaluated the associations between the outcome of GA tools on one side and, on the other, the Vulnerable Elders' Survey-13 (VES-13), Fried's frailty phenotype and a simple index of physical performance, combining the handgrip (HG) and walking speed (WS), categorized as normal or abnormal.
Methods: 273 patients aged ≥70 years with solid tumors attending the Oncology outpatient clinic in Prato, Italy, underwent a GA. Mean values of ADLs, IADLs, GDS, MMSE, MNA and CIRS were then compared across the three categories of the VES-13 (fit, score of 0–2; vulnerable, score of 3–6; frail, score of 7–13), Fried's phenotype (fit: no impairment, prefrail: 1 impairment, frail: 2+ impairments) and according to physical performance (both HG and WS abnormal, HG or WS abnormal, both HG and WS normal).
Results: No significant differences in ADLs, MMSE and CIRS emerged between fit and vulnerable (according to VES-13) or fit and pre-frail (according to Fried) patients, whereas GDS score differed

only between the VES-13 vulnerable and frail categories. Conversely, all the GA items differed across the three categories of physical performance status.
Conclusions: In our sample of elderly oncological patients, simple tests of physical performance were associated to GA items more accurately than VES-13 and Fried's phenotype.

P-158
Geriatric syndromes and frailty status in 'Empty-Nesters' Chinese elderly with hypertension

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Objectives: The aim of this study was to investigate geriatric syndromes and frailty status between empty-nest group (EN group) and non-empty-nest group (non-EN group) in Chinese hypertensive elders.
Methods: In a cross-sectional study, a total of 270 hypertensive patients aged 65 years and older were recruited. Participants were divided into EN group (n = 168) and non-EN group (n = 102). CGA included activities of daily living (ADL), cognitive functioning, depression symptoms, nutritional status, fall risk, comorbidity and polypharmacy. Frailty status was defined using Fried criteria (weight loss, exhaustion, slowness, low activity level and weakness), which range from 0 to 5, and divide into frail (3–5), pre-frail (1–2) and non-frail (0).
Results: Neither hypertension related clinical characteristics nor every component in CGA were found significant difference between the two groups ($p > 0.05$). The percentage of frail and pre-frail in the EN group was higher than non-EN group (79.2% vs. 65.7%, $p = 0.014$). After adjustment for age and sex, partial correlation showed frail criteria scores were associated with the number of geriatric syndromes, ($r = 0.505$, $p < 0.001$), Morse fall scale score ($r = 0.382$, $p < 0.001$), the score of 15-item geriatric depression scale ($r = 0.350$, $p < 0.001$), ADL score ($r = -0.416$, $p < 0.001$), the score of Tinetti performance oriented mobility assessment ($r = -0.406$, $p < 0.001$), the score of mini-mental state examination ($r = -0.300$, $p < 0.001$) and short form mini nutritional assessment score ($r = -0.360$, $p < 0.001$) in the EN group.
Conclusions: Frailty status was more common, and correlated with geriatric syndromes in empty-nest hypertensive elders. Therefore, frailty screen and CGA could be considered as useful tools to guide treatment decision in clinical practice.

P-159
Comparison of hand dexterity in geriatric and non-geriatric patients with Parkinson's disease

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Objectives: Prevalence of Parkinson's disease (PD) increases with aging, and prevalence is 1.5–2% in people 65 and older. PD is a hypokinetic movement disorder characterized by bradykinesia, rigidity, resting tremor and postural abnormalities. Motor symptoms of PD commonly affect upper extremity function. The aim of this study is to compare hand dexterity between geriatric and non-geriatric patients with PD.
Methods: A total of 50 patients with PD 33 (66.6%) geriatric (≥65) and 17 (33.3%) non-geriatric patients. Including criteria were idiopathic PD, Hoehn & Yahr stage I-IV, on medication state, not having orthopedic and neurological disease limiting dexterity. Hand dexterity evaluated with the Nine Hole Peg Test (9HPT) twice for both hands and average of two measurements was recorded. Severity of PD evaluated with Unified Parkinson's Disease Rating Scale-Motor Subscale III (UPDRS III).
Results: Average time to complete the 9HPT was 24.65±9.40 second (sc) and 26.49±12.24 sc in non-geriatric, 26.93±7.46 sc and 29.12±7.12 sc in geriatric (respectively, dominant and non-dominant hand). Non-geriatric patients performed the test significantly faster than geriatric patients both dominant and non-dominant hand (Mann–Whitney U test, $p < 0.001$). In both groups, there was a significant positive correlation between UPDRS III and 9 HPT time for both hands. (Spearman Correlation test, for dominant side; $r = 0.699$, $r = 0.757$ $p < 0.001$, non-dominant side; $r = 0.593$, $r = 0.556$ $p < 0.001$, geriatric and non-geriatric group, respectively).
Conclusions: Aging has a degenerative effect on dexterity and inverse relationship between age and dexterity in PD irrespective of sex. In addition, increasing disability level is associated with loss of dexterity in PD.

P-160
Musculoskeletal problems among the caregivers of the geriatric patients with stroke

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Introduction: After having a stroke, patients often perceive restrictions in performing activities of daily living and often receive assistance from an informal caregiver. It is well recognized that the caregivers experience psychological problems such as burden and restrictions in life satisfaction after their partner's stroke. However, their musculoskeletal risks have not known well. The aim was to determine the prevalence of musculoskeletal problems of the caregivers of the geriatric patients with stroke.
Methods: Thirty-two geriatric patients with stroke and their informal caregivers participated in the study. In addition to the demographic characteristics of the caregivers, the musculoskeletal problems were evaluated by the Nordic Musculoskeletal Questionnaire. The patients' functional levels were evaluated by the Functional Independence Measure.
Results: The mean age of the patients and caregivers were 74.4±10.1 and 55.7±14.9 years, respectively. Most of the patients had high functional independence level (71.9%). One-year prevalence of the musculoskeletal problems ranged from 12.5% (elbows and feet) to 53.1% (low back). One-month prevalence ranged from 12.5% (hands, upper back, and hips) to 34.4% (knee). Most of the caregivers experienced musculoskeletal problems after their partner's stroke (prevalence of musculoskeletal problems after stroke ranged from 12.5% to 93.8%).
Conclusions: The caregivers experience high number of musculoskeletal problems although their partners had high functional independence. Additionally, their musculoskeletal problems occurred after their partner's stroke. In the geriatric rehabilitation settings, the caregivers should also been evaluated in terms of the musculoskeletal problems and they should participate in physiotherapy programs such as ergonomics awareness education.

P-161
Geriatric conditions that predict mortality and hospitalization in dependent older people living in long term care facilities

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Objectives: To clarify geriatric conditions that predict mortality and hospitalization of dependent older people living long term care facilities, we conducted a 2-year prospective cohort study.
Methods: Participants were institutionalized older people aged at least 65 years old (n = 657, average age: 85.2, male: n = 122; 18.6%). Data included the participants' demographic characteristics, Barthel Index(BI), chronic diseases that construct Charlson comorbidity index (CI) and the prevalence of eight geriatric conditions (visual

impairment, hearing impairment, falls, bladder control problems, cognitive impairment, impaired mobility, swallowing disturbance, and loss of appetite). Accumulation of geriatric conditions is defined as the number of these geriatric conditions. The participants were stratified into tertiles according to the accumulation. The Cox proportional hazard model and the Kaplan–Meier method were used to assess relationship between the prevalence of conditions at baseline and mortality and hospitalization during a 2-year period.
Results: During a 2-year observation, 201 participants died and 282 were hospitalized. Multivariate models adjusted for potential confounders showed that hazard ratio for mortality and hospitalization in participants with middle and highest tertiles of the accumulation (reference: lowest tertile) was 1.53 (95% CI: 1.07–2.19) and 2.21(CI 1.48–3.32), 1.55 (CI: 1.18–2.03) and 1.44(CI 1.02–2.20), respectively. Univariate analysis revealed that geriatric conditions related to mortality were visual impairment1.41 (95% CI: 1.07–1.88), cognitive impairment 1.35(CI 1.01–1.82) and those related to hospitalization were bladder control problem 1.42(CI 1.04–1.94), mobility impairment 1.60(CI 1.14–2.27), appetite loss1.54(CI 1.20–1.98) respectively.
Conclusions: Geriatric conditions related to mortality and hospitalization were different in dependent older people living in long term care facilities.

P-162
Association between geriatric assessment tools and self-percieved health-related quality of life measured by Nottingham Healh Profile

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Objectives: Nottingham Health Profile (NPH) is a validated self-administered questionnaire to evaluate subjective health status in six dimensions: Energy (E), Emotional Reactions (ER), Physical Mobility (PM), Social Isolation (SI), Pain (P) and Sleep (S). The aim of the study was to assess association between comprehensive geriatric assessment (CGA) scores and dimensions of NHP.
Methods: Descriptive study of patients admitted to geriatric day hospital from 2007 to 2011. Those with MMSE <10 points, aphasia or non-cooperation were excluded. Age, sex and BMI were registered and following assessment tools were performed: Barthel index, Lawton index, MMSE, Yesavage Geriatric Depression Scale (GDS), Charlson comorbidity index, Norton scale, Timed get-up-and-go (TUG), balance and gate Tinetti scale and NHP.
Results: 331 pacients were included (59.8% women). Significant correlation was found between PM and Barthel ($r = -0.59$ $p < 0.0001$), Norton ($r = -0.53$ $p < 0.0001$), TUG ($r = 0.67$ $p < 0.0001$) and Tinetti ($r = -0.63$ $p < 0.0001$). GDS showed association with dimensions Energy ($r = 0.47$ $p < 0.0001$), ER ($r = 0.49$ $p < 0.0001$) and SI ($r = 0.51$ $p < 0.0001$).
Women reached higher mean scores in Energy (Men: 27.56±30.29; Women: 40.57±36.30; $p = 0.0027$); ER (Men: 29.24±25.08; Women: 39.4±27.45; $p = 0.0008$) and Pain (Men: 25.47±24.68; Women: 38.49±32.83; $p = 0.0009$). No association was found between NHP and age. The rest of significant associations showed poor correlation ($r < 0.4$).
Conclusions: A significant correlation between subjective perception of PM and physical function tools of CGA and between self-perceived emotional status and Yesavage GDS has been found.
Quality of life assessment tools might be helpful to detect mobility impairment and emotional problems in elderly.

P-163
Retrospective study on the intra-hospital work of the geriatric mobile team in the regional University Hospital of Nancy (CHRU) Brabois. Analysis of its activity in a 6 month period and follow-up of recommendations at the end of hospitalization

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Objectives and Methods: The objective of this study is to analyze the activity of the geriatric mobile team (EMG) of the Nancy Brabois CHRU during six months (emergency services excluded) and adherence to recommendations at the end of the hospitalization.
Results and Conclusions: Among the 105 files included in this retrospective study, the most frequent reasons to resort to EMG are troubles due to superior functions (delirium or cognitive impairment) (64%) and loss of autonomy (39%). Nutritional disorders and pain are less frequent reasons to resort to EMG (respectively 10% and 5%) whereas they are strongly assessed by the EMG (respectively 50% and 26%). The main recommendations concern the care of the nutritional and cognitive disorders and the fight against iatrogenesis. The recommendations suggested by EMG are followed at 58%. Three factors are associated with the failure to follow the recommendations. The first factor is the time between the service request and the EMG intervention. The two other factors are the identification of pain and the suggestion that the patient returned home.

P-164
Weight and height prediction of Latvian senior hospitalized patients

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Background: Weight and height are important measurements for many medical and nutritional procedures, such as administration of drugs, calculation of GRF etc. They are difficult to measure in bedridden patients.
Objective: To formulate specific equations estimating body weight and height for the Latvian seniours based on simple anthropometric measurements.
Patients and Methods: 226 seniors (≥65 y), addmitted to the hospital were evaluated. Knee height (KH), middle arm circumference (MAC) and calf circumference (CC), waist circumference, body weight, age (A), stature data were collected by anthropology laboratory nurses using portable anthropometer GPM (precision ±0.1 cm), scale SOEHNLE and a measuring tape. To predict stature and weight multivariate linear regression was performed. The data was analyzed by SPSS-22.
Results: There were more females (172, 74.1%) than males (54). The median stature was 158.9 cm (154.4–172.9), body weight 73.0 kg (63.0–85.2), age 79 y (74–84), the BMI 29.31±5.34 kg/m^2. The stature was predicted by equation $81.26 + 1.99 \cdot KH - 0.175 \cdot (A) - 4.969 \cdot (S)$, adjusted $R2 = 0.812$, $F(3,223) = 321$, $p < 0.001$. The body weight was estimated by equation $1.805 \cdot MAC + 0.823 \cdot CC + 1.194 \cdot KH - 2.508 \cdot (S) + 0.489 \cdot WC - 109.954$, adjusted $R2 = 0.906$, $F(5,221) = 424$, $p < 0.001$. Sex (S): male = 1, female = 2. The estimated BMI was 29.41±5.24 kg/m^2, the Pearson correlation coefficient between the estimated and actual BMI was $r = 0.97$.
Conclusions: The application of weight and height predicting equations, which use a measuring tape and anthropometer as the only tools, are simple and safe alternative for the estimation of weight and height. Further studies are needed to evaluate the applicability of the equations established in a larger Latvian population.
Disclosure: No financial support from commercial parties was received.

P-165
Oncogeriatrics: multidisciplinary management

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Objectives: Incidence of colon cancer is increasing in the elderly. Taking oncogeriatric load is thus essential.
Methods: We illustrate this problem through a clinical case.
Results: A 78-year-old patient was hospitalized for asthenia and weight loss (6 kg in one year) associated with a regenerative normocytic anemia, to 9.9 g / dl, with an inflammatory syndrome without infectious point (CRP 78 mg / L). An indurated and painful mass, on palpation, was discovered in the right iliac fossa, with free lymph nodes. Abdominal CT scan, colonoscopy with biopsies and anatomopathology results revealed a caecal adenocarcinoma, accompanied by mesenteric lymphadenopathy with liver metastases. Bilateral pulmonary embolism is also detected. The tumor is classified pT3aN2M1. This patient had a medical history including many cardiovascular problems like double bypass for ST+ coronary syndrome, pacemaker for atrioventricular block, and a left internal carotid stenosis >80%. A Geriatric Evaluation was realized: Charlson Index at 14, Balducci 2, questionnaire G8 at 4/17, Mini Mental State: 19/30. mini Geriatric Depression Scale at 2/4, BMI 20 kg/m^2, Mini Nutritional Assessment at 10 kg/m^2. Thus, a surgical treatment was decided, but in condition to the anesthetic assessment (the patient was ASA 3) and vascular assessment (left carotid stenosis severe more than 80% at ultrasound carotid Doppler). Unfortunately, the patient died before the surgical management.
Conclusions: This case illustrates the whole point of oncogeriatric assessment, which provides clinicians with essential data to support cancer in the elderly and their long-term monitoring.

P-166
Frailty status of elderly cancer patients in the Central Denmark Region

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Objectives: Comorbidity, mental illness, physical impairment and cognitive problems are more prevalent in elderly patients than younger. This means that elderly cancer patients are more vulnerable in physiological, psychological and social respects. The objective of this study is to describe the overall health status of elderly (70 years+) cancer patients with lung cancer (LC), cancer of the head and neck (HN), cancer of the upper gastrointestinal tract (UGI), and colorectal cancer CRC) using Comprehensive Geriatric Assessment (CGA) and the Balducci frailty criteria.
Methods: From January the 8th to April the 16th 2015 154 elderly cancer patients were referred to the Oncology Outpatient Clinic at Aarhus University Hospital, Denmark for treatment. They were also referred for oncogeriatric assessment. All patients were evaluated regarding comorbidity (CIRS-G), Mental health (GDS-15), cognitive status (MMSE), nutritional status (MNA), and functional status (Barthel-100 and FAQ IADL). The patients were divided into fit, vulnerable or frail. The oncogeriatric evaluation took place prior to start of the cancer treatment.
Results: 154 patients were referred for oncogeriatric evaluation. 53% were females, Mean age 76.7 years (71.3–82.1). LC 44%, HN 11%, UGI 12%, CRC 33%. 95% lived independently, 3% in sheltered housing and 2% in nursing homes. 128 patients underwent CGA. 13% were considered fit, 35% vulnerable, and 52% were frail.
Conclusion: More than half of elderly cancer patients referred to cancer treatment at Aarhus University Hospital is considered frail prior to the beginning of the treatment.

Delirium

P-167
Delirium in elderly patients undergoing intraabdominal cancer surgery – associated factors and consequences

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Objectives: To identify factors associated with the development of delirium following intraabdominal cancer surgery and associated consequences.
Methods: This is a retrospective analysis of older cancer patients (age ≥75 years) with intra abdominal malignancies (hepatobiliary, gastric, colorectal, urologic, or gynecologic) who presented to the Geriatrics clinic at Memorial Sloan Kettering Cancer Center for preoperative evaluation between October 2010 and December 2012. Sociodemographic features, pre-operative geriatric assessment and hospitalization characteristics were collected and analyzed. For continuous and categorical variables, t-test and Chi-square test were applied respectively.
Results: 592 patients (age ≥75 years) undergoing intraabdominal cancer surgery were analyzed. 79 (13.3%) patients developed delirium whereas 513 (86.7%) did not have documented delirium. Factors that were associated with postoperative delirium were a history of falls in the past year ($P = 0.001$), preoperative IADL dependency ($P = 0.015$) and a lower preoperative Mini Cog score ($P < 0.001$). Patients who developed delirium were more likely to have a longer length of stay ($P < 0.001$) and require skilled services at discharge ($P < 0.001$). Six-month survival was significantly lower in patients who developed postoperative delirium ($p = 0.018$).
Conclusions: Development of postoperative delirium in elderly cancer patients is associated with a number of variables. Recognizing these factors early on, prior to surgery could help identify patients at high risk for developing delirium. Addressing the modifiable variables and implementing protocols to prevent delirium in these high risk patients may help reduce the length of hospital stay, requirement of skilled care at discharge and provide a better survival outcome for these patients.

P-168
Timing is of key importance in determining the association between S100B and delirium

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Objectives: Elevated levels of S100B, a marker of brain damage, have been found in serum of delirious patients. S100B measured in serum can also originate from extra-neuronal sources and is elevated after trauma, surgery and during inflammation. S100B levels in cerebrospinal fluid (CSF) are more likely to reflect cerebral origin. We compared S100B levels in CSF of patients with and without delirium.
Methods: We conducted a prospective cohort study at the surgery department of a teaching hospital in The Netherlands. Patients aged 65 years and older who were admitted for hip fracture surgery under spinal anesthesia were included. Delirium was diagnosed using the Diagnostic and Statistical Manual of Mental Disorders, IV edition (DMS-IV-R). We measured S100B levels in CSF obtained prior to the administration of spinal anesthetics.
Results: Sixty-six patients, aged 65–97 years, were included. Fifteen patients (22.7%) developed delirium during admission. There was

no difference in pre-operative CSF S100B levels between delirious and non-delirious patients (median: 1053 pg/mL, inter-quartile range (IQR): 601–1178 versus median: 862 pg/mL, IQR: 701–1156, p = 0.760). The two patients with pre-operative delirium seemed to have higher S100B levels (1052 pg/mL and 2258 pg/mL) than patients with post-operative or no delirium (median: 848 pg/mL, IQR: 595–1177 and median 862 pg/mL, IQR: 701–1156, respectively).
Conclusion: Pre-operative CSF S100B levels did not differ between patients with and without delirium. The higher S100B levels in two patients with delirium at the time of CSF sampling suggest that timing is important in determining the association between delirium and S100B.

P-169
Relation between S100B and delirium remains controversial

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Objectives: Delirium is associated with subsequent increased risk of dementia. This may reflect actual brain damage that arises during a delirious episode. Several studies suggest that S100B, a marker of brain damage, is elevated during delirium. We aim to assess the association between serum S100B levels and delirium in order to further elucidate the pathophysiology of delirium.
Methods: This was a prospective cohort study including patients aged 65 years and older who were admitted for surgical repair of a hip fracture. Delirium was diagnosed using the Confusion Assessment Method (CAM). A maximum of four serum samples were obtained per patient during admission. S100B was measured using enzyme-linked immunosorbent assay.
Results: 995 samples of 385 patients, aged 65–102 years old, were analyzed. 226 patients (59%) had prior cognitive impairment. Cognitive impaired patients were older (86.3 vs. 80.6 years old, p < 0.001), had more functional impairments (Katz-ADL-score 9 vs. 2, p < 0.001) and more often experienced delirium (44.7% vs. 16.4%, p < 0.001). Comparing the first samples during delirium to samples of non-delirious patients, no difference in S100B level was observed (median 0.09 mcg/L versus 0.08 mcg/L, p = 0.219). Multilevel analysis, adjusted for age, prior cognitive impairment, surgery and infection showed no association between S100B level and delirium (p = 0.32). However, surgery (Beta 0.029, p < 0.001), infection (Beta 0.013, p = 0.04) and older age (Beta 0.001, p = 0.01) were associated with increased S100B levels.
Conclusion: In our cohort of older hip fracture patients, we found no association between S100B levels and delirium. The relation between S100B and delirium therefore remains controversial.

P-170
Blood transfusion strategy and risk of postoperative delirium in nursing homes residents with hip fracture

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Objectives: To investigate whether a liberal blood transfusion strategy (Hb levels ≥11.3 g/dL (7 mmol/L)) reduces the risk of postoperative delirium day 10th in nursing homes residents with hip fracture, compared with a restrictive transfusion strategy (Hb levels ≥9.7 g/dL (6 mmol/L)). Furthermore, to investigate whether postoperative delirium increases mortality within 90 days after hip surgery.
Methods: A post-hoc analysis based on The TRIFE randomized controlled trail. Consecutive recruitment of frail anemic patients (aged ≥65 years), residing in nursing homes suffering from unilateral hip fracture, in the period from January 18 th, 2010 to June 6th, 2013 admitted to the Department of Orthopaedic Surgery, Aarhus University Hospital. There were 179 patients included in the study. The first day of hospitalization all enrolled patients were examined for cognitive impairment (assessed by the Mini Mental State Examination) and delirium (assessed by Confusion Assessment Method). Delirium was also assessed on the 10th postoperative day.
Results: The prevalence of delirium was 11% in patients allocated to a liberal blood transfusion threshold (LB) and 22% in the group with a restrictive transfusion threshold (RB). There was association between LB and RB and development of delirium day 10th, OR 0.41 (95% CI: 0.17–0.96), p = 0.04. Delirium on day 10th increased the probability of 90-day mortality OR 2.91 (95% CI: 1.28–6.64), p = 0.01.
Conclusion: In nursing home residents, a maintained hemoglobin level above 11.3 g/dL does reduce the probability of developing postoperative delirium day 10th compared with a restrictive transfusion strategy. Development of postoperative delirium increases the probability of mortality.

P-171
Delirium within the first week of stroke – a pilot study

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Objectives: Delirium is common in acute stroke. Studies indicate prevalence ranges from 13–48%. The purpose of this study is to assess the prevalence of delirium in the first week of stroke and to determine risk factors for the development of delirium.
Methods: Patients admitted to our Acute Stroke Unit were included. Underlying cognitive impairment was assessed using AD8 questionnaire. Delirium screen comprising of 6CIT and DRS was undertaken daily for the first 7 days of admission and data was collected to assess for potential causes of a delirium.
Results: 34 people have been recruited to date with an average age of 67.9 years. 17.6% of patients (n= 6) had a previous diagnosis of dementia.
20.6% (n = 7) were diagnosed with delirium during the first week of stroke. Average age of these patients was 65 (range 40–79). 2 of these patients had a history of dementia. 28.6% (n = 2) had large haemorrhagic TACS and were under the age of 50. 42.8% (n = 3) had an ischaemic PACS and 28.6% had ischaemic POCS. 2 were on intravenous antibiotic therapy and 2 had documented constipation. The median time for patients to be transferred to the Acute Stroke Unit was 23 hours. In the group who developed delirium, median time to transfer was 48 hrs.
Conclusions: Data collection is currently ongoing. Our results to date suggest that delirium occurs in 20% of our patients. Partial anterior circulation stroke syndromes were most likely to become delirious, although this group had 2 patients with dementia.

P-172
Can the development of delirium predict cognitive function after aortic valve implantation?

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Objectives: To establish whether postoperative delirium (PD) predicts cognitive function in octogenarian patients 6 months after treatment with transcatheter aortic valve implantation (TAVI) or surgical aortic valve replacement (SAVR).
Methods: This is a prospective cohort study of octogenarian patients (N = 143) in a tertiary university hospital. Inclusion criteria: ≥80 years, severe aortic stenosis, elective TAVI/SAVR. Exclusion

criteria: Inability to speak Norwegian and declined consent to participate. The Confusion Assessment Method (CAM) was used to identify the presence of PD for 5 consecutive days after treatment. Cognitive function was assessed with the Mini-Mental State Examination (MMSE) the day before treatment and at 6-month follow-up. Longitudinal regression analyses were used to establish the predictive effect of PD in cognitive function.
Results: The majority (57%) of patients was female, and TAVI performed in 46% of the study population. As expected, patients in the TAVI group were older ($p < 0.001$), had more comorbidities ($p < 0.001$) and higher logistic EuroSCORE I($p < 0.001$). Additionally, they had lower MMSE scores ($p = 0.007$). Still, proportionally fewer patients treated with TAVI than with SAVR experienced PD (44% vs. 66%, $p = 0.013$). No differences in cognitive function between baseline and follow-up, in any group, were revealed. However, patients undergoing TAVI and experiencing PD had lower MMSE scores compared to those without PD. Regression models revealed no baseline-adjusted predictive effect of PD.
Conclusions: PD did not predict changes in cognitive function. This is an encouraging finding for octogenarian patients undergoing aortic valve implantation, for whom avoiding or delaying cognitive disability might have a higher priority than promoting longevity.

P-173
Delirium in old patients with reactivated chronic diseases admitted to an intermediate care hospital

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Objectives: Delirium in older hospitalized patients is common and leads to poor clinical outcomes. However, studies about delirium in intermediate care (IC) geriatric hospitals, receiving older adults with exacerbated chronic diseases from the emergency departments (ED), are scanty. We assessed incident delirium, its risk factors and short-term outcomes in this setting.
Methods: We enrolled consecutive older patients transferred from ED to the IC Hospital Pere Virgili, Barcelona, during 3 months. Delirium was determined using the Confusion Assessment Method (CAM). We collected demographics, admission diagnosis, associated dementia, dysphagia, malnutrition, functional status (Barthel Index), comorbidity (Charlson Index), return to usual living situation at discharge and mortality.
Results: Out of 261 patients (mean age+SD=85.2+7.4, 68% women, 53% admitted for respiratory problems, 41% with dementia), 119 (45.6%) developed delirium. In a multivariable logistic regression, dementia and age were associated with delirium ($p < 0.001$), and delirium with less home discharge ($p = 0.003$) and increased mortality ($p < 0.001$). Stratifying for dementia, 38 (25.2%) patients without dementia developed delirium; age, malnutrition, worse functional status and chronic renal failure were associated with incident delirium adjusting for confounders. Regarding patients with dementia: 80 (75.5%) developed delirium; age and admission diagnosis different from respiratory or heart diseases were associated with delirium; delirium did not predict discharge destination or mortality.
Conclusions: In our sample, dementia and age are associated with incident delirium, which reduces home discharge and survival. Identifying risk factors for delirium might help to design prevention and management strategies in this setting

P-174
Undiagnosed prior cognitive impairment in delirium

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Objectives: Cognitive impairment is a risk factor for delirium, but the prevalence of previously undiagnosed cognitive impairment (dementia or mild cognitive impairment) in patients with delirium is unknown.
Methods: We performed a prospective cohort study of people over 70 years admitted to hospital with delirium to establish the prevalence of previously unrecognised prior cognitive impairment. Delirium was diagnosed at baseline using the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR). Mild cognitive impartment and dementia were diagnosed at 3 months in survivors using the International Working Group on Mild Cognitive Impairment criteria and DSM-IV criteria respectively. The group with prior cognitive impairment had a higher burden of co-morbidity (median co-morbidity index 2.0 vs 0.0, $p = 0.002$) and frailty (median clinical frailty scale 5.5 vs 4.0, $p < 0.0005$) than the group with no prior cognitive impairment.
Results: 82 participants with delirium were followed up at 3 months: 5 (6.1%) had persistent delirium, 14 (17.1%) had mild cognitive impairment and 47 (57.3%) had dementia. In 17 participants with prior dementia and 14 with prior mild cognitive impairment the diagnosis had been unrecognised, amounting to 31/82 (38%) of all patients with delirium having some form of previously undiagnosed cognitive impairment.
Conclusions: Three quarters (61/82, 74.4%) of patients admitted to hospital with delirium had evidence of prior cognitive impairment. Given that over 1/3 of older patients with delirium were found to have a previously undiagnosed cognitive impairment, the development and evaluation of services to follow-up and manage patients with delirium is warranted.

P-175
Are outcomes in older patients undergoing elective orthopedic surgery related to anemia and blood transfusion?

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Aim: To evaluate whether anemia at admission predicts postoperative delirium(POD) among older patients undergoing elective orthopedic surgery, and the interrelationship of blood transfusion(BT) in operation and anemia.
Methods: This prospective cohort screened subjects aged over 60 years who were admitted for elective orthopedic surgery in a tertiary medical center from 2011/04 to 2013/12. Age, gender, BMI, educational level, surgery-related factors (ASA class, type of anesthesia and surgery, receiving BT in operation), results of geriatric assessment (hearing/visual impairment, cognition, depressive mood, comorbidity, malnutrition, polypharmacy, ADL, and IADL), laboratory data, POD and length of hospital stay were collected for analysis. To investigate the association of anemia, BT and POD, we grouped patients based on baseline anemia or not, and receiving BT or not.
Results: 37/461 patients (8.0%) developed POD. Anemia at admission and BT in operation are associated with POD and longer

length of hospital stay after univariate analysis. Comparing with patients without anemia and BT as a reference, only patients who received BT had higher risk to have POD (anemia with BT: OR: 4.364, 95% CI: 1.580–12.053; without anemia but receiving BT: OR: 5.139, 95% CI: 1.848–14.294) after controlling confounders. Moreover, anemia is also not risk factor in both gender, and only men receiving BT had a significant risk for POD (OR 4.483; 95% CI: 1.266–15.869).
Conclusions: Among older patients undergoing elective orthopedic surgery, receiving blood transfusion in operation is a significantly risk factor for postoperative delirium, not anemia at admission, and the risk was only found in men, not women.

P-176
Are preoperative cerebrospinal fluid melatonin concentrations associated with postoperative delirium?

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Objective: In delirious patients a disturbed sleep-wake rhythm is often observed. Melatonin, a hormone produced by the pineal gland, is a key factor in regulating circadian rhythm. Our aim is to investigate whether delirium is associated with cerebrospinal fluid (CSF) melatonin levels.
Methods: Patients aged ≥65 years, acutely admitted to the hospital for surgical repair of a hip fracture and received spinal anaesthesia, were included. CSF was collected during cannulation prior to surgery. Melatonin was measured by direct radioimmuno assay (RIA). Patients were screened for delirium daily with the Delirium Observating Screening Scale (DOSS) by nursing staff. If the DOSS ≥3 a psychiatrist was consulted to confirm the diagnosis using the DSM-IV criteria.
Results: Sixty patients were included in the analysis. Thirteen patients (21.7%) experienced delirium during admission of which one before surgery. Baseline characteristics did not differ between delirious and non-delirious patients. In subjects with and without postoperative delirium mean melatonin levels were 12.91 pg/ml (SD 6.6 pg/ml) and 11.72 pg/ml (SD 4.5 pg/ml) respectively, p-value 0.48. No differences in mean melatonin levels were found between patients who experienced delirium and those who did not in analyses stratified for factors that could influence melatonin levels like cognitive impairment, age, use of medication, season, and part of day of CSF sampling.
Conclusion: In this study preoperative CSF melatonin levels aren't associated with postoperative delirium in older hip fracture patients. As melatonin was measured before surgery and delirium usually occurs 2–4 days after surgery this could have influenced the results.

Ethics and end of life care

P-177
The Sequential Organ Failure Assessment (SOFA) score is a predictive factor for 14-day mortality of elderly patients with advanced cancer who present to the ED

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Background: There is limited literature describing clinical predictors for critically ill patients with cancer who present to the emergency department (ED).
Purpose: This study aimed to investigate the potential of SOFA score as a predictor of death within 14 days in elderly patients with advanced cancer admitted to the emergency department (ED).
Methods: This was a prospective observational study of 124 consecutive elderly patients (≥65 years old) with advanced cancer who presented to the ED. The outcome was defined as death within 14 days after admission.
Results: The median survival time of the study subjects was 27.1 days (interquartile range, 9.1–77.2 days), and 35 patients (28.2%) died within 14 days after admission. In univariate analysis, SOFA score (≥4), previous chemotherapy, and altered mental status were predictive of 14-day mortality. Of those variables, only SOFA score was an independent predictor in multivariate analysis.
Conclusions: The SOFA score may provide information on death within 14 days after the ED visit in elderly patients with advanced cancer. This score can help clinicians to predict 14-day mortality and plan appropriate treatment for critically ill patients with cancer who present to the ED.

P-178
Communication of a hospital DNACPR order in the discharge summary in an acute London hospital

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Background: In 2012, the UK National Confidential Enquiry into Patient Outcome and Death (NCEPOD) produced a report stating 'there is a requirement for a robust system to ensure … effective communication of DNACPR decisions between all healthcare workers and organisations involved with the patient'. The report also recommends CPR status should be recorded for all acute admissions. Consequently, this indicates a considerable group of patients who will be discharged with a hospital made DNACPR order. Indeed, previous research, reporting on outcomes of patients with DNACPR orders made in a UK hospital, found that 50% went on to be discharged. In addition to this, there exists significant regional variation in the validity of Hospital DNACPR orders in the community. This further illustrates the need for good communication of DNACPR orders in the hospital discharge summary.
Methods: Data were collected from discharged hospital inpatients in three medical firms over a four month period.
Results: Over the four month period 15% of patients discharged with DNACPR order had this communicated in the discharge summary.
Conclusion: A low proportion of hospital DNACPR orders are communicated to GPs. Recommendations to improve communication includes having a section on whether a DNACPR order was completed added to the discharge summary pro forma. In addition, a clear pathway could be detailed on the DNACPR form on how it should be communicated across different settings.

P-179
Effectiveness of the implementation of a protocol for palliative sedation in hospitalized older patients

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Objective: To determine the effectiveness of a protocol for palliative sedation (PS) in older patients admitted for acute hospital care.
Methods: Observational retrospective study. All patients older than 65 years who were sedated with palliative intent with midazolam in two three-months periods – before and after the implementation

of a hospital PS protocol – were included. Patients who died in the emergency department and ICU were excluded.
Results: 169 patients sedated with midazolam were included (45% before and 55% after the protocol), 53.9% and 46.2% were women, mean age 81.1 and 82.3 years respectively. Most were hospitalized in medical services (93%). The main refractory symptom in need of PS was dyspnea (47.4% vs 46.2%); no refractory symptom was identified in medical records in 5.3% and 10.8% of the patients. After protocol implementation, consultations to the Palliative Care Team decreased (35.5% vs 19.4% p = 0.018). Subcutaneous drug administration decreased (15.8% vs 3.2% p = 0.012), although induction dose of midazolam increased (1.3% vs 28% p < 0.001), the right rescue doses were more frequently used (0% vs 24.5% p < 0.001), as well as the maintenance dose for PS (1.5% vs 33.3% p < 0.001). Sedation level was measured in an increased number of patients (7.9% vs. 31.5%, p < 0.001).
Conclusion: After the implementation of a protocol for palliative sedation, the use of drugs, and the assessment of sedation improved. However, many other aspects of palliative care were unchanged or impaired. More efforts need to be done in implementing the protocol in order to make it effective.

P-180
Palliative sedation in older vs younger hospitalized dying patients

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Objective: To assess how palliative sedation (PS) is performed in older, compared to younger patients dying in the hospital.
Methods: Observational retrospective study. All subjects >17 years old who died in the hospital in a 3-months period were included, except those who died in the ED and the ICU.
Results: 278 patients died, 83.1% were older than 70 years, 47.9% were women, 87% were hospitalized in a medical service. Reasons for dying were cancer (31.3%), heart failure (15%), organ ischemia (14.5%).
PS was used in 134 patients: 59.6% of those below 70 years old and 45.9% of the older ones. Consultations to the Paliative Care Team were more frequent in the younger (33.3% vs 16%, p = 0.04). DNR orders were more used in younger (59.3% vs 30.5%).
The main refractory symptom in need for PS in older patients was dyspnea (33.3% vs 63.2%, p = 0.05), while pain was more frequent in younger (55.6% vs 24.8%, p = 0.002). The drug used for PS was midazolam (100% vs 80.2%, p = 0.04), morphine was used in 15.1%. Induction and maintenance doses of midazolam were correct in 24.3% and 33.3% of older. Rescue doses were indicated more frequently in younger (88% vs 55.1%, p = 0.003) The level of sedation was not assessed in 46% (22.2% vs 51.2%), 19.5% of older showed agitation.
Conclusion: PS was used frequently both in young and old hospitalized patients, being refractory dyspnea and pain the most common symptoms. Midazolam was the drug of choice. Many aspects of PS were different in younger and older patients.

P-181
The process of nurse-led telephone-based care coordination and follow-up of elderly cancer patients

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Objectives: Because of limited ressources for medical geriatric evaluation we examine the feasibility of a nurse-led telephone-based follow-up of elderly cancer patients.
Methods: Between January 2013 and December 2014 all patients with cancer at any stage aged 70 years and older addressed to the geriatrician by an oncologist, surgeon or radio therapist were assessed at baseline and enrolled in a nursing telephone-based follow-up. Selected geriatric conditions included in the comprehensive geriatric assessment were collected at baseline and at J30 and J120. Those geriatric conditions are as follows: functional status as assessed by the Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) scales, nutritional status using the Body Mass Index (BMI) and the Mini Nutritional Assessment-short form, history of falls. And change in the social environment.
Results: A total number of 174 patients took part of the follow-up after an outpatient geriatric evaluation (baseline). The mean age was 83 years. 52% of patients were females. Main tumor sites were lung (almost 40%). All patients who were alive at the date of the telephone interview could participate to the follow-up. The median survival time of the total group from the geriatric baseline evaluation reached about 6 months. Evolution of ADL,IADL and others parameters will be presented.
Conclusions: Utilization of limited geriatric oncology resources may be optimized by performing a training nurse-led telephone-based follow-up.

P-182
Legal guardians' decisions in a dedicated PEG clinic

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Objectives: Despite a growing body of cumulative data indicating no advantage placing a tube feeding in advanced dementia patients, percutaneous endoscopic gastrostomy (PEG) is still a common practice in advanced dementia patients in Israel. A unique clinic was established, aimed to give patients' legal guardians a comprehensive understanding of the procedure, and to recommend comfort feeding, as an alternative to tube feeding.The clinic appointments are conducted by a geriatrician and a gastroenterologist, and last about an hour each. The conversation always consists of information about the course and prognosis of end stage dementia, the futile nature of tube feeding in these patients, as well as more technical information about the procedure and its known complications.
Our aim is to evaluate legal guardians' decision making after this thorough discussion.
Methods: Data of the first 40 legal guardians of advanced dementia patients who attended the clinic were analyzed retrospectively.
Results: Most of the guardians were family members of the patients: 29 were descendants, 2 were spouses, 5 were other relatives (siblings, nephews). Only 4 were public guardians.
In two cases there was an absolute contra-indication for gastrostomy placement. Of the 38 remaining cases – 33 guardians decided to sign up the informed consent form despite our recommendations. 5 guardians decided to withhold the procedure and start (or continue) comfort feeding.
Conclusion: The vast majority of advanced dementia patients' legal guardians decided to place a gastrostomy, contrary to the professional information and recommendations presented.
More research (preferably qualitative) is needed to understand the reasons for the surprising results.

P-183
Hospice Home Immersion Project: advancing medical education

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Background: The University of New England College of Osteopathic Medicine Hospice Immersion project was piloted in Maine, USA,

2014. It was designed and implemented as an experiential medical education learning model whereby medical students were "admitted" into the local Hospice Home to live there for 48 hours. Until this project, palliative and end of life care education at US Medical Schools were accomplished through traditional medical education methods.
Methods: The project utilizes qualitative ethnographic and autobiographic research designs, whereby a unique environment or "culture" (Hospice Home) is observed and life experiences of the medical student before, during, and immediately after the immersion are reported by him/her.
Results: Students report new found skills in patient care such as the 1) importance of physical touch; 2) significance of communication at the end of life for the patient, family, and staff; 3) the value of authenticity and sincerity that comes from being comfortable with oneself, which allows silence to communicate caring; 4) connection with and awareness of the person (rather than their terminal illness) and their family; and 5) the importance of speaking with patients and their families about end of life plans in advance.
Conclusion: This project humanizes dying and death, solidified student realization that dying is a part of life and what an honor it is to be a part of the care process that alleviates pain, increases comfort, values communication, and human connections. Medical education in death and dying is advanced; essential in preparing our future physicians.

P-184
Advanced care planning in the elderly, are we doing it?

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Objectives: The aim was to highlight that elderly patients nearing the end of their life should have an advanced care plan (ACP) as per national guidelines. This helps patients approaching the end of their life to plan for their future care and affairs. This should be discussed before patients become unwell and in the community whilst they have mental capacity.
Method: The National Gold Standards Framework (GSF) for ACP was used on 3 wards for older people. The criteria measured were:
- General indicators of decline and increasing needs
- Signs of frailty
- Signs of late stage dementia.

Results: 27 cases were examined.
- 56% had 5 or more general indicators.
- 85% had 3 or more out of 6 signs of frailty.
- 89% had 2 or more signs of late stage dementia.
- 41% were discharged without mention of care planning and 45% of these had multiple readmissions.
- 33% had palliative discharges and 15% died in hospital.
- None of the patients had an advanced care plan from the community.

Conclusion: ACP aids in planning for future care and a better patient experience. Our study has shown the practice of ACP needs to be improved in patients with poor prognostic indicators. Care plans in hospital and in the community could potentially be clearer and more integrated. One possible solution is to use online platforms to store this information. It is the responsibility of all clinicians at all levels to encourage and participate in ACP.

P-187
Elderly patient insight into deactivation of ICD devices

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ICD implantation is associated with improved mortality in primary and secondary prevention of cardiac death. However patients perceptions have not been well looked at. We studied 22 elderly patients (age up to 87) with prior device implant (ICD and CRT-D) and explored their understanding with a 15 point questionnaire. These patients were interviewed in an outpatient and inpatient setting as part of a quality improvement survey. We found that deactivation was rarely discussed with patients before implant. Patients erroneously believed that an ICD would improve their quality of life. However most patients had not thought about deactivation and appeared to want a box change regardless of age.

P-188
Timeliness and quality of capacity assessments amongst geriatric inpatients

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Objectives: Many elderly patients have transient or permanent defects in cognition and/or communication that impair their capacity for medical decision-making. We sought to discover how swiftly capacity assessments are completed for geriatric inpatients at our institute, how accurately they are documented and who performs them.
Methods: We performed a snapshot analysis over a single day of all capacity assessments performed on patients on three geriatric wards at our institute. We measured the delay between medical decision-making and assessment, the quality of documentation using an approved auditing tool and noted the demographics of the assessor.
Results: A total of 35 assessments were analysed. The mean delay between medical decision-making and assessment was 3.8 days. Quality of documentation varied greatly, from correct completion by all assessors in some sections to correct completion by only two in another. 32 assessments (91.4%) were completed by junior doctors and 28 (60%) were completed by single assessors. 29 assessments (82.8%) were completed by doctors working in geriatrics.
Conclusion: Our study indicates an average delay of over 90 hours between medical decision-making and completion of a capacity assessment for geriatric patients at our institute. These assessments are of variable quality and are often completed by junior staff members working alone once the patient has been admitted to a geriatric ward. We hypothesise that routine screening for confusion amongst elderly patients presenting to hospital, simplification of documentation and formal training in its use will facilitate timely, accurate and standardised capacity assessments in this vulnerable patient group.

P-189
Are elderly patients with cancer always informed of the diagnosis of cancer?

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Introduction: The aim of Oncogeriatric is to adapt the therapeutic management to the general status of the patients. Most of the time, the patient is addressed to the geriatrician after consultation with the cancer specialist. However, the patient does not always know why he's addressed in geriatrics, and what the nature of his illness is.
Objectives: To assess whether the patient knows firstly the reason for the geriatric oncology consultation, and secondly what is the exact nature of his illness.

Methods: A retrospective analysis of 350 consecutive patients evaluated over a 18 month period in the geriatric clinic of the University Hospital of Nancy.
At the beginning of the consultation, two questions were asked: "Do you know why the oncologist sent you?" and "What is the nature of your illness?"
Results: 60% of 350 patients did not know why they will be evaluated by a geriatrician. This was due to the fact that the oncologist had poorly explained the reasons and principles of this consultation. 55% of patients did not know that the lesion was cancer. The greater part of the time, they had forgotten the diagnosis because of cognitive impairment. During the consultation, the cancer diagnosis was announced, and patients were not surprised.
Conclusion: In France, the diagnosis of cancer is mandatory, whatever the age. However, the great majority of the patients is unaware of their disease, and the reason of their consultation. Often families prefer not to inform their parents of the presence of a serious illness.

P-190
Capacity assessments in DNAR orders

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Objectives: Clear documentation of capacity is essential in order to maintain patient safety, autonomy and medico-legal clarity. The aims of the study were to evaluate whether clinicians are formally assessing capacity, using a recommended hospital proforma or otherwise, when implementing a DNAR in patients deemed to lack capacity.
Methods: Data was collected in patients deemed to lack capacity with DNAR orders, across geriatric and acute medical wards at a large tertiary hospital, over April to May 2015.
Data collected included patient demographics, documentation of capacity in the notes, documentation of a formal capacity assessment and the use of the recommended hospital capacity proforma.
Results: Total sample size was 40 patients, with a mean age of 85 years. A 'Lack of Capacity' statement was documented in the notes in 5% of cases (n = 2). None of the cases (0%) had either documentation of a formal capacity assessment, or a completed hospital capacity assessment proforma.
Conclusions: The results of this study suggest there is very poor formal documentation of a mental capacity assessment in patients who are deemed to lack capacity on their DNAR form. This could have profound implications in cases where capacity is fluctuant or where a discussion could not be had with relatives. A revised hospital capacity assessment proforma has therefore been implemented and the relevant teams informed. This new, revised form aims to aid decision making, which many clinicians find particularly difficult in such patients, and provide clear documentation for the patient records. Re-audit pending.

P-191
DNACPR and Mental Capacity Act documentation – prospective study

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Objectives: This study aims to investigate the completion of DNACPR forms, documentation of Mental Capacity Act 2 (MCA2) forms where applicable and involvement of patients/families in decision-making.
Methods: This is a prospective, cross-sectional study. The seven medical wards were examined for patients with DNACPR forms. Each patient's demographics, clinical information were retrieved and DNACPR forms scrutinized.
Results: 77 patients with DNACPR forms were found on medical wards at a single point inspection. The average age was 82±9 years and half were male. 39 (51%) patients had co-morbidities. 61 (79%) had life-limiting conditions. The commonest reason for admission was fall or confusion (32%) followed by shortness of breath/Pneumonia (29%). The most significant reasons for completing a DNAR form were largely frailty, poor reserve and multiple co-morbidities (45%), followed equally by cancer and respiratory/cardiac diseases (13%). However, no reasons were recorded in 11 (14%) cases. Only 30 (39%) patients and 47 (61%) families were aware of the DNACPR decision made. Discussions with patients or families were not always recorded, 10% and 6% respectively. Where patients had no capacity to consent to DNACPR, only 4 (10%) cases had MCA2 forms completed. The vast majority of forms, 63 (82%), were signed or counter-signed by consultants, while only 14 (18%) by Registrars.
Conclusions: Greater care is needed to ensure indications for DNACPR are clearly stated and MCA2 forms are prepared before proclaiming DNACPR. Patients and families should be involved in decision making where possible for more suitable patient care delivery.

P-192
Mortality and morbidity in end of life care – in hospital retrospective study

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Objectives: This study aims to explore the demographics and risk factors of inpatient deaths, as well as the availability of appropriate documentation of DNAR decisions and advance care plans, the reasons for the rates of in-hospital mortality and discharge delays for end-of-life patients.
Methods: This is a single-centre retrospective study. A list of patients who passed away in hospital June-November 2014 was compiled and their case notes examined for relevant data.
Results: 332 deaths were recorded June-November 2014, of which 55 files were irretrievable. Out of the 277 cases examined, 130 (47%) were males and the average age was 81±13 years. 159 (57%) of patients had multiple (≥3) co-morbidities and 165 (60%) had lifelimiting conditions. 125 (45%) had previous admissions in the last 2 years. 260 (94%) had DNAR in place but only 16 (6%) were previously discussed on the community. 32 (12%) had advanced care planned. The average length of stay in hospital was 12 days with an average of discharge delays by 5 days. 56 (20%) were on "fast-track"(End of Life Care) discharge planning and reasons for delays in this included family opposition to caring for patient at home or discharge, delays in equipment arrival and unavailability of funding or of bed in hospice/home.
Conclusions: A greater effort is needed to promote DNAR and advance planning discussion in the community, involving patients and their families. This will help tailor individualized patient care, avoid unnecessary readmissions and reduce long hospital stays, delays/failures in fast-track discharges.

P-193
M-EndoL: Investigating the impact of MRSA infection and colonization in end-of-life-care and geriatrics

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Objectives: The impact of infection and colonization with MRSA or other multi-resistant pathogens (MRE) on patients in end-of-

life situations and in geriatric care, their relatives, professional caregivers and the health care stakeholders is mostly unknown. Existing research data from a general population is not transferable for an end-of-life care population. Therefore, an interprofessional team of nursing scientists, psychologists, health economists and physicians from different departments of university realize M-EndoL, which aims to develop a patient- and family-centered approach for handling MRSA/MRE in end-of-life care, taking into account the complex situation of hospitalized patients and their relatives.
Methods: The study uses a mixed methods approach and is conducted across two research phases and at two study centers. In a first phase, patients and relatives are interviewed using semi-structured questioning to explore information and communication in clinical setting and the individual consequences due to complaints, therapy and hygienic measures. Transcripts are analyzed using principles of Grounded Theory and MAXQDA software. In the second research phase, results are shared in focus group discussions.
Results: We will present first categorizations and hypothesis about the impact of MRSA/MRE infection and colonization on geriatric patients and their relatives.
Conclusions: A synthesis of the research findings will result in a best practice guide for handling MRSA/MRE in end-of-life care. The guide will be developed using expert consensus.
The project is funded by Bundesministerium für Bildung und Forschung (BMBF). There are no conflicts of interest to be reported.

P-194
Terminal change in functional decline of nursing home residents with and without advanced dementia

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Background: Decline in physical functioning has been reported to indicate impending death of residents in long-term care. However, the role of dementia remains unclear, as well as time of onset of terminal decline and the amount of change compared to pre-terminal decline.
Objectives: To investigate terminal change in functional decline of nursing home residents with advanced, mild or no dementia.
Methods: Mulitphase growth models were applied to retrospective data of the last 24 months of 44,811 deceased residents (mean age at death: 87.46±7.17, 67.6% women) of 358 Swiss nursing homes between 1998 and 2014. Physical functioning was assessed with the activities of daily living (ADL) index of the Resident Assessment Instrument-Minimum Data Set (RAI-MDS).
Results: Results revealed an acceleration of functional decline between two and three months before death in all three groups. For individuals without dementia, terminal decline was 1.5 points per month compared to 0.1 points during pre-terminal decline. While residents with mild dementia only showed slight differences in end-of-life trajectories compared to the non demented residents, advanced dementia was related to a lower physical functioning as well as less severe rate of terminal decline.
Conclusion: Impending death of nursing home residents is indicated by terminal change in functional decline between two to three months before death. Although global level of physical functioning is lowered in residents with advanced dementia, they still show a considerable increase in end-of-life functional decline.

P-195
Treatment-related differences in health related quality of life and disease specific symptoms among colon cancer survivors: Results from the population-based PROFILES registry

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Objectives: The goal of this study was to compare health related quality of life (HRQoL) and disease-specific symptoms between colon cancer patients treated with surgery only (SU) and surgery and adjuvant chemotherapy (SU+adjCT). Results were stratified for those aged <70 and ≥70 years. HRQoL of patients was also compared with an age- and sex-matched normative population.
Methods: Patients diagnosed with colon cancer and surgically treated between January 2000 and June 2009, as registered within the population-based Eindhoven Cancer Registry, received a questionnaire on HRQoL (EORTC QLQ-C30) and disease-specific symptoms (EORTC QLQ-CR38) in 2010. EORTC QLC-C30 questionnaire was also completed by the normative population (n = 685).
Results: 1606 (72%) colon cancer survivors responded to our questionnaire. 854 colon cancer patients aged ≥70 were included in this study, treated with SU (n = 643) or SU+adjCT (n = 211), with a matched normative control group of 98. No statistically significant differences on the scales of the EORTC QLQ-C30, both functioning scales as subscales, were observed between colon cancer patients treated with either SU or SU+adjCT and the normative population.
Conclusion: No differences in HRQoL were found between colon cancer patients aged ≥70, 1–10 years after diagnosis, treated with either SU or SU+adjCT and a normative population aged ≥70. Long-term HRQoL does not justify withholding adjuvant chemotherapy. Furthermore, HRQoL-measurements in an elderly population may be complex and actual HRQoL instruments may lack the ability to discriminate HRQoL in elderly patients.

P-196
Dementia Village Singapore: visions of the future

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Introduction: In place of traditional nursing homes, the Netherlands has pioneered the first dementia village in the world, the De Hogeweyk. We imagine how a similar-styled village can be built in Singapore, and its feasibility.
The Dementia Village: Land scarce Singapore would be the perfect setting for a block of condominium-style apartments. It will be situated within a gated premise with security cameras, replete with pavements, cycling paths and gardens. Residents will be given the independence to walk around as they please.
The village will be helmed by a myriad of healthcare staff who will "live" in the same community. They will patrol the village in their own clothes and look after the villagers in a discreet manner.
The village will be self-equipped with its own facilities. There will be a grocery store, hair salon, restaurant, chapel and a GP clinic. There will also be a town hall, where villagers can mingle and have classes such as cooking and art therapy.
It is hoped that the village will create a safe environment for dementia patients to live as normal a life as they could, in a dignified manner.
Limitations: The cost of building and maintaining the compounds will be the main consideration, as well as manpower recruitment and training. Also criteria have to be put in place to achieve a deft balance between demand and supply.

Conclusion: A dementia village is a novel concept, that would result in a more active, comprehensive and humane way for dementia patients to live, without being handicapped by their condition.

Frailty and sarcopenia

P-197
Development and validation of a self-administrated quality of life questionnaire specific to sarcopenia: the SarQoL

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Objectives: The aim of this study was to develop and validate a sarcopenia-specific quality of life questionnaire (SarQoL, Sarcopenia & Quality of Life questionnaire).
Methods: The development part of the questionnaire was articulated in four stages: 1. Item generation; 2. Item reduction; 3. Questionnaire generation; 4. Pre-test of the questionnaire. To validate the SarQoL, we assessed its discriminative power (logistic regression), internal consistency (Cronbach's alpha), construct validity (Spearman Correlation), test-retest reliability (ICC) and floor and ceiling effects.
Results: The final version of the questionnaire consists of 55 items divided into 7 domains, translated into 22 questions to be rated on a 4-point Likert scale. The pre-test indicates that the SarQoL is easy to complete independently, in approximately 10 minutes. The SarQoL significantly discriminated sarcopenic subjects from non-sarcopenic ones ($p < 0.001$). Internal consistency was good with a Cronbach's alpha= 0.87. The SarQoL had a good convergent validity with, for example, the domain of functional score ($r = 0.52$, $p < 0.001$) and vitality ($r = 0.72$, $p < 0.001$) of the SF-36 questionnaire. Divergent validity has been found with, for example, the EQ-5D pain ($r = -0.12$). Test-retest reliability was good with an ICC of 0.91 (0.82–0.95). Neither floor nor ceiling effects has been found.
Conclusions: The first version of the SarQoL, a quality of life questionnaire specific for sarcopenic subjects, has been developed and has been shown to be understandable by the target population. This French version of the SarQoL is valid, consistent and reliable and can therefore be recommended for clinical and research purposes, and for translation in various languages.

P-198
Systematic screening of sarcopenia in geriatric day hospital

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Objectives:
1. Verify the feasibility to implement a simple tool of sarcopenia's screening by patients admitted in the geriatric day hospital.
2. Measure the prevalence of sarcopenia for those patients.
3. Look for possible correlations with the origin of the patient, his sex, the amount of taken medicine and his autonomy.

Methods: The patients aged 75 years or more are considered. A collection of geriatric basic data is realised for all the patients (new or not seen for one year). The sarcopenia's evaluation follows the EWGSOP's consensus.
Results: During the period between 02.17.2014 and 02.09.2015, 428 patients benefited from a sarcopenia screening and the collection of geriatric data. Incidence of sarcopenia: 31.2% incidence.
Sarcopenic patients have a mean age of 84.15 years, are institutionalized in 27.6% of the cases, a Katz's scale average of 10.32/24 and an average number of medicine taken in 8.80.
Respectively for non-sarcopenic patients the data are: 82.74 years (statistically significant difference SS), 26.7% institutionalized (statistically non-significant difference NS), Katz's of 9.28 (SS) and 8.34 medicine taken (NS).
42.1% of sarcopenic patients are men and 23.9% of non sarcopenic (SS).
Conclusions: The systematic screening of sarcopenia is possible at a practical level as part of the patient care in the geriatric day hospital. The prevalence of sarcopenia measured according to this flowchart is 31.2%. Sarcopénia is more often found in men, older people and at the more dependent patients for the ADL.

P-199
Frailty and Sarcopenia in Colombia: Results from the SABE Bogotá Study

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Objective: Analyze the coexistence of frailty and sarcopenia in a sample of community-dwelling older adults and identify variables that increase or decrease the odds of developing these conditions.
Methods: Data comes from the SABE Bogotá Study, a cross-sectional study conducted in the capital of Colombia in 2012. A total of 2000 adults aged 60 years and older were interviewed and sociodemographic, health, cognitive and anthropometric measures were collected. The frailty phenotype the European Sarcopenia Working Group algorithm were used to define both conditions. Logistic regression analyses were used to identify factors associated with increased or decreased odds of developing frailty and sarcopenia.
Results: A total of 135 older adults have frailty (9.4%) and 166 sarcopenia (11.5%). Older age and female gender significantly increased the odds of both frailty and sarcopenia (Frailty: Age OR 1.05, 95% CI 1.03–1.06, Gender OR 1.44, 95% CI 1.12–1.84; Sarcopenia: Age 1.04, 95% CI 1.02–1.07, Gender OR 1.51, 95% CI 1.05–2.17). Depression significantly increased the odds of frailty (OR 1.17, 95% CI 1.12–1.22) and smoking the odds of sarcopenia (OR 2.38, 95% CI 1.29–4.37). Conversely, higher function significantly decreased the odds of frailty (OR 0.74, 95% CI 0.64–0.86).
Conclusions: There are potentially reversible factors that increase the odds of frailty and sarcopenia among older adults in Colombia. Frailty, sarcopenia and multimorbidity are overlapping, yet distinct conditions in our sample. Future studies need to identify interventions to prevent these conditions, and examine individuals that have frailty, sarcopenia and comorbidities to design interventions to improve their quality-of-life.

P-200
Correlation between muscle mass and muscle strength among nursing home residents

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Background: This study aimed to assess the correlation between muscle mass and muscle strength among nursing home residents.
Methods: One-hundred nursing home residents (85% of women) aged 80.1 ± 10.1 years were included in this cross-sectional study performed in Liège, Belgium. Muscle mass, specifically appendicular lean mass divided by the square of the height (ALM/ht^2), was assessed using a bioelectrical impedance analyzer (InBody S10). Muscle strength was measured with a hydraulic dynamometer (hand grip strength) and with a hand-held dynamometer (knee extensors, knee flexors, ankle extensors, ankle flexors, hip

abductors, hip extensors, elbow extensors and elbow flexors). The Pearson's correlation test was used to test the relationship between lean mass and muscle strength.
Results: The mean values were 9.1±10.1 kg/m^2 for ALM/ht^2, 15.9±6.9 kg for grip strength, and for isometric strength they ranged from 56.9±31.5N (elbow extensors) to 101.3±58.2N (knee extensors). Correlation between ALM/ht^2 and grip strength was significant ($r = 0.28$; $p = 0.014$) as well as between ALM/ht^2 and strength of all muscle groups except for hip abductors and extensors. The correlations ranged from 0.38 (elbow extensors and ankle extensors) to 0.52 (elbow extensors). Correlation between lean mass of the dominant leg and grip strength, was also significant ($r = 0.44$; $p = 0.001$) whereas the relation between lean mass of the dominant arm and grip strength was not significant ($r = 0.19$; $p = 0.66$).
Conclusion: There seems to be a positive correlation between appendicular lean mass and strength of various muscle groups including grip strength in nursing home residents. Longitudinal studies are needed to better understand the clinical impact of this observation.

P-201
Impact of the frailty status on muscle mass and muscle strength of nursing home residents

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Background: The aim of this study was to compare muscle mass and muscle strength of frail, pre-frail and robust subjects living in nursing homes.
Methods: This is a cross sectional study performed in 10 nursing homes in Liège, Belgium. Patients were classified as frail, pre-frail or robust according to Fried's definition. Muscle mass, and more specifically appendicular lean mass divided by height squared, was assessed using a recently validated bioelectrical impedance analyzer, the InBody S10 (Buckinx et al. 2015). Grip strength was assessed with a hydraulic dynamometer and maximal isometric strength of 8 different muscle groups (i.e. knee extensors, knee flexors, ankle extensors, ankle flexors, hip abductors, hip extensors, elbow flexors and elbow extensors) was assessed with a microFET2 hand-held dynamometer.
Results: A total of 250 subjects were included in this study (81.2±10.3 years, 67.2% of women). After adjustment for age, sex and BMI, muscle strength at all sites was significantly different between robust, pre-frail and frail groups. However, the difference in appendicular lean mass was not significant between the three groups based on the frailty status.
Conclusion: Frailty status, among nursing home residents, seems to be associated with reduction in muscle strength but not with muscle mass.

P-202
Drugs, frailty and falls. The Toledo Study for Healthy Aging

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Objectives: Interventions to avoid risk factors associated with frailty are needed among others reduction of drugs to prevent falls. However do not exist studies that analyze the relationship between frailty and drugs. Our objective is to evaluate association between number of drugs and frailty with recurrent falls (RF) in the elderly.
Methods: 1723 subjects from the Toledo Study for Healthy Aging, a prospective Spanish cohort study. RF was defined as two or more falls in the last year. Frailty was assessed with three different scales: the Fried's scale, the Frailty Index and the Frailty Trait Scale. And finally, the number of drugs was defined as the number of drug being taken when the interview was done.
Logistic regression models were used to assess this relationship using BMI, age and sex as possible confounders.
Results: Independently whether the frailty scale is included into the model and the scale used, the number of drugs was associated with RF, OR (95% CI) for an increment of one drug range from 1.085 (1.014–1.160) to 1.087 (1.016–1.163). If we change the order of inclusion in the statistical model, we observed the same effect with the frailty score, OR (95% CI) were 3.800 (2.097–6.901), 1.031(1.015–1.047) and 1.032 (1.013–1.052) for Frail vs Robust (Fried's scale) and for an increment of 1 point in the FTS and FI score, respectively.
Conclusions: Independently of the frailty scale used, the number of drugs and frailty are two independent risk factors of recurrent falls.

P-203
Sarcopenia in elder population with good functional capabilities – Evaluation of functionality and detection

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Objectives: The active ageing (WHO) pretends to optimize the health opportunities to improve the elderly population's life quality. The evaluation of the functional capacity in an elderly population with a good level of basal functionality, allows to detect risk situations and subsidiary sarcopenia improvement, by means of an intervention program.
Method: 137 persons were evaluated, all of them with a good level of functionality and autonomous mobility. 103 lived in their community and 34 in residences. Initial evaluation included measurement of anthropometric parameters, history of falls, nutritional and clinic status, polipharmacy, functional status, life quality, MARCHA DUAL, functional status according to Short Physical Performance Battery (SPPB), walking speed, dual walk, muscular strength measured by dynamometry and muscle mass measured by impedanciometry. Sarcopenia diagnosis criteria were established by meeting EWGSOP and Janssen & Masanes criteria. Physical performance status was evaluated by crossed-press strength tests, walking speed and muscle mass index.
Results: The average age of the population is 76.6 years (74.6 in the community and 84.3 in the residence). The residential population presents functional tests below the communal. In the communal population, exist 5% of presarcopenia cases and 6% of sarcopenia. In the residential, exist 24% of people with sarcopenia. A physical exercise program is designed for the total population.
Conclusions:
- Sarcopenia is more frequent in the residential environment than in the communal.
- A multicomponent physical exercise program is presented.

P-204
The FNIH-criteria for sarcopenia predict 12 year mortality in ambulatory older men

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Objectives: The Foundation for the National Institutes of Health [FNIH] Sarcopenia Project recently developed new criteria for diagnosis of weakness and low muscle mass in older adults. These criteria were associated with increased likelihood for

incident mobility impairment. However, mortality risk patterns were inconsistent and further validation of their cut-off points in other populations seems needed (McLean et al., 2014 Journals of Gerontology).
In this study, we aimed to evaluate the FNIH cut-off points for weakness and low muscle mass in a sample of community-dwelling older men in Belgium.
Methods: This community-based cohort study included 200 ambulatory men aged ≥74, living in the community of Merelbeke (municipality of Ghent, Belgium).
Grip strength was measured twice consecutively using a Jamar type dynamometer. Weakness was defined as low grip strength (<26 kg) and low grip strength-to-body mass index [BMI] ratio (<1.00). Low muscle mass (dual-energy x-ray absorptiometry) was categorized as low appendicular lean mass [ALM] (<19.75 kg) and low ALM-to-BMI ratio (<0.789).
Results: Mean age was 78.5(±3.5) years. Combined weakness and low muscle mass was present in 4 to 9% of men, depending on the criteria applied. After 12 years of follow-up, 134 men (67%) had died. Low grip strength (HR = 1.59, 95% CI 1.06–2.28), low grip strength-to-BMI ratio (HR = 1.65, 95% CI 1.03–2.65) and low ALM-to-BMI ratio (HR = 1.68, 95% CI 1.18–2.41), but not low ALM, were associated with all-cause mortality in older community-dwelling men.
Conclusions: These findings confirm the FNIH cut-off points for low grip strength and low ALM-to-BMI ratio as candidate criteria for clinically relevant weakness and low muscle mass in men.

P-205
Discriminating sarcopenia and robustness: a matter of speed limit

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Sarcopenia definitions and cut-off points for each parameter were formulated in 2011 by the European Working Group on Sarcopenia in Older People (EWGSOP) and International working Group on Sarcopenia (IWGS). These guidelines on diagnosis algorithm include usual gait speed as the easiest and most reliable way to start case finding. The EWGSOP stated a cut-off of <80 centimetres per second (cm/s) to identify sarcopenia risk. IWGS put forward a speed lower than 100 cm/s.
Aim: We want to define if either speed limit differentiates better between robust and non-robust elderly.
Method: Participants were categorized robust or non-robust according to their individual speed compared with normative reference age and sex specific gait speed cut to define robust from a cross-sectional study of non-disabled, non-demented elderly. The reference persons were labelled robust when medically and functionally stable over a period of 1 year. Our community dwelling participants (day clinic patients and their relatives, patients recently discharged from hospital) were able to walk 10 meters over a Gaitrite System without help, had no clinical gait abnormalities, used no walking aid or had no orthopaedic prosthesis.
Results: 171 participants (72% females and 28% males), age 70 to 89 years were identified as robust in 38% of the cases. Cohen's Kappa Measurement of agreement between the groups Robust and Sarcopenia limit above 80 cm/s was 0.833 (Std Error 0.042, P ≤ 0.0001). Kappa agreement determining Robust in the same group as Sarcopenia limit over 100 cm/s was 0.576 (Std Error 0.062, P ≤ 0.001).
Conclusion: Robustness matches up best with Sarcopenia criteria using 80 cm/s as case finding limit in a random cohort.

P-206
Explicative factors of fear of fall in elderly. FISTAC Study

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Objective: Find out the factors associated with Fear of Falling Syndrome (FoF) measured by the Falls Efficacy Scale – International (FES-I) in patients included in the FISTAC study.
Methods: 52 patients included in FISTAC study. Variables: age, gender, scales of Barthel, Lawton, FAC, Yesavage, MMSE, Charlson, MNA-SF; fragility (Linda Fried criteria), polypharmacy, vitamine D, SPPB, handgrip, legpress, limits of stability through posturography and gait parameter through GAITRite system. The association between this variables and FES-I was studied with correlation and multiple linear regression tests.
Results: Mean age 78.7 years. 80.8% women. FES-I 31.4 (DE: 11.2). 67% presented FoF by FES-I. Mean of Barthel 92.1 (DE: 7.8); Lawton 5.8 (DE: 2.3); MMSE 21.6 (DE: 4.5); Yesavage 5.3 (DE: 3.8); drugs mean 7.9 (DE: 3.9); gait speed 4m: 0.63 m/s (DE: 0.49); SPPB 7.8 (DE: 2.7); 1RM legpress 67.3 kg (DE: 24.1); power max legpress 150.9 W (DE: 86.5); maximum excursion limits of stability 56.9% (DE: 15). The multiple linear regression model with the variables with significant correlation, evinced a corrected r2 0.721. The variables independently associated with the FES-I were: Barthel (B = −0.71, 95% CI −1.0 to −0.3, p < 0.001), Lawton (B = 1.32, 95% CI 0.01–2.63, p < 0.05), FAC (B = 9.75, 95% CI 3.9–15.6, p = 0.002), Yesavage (B = 0.76, 95% CI 0.17–1.34, p = 0.01), dizziness (B = 6.02, 95% CI 1.89–10.16, p = 0.006), 1RM legpress (B = −0.16, 95% CI −0.31 to −0.01, p < 0.05), maximum excursion (B = −0.5, 95% CI −0.82 to −2.18, P = 0.003), endpoint excursion (B = 0.38, 95% CI 0.03–0.73, p = 0.04); global maximum power (B = 0.16, 95% CI 0.06–0.26, p = 0.003).
Conclusions: The FoF in elderly measured by the FES-I scale, is related to physical parameters such as muscle strength and power in legpress, with the limits of stability, functional parameters (Barthel, Lawton and FAC), with the scale Yesavage, and the presence of dizziness.

P-207
Evaluation of the hypophyseal function in elderly patients in a geriatric medicine unit

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Objectives: To analyse the prevalence of functional disorders of the hypophysis in elderly inpatients with an acute disease; which drugs are related with the modification of the levels of prolactine and its relationship with frailty determiners.
Methods: Descriptive, prospective, transversal study. Patients with inpatient care from June to November 2014. Analysed variables: sociodemographic, medical background (MB), usual drugs, functional assessment (Barthel index, IB), cognitive assessment, comorbidity (Charlson Index, CI), biochemical parameters, hypophysiary hormones and inpatient death. SPSS software package.
Results: 318 patients. 68.2% female. Mean age 86.31. Emergency 84%. MB: cardiovascular 82.4%, neurological 61.3%, dementia 43.1%, nephro-urological 40.6%, sensory 30.6%, pulmonary 28.3%, thyroid disorders 10.7% (hypothyroidism 76.6%). MDRD-GFR <60 ml/min: 23% before admission, 45% in inpatient blood test. IB <45 in 37% in admission, 53.1% in discharge. Anaemia 67.6%, low albumin 56.9%, high TSH 11%, high prolactin in 33% of the patients. Inpatient death: 16%. In admission: CI ≥ 5 18.6%, CI ≥ 3 46.9%, in discharge CI ≥ 3 55.5%. We found significant associations among high prolactin levels and previous

renal disease ($p < 0.024$); mortality ($p < 0.01$); IB <65 ($p < 0.005$); CI ≥ 5 ($p < 0.001$) (male/female $p < 0.027$); trazodone ($p < 0.006$), risperidone ($p < 0.000$) and omeprazole ($p < 0.002$) intake.

Conclusions: More than a third of our patients present hypophyseal dysfunction, regardless the existence of other endocrine alterations, such as hypothyroidism. The continuous intake of risperidone, trazodone, omeprazole has significant association with the rise of prolactin. The rise of prolactin in our patients displays an association with predictive mortality indexes (CI), and short-term loss of functionality and mortality. There is an association between high prolactin levels and anaemia, which is a well-known frailty marker.

P-208

Identification of frailty in community-dwelling older persons with the Gérontopôle Frailty Screening Tool: prevalence and feasibility in primary care

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Background: The Gérontopôle Frailty Screening Tool (GFST) is a tool developed for general practitioners (GP) to screen potential frail individuals and designed to be used for individuals aged 65 and more without physical disability.

Objectives: To determine the prevalence of potential frailty in community-dwelling persons aged 65 and more with the GFST in a French area.

Methods: GP filled in the GFST for every 65-year-old and more patient who came for a consultation. The patient was identified as frail if he/she was considered frail by the GP after the initial questionnaire with frailty criteria. The inclusion register took in the total number of patients aged 65 and more that consulted the GP during the study period.

Results: Sixteen GP included 522 patients; the exact prevalence was measured out of 379 patients visiting one of 11 physicians who filled in the inclusion register;. The mean age was 76.1±7.3 years, there were 51% of women, and 91 were detected as frail: 24.5% [95% CI 20.2–29.2%]. 33.3% of 75-year-old and more patients (n = 204) were identified as frail, [95% CI 27.0–40.3%]. The inclusion rate was 67% to 93%, depending of GP, with a median of 83%. Results for each frail criterion will be presented.

Conclusion: The GFST seems to be an easy frailty-screening tool for primary care: the prevalence of patients identified as frail is close to the reported prevalence in literature. More studies are needed to evaluate the interest of a systematic screening.

P-209

Scales Elderly Patient Global Assessment applied to elderly patients with hip fracture

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Objectives: To analyze the potential relationship between the risk of hip fracture and the results of the scales Elderly Patient Global Assessment in geriatric patients.

Methods: Retrospective and descriptive study of a random series of 120 patients over 75 years attending in the emergency department of the University Hospital of Vigo in the year 2013 with a diagnosis of hip fracture. The data collected from medical records of the patients regarding their functional, mental and social situation value at the time of hip fracture were analyzed.

Results: Of the 120 patients analyzed in the study, 92 were women (76.6%) and 28 males (23.3%) with a mean age of 84.53 years. Considering the Elderly Patient Global Assessment in the functional area, according to the scale of disability of the Red Cross in terms of ambulation, we classified our patients in 6 degrees: 30.83% of patients were classified as grade 0 (normal walking); 27.5% as grade 1 (walks with some difficulty); 17.5% as grade 2 (walks using cane or similar); 10.83% as grade 3 (walks helped by a person at least); 6.67% as grade 4 (walks helped by two people with extreme difficulty); and 6.67% as grade 5 (immobilization in bed or chair). Regarding the mental area, at 75% is no evidence any cognitive impairment. Only 10% of them were institutionalized at the time of the fracture.

Conclusions: In this series of 120 elderly patients a direct relationship between hip fracture by low-impact crash, and functional, mental and social situation is evident: the highest percentage of fractures occurs in patients who had no trouble walking or in need of a single support, without any cognitive impairment and who lived at home.

P-210

Profile of elderly patients with hip fracture and previous history of low impact fracture

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Objectives:

1. To determine the incidence of previous history of low impact fracture in patients admitted to hospital with hip fracture, as well to identify risk factors associated with osteoporosis.
2. To analyze the degree of implementation of anti-resorptive treatments in patients with a history of osteoporotic fracture.

Methods: Retrospective and descriptive study of a random series of 120 patients over 75 years attending in the emergency department of the University Hospital of Vigo in the year 2013 with a diagnosis of hip fracture. Data were collected regarding previous history of low impact fracture, risk factors for osteoporosis, vitamin D levels before fracture and used anti-resorptive treatment.

Results: Of the 120 elderly analyzed in the study, 92 were women (76.6%) and 28 males (23.3%) with a mean age of 84.53 years. Seventy-five percent of those had no cognitive impairment and were independent for ADL. Twenty-nine patients (24% out of 120) had suffered a previous fracture of low impact: 28.95% had hip fracture, 13.16% vertebral fracture, 10.52% Colles fracture and 47.37% of patients had other types of fracture. Chronic renal failure, diabetes mellitus, COPD and corticosteroids were the most prevalent risk factors.

Only 11.66% out of 120 patients had previous vitamin D levels and only 13.8% out of 29 patients with previous fractures, had measured vitamin D levels (50% had a severe deficit).

Only 4.17% out of all patients had a bone density test done and of the 29 patients refractured only 1 patient (3.5%) had measure bone mineral density.

Regarding the implementation of anti-resorptive therapy in the 29 objective of the study, only 34.5% (10 patients) patients had received treatment before hip fracture. Of these, 4 were being treated at the time of the fracture and 6 were treated.

Conclusions: Although the most important risk factors in the onset of fracture include age, personal or family history of fracture and BMD determination, in the series of patients analyzed, low implementation of management protocols in patients with established osteoporosis leading to the appearance of second low impact fracture is noted.

It is necessary to educate the medical staff caring for these patients of the need to implement management protocols of the elderly with low impact fracture in order to reduce the risk of subsequent fractures.

P-211

The 'slumpogram': a novel radiological sign that predicts 6-month mortality in elderly hospital inpatients

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Objectives: Frailty describes decreased physiological reserve and resistance to stressors. Many studies have sought to quantify frailty but there remains no consensus assessment tool or measure. Our retrospective observational study aims to identify frailty and associated increased mortality risk using admission chest radiographs.
Method: 100 hospital inpatients aged 80 and over who received admission chest radiography were included in the study. Two physicians assessed these for the 'slumpogram' sign: chest radiographs in which the mandible overlies the lung fields. Mortality on index admission and at 6 months, and total inpatient bed days, were then recorded.
Results: 20 patients were 'slumpogram' sign positive on admission (20/100, 20%). The 'slumpogram' sign positive and negative groups had comparable mean ages: 88.30 and 86.25 years. 6-month mortality in the positive group was significantly higher than in the negative group: 73.7% and 28.6% respectively. Odds ratio for 6-month mortality in the presence of the 'slumpogram' sign was 7.00 (2.25–21.77, 95% confidence interval, $p < 0.001$). There was a 55.3% increase in average total 6-month bed-stay following the index admission for the positive group (17.7 days vs. 11.4 days).
Conclusion: This study is the first formal description of the 'slumpogram' sign as an independent predictor of increased 6-month mortality. It is a simple tool for assessing frailty in elderly inpatients in the acute setting, providing useful prognostic information. Alongside clinical assessment, such a tool may help to inform end-of-life decisions, improve advanced care planning and enable tailoring of care to individual patients.

P-212

Association of frailty and cardiometabolic risk among community-dwelling middle-aged and elderly people

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Purpose: To evaluate the association of cardiometabolic risk and frailty through a community-based aging cohort in Taiwan
Methods: The data of 1839 participants (men 47.5%; mean age 63.9±9.3years) was retrieved from the first-wave of the I-Lan longitudinal cohort study, for cross-sectional analysis. The diagnosis of frailty was based on Fried phenotype criteria. Comparisons between cardiometabolic risk and frailty status were done after adjustment for age, hormone parameters, functional measurements and skeletal muscle mass. Independent association of cardiometabolic risk and frailty status was identified through the multivariate logistic regression model.
Results: Adjusted for age, blood pressure, LDL-C, uric acid, creatinine, and carotid intima media thickness were not significantly associated with frailty. However, lower total cholesterol and HDL-C, higher hsCRP and glycemia profiles maintained significantly associated with frailty. For hormone parameters, DHEA-S, IGF-1 and free androgen index were not significantly associated with frailty after age adjustment. In multivariate logistic regression model, abdominal obesity, HOMA-IR and hsCRP were significantly associated with frailty, the odds ratio for frailty was 3.57(95% confidence interval (C.I) 1.88–6.78, $p < 0.001$), 1.30(95% C.I 1.02–1.66, $p = 0.032$) and 1.66(95% C.I 1.10–2.49, $p = 0.016$) respectively in fully adjusted model. Conversely, higher total cholesterol was associated with lower prevalence of frailty (OR: 0.44 (95%C.I 0.22–0.89), $p = 0.023$) in the final model.
Conclusion: In this study, abdominal obesity, insulin resistance and inflammation were significantly associated with frailty, and the effect was independent of functional measurement and decline of skeletal muscle mass. An integrated approach targeting at cardiometabolic aging and frailty is needed in clinical practice.

P-213

Prevalence of frailty among outpatient falls clinic attendees in a district general hospital

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Objectives: The prevalence of frailty in community dwelling older people is reported to be from 7% up to 26% in those over 85 years old (Collard et al, JAGS, 2012).Falls and fractures are common among frail people. (Tom et al, JAGS, 2013.) The prevalence of frailty in fallers is unknown. Our aim was to find out the prevalence of frailty among falls clinic attendees in our hospital
Method: 85 consecutive patients attending the falls clinic between January and August 2014 were assessed on the 5 parts of the frailty phenotype model (Fried et al, Journal of Gerontology, 2001) 58 women and 27 Men, Average age 79 years old. No exclusions as long as they could cognitively respond to questions with the help of carers.
Results: 61% of patients were classified as frail, 25% as pre-frail. In those over 80 years old prevalence of frailty rose to 73%. Women made up 71% of the frail group. Those not frail and pre frail had on average a greater number of falls. However histories of fracture were more in frail group.
Conclusion: Frailty with or without fracture is very common in fallers attending falls clinic. Falls services should address frailty as well as falls and fracture prevention.

P-214

Hormonal determinants of muscle strength in hospitalized older adults: the GLISTEN study

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Objective: To determine the relationship between anabolic hormones, testosterone (T), insulin like growth factor-1 (IGF-1) and vitamin D (appropriately measured) and muscle strength in hospitalized older patients.
Methods: The Gruppo Lavoro Italiano Sarcopenia-Trattamento, Nutrizione (GLISTEN) designed a multicenter Study in 7 acute Geriatric Wards of University-Hospitals to determine change in muscle mass and strength during hospitalization. We used data from 77 women and 75 men between October 2013 and 2014 in Parma, Messina, Ferrara, and Rome having serum available and CGA at hospital admission and discharge. Muscle strength was evaluated by hand-grip dynamometer. FNIH cut-off points (26 and 16 kg for men and women) were used to define low muscle strength. Testosterone and Vitamin D were measured by LC-MS/MS in BRAC Laboratory, Boston, USA. The relationship between anabolic hormones and muscle strength was tested by multivariate regression models including age (Model 1) and age, weight, IADL, cognitive-depressive status, multi-morbidity, hemoglobin, albumin and WBC (Model 2).
Results: Mean age was 85±6 and 79±6, in women and men, respectively. T and 25-OHD3 [median (IQR)] were 21 (23) and 216 (292) ng/dL and 6.4 (6.7) and 7.3 (8.9) ng/mL, in women and

men. Medians (IQR) for IGF-1 were 65 (36) and 82 (49) ng/mL. In Model 1, T in men (β±SE 2.06±0.93, p = 0.03) and women (1.33±0.60, p = 0.03) but not IGF-1 and Vitamin D were independent correlates of muscle strength at hospital admission. The association between T and muscle strength was less strong in women (1.04±0.62, p = 0.09) and men (2.17±1.06, p = 0.04) in Model 2. At hospital discharge 47/75 men and 65/77 women had lower muscle strength FNIH sex criteria. FNIH hand grip "weaker" had lower T than "normal" group (214±190 vs 307±181, p = 0.04).
Conclusions: T is an independent correlate of muscle strength at hospital admission in older male and female hospitalized patients. Men in the weaker hand grip FNIH group have significantly lower T than robust.

P-215
Evans syndrome: a rare cause of anemia in the elderly

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Background: Anemia in the elderly remains a major problem and the causes are large and varied.
Methods: We illustrate that problem in this clinical case.
Results: We received a 87-year-old patient for ischemic stroke. She had a history for hypertension treated and phlebitis. Neurological examination showed a right pyramidal syndrome associated with a complete right hemiplegia without facial involvement. The skin examination showed a slight livedo in the lower limbs. Laboratory tests showed anemia and thrombocytopenia initially not known. Cerebral scan confirmed ischemic stroke. Given these disturbed investigations, we have made a report showing a positive Combs test IgG + C3d associated with a collapsed haptoglobin, increased free bilirubin and increased Ddimères (>10.00 mg/L). Antiplatelet antibodies were also positive (IgG + IgM). These results confirmed a mixed autoimmune hemolytic anemia associated with autoimmune thrombocytopenia and going in the direction of an Evans syndrome. An assessment of immune dysfunction has been prescribed, including the search for lupus or antiphospholipid syndrome, which can move in the direction of a Sneddon syndrome. Unfortunately, it has not been possible before the sudden deterioration and death of the patient.
Conclusions: Dysimmune pathologies are also found in the elderly and must be sought before symptoms suggestive for the establishment of a cure.

P-216
Validation of "VIDA questionnaire" for assessing instrumental activities of daily living; aspects connecting to frailty

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Tools assessing early stages of functional decline in elderly people, such as instrumental-activities-of-daily-living (IADL)questionnaires, are involved in the detection of frailty.
Objectives: To present the VIDA questionnaire, assessing IADL in the community health setting, and its main characteristics. To highlight some analysis through which it connects to frailty.
Methods: The creation/validation of this questionnaire has been performed through several research studies: Delphi technique (to select items), inter/intrarater reliability, exploratory factor and known-group analysis; with some of them related to frailty:
– content validity measuring IADL (Delphi), and correlation with similar scales (Lawton),
– concurrent validity with functional performance tests (Timed-Up-and-Go), widely recommended nowadays in frailty detection,
– association with frailty risk factors, including low physical activity or age.
Significance level 0.05 as required.
Results: Finally 10 items were selected through the Delphi study, with 3/4-point Likert for responses, maximum score 38; without gender bias, and 4 minutes to be completed. High inter/intrarater reliability, with intraclass correlation coefficients (ICC) of 0.94 (95% CI 0.88–0.97 p < 0.0001) and 0.96 (0.93–0.98 p < 0.0001), respectively. Cronbach's alpha 0.94. Adequate construct validity (correlations between items >0.40).
Moderately correlated with the Timed-Up-and-Go test (ICC 0.61 p < 0.0001).
In the known-group analysis scores fell when Lawton was wrong (p < 0.0001), with increasing age (p = 0.0002) and decreasing physical activity (p = 0.0001).
Lower score when ≥2 frailty factors (comorbidity, falls, recent hospitalization, adverse social conditions, polypharmacy) coexisted (p = 0.015).
Conclusions: VIDA questionnaire has good characteristics as a diagnostic test, and several analyses seem to connect to the detection of frailty. It is in an advanced stage of validation; indeed, it has started being used in several research projects, mainly related to frailty.

P-217
Relation between knee joint deformity and gait in community-dwelling elderly people

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Objectives: To clarify the relationship between the severity of knee deformity and gait.
Methods: The subjects were 2,284 randomly-selected, community-dwelling middle-aged and elderly people ≥40 years old (men 1,154, women 1,130, mean age 60.2). They were classified into 3 groups by knee deformity on Xp: normal, mild, and severe. Gait velocity, pitch, and step length were examined by gait analysis at comfortable and maximum speeds. A general linear model adjusted for age, weight, and leg length was then used to investigate differences by severity of knee deformity.
Results: The velocity of gait with comfortable speed in the normal, mild, and severe deformity groups was 85.5, 85.2, 81.7 (m/min), respectively, in men, and 82.0, 82.4, 79.5 (m/min) in women. It was significantly slower in the severe group than in the normal and mild groups in both sexes (all p < 0.05). In gait with maximum speed a similar difference was seen only in women (p < 0.05 and p < 0.01, respectively). Pitch was not significantly different between the groups in either gait with comfortable or maximum speed. Step length in gait with maximum speed was different between the severe and mild groups in both sexes and between the severe and normal groups in men (all p < 0.05). Maximum step length was significantly longer in the severe group than the normal and mild groups in both sexes (men, all p < 0.05; women, all p < 0.01).
Conclusion: Severe knee deformity affects gait velocity, mainly by decreasing step length.

P-218
Falls, 25(OH)vitaminD and physical performance in older adults: preliminary results from the FALL-A-SLEEP Study

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Objectives: The relation between serum 25-hydroxyvitamin D3 (25(OH)D) levels and physical performance have been well established among women and community dwelling older adults. We aimed to examine the association between falls, 25(OH)D

levels and physical performance among acute care setting geriatric patients.
Methods: Acute care setting patients aged ≥75 were proposed to participate to the FALL-A-SLEEP Study since March 2015. Patients with severe cognitive impairment, short life expectancy or bedridden were excluded. 25(OH)D levels were measured. Handgrip strength and short physical performance battery (SPPB including gait speed, chair stand and balance) were performed in a stabilized medical condition.
Results: Complete evaluation was available for 17 patients (mean age 84.9, 12 women, mean body mass index 21.7 kg/m^2). For patients never fell, only women. Among fallers (recurrent falls), a half spent more than one hour on the ground after falling and 58% cannot get up alone after falling. 54% had traumatic falls. Handgrip strength and SPPB were not statistically different between fallers and non-fallers. Balance scores between fallers and non-fallers are nearly significant (3/4 vs 1.6/4, p = 0.07). 25(OH)D levels were significantly lower in fallers (36.8 ng/ml vs 22.2 ng/ml, p = 0.04) and among patients with SPPB≤8 (22.3 vs 39.3 ng/ml, p = 0.048).
Conclusions: There is an association between 25(OH)D and falls and between 25(OH)D and physical performance, probably mostly due to the impact on balance. More data are needed to confirm these results and the inclusion is still ongoing in the FALL-A-SLEEP Study.

P-219
High-protein oral nutritional supplements improve leg muscle quality in sarcopenic, malnourished adults

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This study evaluated high-protein nutritional supplements with and without CaHMB on muscle quality (MQ) in sarcopenic, malnourished adults. Participants (65+ years, n = 330) malnourished by subjective global assessment and sarcopenic by EWGSOP were randomized: Control (14 g protein; 160 IU vitamin D) or Experimental (20 g protein; 500 IU vitamin D3; 1.5 g CaHMB) twice daily. MQ was calculated (isokinetic leg strength, Nm ÷ leg lean mass (DXA, kg) at baseline, 12, and 24 weeks. Subgroups were evaluated: severe sarcopenia (low muscle mass, low grip strength [<30 kg men; <20 kg women], and low gait speed [<0.8 m·s^{-1}]) and sarcopenia (low muscle mass, normal gait or normal grip strength). Evaluable data from n = 216 are presented as median change from baseline (25%, 75% interquartile range). MQ improved in both groups (p ≤ 0.05) over 24 weeks (+0.42 [−0.5, 1.3], Experimental; +0.42 [−0.5, 1.8], Control), with no treatment differences. Severe sarcopenia comprised ~44% of this sample; MQ was lower in those with severe sarcopenia, with no treatment differences in MQ improvements. MQ increased in sarcopenic individuals at 12 weeks, Experimental > Control (ns, p = 0.06), with significant treatment differences (Experimental: +0.89 [−0.05, 1.53]; Control: +0.31 [−0.71, 0.73] p = 0.02] in subjects with normal grip only. Sarcopenic, but not severely sarcopenic, participants improved MQ after consuming a supplement with CaHMB compared to a Control supplement for 12 weeks. Although prevalence of severe sarcopenia is low (≤2.9%, Dam et al., J Gerontol A Biol Sci Med Sci 2014; 69: 584–590), severity should be considered for muscle-related outcomes during nutrition-only interventions.

P-220
Prognostic factors related to functional recovery after hip fracture

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Aim: To identify variables related to functional recovery after hip fracture in elderly people.
Methods: This prospective observational study included patients who were admitted to Infanta Sofia's hospital for hip fracture surgery from April to September 2014. Functional status (Barthel Index), mental status (Cruz Roja Index) and grip strength were evaluated at the time of admission. Multivariate regression analysis was used to evaluate the independent relationship between functional status 3 months after discharge and clinical variables.
Results: The mean age of hip fracture subjects was 85.5±0.7 years. Out of 93 subjects, 74 were women and 19 were men. Women were significantly older than men. Barthel Index score was 66.7±3.1 on average. Moderate to severe cognitive impairment (Cruz Roja Index ≥3) was present in 33.3%. The mean grip strength was 10.5±0.6, being higher in men than in women. Grip strength was directly related to age and previous functional status. Mortality was 14.2% and those who died had lower Barthel Index scores prior to hip fracture.
Barthel Index score three months after hip fracture was 50.3±3.9 on average. We observed significant associations between functional status three months after discharge and age, previous functional status, mental status and grip strength. After multiple logistic regression, only associations with age, previous functional status and mental status remained significant.
Conclusions: Hip fracture has a significant impact on functional status and mortality among elders. Factors related to functional recovery are age, previous functional status and cognitive status.
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P-221
Frailty syndrome among older patients with post-traumatic stress disorder

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Objective: To assess frailty syndrome in elderly people with post traumatic stress disorder (PTSD).
Methods: The study included outpatients ≥60 years old with PTSD who had been deported during the World War II or born on exile in the Soviet Union. PTSD was diagnosed according to the criteria of DSM-IV. To asses frailty we used two scales: the Canadian Study of Health and Aging Clinical Frailty Scale (CSHA-CFS) and the Cardiovascular Health Survey frailty definition (Frail-CSH).
Results: The group included 68 patients (55.9% men); mean age: 70.4±6.8 years (min.-max.: 60–88 years). 61.8% of the patients were pre-frail, 20.6% were frail, with the frail-CSH definition. There was a trend toward higher frequency of frailty in women (30% vs 13.2% in men, p = 0.088). More than half of the respondents reported exhaustion, 23.5% weight loss, and 16.2% low activity level; 62.3% presented weakness and 9.2% impaired mobility on physical examination. According to the CSHA-CFS, 29.4% of all respondents were mildly frail, 8.8% moderately frail, 1.5% severely frail, 25% apparently vulnerable, 23.5% well, with treated comorbid disease, 10.3% well, without active disease, and only 1.5% very fit. There was a significant correlation between the results of the CSHA-CFS and the muscle strength (r = −0.35, p < 0.01) and the results of the Timed Up and Go test (r = 0.506, p < 0.001).

Conclusions: Frailty syndrome was diagnosed more often among the patients with PTSD than reported for general population in literature. There was a relationship between the CSHA-CFS results and the muscle strength and mobility.

P-222
Food intake score as an elderly laymen's screening tool for nutritional intake

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Objectives: There are many nutritional screening tools. Many require measurements (BMI) or uncertain information (weight loss). If the elderly are to be sensitized to do a nutritional screening themselves, a more user-friendly tool needs to be presented. The food intake score (FIS) is introduced and screened for correlations with various outcomes of sarcopenia and survival. The comparison will be done with the Mini Nutritional Assessment-Short Form (MNA-SF).
Methods: All patients admitted to the geriatric wards of the University Department of Geriatrics between 01/08/2012 and 31/01/2013 were included. FIS was measured by a three-day-observation of nutritional intake (9 meals). For each meal, a maximum score of 1 was given if the whole plate was eaten. Muscle mass (CT-scan of the upper leg), strength (Jamar dynamometer) and functionality (SPPB) were measured. At least one year after admission, survival was checked. Correlations were calculated using the Pearson's correlation coefficient (PCC).
Results: Cohort totalled 300 patients. The mean FIS was 7.0±2.0 (median 8.0, range 0–9). It had a small but positive correlation with the MNA-SF ($p < 0.001$, PCC 0.222). When compared the FIS with the MNA-SF, correlations where as followed: muscle mass ($p < 0.001$, PCC 0.317 versus PCC 0.238), muscle strength ($p < 0.001$, PCC 0.236 versus PCC 0.200), SPPB ($p < 0.001$, PCC 0.318 versus PCC 0.171) and one-year survival ($p < 0.001$, PCC 0.285 versus PCC 0.278).
Conclusions: FIS had better correlations with muscle mass, strength, functionality and one-year survival than MNA-SF in a hospitalized elderly population. FIS seems a promising easy tool for self assessment in the elderly.

P-223
Sarcopenia in Ukrainian women: assessment and determination of lean body mass deficiency

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The aim of this study was to evaluate the normative data of lean mass in the healthy Ukrainian women.
Materials and methods. 301 women aged 20–87 years (mean age 57.6±0.9 yrs; mean height 1.62±0.004 m; mean weight 63.5±0.5 kg) were examined. No subject had any systemic disorders or took medications known to affect the skeletal and muscle metabolism. The lean and fat masses, bone mineral density (BMD) were measured by the DXA method (Prodigy, GEHC Lunar, Madison, WI, USA). Appendicular skeletal mass (ASM) was measured at all the four limbs with DXA. We've also calculated the appendicular skeletal mass index (ASMI) according to the formula: ASM/height (kg/m^2). Low muscle mass values conform to the following definitions: European guidelines (ASMI <5.5 kg/m^2) [Cruz-Jentoft A.J. et al., 2010], less than 20% of sex-specific normal population and two SD below the mean of the young adult Ukrainian females (20–39 yrs).
Results: We observed a significant decrease of ASM with age ($F=2.7$; $p = 0.01$). The ASMI values corresponding to a cutoff of low muscle mass by the definitions used were as follows: <5.5 kg/m^2 (European guidelines), <5.7 kg/m^2 (<20th percentile of sex specific population), <4.8 kg/m^2 (two SD below the mean of young Ukrainian females aged 20–39 yrs). The prevalence of low muscle mass in women aged 65 yrs and older based on the above three criteria was 12%, 16% and 1.7%, respectively.
Conclusion: Peak muscle mass among the Ukrainian women is achieved in the fifth decade.

P-224
Bone mineral density, spinal micro-architecture (TBS data) and body composition in the older Ukrainian women with vertebral fragility fractures

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The aim of this study is to evaluate the bone mineral density (BMD), trabecular bone score (TBS) and body composition in women taking into account the presence of vertebral fragility fractures (VFF).
Materials and Methods: We examined 171 women aged 65–89 years (mean age 73.12±0.39 yrs). The patients were divided into groups depending on the VFF presence: A, no VFF ($n = 105$); B, present VFF ($n = 66$). BMD, lateral vertebral assessment, trabecular bone score (L1-L4), lean and masses were measured by DXA densitometer (Prodigy, GE). Appendicular skeletal mass (ASM) was measured at all the four limbs with DXA. We've also calculated the appendicular skeletal mass index (ASMI) according to the formula ASM/height^2 (kg/m^2).
Results: We have found the following parameters to be significantly lower in women with VFF compared to women having no VFF: BMD of total body (A 0.859±0.01 g/cm^2, B 0.764±0.02 g/cm^2; $p < 0.05$), spine (A 1.038±0.02 g/cm^2, B 0.927±0.03 g/cm^2; $p < 0.05$), femoral neck (A 0.787±0.01 g/cm^2, B 0.711±0.01 g/cm^2; $p < 0.05$), 33% forearm (A 0.690±0.01 g/cm^2, B 0.600±0.01 g/cm^2; $p < 0.05$), TBS (A 1.171±0.01, B 1.116±0.02; $p < 0.05$), whole-body fat mass (A 30,736.87±939.92 g, B 25,877.45±966.90 g; $p < 0.05$), whole-body lean mass (A 41,202.44±498.18 g, B 39,440.77±594.78 g; $p < 0.05$), ASM (A 16.47±0.22 kg, B 15.81±0.22 kg; $p < 0.05$) and ASMI (A 6.59±0.07 kg/m^2, B 6.34±0.09 kg/m^2; $p < 0.05$). The frequency of presarcopenia was 2% in women with no VFF and 14% – in women with the VFF.
Conclusion: Women with the VFF have the BMD, TBS, lean and fat masses data significantly lower in comparison to women with no VFF.

P-225
The functional autonomy measurement system in relation with dynapenia in elderly patients

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Objective: Functional independence loss leads to an increased risk of mortality and morbidity and decreased quality of life and autonomy. The aim of this study was to investigate the functional autonomy (FA) by 'The Functional Autonomy Measurement System (SMAF)' and to evaluate its relation with dynapenia in elderly patients.
Materials and Methods: This study was carried out in Internal medicine outpatient clinic of Ege University Faculty of Medicine, between January 1st, 2015 and March 31th, 2015. All of the patients 65 years and older admitted to outpatient clinic who gave informed consent formed the study sample. Grip strength measurement was performed by hand grip strength (HGS) measurement. Personal information form and SMAF is filled with face to face interviews. Older individuals with total points −5.0 or smaller, are at risk of losing their functional independence. Statistical analysis of the data were obtained by SPSS 15.0 software package.
Results: The mean age of 71 elderly individuals taken into the study were 73.97±7.1. 59.2% of the study sample were women.

Mean FA score was −20.77±22.29 and HGS values were 16.55±8.54 in the whole group. FA score was −24.18±23.09 in patients with dynapenia and −6.71±10.94 in non-dynapenics. Patients with low FA scores were significantly higher in dynapenic patients versus non-dynapenics (80.3% vs 19.7%).
Conclusion: Dynapenia is common in elderly patients. FA scores were significantly lower in dynapenic individuals. 'The Functional Autonomy Measurement System' may be used for measuring functional autonomy in a structured manner which allows using scores.

P-226
Correlates of poor physical performance in older subjects with comorbidity

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The aim of the study: To characterize factors associated with different forms of physical impairments.
Methods: In subjects aged 53–96 years comprehensive geriatric assessment (MMSE, GDS, MNA, ADL, IADL) was performed. Blood sample for standard laboratory tests and inflammatory markers (hsCRP, osteoprotegerin (OPG), pantraxin3 (PTX3), IL-6, IL-18, soluble receptor2 for TNFalfa (sTNFR2) were taken. Body composition was measured by DXA. Gait speed, Timed Up&Go test, 6-Minute Walk Test and handgrip strength was assessed. Subjects were compared according to performance: gait speed ≥0.8m/s vs <0.8m/s, TUG >13.5 s vs ≤13.5 s, 6MWT ≥400 vs <400 m and handgrip <26 kg for men and <16 kg for women vs ≥26 and ≥16 kg respectively.
Results: Mean age of 73 patients (65.8% men) was 70.7±8.4 yrs. Mean number of diseases was 5.2±2.0, mean number of used medications was 7.3±2.5.
Subjects who performed worse all physical tasks were older, had higher OPG level, and had troubles in IADL. Poorly performed tasks related to gait were associated with lower muscle strength, risk of malnutrition and higher hsCRP, IL-6, IL-18, sTNFR2 level. Better TUG and muscle strength performance were associated with higher 25OHD and lower PTH level. Only 6MWT and handgrip strength were associated with muscle mass and TUG and muscle strength were associated with lumbar spine Tscore.
Conclusions: Poor physical performance is associated with increased markers of inflammation. Impairment in gait related activities was unrelated to muscle mass but were associated with age, comorbidities, poor functional status and fat content, while handgrip strength was associated mainly with appendicular muscle mass and ACEI use.

P-227
Physical frailty predicts medical expenses in community-dwelling, elderly patients: three-year prospective findings from living profiles of older people surveys in Korea

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Objective: With an aging population, medical expenses for elderly patients are increasing rapidly. Frailty is currently considered an important issue in geriatrics. The purpose of this study was to investigate the effect of frailty on medical expenses in elderly Korean patients.
Methods: Data were gathered from the 2008 and 2011 Living Profiles of Older People Surveys (from August 11, 2008 to February 20, 2012) and included 5,303 community-living Korean men and women, aged 65 years or older. The five-item frailty index was comprised of items on weight loss, exhaustion, weak grip strength, slow walking speed, and low physical activity. Frailty data were extracted from the 2008 Living Profiles of Older People Survey, and out-of-pocket medical expenses data were extracted from the 2011 Living Profiles of Older People Survey. A generalized linear model was used to analyze the correlation between frailty and medical expenses after adjusting for sociodemographics, health behavior, and health status factors.
Results: Baseline frailty assessments grouped patients as robust (43.3%), prefrail (49.3%), and frail (7.4%). After adjusting for sociodemographics, health behavior, and health status variables, frailty was found to increase outof-pocket medical expenses (robust: ref., prefrail: $\beta = 0.087$ & $P < 0.001$, frail: $\beta = 0.143$ & $P < 0.001$).
Conclusion: Our findings suggested that frailty is an independent predictor of increasing medical expenses in communitydwelling elderly patients.

P-228
The effect of frailty on 3-year mortality in Korean community-dwelling elderly

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Objectives: With the aging of population, incidence of frailty is markedly increasing. But its association with mortality in Korean elderly is lacking. The aim of this study is to examine the association between frailty and mortality in Korean community-dwelling elderly.
Methods: Data were from the 2008 and 2011 Living Profiles of Older People Survey (From August 11st 2008 to February 20th 2012) and included 4,014 men and women, aged 65 and older, living in community in Korea. 5-item frailty index comprised of weight loss, exhaustion, weak grip strength, slow walking speed, and low physical activity. Participants with lack of data about frailty index and people who were diagnosed with cancer, stroke, myocardial infarction and angina were excluded. Mortality data were extracted from 2011 Living Profiles of Older People Survey. Binomial logistic regression models were constructed with frailty status regressed on mortality, adjusting for variables.
Results: Baseline frailty assessments yielded following results: non-frail (39.74%), pre-frail (50.17%), frail (10.09%). Overall, 303 (7.55%) participants died during the 3-year study period. After adjusting for socio demographic variables, having a 2-year health check-up or not, current smoker or not, BMI, GDS, taking enough vegetables, fruits and milk products, and comorbid diseases (tuberculosis, chronic renal failure, chronic bronchitis/emphysema), frailty increased risk for mortality (HR = 1.675, 95% CI 1.040–2.697).
Conclusions: In community-dwelling Korean elderly, those who were frail and pre-frail elderly showed a higher risk of mortality than the robust.

P-229
Older adults with sarcopenia versus age and sex-matched controls: differences in physical and nutritional characteristics

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Objectives: Nutrition can influence the partly reversible process of sarcopenia, which is a main cause of reduced physical mobility, increased falls and fractures. Our goal was to compare physical and nutritional status of sarcopenic non-protein-energy malnourished older adults with the status of age-matched healthy older adults.

Methods: Older adults in the UK with sarcopenia, i.e. SPPB: 4–9 and low skeletal muscle mass index (SMI), a subset of the PROVIDE study population (NTR2329), were matched 1:1 by age and sex to healthy adults (SPPB≥11 and normal SMI) (n =132, 71±4 y). Muscle mass, physical function (SPPB), hand grip strength, Quality-of-Life (QoL), physical activity level and dietary intake were measured in both groups. Between-group comparisons were made by matched pairs using a paired t-test or Wilcoxon signed rank test.
Results: Muscle mass, strength, and function, QoL and physical activity level were significantly lower in the sarcopenic adults ($p < 0.001$). While energy intakes were similar (sarcopenic, 1709±418; healthy, 1745±513kcal/day), the sarcopenic group consumed less protein/kg (−6%), vitamin D (−36%), vitamin B-12 (−22%), magnesium (−14%), phosphorus (−10%), and selenium (−12%) ($p < 0.05$) than the healthy controls.
Conclusions: Sarcopenia significantly impacted, by definition, muscle mass, strength and function in age-matched older adults, also influencing QoL and activity level. Differences in dietary nutrient intakes might be involved in causing the differences in muscle mass, strength and function between the two groups. These potential nutrient shortages could be addressed using a specific oral nutritional supplement.
Disclosure of Interest: The project is sponsored by Nutricia Research, Nutricia Advanced Medical Nutrition

P-230
A low caloric, leucine-enriched whey protein oral nutritional supplement affects body composition in sarcopenic older adults

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Rationale: High protein intake is recommended for sarcopenic geriatric patients. Here we present the impact of supplementation with a low caloric, fast-digestible, leucine-enriched whey protein oral nutritional supplement.
Methods: Non-protein-energy malnourished sarcopenic older adults (n = 380, mean±SD: 77±7 y), i.e. SPPB: 4–9, were randomly allocated to a 150 kcal, leucine-enriched whey protein oral nutritional supplement or an iso-caloric control product for 13 weeks (secondary analyses of PROVIDE study, NTR2329). Outcomes included energy and protein intake, and body composition. Analyses were made using a t-test or Mann–Whitney test (changes from baseline are presented).
Results: Median protein intake at baseline was 1.0 g/kg body weight/day [IQR 0.8–1.2]. In the active group, median protein intake including the supplement increased to 1.5 g/kg/day [IQR 1.3–1.7, $p < 0.001$]; whereas, there was a slight decrease of 0.05 g/kg/day in the control group [IQR −0.2, 0.1, $p = 0.012$]. The intervention led to a significant increase in body weight in control and active groups (1.08±1.66 kg and 0.92±1.74 kg, $p < 0.001$), driven by fat mass (+0.78±1.20 kg, $p < 0.001$) in the control group and fat (+0.40±1.16 kg, $p < 0.001$) and appendicular muscle mass (+0.24±0.74 kg, $p = 0.003$) in the active group.
Conclusion: Low caloric, high protein oral nutritional supplements are a feasible option to improve protein intake in non-protein-energy malnourished elderly. Supplementation with this low caloric, leucine-enriched whey protein oral nutritional supplement resulted in a muscle mass gain and a modest increase in body weight.
Disclosure of Interest: The project is sponsored by Nutricia Research, Nutricia Advanced Medical Nutrition

P-231
Prevalence of sarcopenia in Parkinson's disease

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Objectives: Parkinson's disease (PD) is characterized by progressive impairment in several domains, potentially leading to a state of frailty. Motor and non-motor symptoms affect their independence, performance and nutritional state. These same conditions represent risk factors for sarcopenia. Scanty evidence is today available on the prevalence of sarcopenia in PD. Aim of the present study was to assess the prevalence of sarcopenia according to three different criteria in PD patients. Their concordance was also investigated.
Methods: Data on 184 PD patients have been analysed. Skeletal muscle mass was assessed by DXA (Dual X-Ray Absorbimetry), muscle strength by hand grip and physical performance by 4-meter walking speed test. EWGSOP (European Working Group on Sarcopenia in Older People), FNIH (Foundation for the National Institutes of Health) Sarcopenia Project and IWG (International Working Group) criteria have been used to define sarcopenia. Agreement was assessed by the Cohen's k coefficient.
Results: Within participants (mean age 74 years; 36% women), the highest prevalence of sarcopenia was found applying the EWGSOP criteria (40.2% in men and 22.4% in women) and the lowest with the FNIH ones (21.4% in men, 19.4% in women). Agreement was good between EWGSOP and IWG criteria (k=0.73–0.75) and weak among the others. In general we found high negative percent agreement but poor positive percent agreement.
Conclusions: Sarcopenia is prevalent in older adults with PD, with significant differences across genders and different criteria. Agreement among criteria was scarce. Which criterion detects more frail and impaired PD patients remains an open question.

P-232
Assessing sarcopenia in older hospitalized patients. Feasibility and prevalence estimates of the EWGSOP algorithm

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Introduction. The term "sarcopenia" is commonly used in the literature, but there is no agreement on the diagnostic definition. Consequently, the prevalence of sarcopenia varies greatly depending upon the criteria used and study setting. We investigated the feasibility of the European Working Group on Sarcopenia in Older People (EWGSOP) algorithm assessment in hospitalized older adults and analyzed prevalence and clinical correlates of sarcopenia.
Methods: Cross sectional analysis of 485 participants enrolled in a multicenter observational study of older adults admitted to 9 acute care wards in Italy. Sarcopenia was assessed as low skeletal mass index (Kg/m^2) plus either low hand-grip strength or low walking speed (EWGSOP criteria). Skeletal muscle mass was estimated using bioimpedance analysis.
Results: Of the 485 patients (age 80.7±6.6 years; women 48%) enrolled in the study, 195 (40.2%) were not able to perform the 4-meter walking test and 34 (7%) did not perform the hand-grip test because of medical problems. After exclusion of 29 patients

with missing data in both hand grip and walking speed, the overall prevalence of sarcopenia (32.7%; CI 95% 28–37%) steeply increased with age ($p < 0.001$). Patients with sarcopenia were more likely to have congestive heart failure, cerebrovascular disease, dementia, and severe ADL disability.
Conclusion: Based on EWGSOP criteria, prevalence of sarcopenia is extremely high among acutely ill older adults. The EWGSOP algorithm, however, might not be suitable for routine clinical use in patients admitted to acute care wards since many patients are not able to perform the walking test.

P-233
Analysis of occurrence of geriatric giants during 17 years at acute geriatric department

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Objectives: With increasing age the degree of dependency and occurrence of great geriatric syndromes (GS), the so-called geriatric giants grow substantially.
Methods: The prospective cohort study was aimed at conducting an analysis and comparison of geriatric syndromes (geriatric giants) among age different groups at admission time to the acute geriatric department. Setting, participants: Between 1995 and 2012 years we had altogether 12,210 elderly patients of an average age 80.57.0 y. (range 65–103 y.) hospitalised at the Department of Geriatrics. We divided the patient set into three different age subgroups (65–74 y.; 75–84 y. and ≥85 y.; e.g. 21.4%; 47.9% and 30.7%) and compared the results among them.
Results: 3787 persons (31.0%) were without any GS. Growing tendency of the occurrence of all the geriatric syndromes in combinations with increasing age ($p < 0.001$) is obvious. Their occurrence in the above mentioned age different sets was according to individual geriatric syndromes and sex (female and male): falls 22.0%,27.8%,39.9% and 20.5%, 27.0%, 36.1%; immobility 26.4%, 29.3%,42.5% and 30.3%, 30.1% and 39.2%; incontinence 38.4%, 50.6%,69.5% and 38.2%, 47.4%,61.8%; dementia and cognitive impairment 13.4%, 23.4%, 38.1% and15.8%, 24.3%,33.2% respectively. Age cut-off for geriatric syndromes occurrence based on ROC analysis is for female sex 83.5–84.5 y. and for male sex 78.5–82.5 y.
Conclusion: The increasing occurrence of geriatric giants with age and female gender has crucial importance not only for individuals and families but also for demands on costs of health and social care in oncoming decades.

P-234
Prediction of appendicular skeletal muscle mass using bioelectrical impedance analysis equations in Australians

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Objectives: Appendicular skeletal muscle mass (ASM) is an important diagnostic criterion for sarcopenia in older people. Bioelectrial impedance analysis (BIA) offers a simple approach to measure ASM. To date, the performance of internationally developed BIA prediction equations (PE) in Australians is not known. The aim of this study was to validate the BIA PEs, against dual-energy X-ray absorptiometry (DXA) in healthy Australians.
Methods: 195 (age 18–82 years old) healthy Australian Caucasians from the western suburb of Adelaide were investigated. ASM were measured using BIA (single frequency) and DXA. Four BIA prediction equations were assessed for their validity in this Australian population. Bland-Altman analysis was used to assess the predictive accuracy of ASM as determined by BIA against DXA.
Results: For three of the BIA PEs, ASM as derived from BIA correlated strongly with ASM as determined by DXA (r ranging from 0.96 to 0.97, $p < 0.001$). Of these three, the PE developed by Sergi et. al. performed the best with the lowest mean bias of 1.09 kg (CI: 0.84–1.34, p-value <0.001). For this equation, the 95% limits of agreement was between −2.50 and 4.68 kg and the root mean square error was 2.09 kg (CI: 1.72–2.47).
Conclusions: The BIA PE developed by Sergi et. al. in older Italians can be used in Australian Caucasians when single frequency BIA is used.

Geriatric education

P-235
A retrospective review of discharges of older people investigating contributions of clinical domains to cost of admissions

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Objectives: Despite trainees in geriatric medicine being required to meet curriculum objectives in management and finance, and consultants being accountable for departmental expenses, little formal teaching is received during training. We evaluated expenditure in domains familiar to clinicians, gaining insight into awareness and understanding of these areas.
Method: Using the Patient Level Information and Costing Systems database, all discharges from the Healthcare of the Older People department over one week (n = 84) were retrospectively analysed. The total cost of the admission, drugs, radiology and pathology investigations and length of stay (LOS) were reviewed.
Results: Average LOS was 15 days. The average expenditure on drugs, radiology and pathology was £507.75 per admission (£175.42, £210.65, £121.86 respectively); average total cost of an admission was £5,715.62. Further analysis demonstrated the biggest determinant of total cost was LOS ($R2 = 0.65$); each additional day after admission estimated at £316.07. Conversely, LOS had little statistical explanatory power of cost of drugs, radiology and pathology ($R2 = 0.27$, 0.06 and 0.29 respectively). A departmental survey (n = 27) demonstrated 33% of clinicians accurately estimated the cost of each additional day in hospital, 30% accurately estimated the total cost of drugs and radiology, but only 11% accurately estimated the cost of pathology investigations.
Conclusions: In our study, LOS is the greatest determinant of the total cost of an admission. Individual 'day-to-day' clinical decisions impact little on total cost; their significance being in additional days they add to LOS. Geriatrics training scarcely addresses these issues, leaving significant gaps in non-clinical training relevant to delivering optimal patient care.

P-236
The involvement of older patients in medical student education from the University of Oxford

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Objectives: A survey was conducted in the John Radcliffe Hospital in Oxford, UK, to investigate the involvement of older patients in medical student teaching, and to gain an insight into which areas of education patients value most.
Methods: After obtaining verbal consent, 65 patients over 65 years were asked to complete a questionnaire on their day of discharge. Questions included the patients' level of interaction with medical

students, their view of patient involvement in teaching, and areas that they believe to be of particular importance for medical student education.

Results: 48% of patients were aware of medical students being involved in their admission, of those 91% described the experience as positive one. The large majority of patients said they would be happy to be involved in medical student teaching in the future (97%), and those that did interact with students were more likely to agree to do so in the future. A number of patients highlighted dementia (28%), cardiac disease (25%), cancer (12%), and arthritis (12%) as of particular importance for medical student education, with 30% of patients highlighting their own condition.

Conclusions: Patient involvement is vital for the education of future doctors, and with an ageing population the role of the older patient is increasing. This study shows that older patients are willing to take part in the teaching of medical students. It also offers some insight into patient priorities as educational needs of medical students, which could be used to guide undergraduate curriculum in geriatric medicine.

P-237
"Geraware", a digital awareness tool for teachers in nursing education

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Objectives: One of the challenges faced in nursing education is generating students' interest for working with frail elderly. Positive teacher communication may have a positive effect on students' attitude towards the care for older adults. However, based on low attendance numbers at training initiatives, nursing teachers seem to have little interest in geriatric care.

With the digital tool Geraware, we want teachers to discover the challenges of this nursing field and hereby increase awareness of their own attitude with regard to geriatric care.

Methods: The participant is guided through the life of an older women in her home environment, portrayed by herself, her children and the general practitioner. By means of questions throughout the story, he is invited to reflect on the provided care and alternative solutions and to take position. Comments can be shared with fellow users via built-in social media.

The choice for a real person, the use of film fragments and learning by reflecting individually and from other users' reactions are evidence-based principles integrated in the tool.

All four university colleges of the Associatie KULeuven, Belgium collaborate on the development of this project.

Evaluation: In May 2015 fifty nursing teachers will test the tool and evaluate its user experience and usability by means of an online questionnaire. Based on this feedback, the tool will be adjusted and completed. A re-evaluation with all nursing teachers of the association KU Leuven is planned for early 2016.

Conclusion: Our aim is to present in two years a final product of Geraware that meets the objectives.

P-238
Learning from death

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Objectives and Methods: Winter admissions are increasing year upon year in older patients causing great strain upon NHS. Hospital mortality has long been an important measure of assessing quality of care by highlighting preventable deaths. In January 2015 all elderly deaths at Luton and Dunstable Hospital were recorded and compared cross-departmentally with the aim to improve care and establish a strategic approach to reduce mortality rate.

Results: The total amount of deaths in January 2015 was 123 compare to January 2014 88. Of these 46 (37.4%) died under care of Geriatrician and 97 (78.9%) deaths were in Short Stay Units, Medical and Surgical Wards. The most common causes of deaths (recorded as 1a) included pneumonia (44.7%), ischaemic heart disease (8.1%) and lung cancer (4.9%). 24 (19%) of patients were identified as end-of-life care patients. Of the 46 deaths under Geriatrician care 39 (73%) occurred on base wards and 13 (27%) on outlier wards. The median age of patients who died on the ward was 84.0 as compared to 68.5 on HDU/ ITU. 30% of patients died within 48 hours from admission. The two highest mortality peaks occurred over a weekend day.

Conclusions: The first 48 hours from admission are crucial in ensuring elderly patients receive a comprehensive geriatric assessment. Despite inevitable bed pressures the up most should be done to minimize outlying elderly care patients. High surveillance and feedback regarding infection rate needs to be maintained. We introduced hospital mortality reduction group for regular feedback and an evidence-based strategy to minimize preventable deaths.

P-239
Is Inter-professional Education an effective way to teach geriatric medicine to medical and nursing students?

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Introduction: Inter-professional Education (IPE) is proposed to be a teaching method that improves patient care by increasing collaboration between different professionals and is recognised by professional accreditation bodies abroad and in the UK. Data on the role of IPE in geriatrics is scarce. We introduced and facilitated problem-based learning (PBL) sessions on geriatric topics to the nursing and medicals students, in order to improve teamwork, and students' insight into the roles of members of IP teams.

Methods: Medical and Nursing students from Oxford and Oxford Brookes Universities, were given four scenarios related to the older population at an introduction session and were asked to work together on these scenarios from the perspective of each profession through self-directed learning in small groups. Afterwards, all students participated in an education session facilitated by senior nurses and geriatricians.

Students completed the readiness for inter-professional learning scale questionnaire and questions about their knowledge and concerns about working with other professionals before and after IPE sessions.

Results: We found significant improvement in students' attitudes towards teamwork, collaboration and other professionals after participation in IP educational activities, but no significant change in knowledge and understanding of the roles and responsibilities of other professionals.

Conclusions: The results indicate that some aspects of geriatric medicine can be delivered effectively to nursing and medical students through joint self-directed learning if facilitated by educators belonging to the IP teams. This was an effective means of education, significantly improving attitude of students to other professionals, collaboration and teamwork.

P-240

Geriatric co-management programs: do they change attitudes towards aging?

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Objective: Evaluate the educational impact of a geriatric co-management (GCM) Program and geriatric lectures developed in an Orthopedics Unit by the Geriatric Division of Brown University supported by the Reynolds Grant.
Methodology: Geriatric attitude assessment was done by an online questionnaire with the Geriatric Attitude Scale (GAS) in 2014. The intervention group were orthopedicians and the control group are urologist. The Orthogeriatric Unit has hired a full-time geriatrician while the Urology department is a comparable surgical unit without co-management or geriatric education.
Results: Both units include 8 attendings, with different amount of trainees (30 vs 16). The answer rate from each group was 52.63% (6 attendings and 14 trainees) and 73.08% (8 attendings and 10 trainees). 84.2% of the first group reported previous education in geriatrics and only 31.6% of the second group (p 0.001). Most of the orthopedicians (94.7%) have worked recently with a geriatrician, in contrast to only 36.8% of the urologists ($p < 0.001$). Geriatric attitudes were favourable in both groups (GAS 3.6 vs 3.81, p 0.12), finding better attitudes in the orthopedic attendings (GAS 3.93 vs 3.89, p 0.86). Recent work with a geriatrician was related to better attitudes (GAS 3.74 vs 3.65, p 0.57), but no association was found with geriatric education (GAS 3.7 vs 3.72).
Conclusions: Our study shows positive geriatric attitudes in both groups of surgeons. An association between recent cooperation with a geriatrician and higher attitudes towards older people was found. GCM Programs should be developed as educational places.

P-241

Curriculum alignment: Bringing the benefits of this technique to departmental teaching

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Objectives: Although medical curricula specify learning outcomes which must be achieved at each level of training, departmental teaching still tends to be arranged in an ad hoc manner. Curriculum alignment is a valuable technique that ensures that teaching relates directly to curriculum items, but it is little known of outside of academic educational circles. This project aims to describe the process of mapping key curriculum outcomes to teaching for trainees rotating through a busy geriatric medicine department.
Methods: The UK foundation, core medical trainee and geriatric medicine speciality trainee curricula were searched systematically for learning outcomes/competences specific to geriatric medicine. These outcomes were then reviewed and duplicates were excluded. A core group of outcomes were identified as being deliverable through small group teaching. These outcomes were grouped into topics and were sent to lecturers who were instructed to align their teaching to them.
Results: 363 competencies/outcomes specific for geriatric medicine were identified. After removing duplicate items 300 competences/outcomes were left. These were then reviewed and 82 outcomes, grouped into 14 topics, were identified as being deliverable through small group teaching. A full list of lecture headings and outcomes will be presented in tabular form.
Conclusions: A curricular mapping process followed by an alignment of teaching interventions to learning objectives allowed a rational, consensus-based core programme of postgraduate teaching in geriatric medicine to be established. This process, using the new European Undergraduate Curriculum, has potential application in teaching programmes in other European centres.

Geriatrics in organ disease

P-242

Oropharyngeal dysphagia in patients with community-acquired pneumonia

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Introduction: Oropharyngeal dysphagia (OD) is highly prevalent in elderly patients. OD is associated with nutritional deficits and community-acquired pneumonia (CAP).
Objectives: Assess the prevalence of dysphagia among inpatient patients with CAP.
Methods: We conducted a observational study on CAP patients consecutively admitted to a Geriatric Department over 6 months. OD was clinically assessed using the Volume-Viscosity Swallow Test (V-VST).
Results: 72 patients (77.6% women), mean age 84.2±4.3 years. The specific clinical history detected previous oropharyngeal dysphagia in 16 patients (22.2%).
The V-VST detected oropharyngeal dysphagia in 35 patients (48.65%). Of them, 27 patients (74.2%) had mixed swallowing disorder, 3 (8.6%) had isolated efficacy disorder, and 6 (17.1%) had isolated safety disorder. Those patients with a positive dysphagia test had a statistically significant higher prevalence of cognitive disorder, higher age, more positive history of previous dysphagia and lower functional status.
Conclusion: OD is a highly prevalent clinical finding in elderly patients with pneumonia. Screening test to detect dysphagia should be performed in these group of patients.

P-243

Oropharyngeal dysphagia in patients with chronic obstructive pulmonary disease

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Introduction: Some authors reported a higher prevalence of Oropharyngeal dysphagia (OD) in individuals with chronic obstructive pulmonary disease (COPD) than in controls. The cause is believed to lie in the intricate coordination of swallowing and breathing.
Objectives: Assess the prevalence of dysphagia in patients with COPD.
Methods: We conducted a observational study on COPD patients consecutively admitted to a Geriatric Department over 6 months. OD was clinically assessed using the Volume-Viscosity Swallow Test (V-VST).
Results: 62 patients were included, mean patient age was 85.12±3.84 years. 69.35% were female. 9 patients required long-term oxygen therapy (very severe COPD).
The V-VST detected oropharyngeal dysphagia in 20 patients (32.26%). Of them, 14 patients (70.0%) had mixed swallowing disorder, 5 (25%) had isolated efficacy disorder, and 1 (5%) had isolated safety disorder.
Eleven patients (55%) had safe swallow at nectar; 5 (25%) at liquid, and 4 (20%) at pudding viscosity.
Conclusion: Prevalence of OD is very high in COPD patients. Screening test to detect dysphagia should be performed in these group of patients.

P-244

A rare case of delirium and deranged liver function tests due to levetiracetam in an elderly patient

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Background: Levetiracetam is increasingly used in elderly for treatment of seizures due to its good bioavailability, linear kinetics, minimal side effects and few drug-drug interactions. There have been few case reports of Levetiracetam as a cause of liver failure and delirium predominantly in younger patients. We report a rare case of an elderly patient with Levetiracetam drug reaction using the Naranjo Drug Reaction Probability Scale (Score = 5 suggestive of probable reaction).
Case: An 88-year-old male presented with unresponsiveness and incontinence. His GCS on admission was 9/15 with no focal neurology. Blood tests showed normal liver and kidney functions and normal inflammatory markers. A CT head showed occipital atrophy but no infarct/bleed. A clinical diagnosis of seizure was made and he was commenced on Levetiracetam. On day 4 his ALT rose to 2676, Bilirubin- 32, Alkaline phosphatase- 82. He became confused, agitated, unsteady and suicidal. An Ultrasound liver, autoantibody screen, hepatitis serology, ammonia levels were all normal. Levetiracetam was stopped immediately and LFT's returned to normal by day 21. His mental state, mobility and balance improved back to baseline.
Conclusion: This case highlights the challenges in managing delirium. Validated probability scales for drug reactions are available in clinical practice. In the exhaustive list of differentials for delirium, we as geriatricians should keep an open mind for rare drug reactions.

P-245

A rare cause of hemoptysis in the elderly: bronchiectasis secondary to measles

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Introduction: Hemoptysis may originate from any part of the respiratory tract. The most common causes are acute or chronic tracheobronchitis, bronchiectasis, pulmonary tuberculosis (TB) or lung cancer. It is associated with high morbidity and its etiological investigation often requires invasive complementary exams.
Methods: An 84-year-old male patient was admitted with hemoptysis. He had hypertension, dyslipidemia, carotid atherosclerotic disease and measles during childhood. A comprehensive study excluded cancer and TB. Thoracic CT showed bilateral calcic pachypleuritis, ground glass opacities in the upper left lobe and fibrotic scarring with bronchial wall tickening in the middle lobe. The bronchofibroscopy was consistent with infection.
Radiologically, bronchiectasis could be secondary to TB or measles. As the patient had no history of TB, it was assumed as case of hemoptysis secondary to bronchiectasis due to measles.
The patient had numerous recurrences within the first year, which, along with the need for chronic antiplatelet therapy, led to therapeutic bronchial artery embolization. Complete remission was verified after 6 months of follow-up, with improved quality of life.
Discussion and Conclusion: This clinical case raises awareness for the existence of bronchiectasis in elderly patients without history of repeated respiratory infections or TB. An increase in measles' prevalence should be expected due to the some countries' unsatisfactory vaccination status.
It also stresses the need for an individualized approach in the elderly, as factors other than age and current co-morbidities should be taken into account and diagnostic and therapeutic resources should not be withheld.

P-246

Radiofrequency ablation of thyroid nodules in frail elderly patients: preliminary results

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Objectives: We aim to present our initial experience with radiofrequency ablation (RFA) of symptomatic thyroid nodules in elderly patients who are unsuitable for surgery due to serious co-morbidities.
Methods: The symptoms and signs of each patient and the sonographic characteristics of the thyroid nodules (size, echogenicity, internal vascularity and consistency) are recorded. Cytological diagnosis is established by at least two separate fine needle aspirations. RFA is applied into the nodules with the "transisthmic approach method" and the "moving shot technique" under ultrasound guidance. Follow-up is carried out with ultrasound and serum concentration of the thyroid stimulating hormone (TSH) in 1, 3 and 6 months.
Results: RFA was applied in 4 female patients (age >65 years) with benign thyroid nodules (Bethesda classification II). The size of the nodules varied with maximum diameter >2 cm and volume ranging from 1.7 cc to 59.6 cc. On follow-up examination the nodules appeared hypoechoic and avascular with a volume reduction after one month that ranged from 40 to 80%. Symptoms and neck cosmesis improved significantly in all patients. Furthermore, RFA was applied to a 75 years old male patient with a recurrence of papillary thyroid cancer in a cervical lymph node. He had been managed in the past with total thyroidectomy and radioactive I-131 but could not tolerate further surgery. Both the lymph node's volume and serum thyroglobulin concentration decreased.
Conclusions: RF ablation can be used to treat both benign thyroid nodules and inoperable, recurrent thyroid cancers located in the surgical bed as well as lymph nodes.

P-247

Breast cancer immunohistochemical characteristics and prognostic factors in the elderly

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Objectives: The aim of the present study was to explore differences in the tumour characteristics between older and younger patients with breast cancer.
Methods: Retrospective study of all breast cancer patients who were managed over a two year period in a department of general surgical oncology. The patients were divided in two groups according to their age (<65 and ≥65 years). Group A was comprised of 84 patients and group B was comprised of 71 patients. Immunohistochemical characteristics and prognostic factors of the tumours were recorded and comparison between the two groups was performed with the software PASW Statistics 18. Differences with p values <0.05 were considered significant.
Results: Estrogen receptors were positive in 79.8% of tumours in group A versus 88.7% in group B, while progesterone receptors were positive in 67.8% and 74.6%, respectively. The average expression of Ki-67 marker was 20.4% versus 16.7% and the percentage of

infiltrated lymph nodes was 36.9% versus 30.9%. Only the difference in estrogen receptors was statistically significant between the two groups while differences in progesterone receptors, expression of Ki-67, size of tumour, tumour grading, lymph node infiltration and expression of cerbB2 were not significant.
Conclusions: In the present series tumours of elderly patients had significantly higher levels of estrogen receptors as compared to tumours of younger patients. Nevertheless, due to lack of significant differences regarding the rest of the studied variables, breast cancer in the elderly could not be considered less aggressive.

P-248
Is a Head-up-tilt-table test a useful diagnostic tool in elderly patients with an unclear reason for syncope?

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Objective: To study if a resource demanding Head-up-tilt-table test (HUT) may be diagnostically useful in elderly patients with unclear causes of syncope.
Methods: In order to answer our question we reviewed the literature. We hypothesized that patients with a positive HUT more often 1. report a longer history of syncopes, 2. take vasoactive medicine, or 3. are unable to discriminate clearly between e.g. unexplained fall and syncope. Finally we hypothesize that there is no association between typical vaso-vagal symptoms and outcome of the HUT.
We searched Pubmed, Cinahl, Embase, and Cochrane with the keywords: "Syncope" AND ("Aged" OR "Aged, 80 and over") AND "Tilt-table test". Specific exclusion criteria were lack of clear patient inclusion criteria, or studies with lack of exclusion of patients with cardial syncope, orthostatic hypotension, and carotid sinus syndrome.
Results: 534 articles were found. In the end five articles were included. Only two included patients with mean age 65+ years.
It appeared that a longer period with attacks of syncope does not predict the outcome of the HUT, nor did presumed vasovagal symptoms or ongoing vasoactive medication. Whether lack of relevant anamnestic information about causes of syncope is a predictor for the outcome of HUT was not addressed in the articles.
Conclusion: We found a very limited number of relevant articles. No association was demonstrated between certain clinical parameters and outcome of the HUT. Studies on the usefulness of HUT as a diagnostic tool in patients with an unclear reason for syncope are recommended.

P-249
Evaluation of axillary lymph node status in patients with early breast cancer by age-at-diagnosis

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Background: Lymph node status at diagnosis is an important prognostic factor for survival among women with breast cancer (BC). In Denmark, BC survival among women >70 years did not improve the past decade as it did among women <70 years. Among older patients, increasing age-at-diagnosis is associated with decreasing adherence to surgical guidelines. We aimed to examine the association between age-at-diagnosis and surgical lymph node evaluation (LNE) in a large population-based cohort of women with BC.
Methods: We used Danish nationwide medical registries to assemble a cohort of women diagnosed with BC during 2000–2013. We examined time trends for age-at-diagnosis and distribution of LNE, using a stacked bar chart and an area chart. Women with no registered pathologic lymph node status were classified unknown surgical LNE.
Results: The study included 62,393 women with invasive BC. Of these, 29% were ≥70 years old. 14% had unknown surgical LNE and of these 61% were aged ≥70. The overall proportion of patients with positive lymph node status decreased from 41% to 33% from 2000 to 2013, while the proportion with unknown surgical LNE remained at approximately 16%.
Conclusion: Women aged ≥70 with BC are less likely than younger women to undergo surgical LNE. This may partly explain why survival among women with BC in this age group lags that of their younger counterparts. Whether the decline in adherence to surgical guidelines is justified or not, or whether it can be altered by geriatric interventions, should be evaluated in future studies.

P-250
An unusual cause of chronic cough – foreign body aspiration

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Introduction: Coughing is a natural reflex of the respiratory system, which arises as a consequence of irritation process. In many ways it is beneficial because it helps expel secretions or foreign bodies (FB). Any cough persisting beyond 8 weeks is considered chronic. The most common causes of chronic cough in nonsmokers are postnasal drip syndrome, asthma, gastroesophageal reflux, or the use of ACE inhibitor drugs.
Case: Man 76 years, he is sent to the medical appointment, he has a persistent dry cough, with a year long, without other symptoms. Irrelevant personal history. Unchanged blood tests. Chest X-ray: nodule in the right upper lobe. For suspected cancer/metastasis he was performed CT-chest "slight loss of the right upper lobe volume, with multiple cylindrical bronchiectasis, which are associated with discrete areas of vaguely nodular density, contours spiky", after that he performed bronchoscopy and it was removed FB in the main right bronchus, about 2 cm, wrapped in granulation tissue, when it placed in formalin, it was a chicken bone. In a reevaluation, after one week, the patient no longer had coughing.
Conclusion: We present a classic case of FB aspiration. The FB was in the right lower lobe, consistent with the majority of cases in adult patients years ago. Removal of the FB led to prompt improvement in symptoms. FB aspiration should be considered in adult patients with risk factors for aspiration and chronic or recurring pulmonary symptoms. Bronchoscopy is safe and effective for diagnosis and treatment.

P-251
Acarbose and postprandial hypotension

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Objectives: Postprandial hypotension (PPH) is a common intractable etiology for syncope in older adults with Type 2 diabetes, and there are no reliable treatments for this condition. The purpose of this study was to demonstrate how acarbose, an α-glucosidase inhibitor, affects postprandial hypotensive events (PHEs) in older adults with Type 2 diabetes.
Methods: 15 adults (9 women, 6 men) with an average age of 76.1 years (range: 67–85) and an individual history of Type 2 diabetes attended a treatment (acarbose 50 mg orally) and placebo session

in random double-blinded order. Subjects were fed a standardized meal and then continuously monitored for 90 minutes.
Results: 14 out of 15 Type 2 diabetes subjects in our study demonstrated PPH during the placebo session. Subjects demonstrated 0.7 fewer PHEs (p = 0.042, 0.1 to 1.2, 95 percent confidence interval) during the acarbose session (0.8±0.2 PHEs) as compared to the placebo session (1.5±0.3 PHEs). Systolic blood pressure (SBP; main effect of session, p = 0.030) and mean arterial pressure (MAP; p = 0.035) were higher during the acarbose session by 2-way mixed design analysis of variance with repeated measures.
Conclusions: This is the first study to demonstrate acarbose reduced PHEs and raises postprandial blood pressure in older adults with Type 2 diabetes complicated by PPH.

P-252
Transcatheter aortic valve implantation registry with comprehensive geriatric assessment (CGA-TAVI)

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Objectives: Many elderly patients are never considered for surgery as treatment of severe degenerative aortic stenosis, resulting in a curtailed survival rate at 32%, 60% after one, 5 years. The transcatheter aortic valve implantation (TAVI) has shown an absolute reduction in all-cause mortality of 20% compared to medical therapy. The aim of the registry is to identify patient characteristics and indicators related to complications and clinical benefit in the elderly.
Methods: CGA-TAVI commenced in February 2014. The co-primary objectives are to establish predictive value of CGA (with Multidimensional-Prognostic-Index (MPI), short-physical-performance-battery (SPPB), and SilverCode) for mortality and hospitalization and to demonstrate CGA changes after TAVI.
Results: As of April 2015 44 patients had been enrolled. Patients had a mean age of 85.4±2.7 years. The majority of patients had NYHA class III/IV (82.4%). At baseline mean MPI was 0.34±0.11, SPPB 6.4±3.3 and SilverCode 21.2±8.4, compared to 0.33±0.14, 7.6±2.8, and 23.4±6.9 three months after TAVI. One patient had NYHA III, none NYHA IV. A total of 6 patients reached the combined endpoint of death or stroke within 3 months after TAVI which had a higher MPI (0.42±0.14) and SilverCode (23.3±4.4) at baseline compared to those without (0.34±0.10; 20.9±8.3).
Conclusions: These preliminary results show improvement of NYHA functional class at 3 months follow-up. Although of the limited number of patients the registry hint to identify patients who would benefit by TAVI.

P-253
Acute respiratory distress in geriatrics: the saving call to the medical intensivist

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Objectives: The vital distress in geriatric populations is common, however, the appeal of a medical intensivist is not systematic as it could allow a saving care.
Methods: We illustrate this problem by a clinical case.
Results: A patient of 80 years is hospitalized in our department for blood transfusion for anemia. She is followed for mixed chronic respiratory failure treated by oxygen therapy 1 Litre per minute. On the seventh day, she presented an episode of desaturation and significant bronchial congestion. The blood pressure of the patient was of 135/85 mmHg, the heart rate was 75 beats per minute, the saturation in 1 liter of ambient O2 was 75% and a temperature at 38.6°C. Clinical examination showed only confusion, a draw sternal and intercostal and the emergence of left basal crackling. The gasses blood showed a pH 7.21, a 35 mmHg pO2, pCO2 at 108 mmHg, the HCO3–37 mmol / L. Biology showed the appearance of a CRP increased to 280 mg / L. The chest radiograph showed atelectasis in the left lung base. Given this acute carbonarcosis associated with a probable bronchopulmonary infection, we contacted the intensivists who have accepted the patient in intensive care. However, the evolution has proved fatal after 48 hours non-invasive ventilation.
Conclusions: It is essential to have a constructive dialogue with intensivists. Geriatricians must be convinced of the usefulness of a transfer in the ICU, which also determines the approval of the medical intensivist.

P-254
Aseptic osteonecrosis of the femoral neck: a diagnosis not to ignore in the elderly

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Objectives: Aseptic osteonecrosis of the femoral neck is a diagnosis not to ignore in the elderly.
Methods: We illustrate this problem by this case.
Results: A patient of 92 years was referred to our department for minor drop repeatedly for several months. She was diagnosed with type 2 non-insulin dependent diabetes treated with biguanide. She would have fallen with his walker and wouldn't have been able to stand up. The patient had spontaneous pain at the right hip flexion without flessum, but had a limited mobility of the lower limb in external rotation to 20°, internal rotation to about 10°, adduction and abduction to about 20° flexion to 70° bent knee and extension at 5°. Otherwise, the physical examination was normal. The pelvis radiograph showed osteoarthritis of the hip, but also possible signs of osteonecrosis with a focus of sclerosis of the femoral neck may correspond to a stage IV of Ficat's classification. This was complemented by a CT report confirming this osteonecrosis stage 4. The etiological balance of this osteonecrosis did not find any inflammatory, neoplastic particular abnormality
Given the absence of chronic alcoholism and cancer, often the traumatological cause associated with an ancient type 2 diabetes could be retained in the diagnosis of osteonecrosis of the femoral head. Surgical management was decided.
Conclusions: In front of all repeated fall, radiological examination must be performed and the only fracture is not the only orthopedic diagnosis to look in the elderly.

P-255
Age and gender differences in the haemodynamic response of patients with neurally mediated syncope

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Introduction: Neurally mediated (reflex) syncope is the most common cause of syncope. The incidence of syncope shows a sharp rise after the age of 70 years.
We studied the age and gender differences in the haemodynamic response in patients with positive Tilt Table Tests (TTT).
Methods: Audit of all patients, referred as part of syncope and falls work up, who had a TTT in a 62 months period in a UK district general hospital. The modified Westminster protocol was used.

Demographic and patient data and TTT results were collected from the HISS system and stored on an excel sheet. Simple statistics were used to analyse the data.

Results: 549 patients had TTT in the audit period; the mean age was 63 years, with 55% (302) females and 45% (247) males. 37% (204/549) of patients were younger than 60 years and 63% (345/549) were older. 35% (192) were referred because of syncope, 23% (127) had recurrent syncope, 25% (139) had presyncope and 17% (91) for other symptoms suggestive of reflex syncope; 40% of whom (36/91) had falls).

28% (152/549) of the TTT were positive. 20% (41/204) of the younger patients have a positive test compared to 32% (111/345) of older people.

In younger and older groups vasodepressor response was the commonest type of positive response (51%, 55%) followed by mixed response (22%, 29%) and cardio inhibitory response was the least common (12%, 1%). 28% of men and 27% of women had a positive TTT result; vasodepressor response was the commonest type of positive response in both (54%, 53%) followed by mixed response (29%, 25%) and cardio inhibitory response was the least common (12%, 11%).

Conclusion: In both younger (<60 years)and older (>60 years) patients; whether men or women, vasodepressor response was the commonest type of positive response followed by mixed response, and cardio inhibitory response was the least common.

P-256
Prevalence and types of neurally mediated syncope in older people

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Introduction: Neurally mediated (reflex) syncope is the most common cause of syncope. It includes: vasovagal, situational and carotid sinus syncope and atypical forms. We studied the prevalence and types of the haemodynamic response in patients with positive Tilt Table Tests (TTT).

Methods: Audit of all patients, referred as part of syncope and falls work-up, that had a TTT in a 62 month period in a UK district general hospital. The modified Westminster protocol was used.

Demographic and patient data and TTT results were collected from the HISS system and stored on an excel sheet. Simple statistics were used to analyse the data.

Results: 549 patients had TTT in the audit period; the mean age was 63 years, with 55% (302) females and 45% (247) males.

35% (192) were referred because of syncope, 23% (127) had recurrent syncope, 25% (139) had presyncope and 17% (91) for other symptoms suggestive of reflex syncope; 40% of whom (36/91) had falls.

28% (152/549) of the TTT were positive.

66% (100/152)had neurocardiogenic (vasovagal) syncope, 26% (40/152) had carotid hypersensitivity, 3% (4/152) had hypotension and 3% (5/152) had POTS. Result was unavailable for 2% (3/152).

Of those 100 patients who had neurocardiogenic (vasovagal) syncope; 68% had vasodepressor response, 25% mixed type, 6% cardioinhibitory 2A and 1% cardioinhibitory 2B.

Of those who had Carotid hypersensitivity 35% (14/40) had vasodepressor response, 5% (2/40) cardioinhibitory 2A and 20% (8/40) cardioinhibitory 2B, and 40% (16/40) mixed type.

Conclusion: In this audit, more than 1 in 4 patients had a positive tilt table result. With good clinical selection, based on history and examination, TTT is a useful clinical tool to investigate syncope and falls.

In the studied population neurocardiogenic (vasovagal) syncope represented the commonest variety of neutrally mediated syncope (two thirds of positive cases) followed by carotid hypersensitivity (one quarter of positive cases).

P-257
Analysis of gastric cancer in a geriatric population

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Objectives: Characterization of a geriatric population with gastric cancer.

Methods: We, retrospectively, reviewed data from 71 patients (minimal age 75) diagnosed with gastric cancer between 2006–2012. The charateristics considered were: age, gender, comorbidities, clinical presentation, tumor location, lymph node status, T and N stage, differentiation grade, histologic subtype, therapeutic proposal (surgery, chemotherapy, best supportive care, clinical surveillance) and toxicities.

Results: In this population, median age was 78 (range, 75 to 92), most were male (52.1%) and had an ECOG 1 (64.8%). Gastric pain (42.3%) was the most common clinical presentation. Tumors were predominantly located in the pyloric antrum (57.7%).

At diagnosis, 19.7% had stage IV diseases. From those, 71.4% underwent palliative chemotherapy and 28.6% referred to best supportive care.

From those candidates to curative surgery (66.2%), subtotal gastrectomy was performed in 91.4%. Concerning pathologic stage, pT1, pT2, pT3 and pT4 were diagnosed in 39.6%, 25%, 29.2% and 6.2% and pN0, pN1, pN2 and pN3 in 52.1%, 22.9%, 14.6% and 10.4%, respectively.

Considering histology, 80.3% were intestinal type and 59.1% grade 1. The median metastatic/excised lymph node ratio was 0.16. Following surgery, 11.6% underwent adjuvant chemotherapy and the others stayed on clinical surveillance.

From those submited to chemotherapy, 61.5% had toxicity grade 3 or 4. Only 3.6% were subjected to a second line of chemotherapy.

Conclusions: Geriatric population are often underrepresented on clinical trials. It is of most relevance to understand their characteristics and adjust the therapy to patient's frailty instead of age, as they can benefit from it.

P-258
The importance of measuring bone mineral density (BMD) in a patient with liver transplantation – patient case report

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Introduction: Osteoporosis is a major problem of public health. With the increase in the number of organs transplanted and the improved survival of transplant patients, osteoporosis has emerged as a frequent complication of the transplantation process.

Objectives: The aim of this study was to determine BMD in a male adult after liver transplantation.

Methods: In this study we present a man at 61 years old who has liver transplantation. We determined lumbar spine BMD and hip with Dual-energy X-ray absorptiometry method (DXA).We don't know which BMD level before the surgery was.

Results: BMD and Tscore values determined by DXA method at left femoral neck, indicated osteopenia (BMD = 0.852 g/cm^2; Tscore = −1.7DS). Mean BMD and Tscore values measured at the lumbar spine showed severe osteopenia (BMD = 0.996 g/cm^2; Tscore = −1.9DS). Large decrease in BMD at lumbar spine and hip associated with immunosuppressive drugs, increase the risk to osteoporosis and fractures.

Conclusions: All transplant candidates should be evaluated, by osteoporosis, before and after liver transplantation. It is necessary

to be elaborated a guidelines for osteoporosis management for patients with liver transplantation.

P-259

Hematologic parameters in older patients: Results of a German multicentric anemia prevalence study

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Anemia is highly prevalent among geriatric inpatients. Association with morbidity and mortality is acknowledged. However, most ta derive from studies outside Germany. The present study was initiated by the German Geriatric Society to fill the gap of German data concerning anemia in geriatric inpatients.
Between June 2013 and December 2014 598 geriatric inpatients were recruited in 6 participating centers. On admission laboratory parameters and comprehensive geriatric assessment were collected. Five hundred fifty-nine of 598 patients could be evaluated (M 188, 32.5%). Anemia was present in 319 patients (55.1%) with 46.9% to 66% according to center; average Hb was 11.9 g/dl (11.2 to 12.1 g/dl)($p > 0.05$). Low albumin (<3.5 g/dl) was present in 71% of all patients while deficiency of folic acid and VitB12 were found in 6% (<3 ng/ml) and 5.8% (<200 ng/l), respectively. Anemic patients had significant lower albumin levels ($p < 0.004$) and significant lower Barthel Index ($p < 0.001$); no significant difference was found respecting other assessment tests (MMSE, TUG, Handgrip).
We conclude that anemia is highly prevalent among German geriatric inpatients, comparable to US data, thus raising the question of age adjusted reference values in patients >70 years; anemia is associated with significant lower albumin levels, confirming previous data; anemia is associated with significant lower Barthel Index, emphasizing its negative impact on activity of daily living.

P-260

Pre-malignant and malignant skin lesions in older people

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Objective: Skin lesions are frequently encountered in elderly. Pre-malignant and malignant lesions raise problems of diagnosis in early stages. Objective was to identify such skin lesions characteristic in elderly.
Material and Methods: We investigated 315 older patients with skin lesions, 56% women, 66% from rural area. Three age-groups were considered: pre-senescent (50–64 years), young-old (65–74 years), old-old (≥75 years). Risk factors for malignant lesions have been evaluated.
Results: Pre-malignant and malignant lesions affected most often feminine gender from rural area ($p < 0.05$). Pre-malignant lesions: 71% prevalence, most often seborrheic keratosis, followed by actinic keratosis and dysplastic nevi, the last more prevalent in men ($p < 0.05$). Most often malignant lesion: basocellular epithelioma, followed by spinocellular epithelioma, the latter more frequent in men ($p < 0.05$). Interestingly, pre-malignant and malignant lesions were more frequent in young-olds as compared to other age-groups ($p < 0.01$). Beyond the age of 75 years, actinic keratosis was most prevalent (47%). Bowen disease was significantly more prevalent in pre-senescence ($p < 0.01$). Most prevalent risk factors were skin burns, followed by actinic keratosis. Nodular basocellular epithelioma was most prevalent (41%), and both types of epithelioma were most frequently located on head (53%), mainly on cheeks followed by nose. Spinocellular: more frequent on lips. Most tumors (46%) were between 1 and 2 cm. Most patients (47%) went to medical examination after >2 years of evolution. Most frequent type of melanoma: lentigo maligna.
Conclusions: Skin changes with age favor several pre-malignant and malignant lesions. They need a careful and early detection in older people to start adequate therapy.

P-261

A complete audit of blood pressure control in stroke patients in a geriatric hospital in Malta

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The National Institute for Health and Care Excellence (NICE) states that blood pressure (BP) control in stroke has the same guidelines as for BP control in high cardiovascular risk patients. The targets for non diabetic stroke patients are a BP of less than 140/90 mmHg and for diabetic ones a BP of less than 130/80 mmHg.
An audit was done in 2009 to show if blood pressure (BP) in stroke patients is well controlled. A second cycle was repeated in 2015. The cohort of patients selected were those found in geriatric wards in Malta's geriatric hospital. Patients who had a very recent stroke (less than 2 weeks) were excluded from the audit as elevated BP levels are a common complication of acute stroke and usually normalise a few days to weeks after the event.
As well as a blood pressure reading by the doctor, epidemiological data, risk factors and anti-hypertensive medications if any were collected. Results of the both the first and second cycle showed that there is good BP control in this cohort of patients in Malta's geriatric hospital when compared with the guidelines as well as studies done in other countries.

P-262

Primary malignant lymphoma of the uterus in an elderly lady

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Primary malignant lymphomas of the female genital tract are rare and less than 1% of these lymphomas occur in the female genitalia. Most cases are non-Hodgkin lymphomas and diffuse large B-cell lymphomas are most commonly seen. Patients tend to be asymptomatic or have nonspecific abdominal symptoms, including abdominal bloating, pressure, and discomfort. According to reports, only 17% of non-Hodgkin's lymphoma patients have constitutional symptoms such as fever, weight loss and night sweats. The most common presenting feature of primary uterine lymphoma is vaginal bleeding, which is similar to that of cervical carcinoma.
We present this rare case of an 81-year-old lady who presented with abdominal pain and an episode of post menopausal bleeding. A computer tomography of the abdomen and pelvis showed evidence of a lymphoproliferative disorder. An endometrial biopsy was taken which diagnosed a primary diffuse large B cell lymphoma of the uterus. She was started on chemotherapy with an R-CEOP protocol (Rituximab, Cyclophosphamide, Etoposide, Vincristine and Prednisolone). Currently the patient is stable and is receiving further cycles of chemotherapy.

P-263
Cryptogenic organizing pneumonia: a rare syndrome even in the elderly. Case report

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Patient: Woman 88 years. Hospitalizazion for persistent low-grade fever and dyspnea with worsening of respiratory exchanges. Chest CT with contrast showed the involvement of the upper and lower interstitial lung lobes with bilateral pleural effusions.
Empirical antibiotic therapy for nosocomial pneumonia was started. For the persistence of symptoms was placed on suspicion of cryptogenic Organizing Pneumonia (COP).
It was undertaken therapy with high dose of corticosteroids with rapid clinical and radiological improvement. A chest CT pre-discharge featured complete resolution of pulmonary consolidations. The patient is currently in good condition and assumes prednisone 12.5 mg / day.
Results: COP appears most frequently in the fifth-sixth decade of life and affects men and women equally. It begins with cough, dyspnea, fever, malaise and weight loss. Breathing pattern directs toward the diagnosis of pneumonia, confirmed by radiological evidence: typical is the presence of opacity, circumscribed or diffuse, or consolidations with ground-glass appearance, often migrants, with bilateral and peripheral distribution.
The most effective therapy is long-term administration of corticosteroids at high doses that are gradually climbing in 6–12 months.
The complete resolution of the clinical picture and the normalization of the radiological image usually occurs in 2/3 of patients. In patients who don't respond to steroid therapy is necessary to reconsider the initial diagnosis of COP.
Conclusion: This case report may be useful for Geriatricians, since our patient developed the disease beyond 80 years. The clinical course may be similar to more frequent polymyalgia rheumatic in the elderly, but these are just hypotheses.

P-264
Autoimmune hemolytic anemia in the elderly over 75 years: report of a rare retrospective study

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Objectives: Autoimmune hemolytic anemia is a rare disease in the elderly.
Methods: Retrospective study over a period of 5 years, focused on two Internal Medicine Service (Reims and Strasbourg).
Results: 7 patients were enrolled, including two men. The average age was 85.4 years. All had clinical signs of anemia (dyspnea, mucocutaneous pallor, …), while clinical signs of hemolysis were very inconsistent. The mean hemoglobin level was 7.6 g / dl. No thrombocytopenia was associated; two hyperlymphocytosis were found. Haptoglobin was reduced for 5 patients, normal in the other two patients. Other biological hemolysis parameters were inconsistent. The blood smear found for all patients anisocytosis; no schistocyte is found (missing: 3). The Coombs test was positive for all patients: 4 patients had a mixed profile (IgG + C3d); 2 had a positive Coombs test type IgG alone, and only one patient had a positive Coombs test type C3d alone. 3 patients had cold agglutinins (cold hemagglutinin disease). The etiological assessment found 4 cases of lymphoma, one case of chronic lymphocytic leukemia, one case of unclassified dysimmunity and idiopathic case. 4 patients received corticosteroid therapy (one patient was complicating with lumbar shingles and diabetes imbalance). Cold-protection measures have been advocated for 3 patients; immunosuppressive treatment for a single patient. One patient had, during its evolution, an association with idiopathic thrombocytopenic purpura; another patient died.
Conclusions: This disease is difficult to diagnose in the elderly, because of its rarity; lymphoma and chronic lymphocytic leukemia being the main causes to look in the elderly.

P-265
MGUS and dystrophy myeloma: blurred border

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Objectives: Monoclonal gammopathy of undetermined significance is a benign entity but very little diagnosed in the elderly; atypical cases are difficult to identify in the elderly.
Methods: We illustrate this data by a clinical case.
Results: A 89-year-old woman was hospitalized for fall without loss of consciousness. Normochromic normocytic aplastic anemia was detected. A serum protein electrophoresis showed an IgG monoclonal band kappa to 13.2 g/L, associated with proteinuria estimated at 266 mg/24h. Urine immunofixation also found IgG κ and λ. The assessment was completed by a myelogram showing a plasma cell dystrophic inclusion estimated at 3%. A moderate chronic renal failure of unknown etiology has been present for one year. No hypercalcemia was found. Presence of two gaps X-rays of the skull were detected. LDH increased at 512 IU/L and high β2 microglobulin to 4.65 mg/L. Oncogeriatric assessment found risk of malnutrition, mixed dementia pathology moderate stage, a high risk of falls, a Cornell index 7/38 not in favor of a depression. Haematological advice was requested, concluding to a MGUS because only 3% of dystrophic plasma cells, but a dystrophy myeloma was not excluded. No therapeutic was expected because of her general condition and its comorbidities (colon cancer with discharge stoma, in remission since 2001, and discovery of a bilateral pulmonary embolism during her hospitalization). Biological monitoring was recommended.
Conclusions: Atypical aspects in the elderly raise the problem of medical care, conditioned by an accurate evaluation oncogeriatric.

Geriatric rehabilitation

P-266
Three different outcomes in older patients receiving intermediate care in nursing home after acute hospitalization

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Objectives: To evaluate the recovery and outcome of older community-dwelling patients admitted to intermediate care (IC) in nursing home after acute hospitalization, and to compare patients who were able and unable to return directly to their own homes.
Patients and Methods: A prospective, observational, cohort study conducted between June 2011 and 2014 in a 19-bed IC nursing home ward with increased multidisciplinary staffing. A total of 961 community-dwelling patients, ≥70 years of age, considered to have a rehabilitation potential and no major cognitive impairment or delirium, transferred from internal medicine, cardiac, pulmonary and orthopaedic hospital departments were included.

Results: Recovery was divided into 3 groups: (1) Rapid, able to return home after median 14 days in IC (n = 785, 82%); (2) Slow, requiring additional transfer to other nursing home after IC, but still able to return home within 2 months (n = 106, 11%). (3) Poor, requiring transfer to other nursing home after IC and still in a nursing home or dead at 2 months (n = 66, 7%). After 6 months, the recovery and mortality of patients with rapid or slow recovery was rather similar, 87% were living at home, 9 and 8% were dead. In patients with poor recovery, only 20% were living at home and 41% were dead.
Conclusions: Although the majority of patients selected for treatment in the IC unit were able to recover and return home, a group of patients needed extra time, up to 2 months, to recover, and another group had a poor chance of recovering and returning home.

P-267
Results of specialized geriatric fall clinic intervention for older patients with orthostatic intolerance

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Introduction: Geriatric fall clinics are well established in Denmark. Work-up and treatment for conditions as orthostatic intolerance and vestibular dysfunction requires special equipment and experience. To deal with this challenge a new approach in terms of specialized fall clinics was made.
Objective: Evaluation of the specialized fall clinic intervention.
Method: Elderly fall patients with symptoms suggesting orthostatic intolerance and/or vestibular dysfunction were referred to the specialized fall clinics. Assessment for orthostatic intolerance included tilt-table-test with carotid-sinus-massage and measurement of dizziness and functional ability with Dizziness-Handicap-Inventory (DHI), Dynamic-Gait-Index (DGI) and 30-second-Chair-Stand (CS). Individualized interventions i.e. counselling, physical counter pressure manoeuvres, medication adjustment, fludrocortisone, physical training and patient education were offered. Effect was evaluated after the training period and 3 months after.
Results: 155 patients were referred (74% females, mean age 78 years) October 2013 to December 2014. Symptoms: dizziness (92%), falls (65%) and syncope (26%). 55 patients were diagnosed with orthostatic intolerance (OI): 31 (56%) orthostatic hypotension at active standing, 28 (51%) orthostatic hypotension at passive tilt and 5 (9%) reflex syncope. 26 patients with OI were also diagnosed with vestibular dysfunction. 44 patients with OI received physical training. A significant improvement was found in dizziness (DHI $p < 0.011$) and functional ability (DGI $p < 0.000$; CS $p < 0.001$). 23 OI patients reported syncope at referral, only 3 at follow-up
Conclusions: Specialized geriatric work-up and intervention for elderly fall patients with dizziness and syncope due to orthostatic intolerance, for some combined with other risk factors i.e. vestibular dysfunction, seems to be an effective approach.

P-268
Geriatric fall clinic interventions improve functional ability in old patients with vestibular dysfunction

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Introduction: Geriatric fall clinics are well established in Denmark. Work-up and treatment for conditions as vestibular dysfunction and orthostatic intolerance requires special equipment and experience. To deal with this challenge a new approach in terms of specialized fall clinics was made.
Method: Elderly fall patients with symptoms suggesting vestibular dysfunction or orthostatic intolerance were referred to two specialized fall clinics in Copenhagen. Assessment included videonystagmography, caloric testing, tilttabel test, measurement of dizziness and functional ability with Dizziness Handicap Inventory (DHI), Dynamic Gait Index (DGI) and 30 second Chair Stand (CS). Individualized interventions i.e. repositioning manoeuvres, physical training, medication review and patient education were offered. Effect was evaluated at the end of the training period and 3 months after.
Results: 155 patients were referred (74% females, mean age 78 years) October 2013 to December 2014. Symptoms were dizziness (92%), falls (65%) and syncope (26%).
Vestibular dysfunction was diagnosed in 108 (70%) patients (24% Benign Paroxysmal Positional Vertigo, 30% peripheral vestibular asymmetry, 24% other peripheral dysfunction, 37% central vestibular dysfunction with MR signs of infarction or white matter lesions). 26 patients with vestibular dysfunction were also diagnosed with orthostatic intolerance. 85 patients with vestibular dysfunction received physical training in the fall clinics.
A significant improvement was found in dizziness (DHI $p < 0.000$) and functional ability (DGI $p < 0.000$; CS $p < 0.002$).
Conclusions: Specialized geriatric work-up and intervention for elderly fall patients with vestibular dysfunction, for some combined with other risk factors i.e. orthostatic intolerance, seems to be an effective approach.

P-269
The complexity of elderly fall patients – results from a geriatric fall clinic

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Introduction: Multifactorial fall assessment and intervention has been found effective in preventing fall in elderly people. We present data from a Danish fall clinic.
Method: Fall patients referred underwent a standardized multidisciplinary quantitative assessment program: vision, sensibility, orthostatic blood pressure, cognitive and emotional function, nutritional status, medicine use and functional ability measured by 30-second-Chair-Stand (CS), Bergs-Balance-Scale (BBS), and Dynamic-Gait-Index (DGI). Patients with symptoms of vestibular dysfunction were examined with videonystagmography. Individualized interventions were made and physical training was offered. Assessment at the end of the training period was done.
Results: 133 patients were referred throughout 2014, 61% women, mean age 78. Risk factors identified: 84 (65%) had vision impairment, 75 (58%)reduced sensibility, 21 (16%) vestibular dysfunction, 35 (27%) orthostatic intolerance, 45 (34%) use of psychotropic medicine, 19 (15%) cognitive dysfunction, 32 (25%) emotional dysfunction, 17 (13%) malnutrition, 31(23%) vitamin D deficiency, 16 (12%) cardiac arrhythmia at event recording, 82 (64%) impaired muscle strength by CS, 62 (53%)impaired balance by BBS and 75 (58%)by DGI. Most patients had several risk factors.
107 (80%) patients received physical training: 39 patients in the community, and 68 in the fall clinic (twice a week; mean number of training sessions: 13.5). At the end of training a significant improvement was found in strength (CS $p < 0.001$) and in balance (BBS $p < 0.001$; DGI $p < 0.000$).
Conclusion: Geriatric fall clinic assessment is feasible and identifies multiple risk factors in elderly fall patients. Physical training improves functional ability.

P-270

Influence of vitamin D deficiency in the functional recovery in patients with hip fracture of a functional recovery unit

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Objective: To determine the influence of vitamin D deficit in functional recovery in patients admitted to a unit of functional recovery with hip fracture.
Methods: Prospective observational study of a cohort of patients with hip fracture admitted from April 1, 2014 to 31 March 2015. We analyze Socio-demographic data, functional status on admission and at discharge in the unity and levels of 25 (OH) vitamin D on admission.
Results: 59 patients (74.5% women) were admitted in our unit. The 78% of patients had vitamin D levels <20 ng/dl and the 30.5% <10 ng/dl. We divide the sample in 3 groups according to the level of Vit D. A: patients with <10 ng/dl: 18, mean of age 84.6 years, length of stay 33.2 days, Barthel admission 40.8 and 62.7 at discharge (Heineman I.: 32.61), FAC admission 0.9 and 2.4 to discharge. B: patients with Vit D 10 to 20 ng/dl: 28, age 82. 7 years, stay 30.4 days, Barthel 49.2 admission and 71.2 at discharge (Heineman I.: 54.42), FAC admission 1.3 and 3.1 at discharge. C: patients with Vit D normal: 13, age 81.4 y., stay 22.7 days, Barthel admission 56.9 and 82.2 at discharge (Heineman I.: 64.06) and FAC 2.2 and 4.1 to discharge.
Conclusions: Vitamin D deficiency is extremely prevalent among the studied population.
In our study patients with low levels of vitamin D have more years and more dependence levels at admission in the unit and obtain lower functional recovery at discharge in more days of stay.

P-271

Effectiveness of an "osteopathic manipulative therapy" for chronic low back pain in elderly: preliminary report

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Objectives: Advancing age is associated with less positive treatment outcomes in patients with chronic low back pain (CLBP). The aim of this preliminary study was to evaluate the effectiveness of soft tissue mobilization treatment as an osteopathic manipulative therapy approach in elderly patients with CLBP.
Methods: Twenty patients, aged 64 to 80 years (mean age: 70.54±5.63) with CLBP participated in this study. 58.3% (n = 14) of the sample were female. Mean duration of low back pain was 24.95±2.17 months. Patients received soft tissue mobilization program, three times a week for 3 weeks. Soft tissue mobilization program included different soft tissue mobilization techniques such as functional massage, myofascial release, friction massage, muscle energy techniques, neuromuscular stretching. The soft tissue mobilization techniques are selected according to physical examination findings of patients. Pain (Visual Analog Scale) and disability (Roland Morris Questionnaire) assessed at pre- and post-treatment time points.
Results: In the pre-treatment period, mean Visual Analog Scale (VAS) and Rolland Morris (RM) scores were 7.08±2.28 (95% CI 6.12 to 8.08) and 15.70±5.87 (95% CI 13.22 to 18.18) respectively. In the post-treatment period, mean VAS and RM scores were 2.09±1.28 (95% CI 1.55 to 2.63) and 7.37±5.82 (95% CI 4.91 to 9.83) respectively. The reduction from the baseline scores were significantly different for both pain and disability ($p < 0.05$).
Conclusions: The results of our study suggest that soft tissue mobilization treatment has positive effect on pain and disability in elderly patients with CLBP. The study did not have any financial support.

P-272

Falls, gait and dual-tasking in older adults with mild cognitive impairment: A cross-sectional study

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Objectives: Cognitive impairment has an effect on gait and falls rates. Gait speed and step variability, particularly in a dual-task paradigm, are considered quantifiable measures to evaluate the role of cognition on gait. The aim was to investigate the relationship between falls risk and gait measures in single and dual-task conditions in older adults with mild cognitive impairment (MCI).
Methods: Falls risk [Physiological Profile Assessment (PPA); previous 6 months fall history] and global cognition (MOCA) were measured in a cross-sectional study of older adults with MCI (MOCA 15–25) recruited from memory and falls services (Balance and the Mind study). Spatiotemporal gait parameters using the GAITRite system were recorded under single task and 2 dual task conditions. Dual-task cost was calculated for gait speed and variability.
Results: The 69 participants (mean age=80.75 years;38 women) with MCI had an increased risk of falls (median falls in previous 6 months=1.5; mean PPA falls risk score=2.48) and poor gait pattern (Table 1). DTC was identified during both cognitive tasks, with verbal-fluency producing the greatest cost to gait speed (−26.99%) and variability (step-time 53.29%, step-length 35.27%). A statistically significant relationship between gait parameters (speed, step-time variability and step-length variability), falls risk ($p < 0.05$) and global cognition ($p < 0.05$) is evident.
Conclusions: Negative changes to gait pattern are evident and are associated with an increased risk of falls and global cognition in older adults with MCI. A DTC exceeding levels for healthy older adults is present suggesting a benefit of such measures in falls intervention research with this population.

P-273

Body mass index, nutrition and rehabilitation outcome in elderly patients with cognitive impairment

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Background: Cognitive impairment is known to adversely affect rehabilitation but the role of poor nutrition in the rehabilitation of such patients needs exploring.
Methods: In a UK-based prospective cohort study in a general rehabilitation unit for elderly patients we explored rehabilitation outcomes in 115 patients (mean age 84.7, 70 females). We used BMI and MUST as surrogate markers of poor nutrition. All patients were included in an individually tailored programme comprising one-to-one attention and group sessions. The Barthel Index (BI) was performed on admission and discharge. Patients also had BMI, MUST, Mini Mental State Examination (MMSE), and Carlson Co-morbidity Index recorded.
Results: Improvement on the BI was significantly associated with cognition ($P = 0.018$), BMI ($P = 0.003$), MUST ($P = 0.001$) and length of stay ($P = 0.006$). Logistic regression identified MUST ($P = 0.039$, CI 0.37–0.97) and in a separate analyisis, BMI ($P = 0.027$, CI 0.04–0.15) as independent variables that influenced rehabilitation outcome. Patients with cognitive impairment and a high MUST or BMI <20 kg/m^2 were significantly less likely to show improvement in BI with rehabilitation when compared to cognitively impaired patients with low MUST or BMI ≥20 kg/m^2. Cox Regression showed the former group of patients had a slower trajectory of improvement.

Conclusion: Patients with cognitive impairment, a Low BMI and a high MUST are less likely to show an impovement in Barthel Score with Rehabilitation when compared to cognitively impaired patients with a low MUST or BMI≥20 kg/m^2. Nutrition may be a reversible risk factor to improve rehabilitation outcomes in this group of patients.

P-274

Should patients with severe cognitive impairment be offered rehabilitation after acute illness?

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Objectives: To evaluate the outcomes of rehabilitation in patients with moderate to severe cognitive impairment and clarify whether such patients benefit from rehabilitation.
Methods: We performed a prospective cohort study of 116 patients (70F), mean age 86.3 (SD 6.4) in a rehabilitation unit for older people in the UK. Group 1: 89 patients with moderate cognitive impairment (MMSE 11–20) and Group 2: 27 patients with severe cognitive impairment (MMSE 0–10). Each patient had a personalised rehabilitation plan dependent on the patients' abilities with formal input from physiotherapists, physiotherapy assistants and occupational therapists and informal therapy from nursing staff. Barthel activity of daily living score (BS) was recorded on admission and discharge as well as length of stay and discharge destination.
Results: Of the home discharges in Group 1, 32/37 (86.5%) patients improved their BS compared to 10/28 (35.7%) of placement discharges ($p = 0.0001$). In Group 2, 6/6 (100%) home discharges showed an improvement compared to 3/7 (42.8%) patients discharged to placement ($p = 0.07$). In both groups a discharge home required an improvement in at least three Barthel domains (BD). In Group 1 a discharge home was associated with significant different improvement in BDs than a placement discharge (3.27 v 1.86: $p = 0.007$). A similar pattern was noted for severe dementia patients (3.5 v 1.14; $p = 0.1$). Improvement in BDs can happen regardless of the level of impairment on admission.
Conclusion: Patients with moderate /severe dementia demonstrated significant improvements in BS and BDs which translated into home discharges.

P-275

Point prevalence of healthcare-associated infection and antimicrobial use in a rehabilitation setting for older people

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Introduction: Healthcare-associated infection is a common problem in acute hospital inpatients. The aims of this study were to study nosocomial infection and antimicrobial use in a rehabilitation unit for older people.
Methods: All patients were studied in a geriatric rehabilitation unit. The point prevalence of patients receiving a prescribed antimicrobial was measured. There were no exclusion criteria.
Results: Sixty-nine patients were studied. 59.42% were female; 40.58% were male. The mean age was 80 (SD=8.9 years). Median length of stay at the time of the study was 23 days (IQR 9–49). The point prevalence of rehabilitation inpatients on antibiotics was 21.7%. 7.3% had a urinary tract infection (n = 5). 5.8% (n = 4) had a lower respiratory tract infection. Other antimicrobial indications documented in the patient notes included *Clostridium difficile*, colovesical fistula, epididymoorchitis, latent TB and wound infection. Of those on antibiotics, 46.7% were on coamoxiclav (n = 7), 13.3% were on metronidazole (n = 2) and 13.3% were on trimethoprim (n = 2). All UTIs had confirmed laboratory evidence. There were no statistically significant associations between antibiotic use and length of stay, age or gender.
Conclusions: Nosocomial infections can limit rehabilitation potential. This study highlights the importance of vigilance surrounding identification and diagnosis of infections in this group of older patients.

P-276

How to enhance meaningful activities for nursing homes residents: insights from focus groups with staff members

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Objectives: Meaningful activities of daily living (MADL) are essential to promote the identity of nursing homes residents (NHR) and seem to improve their quality of life and autonomy. Although NH are expected to offer a range of activities, they don't fulfil the needs of residents and are often meaningless. This study explores the insights of NH-staff to realize MADL.
Methods: This qualitative study used eight semi-structured multidisciplinary focus groups, including occupational therapists (n = 21), nurse assistants (n = 20), recreational therapists (n = 20) and NH managers (n = 5). All interviews were audiotaped and coded line-by-line. Data were analysed open-minded, using content comparison to determine the preconditions and influencing factors of organizing MADL.
Results: All participants agreed on the importance of MADL for NHR. However, most MADL were organized spontaneously and relied on the 'gut feeling' of the caregivers. To realize MADL, it appeared crucial to know the life history, needs, wishes and capacities of NHR. However, caregivers perceived this as time consuming. Because MADL seemed to be a dynamic concept, which was strongly related to the changing abilities of NHR, a consequent and continuous monitoring of MADL was needed. Nevertheless an achievable, well-structured approach to identify, realize and monitor MADL was lacking. Remarkably, NHs didn't have protocols to enhance MADL, neither they used tools to evaluate and improve MADL.
Conclusions: MADL should be organised in a more structured and transparent manner. This study indicates the need for a practical guideline to enhance the realisation of MADL for NHR.

P-277

An exploratory study on the effects of mobility training in chronic stroke patients using repeated fMRI

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Objectives: Previous studies demonstrated changes in sensorimotor network activations after stroke that have been interpreted as partly compensatory. Locomotor and balance trainings may improve mobility and cognition and normalize and increase cerebral activations. We aimed to test these assumptions in an exploratory study to inform subsequent intervention studies.
Methods: In the intervention group eight participants (73.3±4.4 yrs) with chronic lacunar ischemic stroke (mean interval 3.7 years after the event) and residual gait disturbance received guided five week training focussing on mobility, endurance and coordination. Before and after this intervention, they underwent clinical, neuropsychological and gait assessments and brain MRI including a functional ankle movement paradigm. Sixteen healthy controls (68.8±5.4 yrs) followed the same assessment-protocol without receiving guided training.

Results: Participants in the training group had improved in mobility, memory and delayed recall of memory. There was a significant positive correlation between success of training on processing speed and grade of White Matter Hyperintensities. While cerebral activations in healthy controls remained unaltered, participants in the training group showed increased activations in the precentral gyrus, the superior frontal gyrus, and the frontal lobe with bipedal ankle movements.
Conclusions: This exploratory study documents the feasibility of a complex outpatient rehabilitation intervention through close collaboration between centres and disciplines. These preliminary data suggest that a training focussing on mobility, endurance, and coordination also improves distinct aspects of cognition and may induce neuronal plasticity. These results will inform a subsequent intervention study.
Financial support: This study was partially funded by a project of the country of Styria.

P-278
Enabling meaningful activities in daily living and quality of life in nursing homes: development of a multidisciplinary client-centred approach

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Objectives: Engagement of Nursing Home residents(NHR) in meaningful activities of daily living (MADL) enhances their autonomy and Quality of Life. This project aimed to develop an approach to identify NHR' needs for MADL and to guide NHs to developing a creative and innovative attitude towards NHR' MADL.
Method: The approach was developed based on the steps of Campbell's (2008) 'framework for design and evaluation of complex interventions to improve health care' including (1) a qualitative study with NHR exploring their MADL needs; (2) a survey with 143 NHR determining the components of a new MADL approach; (3) a systematic review on interventions to enrich MADL; (4) the development/evaluation of a new approach in three living labs examining the feasibility, benefits for NHR and acceptability for the staff; finally, to support implementation; (5) a qualitative analysis of 'good practices' and (6) focus groups with different stakeholders (nurses, management, activity coaches, occupational therapists) to identify their visions on MADL.
Results: A client- and activity-oriented approach was developed, characterized by an active participatory attitude of NHR and caregivers. Based on a systematic therapeutic process, four phases are distinguished, from an initial 'getting to know each other', over an all-encompassing evaluation of the wishes, desires, priorities, facilitating and inhibiting factors. After cataloguing the resources and strengths of the NHR, a plan to enable NHR' preferred MADL can be developed. Alongside, a toolbox was developed.
Conclusion: This promising empowering approach needs to be further examined in a RCT to evaluate its outcome and implementation potentials.

P-279
'Having something meaningful to do' is correlated with Quality of Life in residential care … or not?

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Objectives: Engagement in meaningful activities of daily living (MADL) optimizes people's Quality of Life (QoL) and serves as a mediating factor in both psychological and physical health. This study explores the meaningfulness of activities of nursing home residents (NHR) and its correlation to QoL.
Methods: A survey was administered to 143 cognitively healthy NHR (M 85±5.72 years; 43 men; 106 women) including cognitive, functional and mobility evaluations, a MADL questionnaire and the Anamnestic-Comparative-Self-Assessment for QoL (ACSA).
Results: Respondents reported a QoL of 1.78 (range −5 to +5; modus 3) and an important loss in number of MADL since their admission in the NH (household M 4.39±1.73 and leisure M 15.87±7.29). Self-care-activities remained intact although help was needed. 38 respondents gained 'new' activities (e.g. making crosswords, using a computer). Participants scored low on their activity-performance (4.5/10), performance-satisfaction 5.3/10 and the activity-challenge (5.4/10). Both inhibiting and facilitating factors were related to the capacities of the resident, the support of the environment and the organized activities, which were experienced as unchallenging. No correlations were found between QoL and the number of activities, performance nor satisfaction with activities. A small, although significant correlation was observed between QoL and 'activities according to the individual wishes' ($r = 0.272$; $p < 0.05$) and 'activities within the neighbourhood' ($r = 0.167$; $p < 0.05$).
Conclusion: Professionals are expected to enable MADL and to promote NHR' autonomy and QoL. Based on our study, this appears, however, to be hardly the case. It remains a challenge to identify the needs of NHR and enable them to engage in MADL.

P-280
Assessment of activities of daily living of the residents of a special nursing home

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Objective: In this study, it was aimed to evaluate the relationship of the activities of daily living with the sociodemographic characteristics of the elderly who live in a private nursing home in Manisa.
Methods: 47 people staying at private nursing home in Manisa were included to the study. Dependence in the daily living activities of elderly people was evaluated with the Katz Activities of Daily Living Index and Lawton and Brody's Instrumental Activities of Daily Living Index. Interviews was applied with the residents of nursing homes by intern doctors between 2012–2014.
Results: Study was carried out with 24 women (51.1%) and 23 men (48.9%). 57.5% of the residents is the equivalent of high school and higher school graduates and 87.2% of them is single. Most of them (89.4%) have at least one chronic disease. All individuals are independent according to the Katz Activities of Daily Living Index. The 27.7% of the residents is half-dependent, 4.3% of them is fully dependent according to the Lawton and Brody's Instrumental Activities of Daily Living Index.
Conclusion: As a result of this study, the well being of the socio-economic and educational situation were found to be effective positively at the level of dependence of the elderly.

P-281
Geriatric discharge to assess unit

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Objectives: Wellington House is an offsite discharge to assess unit. It is designed to accept patients who have reached the end of their acute hospital episode but are unable to return home, usually due to an increase in frailty from deconditioning or consequence of acute illness. The unit provides timely and appropriate care in

a non-acute multi-disciplinary safe environment with the aim to allow them to return to living independently.
Methods: The team take a holistic patient-centred multi-disciplinary approach. This includes interaction in the communal areas, for example group physiotherapy sessions and meals. The multidisciplinary team works closely together with excellent communication using daily board round and weekly MDT meetings to discuss complex discharges with the patient and families.
Results: 73% of patients were discharged to their own home, 90% within 6 weeks, 78% within 28 days. Functional and mobility scores improved with an increase of 3 on Bartel, a 5.5% gain in body weight, no pressure sore development, and a significantly lower usage of antibiotics. All patients viewed their stay as a positive experience.
Conclusions: Overall the patient experience is excellent, with great outcomes both qualitative and quantitative. The unit is meeting the needs of the most frail and vulnerable older patients in a safe and health-improving environment. The vision to improve quality of life and increase independence has enabled a vast majority to go home, rather than inappropriate transfer to 24 hour care or the increased complication from unnecessary high length of stay in the acute hospital.

P-282
Falls as an indicator of the reduced motor function and quality of life in elderly patients with stroke

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Objectives: Falling is a common problem among elderly people, especially in patients with stroke. Falls are related functional limitations, reduced mobility and activity, fear of falling as a consequence of this quality of life reduced after stroke. This study investigate the relationship between frequency of falls and quality of life, motor function, functional capacity and balance in elderly stroke patients.
Methods: Thirty-one stroke patients who were over 60 years of age included in this study. Patients with aphasia, orthopedic and other neurologic problem, and recurrent stroke were excluded. Quality of life [Stroke Impact Scale (SIS)], motor function [Stroke Rehabilitation Assessment of Movement Measure (STREAM)], balance [Activities-specific Balance Confidence (ABC) Scale] and functional capacity [6 Minute Walk Test (6 MWT)] were evaluated.
Results: Fifteen patients (48.4%) reported fall. A significant correlation was found between falls and quality of life, motor function, functional capacity, balance measurements (Spearman Correlation test, SIS; $r = -0.514$, $p = 0.003$, STREAM; $r = -0.514$, $p = 0.003$, 6 MWT; $r = -0.458$, $p = 0.01$, ABC; $r = -0.410$, $p = 0.02$). While there was a statistically significant difference in motor function and quality of life scores between fallers and non-fallers (Mann–Whitney U test, $p < 0.05$), the difference in functional capacity and balance scores was not significant (Mann–Whitney U test, $p > 0.05$).
Conclusions: As a result of this study, elderly stroke patients who had fallen have poor motor function and this situation affects their quality of life. This study suggests that fall preventing approach should add to the rehabilitation programs for elderly stroke patients.

P-283
Feasibility study of motivational interviewing to improve rehabilitation in an intermediate care hospital

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Objective: Our main objective was to test the feasibility of adding a patient centered motivational intervention to the usual rehabilitation in an Intermediate Care (IC) Hospital for patients admitted after a hip fracture or stroke.
Methods: 20 patients >65 years (10 hip fracture;10 stroke) participated in the study, receiving two motivational interviewing sessions by a trained geriatrician, the first within the 72 hours after admission, the second one week later. All patients were given leaflets informing about different rehabilitation exercises to perform besides formal physical therapy provided in the hospital, among which they could choose those they felt more suitable. Data collected included socio-demographics, comorbidity, and clinical, cognitive and functional status.
Results: The motivational intervention was accepted by all patients and all felt it to be appropriate. Opportunities for this intervention were high, 4–5 patients per week, best time for the interventions was in the afternoons, which avoided interferences with hospital activities. In patients with mild cognitive impairment the intervention was harder, and in 3 occasions the primary caregiver was invited to participate, with high acceptance and enthusiasm. Patients at baseline were already highly motivated to do rehabilitation, and ambivalence was not big. Therefore most of the interviews focussed on empowering patients and helping them to identify and set their own goals during rehabilitation.
Conclusions: Adding specific motivational interventions to usual rehabilitation treatment in older patients admitted after a hip fracture or stroke, is feasible and acceptable in our IC Hospital. Since patients are quite prone to rehabilitation, interviews tend to focus on empowerment. Further, rigorous research is needed.

P-284
Novel use of the Nintendo Wii board for measuring isometric lower limb strength: A reproducible and valid method in older adults

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Objectives: Portable, low-cost, objective and reproducible assessment of muscle strength in the lower limbs is important as it allows clinicians to precisely track progression of patients undergoing Geriatric rehabilitation. The Nintendo Wii Balance Board (WBB) is portable, inexpensive, durable, available worldwide, and may serve the above function. The purpose of the study was (1) to explore reproducibility and (2) concurrent validity of the WBB for measuring isometric muscle strength in the lower limb.
Methods: A custom hardware and software was developed to utilize the WBB for assessment of isometric muscle strength. The study design was a test-retest intra-rater reproducibility study, which followed international guidelines for reporting reliability and agreement (GRRAS). Thirty older adults (69.0 ± 4.2 years of age) were studied using both relative and absolute measures of reproducibility. Concurrent validity was explored by comparing the WBB against a stationary isometric dynamometer (SID).
Results: No systematic difference between test-retest was observed for the WBB. The Intra-class correlation coefficients (ICC 3.1) ranged from 0.911 to 0.967, Standard Error of Measurement from 9.7 to 13.9%, and Limit of Agreement from 20.3 to 28.7% for the WBB when averaging one to three recordings. Concurrent validity between the WBB and the SID on session one were all statistically significant and range from 0.691 to 0.846.
Conclusions: The WBB had a high relative reproducibility and acceptable absolute reproducibility in older adults. Concurrent validity was good as the WBB correlated significantly with the SID.

P-285

Novel use of the Nintendo Wii board as a measure of reaction time: A study of reproducibility in older and younger adults

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Objectives: Reaction time (RT) is a measure of processing speed in the central nervous system and has been reported to predict falls in older adults. We therefore developed a custom software, which utilizes the portable and low-cost standard Nintendo Wii board (NWB) to record RT. The aim of the study was: (1) to explore if our RT test could differentiate between older and younger adults, (2) to study learning effects between sessions, and (3) to examine reproducibility of our RT test.
Methods: A young (age 20–35 years) and an older study-population (age ≥65 years) were enrolled in this within- and between-day reproducibility study of RT. A mixed effect model was used to explore systematic differences associated with extremities, age, and session. Reproducibility was expressed by Intraclass Correlation Coefficients (ICC), Coefficient of Variance (CV), and Typical Error (TE).
Results: The RT tests was able to differentiate older adults from younger adults in both the upper extremity test [$p < 0.001$; −170.7 ms (95% CI −209.4, −132.0)] and the lower extremity test ($p < 0.001$; −224.3 ms (95% CI −274.6, −173.9)]. Moreover, no learning effect was found between sessions with exception of the lower extremity test between session one and three. An excellent within- and between-day reproducibility was achieved for both the upper and lower extremity test.
Conclusions: A low-cost and portable reaction test utilizing a NWB showed excellent reproducibility, no or little systematic learning effects, and could easily differentiate between younger and older adults in both upper and lower extremities.

P-286

Is "30-seconds sit to stand test" able to identify geriatric patients at risk of injurious falls?

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Objectives: The utility of commonly used clinical and physical-functional tests as predictors for injurious falls in geriatric patients needs to be examined. The aims of this study are to (1) examine the cut-off score for the predictive value of "30-second sit to stand test" with regard to injurious falls to improve sensitivity, and (2) investigate any association between the cut-off score and injurious falls when adjusted for other risk factors.
Methods: Community-dwelling 70+ years old adults were examined at a geriatric clinic. They were consecutively enrolled and received a comprehensive geriatric assessment, which included the "30-second sit to stand test". Data on prospective injurious falls within 12 months registered at the Emergency Department will be recorded. The currently recommended cut-off score of less than nine repetitions by the "30-seconds sit to stand test", for predicting reduced physical independence, was used. When all data are available, sensitivity and specificity will be calculated to find the optimal cut-off score for predicting injurious falls. A logistic regression analysis will be performed to show any association between the most optimal cut-off score and injurious falls when adjusted for age, sex, and previous injurious falls.
Results: In total 320 patients were examined at the geriatric clinic. Mean age was 81.8 years (±7.2) (range 70–95). Seventy-two percent of the examined were women. Results for optimal cut-off score of the "30-second sit to stand test" and association with injurious falls will be available at EUGMS 2015.

P-287

Unsupervised interactive video-based balance training to improve balance in older adults: a pilot study

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Objectives: Exercise videogames (exergames) have gained in popularity as a tool for improving balance ability. We developed an exergame, enabling community dwelling older adults to train balance in their home environment without supervision, using affordable technology. The objective of the present study was to assess the effects of the exergame on balance control.
Methods: Ten healthy older adults (75.9±7.2 years) played a newly developed ice-skating exergame for six weeks at home without supervision. During gaming the speed and direction of a virtual ice-skater are controlled by making lateral weight-shifts that are captured by a Kinect. Before, after 2 and 4 weeks of training and after the intervention, postural control was measured during 45 sec. of standing on a pressure mat system in eyes open (EO), eyes closed (EC) and dual task (DT) conditions. From the center of pressure signals sway characteristics in time and frequency domain were calculated. Multilevel modeling with a two-level hierarchical model was applied to examine changes in balance.
Results: Participants played on average 631 (±124) minutes and no participants dropped out. Improved sway characteristics in time and frequency domain ($P < 0.05$) were observed in EO and EC condition after 4 and 6 weeks of training. The rate of balance improvement showed differences ($P < 0.05$) between participants, not related to total playtime.
Discussion: A 6-week balance training based on unsupervised home-based exergaming improves balance ability in healthy older adults. However, participants did not benefit equally from the intervention, thereby emphasizing the need for a personalized training program.

P-288

Cardiac rehabilitation for heart failure in primary care

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Objective: The aim of this study was to assess the effectiveness of a cardiac rehabilitation programme for patients with heart failure and chronic diseases in Primary Care.
Methods: The participants in this 6-month prospective study were 172 consecutive patients with low-risk myocardial infarction referred to their primary care center for follow-up care (60–89 years, 66% male). Of these patients, 97 were referred to a mixed primary and specialized care program that included exercise training, cardiovascular risk control, an antismoking program, patient education and psychological evaluation (lifestyle modification). We analyzed the results after 3 months and 6 months of follow-up.

Results: After 6 months of follow-up, the cardiac rehabilitation program coordinated by cardiological and primary care services for heart failure patients improved quality of life, and increased exercise tolerance, active employment, and the number of participants who quit smoking. The mixed program also reduced body mass index. The results of this study demonstrate that a multidisciplinary cardiac rehabilitation programme can improve symptoms, functional performance and health-related quality of life in older patients with heart failure. These benefits are associated with a reduction in hospital admissions attributable to heart disease.
Conclusions: Not all patients with heart failure are suitable for such an exercise programme and clearly this care component needs to be tailored to the individual. However, we believe that cardiac rehabilitation should become an important part of the care of heart failure patients. Cardiac rehabilitation offers an effective model of care for older patients with heart failure in Primary Care.
Project funded by EEA Grants (NILS Movility Project).

P-289
J.H. Downton scale and rehabilitation effectiveness: may be related?

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Aim: Relationship between J.H. Downton scale at admission and effectiveness on functional ability in patients admitted to an intermediate care unit.
Patients and Methods: Prospective study of patients admitted from 1st of January 2014 until 31st of November of the same year. Barthel index at admission (BIA), Barthel index at discharge (BID) and J.H. Dowton scale at admission were registered. J.H. Downton scale values the risk of falling and consists of the following items: previous falls, cognitive status, sensory deficit, drugs and walking ability (score range: high risk: ≥3; moderate risk: 2; low risk: <2). Functional improvement was assessed using the absolute functional gain (AFG) and was calculated by the difference between BID and BIA (adequate rehabilitation effectiveness was considered a AFG >20 points).
Results: Five hundred and thirty-five patients were registered (60.1% women). Mean of AFG was 29.6±25.6. Five hundred and three (94.0%) patients had high risk of falling valued by the J.H. Downton scale, 27 (5.0%) moderate risk and 5 (0.9%) low risk. From 338 patients who attained an AFG >20 points, 318 (94.1%) had high risk of falling, 7 (5.0%) moderate risk, and 3 (0.9%) low risk; the remaining 197 (36.8%) (AFG ≤20), 185 (93.9%); 10 (5.1%) and 2 (1.0%), respectively ($p = 0.988$).
Conclusions: Most of the patients admitted to the intermediate care unit had a high risk of falling assessed by J.H. Dowton scale. No significant relationship between J.H. Dowton scale at admission and adequate effectiveness on functional ability was found.

P-290
Might be the Braden scale a predictor of functional improvement in patients admitted to an intermediate care unit?

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Aim: Relationship between Braden scale at admission and effectiveness on functional ability in patients admitted to an intermediate care unit.
Patients and Methods: Prospective study of patients admitted from 1st of January 2014 until 31st of november of that year. Barthel index at admission (BIA), Barthel index at discharge (BID) and Braden scale at admission were registered. Braden scale assesses the risk of developing pressure ulcer (PU) and consists of the following items: sensory perception, skin exposure to moisture, physical activity, mobility, nutrition and skin friction. The score range: ≤12 points: high risk, 13–14: moderate risk, 15–16 (if >75 years 17–18): low risk and >17: without risk. Functional improvement was assessed using the absolute functional gain (AFG) and was calculated by the difference between BID and BIA (adequate rehabilitation effectiveness was considered a AFG >20 points).
Results: Five hundred and thirty-five patients (60.2% women) were recorded. Mean of AFG was 29.7±25.6. Twenty-six (4.9%) patients had high risk of PU valued by the Braden scale, 61 (11.4%) moderate, 199 (37.2%) low and 249 (46.5%) had no risk. From 338 (63.2%) patients who attained a AFG >20 points, 4 (1.2%) had Braden scale suggestive of high risk of developing pressure ulcers; 24 (7.1%) moderate risk; 109 (32.2%) low risk and 201 (59.5%) had no risk; the remaining 197 (36.8%) (AFG≤20), 22 (11.2%); 37 (18.8%); 90 (45.7%) and 48 (24.4%), respectively ($p < 0.0001$).
Conclusions: Patients who obtained an adequate functional improvement had higher scores on the Braden scale at admission, i.e. low risk or no risk of developing PU during admission.

P-291
Consequences of a health reform on short term mortality in elderly hip fracture patients; results from a quality registry

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Objectives: In January 2012, a national health reform was implemented in Norway and the number of hospital beds decreased, resulting in shorter length of stay (LOS). The aim here is to describe consequences of this reform focusing on LOS, on short-term mortality in elderly hip fracture patients.
Method: Cross-sectional observational study. Data was obtained from a quality registry where demographic and medical information are collected by an interdisciplinary team. Data about time of death were obtained from the National Population Registry. Short-term mortality was defined as time of death within 30 days after discharge from hospital.
Results: 2353 patients with hip fracture, 65+ years were included from 01.01.2007 to 31.12.2014. Patients who died in hospital and patients admitted from nursing homes were excluded. There proportion of men admitted before the reform was 24% vs 26% after ($p = 0.38$). Mean age was 84 years, the same in both groups, while there were more patients within ASA-score group 3–5 before the reform than after, 51% vs 46%, $p = 0.034$. LOS decreased from mean 13(±8.5) days before the reform to 7(±3.9) days after, $p = 0.001$. Short-term mortality before the reform was 3.5% vs 5.6% after, $p = 0.017$ (CI 1.09–2.40, OR 1.6). We found no significant association between LOS and short-term mortality, $p = 0.42$.
Conclusions: Short-term mortality increased for patients admitted from their homes after the reform. We did not find a significant association between LOS and the increased mortality in this study. Further studies on LOS and the risk of short-term mortality needs to be studied.

P-292
Acute geratology wards and stroke patients

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Objective: The National Clinical Guidelines for stroke stipulate that all stroke patients should be cared for in Acute Stroke Units. With high demand on the Oxford Stroke Unit beds, a minority of stroke patients needing further rehabilitation, are

transferred to the Geratology wards while waiting for dedicated stroke rehabilitation beds in two Oxfordshire community hospitals (Witney and Abingdon). We explored their care.
Method: Discharge letters and electronic records of physiotherapy sessions for patients transferred to the Geratology wards while remaining on the "stroke pathway" were retrospectively examined for diagnosis, co-morbidities, age, dates of transfer, length of stay, discharge destination and physiotherapy input between January 2014 and January 2015.
Results: 40 stroke patients were transferred in the period reviewed. At the time of discharge from the Geratology wards, the average age was 86 years (45% were >90 years old). 60% had a nasogastric tube in situ and 12% End of Life care. Their average stay in the Geratology wards was 8.5 days. 25% of patients received physiotherapy upon transfer, 25% waited between 1 and 6 days for physiotherapy and 50% received none during their stay. Only 44% of all transferred patients reached the designated stroke rehabilitation beds.
Conclusions: On average 3 patients per month were transferred from the Stroke unit to the Geratology wards while waiting for dedicated community stroke rehabilitation beds. We identified a need for increased provision of the appropriate rehabilitation services on the Geratology wards or the capacity in stroke pathway beds, to make this overflow unnecessary.

P-293
Individualized music in nursing home medicine: A hands-on workshop

A. Myskja
National Competence Center for Arts & Health, Ski, Norway

The workshop will be practically oriented, with the aim of enabling participants to apply the main skills taught in everyday clinical work.
Main topics:
- Individualized music: Assessing preference
- Individualized music in practice
- Evaluating effects and adjusting therapeutic programs
- Care singing – a tool for procedures
- Rhythmic auditory stimulation: Aiding gait and sensorimotor function
- Integrating new therapeutic strategies in a nursing home setting: Success factors and obstacles

P-294
Music as psychosocial intervention in dementia care – why and how?

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The lecture will provide an overview of the field, presenting and evaluating the research status of the main music modalities: Music therapy, individualized music, care singing and therapeutic movement with music accompaniment. In addition, core findings from Norwegian projects studying the application of music based methods in geriatric settings are presented. A discussion of key factors in successful implementation of music as therapeutic modality in a dementia care setting will conclude the presentation. Video samples will illustrate the key points of the lecture.

P-295
Driver licence restriction: effective to improve older driver safety without unduly impairing mobility?

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Objective: While medical conditions have been recognised as a minor contributing factor to road traffic crashes, clinicians and driver licencing agencies need mechanisms for promoting safe mobility for those with age-related illnesses which can impact on driving safety. Restrictive licensing has been proposed as a possible intervention for decreasing the risk of crashes associated with medical crashes, whilst not unduly affecting patient mobility. We analyzed how the term 'restrictive licensing' is defined in the literature, and to determine the effectiveness of this mechanism in improving driver safety.
Method: A systematic literature review of MedLine and Transport Research International Documentation (TRID), is the largest online bibliographic database of transportation research.
Results: Medline returned 42 papers, and TRID 110: excluding those which overlapped, we reviewed a total of 21 papers which met inclusion criteria. Restrictive licensing is most commonly defined as a geographical, time of day or speed restriction placed on the driver. Personal and vehicle modifications are considered by some to also be a form of restrictive licensing. Existing studies are supportive of the efficacy of restrictive licensing programs, with reduced crash rates for drivers carrying restricted licences compared to controls.
Conclusions: Restrictive licensing has consistently been shown to be an effective mechanism of increasing driver safety without unduly impacting driver mobility. It has significant potential to have a positive impact on the ability of those with age-related medical conditions to drive safely, provided that it is implemented and policed in the correct manner.

P-296
Treatment of non-healing two diabetic foot ulcers with N-acetylcysteine

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Diabetes mellitus (DM) is a complex, chronic metabolic disorder; affects almost all age group of patients which requires continuous medical care with multifactorial risk reduction strategies beyond glycemic control. Diabetic foot is the major health problem causing serious morbidity and mortality.N-acetylcysteine (NAC), an aminothiol and synthetic precursor of intracellular cysteine and glutathione.NAC has anti-inflammatuary, and antioxidant features.In our study, we apply local NAC to two diabetic foot ulcers.The patient was 66 six years old woman and had Diabetes Mellitus type II and also poor glycemic control.She had bilateral diabetic foot ulcers on the sole of her feet.One of them was Stage II-a and the other was Stage II-b according to Wagner classification.We applied local NAC with wet dressing to ulcers twice a day.On the 50th day, both of the ulcers have healed completely.Local Nac therapy may be effective in diabetic foot ulcers.

P-297
Retrospective cross-sectional study of next-of-kin demographics and community hospital length of stay

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Introduction: Hospital discharges can be complex and lengthy. It is recognised that family issues, or involvement, influence length of stay (LOS). Anecdotally, at a geriatric community hospital with regular complex discharges, there are varying levels of engagement of the next of kin (NOK). We have observed female NOK are often more engaged in their relatives care but this has not been examined in the literature.
Objectives: The study aimed to determine whether NOK demographics (gender, civil status, distance from relative) influences LOS.

Methods: Retrospective data collection about all discharges during June to September 2013 from a community hospital geriatric rehabilitation ward.
Results and Discussion: Average LOS for patients with male NOK was 37.9 days compared to 31.2 days for those with female relatives; a significant difference existed between patients with sons and daughters (P = 0.023) and a trend noted between all comparable groups. Civil status influenced LOS: divorced patients had shortest LOS whereas single, never married, patients had the longest LOS; possibly due to smaller support networks secondary to lack of offspring. No correlation existed between LOS and distance of NOK, however discharge location affected LOS: the quickest discharges were to home, rather than a placement. LOS for those going home with female NOK (n = 35) was shorter than those with male NOK (n = 31) however this was not replicated with placements.
Conclusions: We have made several observations regarding the demographics of NOK. Generally, if a patient has a female NOK they have a shorter LOS, in concurrence with our sexist observations.

P-299
Geriatric assessment in nonagenarian patients: prognostic factors, interdisciplinary interventions and effectiveness on functional ability

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Objectives: 1. To prove whether nonagenarian patients improve their functional ability while admitted to a geriatric convalescence unit. 2. To identify the prognostic factors of functional gain.
Patients and Method: Prospective study of 212 nonagenarian patients (75.94% women; average age 92.02 years), who were admitted to the unit over a period of six years. An overall geriatric assessment of all the patients was performed, as well as a program of interdisciplinary interventions and, when indicated, a rehabilitation program (physiotherapy and occupational therapy). Variables: age, gender, previous functional ability (Lawton and Barthel indices), at admission and at discharge (Barthel index), main diagnosis at admission, cognitive function (Folstein MMSE), depression (screening question and Yesavage GDS if necessary), nutritional status (seric albumin, total plasmatic cholesterol, food intake), comorbidity (Charlson index), presence of geriatric syndromes, complications during the stay in the unit. Functional improvement was assessed using the relative functional gain calculation or corrected Heinemann index (RFG-CHI) (adequate RFG-CHI ≥35%).
Results: One hundred and twenty-nine patients obtained a RFG-CHI ≥35% (62.62%). Variables associated with a RFG-CHI ≥35% in a multivariate analysis: Folstein MMSE ≥13 points (OR = 2.63; p = 0.011); plasmatic albumin ≥2.90 g/dl (OR = 2.61; p = 0.017); admitted for any non-neurological/vascular disease (OR = 4.92; p < 0.001) and absence of immobility syndrome (OR = 5.62; p < 0.001).
Conclusions: 1. A high number of nonagenarians improved their functional ability with a RFG-CHI ≥35%. 2. The geriatric assessment and the usual clinical history make it possible to identify most of the predictive factors of functional gain.

P-300
Gait pattern visualization in geriatric patients using a displacement measurement of distributed centres of pressure

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Objectives: With the present research we investigate the feasibility of gait stability measurements during walking in a geriatric rehabilitation setting and visualize the corresponding gait pattern by a graphical representation to support the interpretation of the gait analysis.
Methods: Traditional methods use a platform with embedded sensors to measure standing stability, with patients instructed to stand up straight and still during the tests. The method presented in this work provides additional information on the distribution of balance and stability during walking by using the GAITRite® system. Our method computationally solves the export of centre of pressure data (CoP) from the GAITRite® database and plots CoP distributions of each foot separately along the walkway resulting in a graphic representation to ease the interpretation of instability of the patient's gait by the clinician.
Results: The graphic representation allows us to perform: (i) intra-individual comparisons by observing the walking patterns of the same individual to evaluate the progression of the treatment (e.g., rehabilitation), and (ii): inter-individual comparisons by comparing gait characteristics among different groups (e.g., patients, healthy individuals).
Conclusions: The present pilot research discusses a new method to investigate the distribution of centre of pressures of an individual during walking. We are able to demonstrate inter- and intra-individual differences in the walking patterns depending on the characteristics of the patient. Further research is needed to improve the developed algorithm to discern better between different treatment evolutions and between different pathological and healthy samples.

P-301
Galvanic vestibular stimulation as a possible treatment for camptocormia?

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Introduction: Camptocormia is a disorder characterized by involuntary flexion of the thoracolumbar spine in sagittal plane while standing and walking, which resolves completely in supine position. Camptocormia is associated with Parkinson's disease (69%). Therapeutic approaches have not achieved positive results. Vestibular galvanic stimulation (VGS) could induce a swinging pelvis, trunk and head back, reducing the angle of anterior trunk flexion (ATF) in these patients.
Methods: Longitudinal study; 7 patients with camptocormia that held a 20-minute VSG session (1.5mA) were included.
Primary outcome: ATF at stand-up position, measured as the distance (cm) between the C7 spinous process and the vertical reference line that crosses the sacrum perpendicularly.
AFT was registered in: 1/Stand-up at minute 0 (stand-up); 2/After remaining 60 seconds (s) with opened eyes (60sOE); 3/After 60s with closed eyes (60sCE). Evaluations: Before, immediately after and one month after treatment with VSG. Statistical analysis was performed using t-student.
Results: Two males, 5 females, aged 77.5(SD6.1), 5 of whom were diagnosed of Parkinson's disease, were included.
AFT after VSG decreased in the stand-up (p < 0.05); reduction obtained in 60sOE (p = 0.075) and 60sCE (p = 0.083) was nonsignificant. A reduction of 11.25%(SD12.5) in the stand-up, 14.35%(SD11.9) in 60sOE and 16.4%(SD15.9) in 60sCE was observed.
One month after treatment, the effect of ATF reduction remained in 50% of the patients. Comparing AFT results after a month with pre-VSG results, differences in the conditions of 60sOE (p = 0.048) and 60sCE (p = 0.032) were observed.

P-302

Using the De Morton Mobility Index (DEMMI) to predict physical activity and outdoor mobility after hospital stay – preliminary results

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Background: The De Morton Mobility Index (DEMMI) is a valid measure of inpatient mobility in the geriatric Setting. These preleminary data, shown at the WCTP-Poster presentations 2015 will build a useful platform for further clinical trials.
Purpose: The preliminary analysis of the DEMMI's prognostic validity in older patients admitted to an inpatient geriatric clinic in regard to the expected amount of physical activity after returning back home.
Methods: The DEMMI was performed with older individuals in a geriatric clinic within the last week before discharge. A telephone follow-up after 4 weeks was used to assess physical activity with the Physical Activity Scale for the Elderly (PASE) [Washburn 1999], among others.
Results: Forty-nine individuals were assessed in the clinic, of which 25 (51%; 80±5 years old) attended the telephone interview. Most of them (88%) showed low PASE scores of less than 70 points, indicating low levels of physical activity [Märki 2004].
There was a significant correlation between DEMMI and PASE scores (Pearson's $r = 0.65$; $p < 0.001$) as well as between DEMMI scores and the number of climbed stair steps on the previous day ($r = 0.64$; $p = 0.001$).
Already in the clinic, participants who walked outdoors in the week prior to the interview ($n = 17$; 59±11 points) showed significantly higher ($p = 0.013$) DEMMI than those individuals that stayed inside ($n = 8$; 46±10 points).
Conclusions: These results indicate prognostic validity of the DEMMI concerning post-clinical physical activity and outdoor mobility.

P-303

Relationship between age and balance, trunk impairment in Parkinson's disease

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Objectives: Prevalence of Parkinson's disease (PD) increases with aging. Balance and trunk impairments lead to disorders and their treatment are considerably hard in PD. Both of them result in falls and affect negatively daily living activity and quality of life. Our aim is to examine the relationship between aging and balance, trunk impairment in patients with PD.
Methods: 50 patients (19 female and 31 male) with PD mean age was 67.84±1.31 years and mean Hoehn & Yahr stage was 2.46±0.76 included this study. Including criteria were consist idiopathic PD, Hoehn & Yahr stage I-IV, on medication states, not having orthopedic and neurological disease limiting dexterity. Balance evaluated with Berg Balance Scale (BBS) and trunk impairment evaluated with Trunk Impairment Scale (TIS).
Results: Mean BBS score was 50.90±5.47 and mean TIS score was 19.74±3.01. There was a significant negative correlation between age and balance, trunk control. (Pearson Correlation test, BBS; $r = -0.538$, TIS; $r = -0.476$, $p < 0.01$). In addition, between balance and trunk control and Hoehn & Yahr stage was a significant negative correlation (Spearman Correlation test, BBS; $r = -0.651$, TIS; $r = -0.758$, $p < 0.01$). Sex was not predicted both balance and trunk impairment (Mann–Whitney U test, $p = 0.141$, $p = 0.498$, respectively).
Conclusion: Our study reflects that there was an association between aging and balance, trunk control. Balance and trunk impairments should be assessed along with aging and appropriate therapeutic interventions might be implemented in early stage of PD rehabilitation.

P-304

Feasibility of a video-based exercise training program in institutionalized elderly suffering from dementia

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Objectives: There is evidence that exercise programs are feasible and potentially effective in persons with dementia. The impact of replacing the therapist by video demonstrated exercises has not yet been investigated. The aim of this study is to evaluate (1) the feasibility of a video-based exercise program (2) the motivation, credibility and expectations regarding the program, in elderly suffering from dementia.
Methods: This pilot study contains a three weeks functional exercise program using a video-based exercise training joined with background music. Elderly suffering from dementia were recruited from one nursing home and practiced three times per week for 30 minutes. After each session, the Intrinsic Motivation Inventory (IMI) and the Credibility Expectancy Questionnaire (CEQ) were conducted. A Friedman analysis was performed to measure changes over time ($\alpha = 0.05$). For multiple comparisons, a Wilcoxon signed ranks test was done (Bonferroni correction, $\alpha = 0.0167$).
Results: 5 participants (89.6±5 years) with moderate Alzheimer's disease (mean MMSE 14.6±3.4) were recruited. Adherence to exercise sessions averaged 88.9% (individual values of 100% in two subjects, 77.8% in two subjects and 88.9% in one subject). The median CEQ and IMI results over the entire program were all positive. Only credibility changed significantly over time ($p = 0.024$). No differences were found with multiple comparison analyses between weeks.
Conclusions: High adherence demonstrated the feasibility of the program. The intervention was well received by the participants, as shown by favorable scores on motivation, credibility and expectancy regarding the program.

P-305

Body composition and training after stroke

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Objectives: To study the effects of a progressive resistance and balance (PRB) exercise program on body composition with regard to its associations with physical function among individuals approximately one year after stroke.
Methods: A total of 43 individuals from the community (age 73 years (SD 5.0), 73% men) were randomly assigned either to an intervention group (IG, $n = 20$) that received a PRB exercise program twice weekly for three months or a control group (CG, $n = 23$). The primary objectives were to correlate potential changes in the fat-free mass (FFM (kg) and FFM index (FFMI) (kg/m^2), and fat-mass (FM (kg), (%) of body weight, FMI (kg/m^2)), as measured by bioelectrical impedance analyses (Tanita®), with physical function, including walking capacity; i.e., the 6 Min Walk Test; 6MWT, balance and mobility.
Results: At three months, a complete case analyses revealed a significant reduction in fat mass per cent in the intervention group when compared with the control group; −1.5% vs. 0.13% respectively; effect size, $ES = 0.62$, standard error (SE), 0.80;

P = 0.0.39). No between-group differences in FFM were observed. There was a between-group difference in the 6MWT (25 vs. −10 m) at three months in favor of the IG (r = 0.47, P = 0.04). Changes in FMI were associated with improved walking capacity in the IG.
Conclusions: Three months of PRB training might reduce fat mass in older adults approximately one year after stroke. This exploratory study indicated an association between improvements in physical performance and changes in body fat mass.

Infectious diseases and vaccines

P-306
Controlling MDRO in acute geriatric care: Compliancy to hand disinfection by patients guided by geriatric teams

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Objectives: MDRO places acute geriatric teams to a huge challenge: patients with high risk profile for developing MDRO are given geriatric revalidation at the same time.
In this observational study, we want to measure the effect of hand disinfection by the patients themselves. Frequently, they suffer from cognitive and/or physical decline. In this context, it is necessary that members of the geriatric team help with the hand disinfection.
In addition, we want to document the bacterial load to which these patients were exposed to during revalidation time.
Methods: 40 patients from one acute geriatric ward are included during period of 4 weeks. Informed consent is asked, if necessary to their relatives. Data on MMSE, CCI (=Charlson Comorbidity Index) and ADL, get up and go are collected.
Hand hygiene and disinfection will be evaluated by the 'finger press method': the patients will press their fingertips directly onto a blood agar plate. Each patient will be tested on four different moments. The first measurement takes place after hygienic care and hand disinfection by nurses in the morning. A 'clean' rollator will be given to the patient. The second will take place after breakfast in the acute ward restaurant and before entering the fitness room. Then a hand disinfection (alcohol rub) will be performed, followed by measurement 3. Patients are confined to their revalidation. Standard measures to control for MDRO in revalidation rooms are applied. After the exercises, a new bacteriological control is planned (measurement 4).
Results: June 2015.
Conclusions: June 2015.

P-307
Risk factors of *Clostridium difficile* infection in elderly patients in Czech hospital

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Objectives: *Clostridium difficile* infection is a serious disease complicating the antibiotic treatment in hospital environments. The goal of this study was to evaluate the risk factors which lead to the CDI disease in seniors in order to reduce mortality.
Methods: In this retrospective study the group of 235 patients over 65 years of age with confirmed diagnosis of CDI, hospitalized at the University hospital, Brno, from January 2008 to December 2013 were evaluated. For the diagnosis of CDI, finding of toxins A and B in the stool of patients or autopsy confirmation were crucial. Demographic and epidemiological details, clinical data, antibiotic administration in previous two months, concurrent medication, the effect of comorbidities, malnutrition were evaluated.
Results: The risk factors comprised the cerebrovascular disease, dementia, presence of pressure ulcers and immobility. The impact of antibiotic therapy in anamnesis on increased incidence of CDI was clearly confirmed in our group. The use of tetracycline and third generation cephalosporin has proved to be a risk ATB. A statistically significant was the leukocyte levels in the course of CDI. While assessing other biochemical and haematological parameters, calcium levels, urea levels and CRP with respect to mortality measured within the course of CDI came out to be significant.
The study proved the MMSE test, ADL test, MNA-SF test and Charlson comorbidity index as a statistically important factor.
Conclusion: Knowledge of risk factors which leads to *Clostridium difficile* infection in elderly patients could help to improve the therapeutic process.

P-308
Short stretch bandage does not compromise microcirculation in patients with erysipelas

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Objectives: Cutaneous blood flow rate (BFR) was measured in the forefoot of 24 patients diagnosed with erysipelas in one calf. BFR was measured with and without short stretch bandage (SSB) (comprilan bandage), and presence of the local veno-arteriolar reflex (VAR) was examined in the forefoot.
Methods: Five women and 19 men were included, mean age 68 years (45–92 years, median 72 years). Cutaneous BFR was measured with the heat-washout method in the forefoot with the foot placed at heart level, and 50 cm below heart level. SSB was applied, and subsequently BRF was measured in the forefoot at heart level. Measurements made in the forefoot with SSB were repeated the following day.
Results: BFR remained unchanged with the foot placed at heart level as well as below heart level, not significant, n.s., indicating that the local VAR was not present. BFR in the forefoot with and without SSB remained unchanged, n.s., and so did BFR in the forefoot when repeated at day two, n.s.
Conclusion: The local VAR was not present, neither with nor without SSB. Most likely this is due to the fact that VAR is overruled by the hyperemia caused by the erysipelas infection. In attempt to restore a normal microcirculation by the use of SSB, which reduces diffusion distance from capillaries to the tissue, the healing process might be improved. Use of short stretch bandage does not compromise peripheral BFR but reduces the edema.
The authors have no conflict of interest to declare.

P-309
Bacteriological analysis of urinary tract infections in a French nursing home. Introduction of an empiric antibiotic protocol

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Introduction: Antibiotic resistance has become a major concern in the nursing home (NH) communities. Despite this, antibiograms are not being used enough in the NH to help physicians make more educated decisions. Bacterial ecology of urinary tract infections in the NH is unknown and selection of an antibiotic is based on physician personal experience.
Objective: To develop an empirical antibiotic protocol according to urinary tract infections ecology in the NH
Methods: This retrospective study was performed during one year. We checked all bacterial urinary cultures (MSU) for susceptibility to multiple antibiotics (ATB).
Results: 112 MSU were done in 309 potential residents with 34 antibiograms.

Ecology: *Escherichia coli* (*E. coli*) was the most common bacteria (75%)
32% of *E. coli* were sensitive to most ATB
40% of *E. coli* were resistant to ampicillin and sensitive to amoxicillin–clavulanic acid
28% of *E. coli* were resistant to quinolone
28% of *E. coli* were resistant to sulfa drug
0% of *E. coli* were resistant to nitrofurantoin.
A standard operating procedure (SOP) was performed according to this ecology
Conclusion: Information gathered from this study was helpful in establishing SOP on a nursing home for GP to know when and which antibiotics should be used.

P-310
Human lymphadenitis due to Corynebacterium pseudotuberculosis: a case report

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Objectives: We report the case of a 82-year-old man who presented a 15-day history of a single painful axillary adenitis, without fever, weight loss or sweats.
Methods: Physical examination of our patient was normal, without hepatosplenomegaly or other adenitis. We noted a dry cough. Initial laboratory evaluation was normal, serology was negative for Brucella or Bartonella, imaging by computed tomography (CT) showed patterns of pulmonary fibrosis, micronodular anthracosilicosis, and a large (34 mm) left axillary lymphadenopathy.
Results: The lymph node was excised and bacterial cultures allowed to identify C. pseudotuberculosis. Histopathology examination showed an adenitis (dimension $2.5 \times 1.5 \times 1.5$ cm) containing necrotic, granulomatous and abscess material. PCR was negative for Bartonella, Mycobacterium tuberculosis or atypical Mycobacteria. The patient was treated with amoxicillin antibiotherapy. Medical history review of the patient confirmed he had been skinning a sheep four months ago.
Conclusions: C. pseudotuberculosis is a nonmotile, gram-positive small bacillus that grows both aerobically and anaerobically. Most of the cases of human lymphadenitis due to C. pseudotuberculosis have been reported in Australia, usually in those who have been occupationally exposed to sheep. Axillary lymphadenitis predominates, presumably because the hands and arms are frequently the site of primary infection. Histopathology features of human lymph nodes infected by C. pseudotuberculosis are variable and are characterized by necrotizing and suppurative granulomatous lympadenitis. Cases of suppurative lymphadenitis might be treated by incision and drainage, along with antibiotherapy. C. pseudotuberculosis is susceptible to penicillin and other antibiotics that are active against gram-positive bacteria or have broad-spectrum activity.

P-311
Ramsay Hunt Syndrome – a case report

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Introduction: Ramsay Hunt Syndrome is a rare condition caused by the Varicela-Zoster Virus (VZV), which is characterized by facial palsy with associated erythematovesicular rash of the pinna or mouth. This syndrome is the second most common aetiology for non-traumatic peripheral facial palsy, and is diagnosed based on the patient's clinical history and physical examination.
Case report: The case we describe refers to a 70 years old white man that presents at the hospital with oral pain, left unilateral otalgia and facial asymmetry; all of which had started 3 days prior to presenting to hospital. He had essential hypertension, dyslipidemia and was overweight (BMI = 28.125 kg/m^2). He was medicated with a combination of lisinopril 20 mg and amlodipine 5 mg, once a day. The physical examination revealed left palsy with palpebral ptosis and Bell's sign, and vesicular rash on soft and hard left palates. There was no sign of disease in the ear. It was presumed that was Ramsay Hunt Syndrome and the patient was medicated with deflazacorte 60 mg and acyclovir 500 mg once a day, for 7 days. One month later, he was reassessed in consultation and he still presented with facial palsy, having recovered from the remaining symptomatology. The serologic evaluation shown elevated titles of VZV antibodies [IgG 3308 (positive >165); IgM >2.3 (positive >1.1)].
Conclusion: Ramsay Hunt Syndrome is a benign aetiology of facial palsy, but it has a poor prognosis in the elderly, especially if the treatment is delayed or the patient has elevated arterial blood pressure.

P-312
Antimicrobial therapy assessment in four health centers from 2010 to 2014

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Objectives: Assess antimicrobials use in subacute-longterm care during the last five years, depending on the different types of patients.
Identify differences in:
- Group of antimicrobials used
- Length of treatment
- Administration route

Material and Methods:
- Evaluation period: 2010–2014.
- Beds of the centers included: Güell 165, Girona 97, Vilaseca 25 and Diagonal 17.
- Data obtained from the management program and prescription application.
- DDD/100 stays were calculated according to antimicrobial group ATC-classification, antimicrobial, typology of patient and length of treatment.

Results: Mean age 80.4 years (62.4% women). The percentage of patients/year with antimicrobial treatment has ranged between 33% and 40%; 47% and 54%; 10% and 28%; 54% and 69% per center.
The DDD/100 stays have remained constant in Girona (12.81), and Diagonal (18.02) but have increased in Güell, from 26 in 2010 to 52.1 in 2014, and Vilaseca, from 3.8 to 8.4.
Mean length of treatment 10.5 days. Parenteral route in Girona and Güell is stepping out.
Antimicrobial most used was penicillin/beta-lactamase inhibitors (amoxicillin/clavulanic) in all centers. Also stand out quinolones and fosfomycin. In recent years the use of fourth generation cephalosporins, metronidazole and monobactam has increased.
Conclusions: Incidence of antimicrobial treatments remains high. Antimicrobial use follows the Antimicrobial Treatments Guideline of Group Mutuam im relation to the most prevalent infections (urinary and respiratory). Decrease of treatment days related to fosfomycin high use. Complexity of patients referred to geriatric hospitals is increasing, shown by the increasing use of intravenous route and antimicrobials for multiresistant bacteria.

P-313

Bedsores and osteitis in the elderly: how the infectious complications and malnutrition affect prognosis, about a case

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Objectives: Bedsores are a major problem in geriatrics; the causes are multiple and major consequences without a real prevention policy.
Methods: We illustrate this problem by a clinical case.
Results: A lady of 89 years was referred for a fever lasting for several days. She was followed for insulin-requiring diabetes, dyslipidemia and mixed dementia, severe stage. The skin examination revealed a stage IV pressure ulcer with bone contact by a stylus, next to the sacral spine, accompanied by substantial purulent discharge; This in a patient at the limit of cachexia, with atrophy of the members. We realized laboratory tests revealing an important inflammatory syndrome with a CRP to 136 mg/L (normal <10 mg/l). Albumin was 26 g/L (normal >35 g/l). We did not find abnormalities in blood counts except anemia 9.8 g / dL in this biological inflammatory context. The infectious samples were multiple. The urine culture showed an urinary infection by Enterococcus faecalis. Samples at the ulcer showed the presence of Enterococcus faecalis. The blood cultures were also positive at the same germ. However, this bacterium was resistant to beta-lactamins, macrolides and fluoroquinolones. Due to bone contact with bacteremia, a basin scanner was performed, confirming a sacred osteitis. We introduced antibiotics to bone penetration, wide spectrum, which were glycopeptides, aminoglycosides and rifampicyne. Due to a significant weakness, the patient died despite the treatment instituted.
Conclusion: Pressure ulcers exposed to infectious complications; malnutrition is an aggravating factor to be fought inevitably.

P-314

Effective implementation of Herpes Zoster Vaccination (HSV) programme among elderly

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Objective: To improve the vaccination rates and documentation of Herpes Zoster Vaccination (HSV) from zero % to 80% of geriatric in and out patient by the end of March 2015 and 100% by end of June 2015 and to assess the effectiveness of programme by December 2015.
Methods: Introduced HSV, in addition to existing adult vaccines like pneumococcal and influenza vaccines. Staff education by hand out and presentation about Zoster vaccinations indication, contraindications, route of administration and implementation of adult vaccine card. Data extraction from patient files to determine baseline adult vaccination and documentation rates.
- Family meeting for consent and making vaccination a regular practice for newly admitted patients who above 60 years
- Giving vaccines to unvaccinated patients with age above 60 years
- New registry for Zoster vaccination in geriatric setting and prepare an addendum to antimicrobial policy as vaccination programme for preventable infectious disease.

Results: Vaccination programmme achieved highest rates by 4 months from Dec 2014 to March 2015 and it exceeded the goal of 80% for in patients and out patients.
Conclusions:
- A follow up every month revealed a further improvement in rate of vaccination among geriatric in patients and out patients in Rumailah hospital.
- Health education and adult vaccination advocacy helped to implement HSV vaccination in outpatient clinic.
- Implementing new documentation system for adult vaccination card increased the vaccination rate to optimum level.
- Patients and families are willing to take vaccine once education is provided in detail about complication of Herpes Zoster infections.

P-315

Development and validation of attitudes towards vaccinations

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Objectives: The aim of the study was to develop and validate the scale measuring positive and negative attitudes toward vaccinations among older people aged 60 and more in Poland. Vaccination rates and general knowledge about vaccination in this group are low despite of higher risk of serious effects of communicable diseases among older people.
Methods: Correlation matrix was analyzed for both development and validation stages separately. Factor structure of the scale was assessed using Principal Component Analysis (PCA). Assuming that personality and habitual traits and individual beliefs play significant role in shaping particular attitudes, we compared scores of ATVS's subscales with the measurements of the following variables: anxiety, copying with stress, self-efficacy, and health behaviours.
Results: The scores of the positive subscale of ATVS correlated positively with all subscales of Health-related Behaviours Inventory, the most strongly with positive attitudes and proper nutrition habits, as well as with self-rated health, and self-assessment of risk of catching influenza or pneumonia. Some significant negative correlations exist between the negative subscale of ATVS, and both generalized self-efficacy and internalized locus of control. Moreover, the negative subscale of negative attitudes correlates negatively with self-rated health and self-assessment of risk of catching influenza.
Conclusions: The results support the assumption that the positive attitude toward vaccinations correlates with pro-health behaviours: the strongest is for positive attitude and proper nutrition habits.

P-316

The hidden abscess

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Case report: 82-year-old man presented with shortness of breath and fever. He denied abdominal pain. Past history included atrial fibrillation on warfarin, hypertension, ischaemic heart disease, heart failure, and recurrent urinary tract infection. On examination his temperature was 38.9 degree celcius, O2 saturations 95% on 9L oxygen, bronchial breathing at left base. Nil else significant on examination. He was commenced on intravenous antibiotics for bronchopneumonia. Chest xray showed possible consolidation left lower zone. Bloods results showed raised infection markers, INR 3.1 and deranged liver functions. As he continued to spike temperature, an ultrasound scan of abdomen was requested which showed renal stone in right kidney and possible splenic abscess. This was confirmed on a CT scan of abdomen. He was reviewed by the surgeons who felt operating on him carries a very high mortality risk in view of his medical background. The other option was to consider CT guided abscess aspiration or drainage. Echocardiogram was normal. Clinically it was felt that option of palliation should also be considered. CT guided intervention was discussed with the radiologist and patient and offensive pus was aspirated. He made good recovery and was discharged home.
Conclusion: We should keep an open mind when someone is admitted with sepsis. The source of infection is not always chest or

urinary tract. Elderly patients does not present with classical signs and symptoms. If initial treatment is not working we have to look elsewhere. If patient is not suitable for surgical intervention we should look into alternative options.

P-317

Are there any risk factors for VRE-colonization in geriatric patients: A case–control study

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Objectives: Colonization with vancomycine resistant Enterococcus faecium (VRE) has been an emerging and cost-intensive problem during the past years. Transmission pathway is faeco-orally, exposure time and close contact to colonized patients are thought to be important risk factors.
The aim of this study was to show possible clinical risk factors for VRE-colonization in geriatric patients and to explore antibiotic use and coinfection rates with *Clostridium difficile* (CD).
Methods: In a retrospective case-control study we included all patients admitted to the geriatric department between May and August 2013 (n = 122), defined as cases (n = 38) or controls (n = 84) depending on their rectal VRE colonization status during hospitalization.
Clinical data, functional status (ADL), readmission and death rates, data on antibiotic use 6 months prior to study period and co-infection rate with CD 6 months before and after study period, were collected.
Results: Readmission rates ($p < 0.01$) and length of hospital stay were higher in cases ($p = 0.03$), no significant differences in mortality rates were observed.
We found more co-infections with CD in the case group ($p < 0.01$) and a higher use of amoxicilline/clavulanate and ciprofloxacin ($p < 0.05$). No significant difference in the use of other antimicrobial agents was observed.
No differences in age, sex, functional status and Charlsons Comorbidity Index were found.
Conclusion: VRE-colonized geriatric patients are characterized by high readmission rates, long hospital stay and high coinfection rates with CD. Clinical factors seem to play a minor role suggesting that minimizing exposure is the most efficient strategy to avoid VRE colonization also in these patients.

P-318

The impact of childhood 13-valent pneumococcal conjugate vaccination on overall invasive pneumococcal disease, including the oldest old

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Objectives: The aim of this study was to compare serotype distribution in invasive pneumococcal disease (IPD) in the Belgian population before and after the introduction of the 13-valent conjugate vaccine (PCV13) in the national childhood vaccination schedule.
Methods: Serotyping was performed on 9787 pleural fluid and bacteraemic isolates (IPD-isolates) sent to the National Reference Laboratory between 2008 and 2014. We compared the distribution of serotypes (ST) /serogroups (SG) between the periods before (2008–2010) and after (2012–2014) the introduction of PCV13 in children and adults of different age groups, including older individuals (65–84 and >85 years).
Results: The introduction of PCV13 in the childhood immunisation program resulted in a reduction of 16% of all IPD-isolates. The prevalence of PCV13-SG decreased in all age groups. A decrease from 79% to 59% ($p < 0.005$) was seen in children <18 years and from 67% to 57% ($p < 0.005$) in persons aged 18–64. This effect was also observed in older persons, with a decline from 63% to 54% ($p < 0.005$) and 61% to 51% ($p < 0.005$) in the age groups 65–84 and >85 years, respectively. Furthermore, we observed a significant reduction in coverage rate for the 23-valent polysaccharide vaccine after introduction of PCV13 in all ages, except for those >85 years, where the coverage rate remains stable.
Conclusions: After introduction of PCV13, a reduction of PCV13-serotypes occurred in IPD in children, but also in other age groups, including those aged 65–84 and >85 years. This indirect effect (herd-protection) should be incorporated in the pneumococcal vaccine strategies for (older) adults.

P-319

Risk management for patients with *Clostridium difficile* in geriatric departments

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Objectives: Risk management of multimorbid patients has to take in consideration in terms of infection diseases like *Clostridium difficile*. The geriatric departments take over patients from other clinic departments to continue started therapies, especially antibiotic regiments.
Methods: In a retrospective analyses patients were documented for allocation from other clinic departments or from acute ambulatory setting. This was performed as a monocentric clinical trial.
Results: 2,826 patients were screened for *Clostridium difficile* associated diarrhoea transferred from 32 different clinical departments in 2014. 20% were allocated from an ambulatory setting. In 167 cases the clinical diagnose were documented and resulted in an extended treatment duration and complicated follow up. Antibiotic history was documented and indicated a high percentage of quinolone therapy.
Conclusions: To avoid complicated follow up treatments and costly therapy strategies with an higher mortality risk, it will be necessary to document antibiotic history of geriatric patients and to perform a risk stratification supported by antibiotic stewardship.

P-320

Course of Streptococcus pneumoniae meningitis in young and aged mice

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Objectives: In order to elucidate the causes for the increased incidence and mortality of aged patients with bacterial central nervous system (CNS) infections, we compared the course of Streptococcus pneumoniae meningitis in aged and young mice.
Methods: Aged (21.2+3.1 months, n = 40) and young (3.2+0.9 months, n = 42) C57BL/6N and B6/SJL mice were infected by intracerebral injection of 50–70 CFU S. pneumonia SP3 and monitored for 15 days (clinical score, motor functions, weight). Bacterial concentrations in cerebellum and spleen were determined by quantitative plating [median (25./75. percentile) CFU/ml]. Leukocytes were quantified in brain sections stained by chloracetate-esterase [meningeal inflammation score: median (25./75. percentile)].
Results: After intracerebral infection with S. pneumonia, aged and young mice did not differ concerning mortality (35%

versus 38%, p = 0.99; log-rank test), weight loss, development of clinical symptoms, bacterial concentrations in cerebellum [7.5×10^7 ($2\times10^7/2.5\times10^8$) versus 1.1×10^8 ($6\times10^7/7\times10^8$), p = 0.10] and spleen [3.5×10^5 ($6.5\times10^4/8.5\times10^5$) versus 3×10^5 ($1\times10^5/7\times10^5$), p = 0.89] as well as the amount of CNS infiltrating leukocytes [1.6(1.2/2) versus 1.6(1.4/2), p = 0.61] (Mann–Whitney U-test).

Conclusions: In contrast to results from our geriatric mouse model of E. coli meningitis, where aged mice showed a higher mortality and an impaired elimination of bacteria, we did not find any differences between aged and young mice after intracerebral infection with S. pneumoniae SP3. This indicates that the increased susceptibility of aged mice to bacterial CNS infections is pathogen-specific: It appears less prominent in infections caused by hardly phagocytable pathogens with thick capsules, like SP3, where the age-related decline of the phagocytic capacity of microglia and macrophages has only minor impact.

P-321
Development and validation of Attitudes towards Vaccinations Scale

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Objectives: The aim of the study was to develop and validate the scale measuring positive and negative attitudes toward vaccinations among older people aged 60 and more in Poland. According to our previous research, vaccination rates and general knowledge about vaccination in this group are low despite of higher risk of serious effects of communicable diseases among older people.

Methods: Correlation matrix was analysed for both development and validation stages separately. Factor structure of the scale was assessed using Principal Component Analysis (PCA). Assuming that personality traits, individual beliefs and habitual traits play significant role in shaping particular attitudes, we compared scores of ATVS's subscales with the measurements of the following variables: anxiety, copying with stress, self-efficacy, health locus of control, and health behaviours.

Results: The scores of the positive subscale of ATVS correlated positively with all subscales of Health-related Behaviours Inventory, the most strongly with positive attitudes and proper nutrition habits, as well as with self-rated health, and self-assessment of risk of catching influenza or pneumonia. Some significant negative correlations exist between the negative subscale of ATVS, and both generalized self-efficacy and internalized locus of control. Moreover, the negative subscale of negative attitudes correlates negatively with self-rated health and self-assessment of risk of catching influenza.

Conclusions: The results support the assumption that the positive attitude toward vaccinations correlates with pro-health behaviours: the strongest is for positive attitude and proper nutrition habits.

P-322
Impact of a Legionella outbreak in an elderly population

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Introduction: On November 2014, one of the largest outbreaks of Legionella spp, an agent responsible for community-acquired pneumonia(CAP), occurred in Vila Franca de Xira – Portugal. Like in other cases of CAP, the elderly were one of the afflicted.

Methods: A retrospective observational study of patients with ≥65 years old admitted to our Emergency department(ER) during the 2014 outbreak with Legionella pneumophila antigen in urine. Variables: gender; age; residence; comorbidities; intensive care admission; length of stay; destination after discharge.

Results: Of the 192 cases received in the ER, 59(30.7%) were aged ≥65 years (7.3% with >80 years). Of these, 32 were male, had a mean age of 73.8 years. 94.9% lived in the area of the outbreak, 3 in a nursing home. 4 were totally dependent and 4 only partially. 84.7% had comorbidities and 13.5% smoked. On admission, 64.4% had a Pneumonia Severity Index (PSI) of >90 and <131 and 11.9% had PSI >131. Due to exceeding hospital capacity, 50.8% of patients were transferred. Of the remaining (29), there was an average stay of 7.3 days, a mortality rate of 13.8% (4) and 20.7% (6) patients required intensive care.

When compared with the group with <65 years, they had more comorbidities (84.7% vs 42.2%), smoked less, had less length of stay (7 vs 8 days), less admissions in ICU and greater mortality rate (13.8% vs 3.4%).

Conclusion: Given the small number of Legionella infection cases, outside of the epidemic context, this outbreak was an opportunity for a better characterization of the disease.

P-323
Staphylococcus aureus with methicillin-resistant type infections in the elderly: a real challenge for geriatricians

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Objectives: Infections by Gram-positive cocci are encountered in medical practice, especially in the elderly. Their management is difficult, due to prolonged antibiotic therapy, not without adverse effects. Infection by methicillin-resistant character sets to medical precarious for the elderly.

Methods: We illustrate our problem in this clinical case.

Results: A 80-year-old patient, male, is admitted for an unexplained biological inflammatory syndrome. His medical history includes peripheral arterial disease of the lower limbs requiring amputation of his right leg. He has a severe malnutrition. He has, at his left heel necrotic bedsore without bone contact. His right stump has purulent sluices. The patient lives in a retirement home. It is bedridden. It has an indwelling urinary catheter, the reason is not listed. We perceive a purulent discharge from the penis; a bacteriological sample is performed. These samples (right stamp; urethral sample) find an infection caused by Staphylococcus aureus with methicillin-resistant type. The scanner of the right stump find suggestive signs of osteitis. The origin of this infection remains undefined actually. Glycopeptide and rifampicyne antibiotic therapy is started and will continue for 3 months in the hope of ending this infection. No adverse effects are detected.

Conclusions: Staphylococcus aureus with methicillin-resistant type is a bacterium whose medical care is difficult in the elderly. The use of repeated doses of antibiotics exposed to multi-resistance problems; this more problematic in the elderly. Malnutrition remains a major aggravating factor in the onset of severe infections in the elderly.

Longevity and prevention

P-324
Successful aging in the elderly. The HUNT study

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Objectives: Normal aging can be described as successful aging (SA) or usual aging (UA), as suggested by Rowe and Kahn (1987, 1997). Aims of this study were to investigate the prevalence of SA, the relative importance of the three components of Rowe and Kahn's successful aging model across age, and to study correlates of SA.
Methods: Subjects aged 70 to 89 from the cross-sectional population-based Nord-Trøndelag Health Survey (HUNT3) in Norway participated in the study. The subjects were divided into four different age cohorts and individuals with complete datasets for variables of interest were included (N = 5154 of 8040, 64.1%). SA was operationalized according to Rowe and Kahn's three components. Multiple logistic regression analysis was performed to investigate the most important correlates of successful aging.
Preliminary results: 10.5 percent of the total sample was "successful" in all three components. 12.3 percent of the 70–74-year-olds fulfilled all three criteria, whereas only 6.1 percent of the 85–89-year-olds. The criteria of absence of disease/disability was met by 23 percent of the total sample, 41.8 percent met the criteria of high physical and cognitive function and 80.7 percent reported being actively engaged with life. The importance of disease and disability for SA status decreased with age. Results regarding the most important correlates of SA will be presented at the conference.
Conclusions: Prevalence of successful aging varies across studies. In this study 10.5 percent of the sample was SA in all three criteria. The most demanding criterion was absence of disease and disability.

P-325
Telemedicine systems used for early detection of heart failure in elderly

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Objectives: It has been suggested that the use of telemedicine systems (TS) in monitoring patients with heart failure after admission, improve their prognosis, reducing mortality and readmissions. However there are no data in specific populations such as elderly patients because of their difficulty to use them. Our objective is to identify the more predictive variables of readmission and length of stay between traditional vital signs, clinical symptoms and functional items en order to simplify these systems
Methods: Unblended clinical trial.
Results: 90 patients. After follow up, the intervention group had fewer worsening events assessed by visits to the emergency room and/or readmissions (OR 0.411, 95% CI 0171–0993). Between all vital signs evaluated, oxygen saturation was the only predictor of exacerbation (0.743, 95% CI 0566–0976). Variability of gait speed was the functional item that showed good ability to predict worsening (OR 1.34, 95% CI 1.04–1.72). None more variables were useful.
Conclusions: We tested the feasibility and effectiveness of a telemedicine system shorting the readmissions rate and length of stay in elderly patients with heart failure. From the collected variables, only the variability of gait velocity and the mean oxygen saturation were risk factors of clinical worsening. Further studies are needed to evaluate the efficacy of a simple system with only these two variables to predict readmission.

P-326
Medico-social problems of the elderly population in Manisa, Turkey

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Objectives: The aim of this study was to determine the demographic features, socio-economic status, health problems, and daily living activities of the elderly population in two different settlement regions (rural and urban) of Manisa
Methods: The population of this cross-sectional study was 3163 elderly individuals who were leaving at the region of two randomly selected primary medical services (one at rural area, other at urban area) in April 2015. The sample size was calculated using the software of Epi info 7.0; thereby, 480 elderly individuals were enrolled. Each individual was randomly selected from registration. All data were collected by face-to-face interview and a standardized questionnaire form, that involved sociodemographic characteristics, health and social status, Katz index and was used. The rate of participation was 88.9% (n = 427). All data were evaluated using descriptive analysis and chi square test
Results: The mean age of the study group was 72.9±6.7. The majority of individuals (86.4%) had a chronic disease for which continuous drug administration was required, 49.6% was women, 35.1% was graduated from elementary school and 23.4% was living alone. More than 79.4 of elderly could have done daily living activities easily, less than 5% were depent in one or more basic activities of their daily life. 30.4 percent of elderly have injured last one year period. Home accidents were the most common cause of report injuries.
As a result; elderly people are have to been accepted as one of the preceding groups in the planning of the health service

P-327
Smoking versus non-smoking European older people: differences in diseases, disabilities and life satisfaction

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Objectives: Decline in quality of life is commonly associated with old age, because older people suffer at least part of this period from one or more diseases and resulting disabilities. Presumably a good life style can help reduce diseases and disabilities which may result in a higher life satisfaction. However, research on smoking behaviour of older people and the association with diseases, disabilities and opinions about quality of life is lacking.
Methods: Data about smoking, diseases, disabilities and life satisfaction of 12,478 EU-inhabitants in the age band of 50–90 are obtained from the European Study on Adult Well-being (ESAW). This study was conducted in 2002 and 2003 in six EU-countries. Cross-sectional analysis and analysis of variance is used to understand individual differences in life satisfaction in relation to smoking behaviour, diseases and disabilities.
Results: In general the findings show a higher level of life satisfaction across non-smoking older people in the six EU-countries. In addition we describe differences in reported diseases and disabilities between non-smoking and smoking older Europeans.

Conclusions: To the best of our knowledge this is the first study that presents data on the relationship between smoking and life satisfaction of older people in EU countries living independently. Non-smoking older people report a higher level of life satisfaction compared to smoking older people. The relation between smoking behaviour, diseases, disabilities and life satisfaction is complicated because smoking is related to diseases with a high mortality rate and sometimes a relatively short period with disabilities before death.

P-328

Predictors of long-term mortality in oldest old patients (90+) hospitalized in medical wards via the emergency department

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Objectives: The objective of the study was to identify risk factors for long-term mortality in patients aged 90 years and over who were admitted to medical wards through the emergency department.
Methods: A prospective cohort study (SAFES Cohort) was set up in nine French hospitals. Among the 1306 patients in the SAFES cohort, the 291 patients who were aged 90 or over were analysed. At inclusion, demographic data (age, sex, level of education, living alone or in an institution, number of children, presence of helper/caregiver), as well as data from comprehensive geriatric assessment (dependence status, risk of depression, dementia, delirium, nutritional status, walking disorders, risk of falls, comorbidities, risk of pressure sores) were recorded. Vital status at 36 months was obtained from the treating physician, the general practitioner, administrative registers, or during follow-up consultations. Relationship between patients' characteristics and 36-month mortality was studied using Cox regression modelling.
Results: Average age was 93±3 years, and patients had 2±2 children on average. Among the 291 patients included, 190 (65%) had died at 36 months. Risk factors for mortality at 36 months identified by multivariable analysis were risk of malnutrition (HR 1.6, 95% CI 1.1–2.3, p = 0.004) and delirium (HR 1.6, 95% CI 1.1–2.3, p = 0.01).
Conclusion: Our study shows that malnutrition and delirium have a negative impact on survival in acutely ill oldest-old population. Both these factors can easily be identified and treated early during hospitalisation using geriatric assessment tools that are widely available in daily practice.

P-329

Modifiable lifestyle factors and independent ageing – a 15-year follow-up in 70 year old men

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Objectives: To examine relationships between modifiable lifestyle factors at the age of 70 and subsequent independent ageing.
Methods: The Uppsala Longitudinal Study of Adult Men (ULSAM) was first examined at the age of 50. In 1991–95, 1221 men (age 70) took part in a re-investigation, and 405 men were again re-investigated in 2008–09. Modifiable lifestyle factors like BMI, smoking, leisure time physical activity and dietary intake were registered at age 70. Independent ageing was defined as survival to the age of 85, not living in an institution, no diagnosis of dementia, Mini Mental State Examination ≥25/30 p, independency in personal care and being able to walk outdoors without assistance. Logistic regression analyses were performed with adjustments for age at baseline, education, smoking and adherence to a healthy dietary pattern.
Results: The criteria of independent ageing were fulfilled by 73% (297/405) of the participants. Normal weight, i.e. BMI 18.5–25 (OR = 2.61, 95% CI 1.22–5.58) and overweight, i.e. BMI 25–30 (OR = 2.89, 95% CI 1.41–5.94) were positively associated with independent ageing (vs. obesity). There were also positive associations with never (OR = 2.23, 95% CI 1.09–4.57) and having quit smoking (OR = 1.63, 95% CI 0.84–3.14) (vs. current smoking). Leisure time physical activity was not associated with subsequent independent ageing.
Conclusions: The possibility to reach age 85 with preserved independency was highest among the men that at 70 years of age were not obese and did not smoke, while leisure time physical activity did not associate with independent ageing.

P-330

Phenomenological and psycho-dynamical analysis of sexuality with ageing: a qualitative study in France

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Background: Although according to World Health Organisation, sexual well-being is part of global well-being, sexuality in older age is rarely mention by general practitioner (GP) or by older people to GP. The main objective of this study was to better understand representations older people may have regarding their own sexuality.
Method: Qualitative study through partially guided conversations with 15 French patients older than 65 years.After data saturation, triangulation of both phenomenological and psycho-dynamical analysis of the verbatim integrally transcribed.
Results: May 1968 is a key period that distinct older people views about their sexuality, a period of riot in France against a rigidly conservative society; for a first group, sexuality is in accordance with the societal standards existing before "May 68", is still taboo and linked to procreation, and, sexuality is no longer part of an ageing body. The interchange with GP is difficult as resistances mechanisms are activated. The second group have managed to free themselves from those earlier societal standards. With ageing, the thought of pleasure is still present but accepting their altered body is not always simple because of actual societal standards reserving sexuality to younger people. The interchange with GP is not obvious but still possible.
Conclusions: Understanding the representations that the elderly have of their sexuality allows the GP to come into a better dialogue. His role then would be to help patients to overcome societal standards about sexuality and to revitalize their ageing body.

P-331

Baseline characteristics of a two-year prospective study aiming to link clinical components, cognitive and gait performances in healthy old people

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Objectives: Introduce the protocol of the GABI (Gait Analysis and Brain Imagery) study developed to highlight the links between clinical components, gait performances, brain changes and cognitive and functional status in a cohort of healthy old people to promote successful aging.
Methods: 131 community-dwelling older were recruited (including 75 women). Mean age is 71.3 years, mean CIRS-g is 9.8/45, mean mini nutritional status is 12.8 and mean body mass index is 25.8, mean physical activity on Jackson scale is 2.8/7, mean Katz scale is 6.3/24 and mean geriatric depression scale is 0.8/4. Mean walking speed is >1 m/s. Timed up and go tests remain <20 s and mean SSPB is higher than 9/12. Finally, 112 volunteers are robust (and 19 mild or moderate frail) according the Edmonton scale. No cognitive disorders are already diagnosed.

All of these volunteers were assessed for body compositions and muscle strength and for gait performances at usual (simple and dual task) and fast walking speeds. Brain MRIs were realised including T1-weighted and T2-weighted data using respectively multi-parametric, FLAIR and diffusion sequences. After a two-years follow up, a similar assessment will be plan to detect cognitive or functional decline.
Results: According to these evaluations, 131 healthy old people are already included and assessed at baseline.
Conclusion: Authors introduce the original protocol of this first two-year prospective study including robust old people with a comprehensive assessment to promote successful aging.

P-332
Physical and mental determinants of falls in healthy old people: baseline data of the GABI study

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Objectives: To highlight the physical or mental determinants of falls in healthy old people to promote successful aging.
Methods: In cohort of 131 healthy old people, history of fall, fear of falling, co-morbidities, drugs, anthropometric measures, nutritional status, body composition, grip strength and functional and cognitive status were assessed. Among them, 112 volunteers are robust according the Edmonton scale. No cognitive disorders are already known. Mean values were compared by ANOVA using SAS 9.3. Results were considered statistically significant for a p-value <0.05. All parameters with a $p < 0.25$ were then combined into a logistic regression with stepwise procedure.
Results: Into this healthy old people cohort (mean age 71.3 years, mean CIRS-g is 9.8/45, mean mini nutritional status is 12.8, mean body mass index is 25.8, mean physical activity on Jackson scale is 2.8/7, mean Katz scale is 6.3/24, mean geriatric depression scale is 0.8/4 and mean walking speed is >1 m/s), 51 volunteers feel fear of falling and 30 volunteers have already fallen the year before. In univariate analysis a difference was observed concerning muscle mass ($p = 0.0094$), muscle strength ($p = 0.0029$), comfortable walking speed ($p = 0.021$) and fast walking speed ($p = 0.0051$) between fallers and non-fallers. However, multivariate analysis showed that variables significantly associated with falls were the fear of falling ($p = 0.0015$ and $OR = 6.09$), the use of anti-depressive drugs ($p = 0.011$ and $OR = 6.91$) and the temporal orientation ($p = 0.041$ and $OR = 0.29$).
Conclusion: Fall prevention in healthy old people should consider more sensitive parameters than only physical frailty components.

P-333
Prevention of thromboembolism in elderly hospitalized: Follow-up evaluation recommendations

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Introduction: Given the increase in the number of patients hospitalized for acute illness and the risk of venous thromboembolism (VTE), the use of prophylaxis has become a public health issue.
Materials and Methods: Observational study, non-interventional, prospective, single-center aimed to assess the practices of two services of the same hospital, and to evaluate their adherence to the French Agency for Sanitary Safety of Health Products (AFSSAPS) 2009 for the prevention of thromboembolic disease in the elderly over 75 years old.
Results: 222 patients were included: 125 from internal medicine and 97 from acute geriatrics. Among these patients, the median age was 84 years and the sex ratio 0.42. Fifty-four percent of patients did not require preventive anticoagulation as recommended by the AFSSAPS. Seventy percent of the patients included in the study were anticoagulated, 89% with Low Molecular Weight Heparin (LMWH). Twenty-two percent of patients received anticoagulation while it was not recommended. Adverse events were recorded: 4 thrombosis (1.8% of the population) and 8 accidents anticoagulants (5.1% of the anticoagulated population). At three months, 76 patients were followed through their physician: 2 died and there was no venous thromboembolism (VTE) diagnosed.
Conclusions: In the elderly, whatever service management, preventive anticoagulation is prescribed by excess. Despite this mismatch, thromboembolic accidents are less frequent than reported in the literature and bleeding events have occurred in excess. Recommendations could be better monitored to limit the number of hemorrhagic stroke.

P-334
The epidemiology of distal radius fractures in Castile and Leon (Spain)

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Aims: Study of epidemiology of Distal Radius Fracture (DRF) to promote preventive activities from Primary Care physician and. Specialist in Orthopaedic Surgery and Traumatology
Method: The authors conducted a cross-sectional descriptive study applied to a selection of patients (n = 50) from among all patients in the urban health center in Castile and Leon (Spain) who had recorded in his medical history that had submitted DRF. We study, age, sex and cause of DRF. The data is collected on an Excel spreadsheet and analyzed using SPSS 15.0 for Windows
Results:
- The incidence was 4 women/1 man.
- 40% of women with fractures had a history of osteoporosis.
- 87.4% were over 50 years. they had a cause declines in home, in 90% of cases related to falls from sidewalks, domestic stairs, slipping in the shower, tripping over rugs. The 10% fall in the street, getting off bus, slip tiles and other obstacles.
- 12.6% were patients under 50 years of age, with the fall due in conducting sports, cycling and drop a case from scooter.

Conclusions: Significant association between osteoporosis and fractures are detected in women. High cause of Distal Radius Fracture from falls at home, probably related to poor lighting and defects in visual acuity, presence of obstacles such as carpets. We propose to act on these problems through a program of health education aimed at groups and the development of preventive activities in Primary Care consultation and Specialist in Orthopaedic Surgery and Traumatology

P-335
Fractures in postmenopausal osteoporosis

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Aims: Using records from the Record of Medical Informatics (MRI) to determine the prevalence of fractures in postmenopausal who have osteoporosis (OP) to promote Preventive Services Primary Health Care and Orthopedic Surgery and Traumatology Specialist

Design: Most osteoporotic fractures (OF) occur in postmenopause, consuming significant resources, health, social and economic in the process of diagnosis and treatment. The authors conducted a cross sectional study of menopausal women diagnosed with OP and OF, registered in MRI.
Method: From the list of patients with MRI, we selected 687 patients postmenopausal who have a diagnosis Osteoporosis (OP), we studied the prevalence of OP and the prevalence of OF. We analyzed the causes of breakage. Data are collected on a Excel spreadsheet and analyzed using SPSS 22 for Windows.
Results:
- Patients with OP in our health center corresponds to 20% of the population over 50 years.
- Of the 687 women with MRI in the diagnosis of OP: Prevalence OF = 31.99%. 1-OF hip: 5.09%. 2-OF spine: 6.6%, 3-OF twang-foot: 3.8%, 4-OF humerus: 5.8%, 5-OF wrist: 10.7%.
- Falls at home was the cause in 82% of cases. For defects of vision, collision with obstacles and falls from ladders.

Conclusions: 20% of women postmenopausal over 50 years of our health center has registered its MRI, the clinical process OP, and 32% have OF, which justifying the implementation of a Health Improvement Plan, including Education Program for Health aimed at groups and the development of preventive activities in primary care consultation.

P-336
Characteristics of inpatient at geriatric department in Japan

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Objectives: The average life expectancy exceeds 80 years in Japan. The number of the hospitalized elderly has been increasing. We investigated the characteristics of inpatient of geriatric department at Nagoya University Hospital in Japan.
Methods: We analyzed the inpatient registry of the department of geriatrics at Nagoya University Hospital in Japan between 2012 and 2014. We investigated patient profiles including their demographic characteristics, the cause of hospitalization, comorbidities, the numbers of drugs, the numbers of hospitalization days and care services.
Results: We investigated 294 elderly Japanese patients (155 women; age 84.5±7.5 years). The average numbers of hospitalization days were 22.6±19.2 days. Subjects who returned to their homes were 16.9±12.4 days and changed the hospital were 34.4±23.9 days. Approximately 40% of patients could not return to the home. The numbers of drugs were significantly reduced from 7.0±4.0 to 5.4±3.3 during hospitalization. The main cause of hospitalization was respiratory diseases like pneumonia, second was neurologic diseases like stroke. These two diseases occupied about 50%.
Conclusions: Once the elderly people are hospitalized, they often cannot return to the home and transfer to a different hospital in Japan. In these cases, the numbers of hospitalization days will be extended to double compared to patients who return to the home. Because long-term care hospitals are usually crowded condition, we need to take the possibility of changing hospital and the necessities of care services into consideration as early as possible. We also need to approach for identifying inappropriate polypharmacy during hospitalization.

P-337
The association between falls and history of any fracture and fragility fracture in community dwelling older adults screened for osteoporosis

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Objectives: Osteoporosis screening tools do not always include falls risk as a determinant of fracture risk. A history of falls has been shown to predict fractures independently of other risk factors and may enable more accurate fracture prediction. We aimed to investigate the relative strength of association between any fall and recurrent falls and history of any fracture after age 50 yrs and fragility fractures (hip, wrist or vertebral) after age 50 yrs.
Methods: Cross-sectional analysis of self-reported data from a community dwelling cohort of older adults registered at four urban GP practices. Participants were invited to complete a screening questionnaire assessing osteoporosis risk.
Results: 1498 questionnaires were completed. The mean age was 73.1 yrs(SD 8.3) and 84.6% were female. 333(22.2%) fell in the preceding 12 months, of whom 129 fell more than once. 297 (19.8%) had sustained any fracture after 50 yrs, and 145 (9.7%) had sustained a fragility fracture after 50 yrs. Fallers were almost 3 times more likely to have sustained any fracture after 50 yrs compared to non-fallers [OR 2.85 95% CI (2.16–3.75), $p < 0.0001$, for all fallers: OR 2.98, 95% CI (2.04–4.36), $p < 0.0001$ for recurrent fallers]. Fallers were more than twice as likely to have had a fragility fracture after 50 yrs compared to non-fallers [OR 2.44, 95% CI (1.70–3.50), $p < 0.0001$ for all fallers; OR 2.50, 95% CI (1.55–4.02), $p = 0.0002$ for recurrent fallers].
Conclusion: Falls are an important risk factor for fracture. Failing to include falls history in assessment tools may underestimate fracture risk. Single falls may be as relevant as recurrent falls for this purpose.

P-338
The association between sedentary time and kidney function in community-dwelling elderly Japanese people

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Objectives: This study aimed to determine was association between sedentary time and kidney functional decline in community-dwelling elderly persons in Japan.
Methods: A total of 10,361 older adults who were enrolled in the National Center for Geriatrics and Gerontology – Study of Geriatric Syndromes (NCGG-SGS). The estimated glomerular filtration rate (eGFR, mL/min/1.73 m^2) was determined according to the creatinine level, and kidney function decreasing was defined as eGFR less than 60 mL/min/1.73 m^2. Total sitting time was determined by the International Physical Activity Questionnaire (IPAQ) to record the total amount of time, in hours, they usually spent sitting per day, and values were divided into quartiles of 0 to <4 hours, 4 to <6 hours, 6 to <8 hours, and ≥8 hours of sitting time per day. Multivariate logistic regression was used to examine the relationships between sedentary time and kidney function decreasing.
Results: After multivariate adjustment, participants with highest sedentary time were more likely to have significant kidney function decreasing than the lowest quartile (OR:1.30, CI: 1.12–1.50). Further, the analyses combining sedentary time and with heart disease tendency towards a increased risk of kidney function decreasing (OR:1.28, CI: 1.08–1.51). A similar trend was found person with hyperlipidemia(OR, 1.43; 95% CI, 1.12–1.82).

Conclusion: A higher level of sedentary time was associated with lower kidney function in community-dwelling older adults.

P-339
The use of fall prevention strategies in home care: a survey in Flanders (Belgium)

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Objectives: Falls in community-dwelling older persons occur frequently. The consequences emphasize the need to screen for an increased fall risk and a targeted multifactorial and multidisciplinary approach. This study describes the extent to which fall prevention strategies (FPS) are applied by primary healthcare workers (PHW) in Flanders. Insight in barriers is provided.
Method: An online survey was collected by the Center of Expertise for Falls & fracture Prevention Flanders.
Results: A total of 1483 respondents (55% nurses; 24% general practitioners; 17% physiotherapists; 4% occupational therapists) are included. Most PHW are confronted with falls at least once a month (93%) and believe they can make a positive contribution to FPS (96%). At least once a year, PHW inquire about falls (62%) and screen for gait and balance problems (84%). A multifactorial assessment is performed in case of an increased fall risk (76%) or a recent fall (95%), and is discussed at a multidisciplinary meeting (51%). Most frequently PHW give advice on safe environment and behaviour (93%), walking aid (91%), personal alarm systems (89%) and footwear (85%). Unmotivated older persons (75%) who ignore their fall risk (85%), insufficient time (60%), financial compensation (54%), staff (50%), communication (31%) and knowledge (23%) are barriers to implementing FPS.
Conclusions: Although PHW are aware of the importance of FPS, these results reveal a necessity of increased focus on communication, obtaining and supporting sufficient knowledge, more structured multidisciplinary interaction and cooperation, and the need of a clear fall prevention policy. Raising awareness of older persons also remains crucial.

P-340
Effects of preventive home visits on older people's use and costs of health care services: A systematic review

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Background and Aim: The data about the effects of the preventive home visits on older people's use and costs of health care and social services is still controversial. The aim of this study is to systematically review the evidence from randomized controlled trials (RCT) of effects of preventive home visit programs on the use and costs of health care and social services.
Methods: A search for literature was made in PubMed, Ovid Medline, Cochrane Database, DARE and Cinahl. We also searched related articles and manually searched reference lists of the previous systematic reviews for potentially relevant papers.
Results: The search identified 697 results, and of these 13 papers met the inclusion criteria. The study settings and target groups were highly variable. Six studies compared the hospital and nursing home admissions and use of services without costs analysis. Of these, two showed lower hospital or nursing home admissions in the intervention group and the other four studies did not show significant differences in the uses of the services.
Of the studies included 7 considered also the overall use and costs of health care and social services. These studies were not able to show a significant difference in costs between intervention and control groups.
Conclusions: Regardless of a high number of studies investigating efficacy of preventive home visits on older people, there is only a few studies exploring their effects on use and costs of health care and social services. More studies are needed to clarify the cost-effectiveness of the preventive home visits.

P-341
One hundred years of life

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Introduction: The elderly-elderly are the most rapidly growing segment of society. The centenarians are a subgroup that begin to have an impact on hospital.
Objective: To understand the illness severity triage of the centenarians (Manchester system), the most frequent diagnosis in our emergency department, in which medical specialties were admitted.
Methods: We conducted a retrospective case series analysis of all patients 100 years of age and above admitted in our hospital between 2009–2014.
Results: 202 patients with a mean age of 102.8 years were admitted in emergency department, in a total of 307 times, during the 6-year study period. 150 patients were 100 years old (48.9%). The maximum age was 110 (2 patients). 85.3% were female. 61.6% lived in their homes. 28.7% came from nursing homes. 13.2% of the patients didn't have any kind of medical diagnosis. In triage, 50.5% were orange (very urgent), 40.1% yellow (urgent). The Emergency exit diagnoses were: 28.0% respiratory infections, 20.1% trauma (fractures, open wounds, intracranial injury). 53.7% of the patients were discharged from the emergency to their homes, 43.0% were admitted (44.7% in Internal Medicine ward, 25.8% in Orthopedic ward). Comorbidities: 25.9% heart failure, 62.1% hypertension, 15.9% atrial fibrillation. The mortality was 10.8%.
Conclusions: The centenarians are group with its own characteristics. They have few comorbidities (2.31 diagnoses). Usually they have a healthy life without relevant personal history. In this study, we noticed a pattern, patients who experience trauma fracture, they were readmitted in a second hospitalization with an infection in 83.7% of cases.

P-342
Google Search data for health promotion behaviours and state-by-state cardiovascular risk

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Objectives: Both unhealthy eating and lack of activity have been associated with a higher cardiovascular risk. Personal motivation tends to follow a seasonal pattern, ususally in the form of New Year's resolutions. Using Google Trends search data for the US, we examined how state-by-state interest in both weight loss and increasing physical activity predicted rates of cardiovascular death, obesity, diabetes and stroke.
Methods: Internet search query data was obtained from Google Trends (2005 to 2014), after a standardized keyword search. Heart death, obesity prevalence, diabetes prevalence and stroke death

were obtained from Center for Disease Control datasets. Time series analysis (every 2 weeks) was performed on search query data to determine both search volume (normalized to overall search intensity) and seasonality (cosinor analysis).
Results: As expected, the seasonality of both weight loss and exercise searches showed a peak near the start each year. Strong seasonality for exercise searches was associated with a lower state-by-state diabetes prevalence (Standardized β −0.33±0.15, p = 0.030), while strong seasonality for weight loss searches showed no no association with any cardiovascular outcome. Overall state-by-state search volume for both weight loss and exercise was associated with higher rates of all outcomes.
Conclusions: Overall interest in both weight loss and exercise is associated with higher rates of negative cardiovascular outcomes, suggesting that interest in health promotion (at least as measured by Google search data) does not necessarily translate into reduced risk. Cyclic increases in interest in exercise, however was assocated with a lower statewide rate of diabetes.

P-343
Psychological wellbeing and loneliness among Finnish older people living in Spain compared to those in Finland

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Objectives: Many older people choose to spend their winters in temporary homes in Southern European countries. Little is known about their psychological wellbeing or loneliness.We investigated psychological wellbeing, feelings and reasons loneliness among Finnish older people living in Spain compared to those living permanently in the southern part of Finland.
Methods: A structured questionnaire was mailed to a random sample of older people 65–75 years in town of Espoo (N = 562), Finland 2007 and a questionnaire with same items was delivered to retired older people living mainly seasonally in Costa del Sol area (N = 261) Spain, 2011. Questionnaire included demographics, physical, psychological and social issues.
Results: Older people living in Spain had higher education, better income, better self-rated health and lived more often with a partner compared to their counterparts. There were no differences in the number of comorbidities. A larger proportion of those living in Spain (98%) were satisfied with life than those living in Finland (92%) (p = 0.002, adjusted for age, gender). Respectively, they felt more often needed (96% vs. 90%, p = 0.008), had plans for the future (86% vs. 66%, p < 0.001), zest for life (100% vs. 97%, p = 0.045), felt less often lonely (12% vs. 19%, p = 0.006) and depressed (22% vs. 31%, p = 0.004). Those living in Spain felt more often that comorbidities, the lack of relatives and family concerns were reasons for loneliness than those living in Finland.
Conclusions: Finnish retired people living in Spain report better psychological wellbeing than their counterparts in Finland. However, they also had specific reasons for loneliness.

P-344
Motor learning training is the most effective tool in fall prevention

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Objectives: Several studies confirm that the cause of falls in the elderly often related not only to physical but also to cognitive functions. Training to prevent falls must be complex and that's why is used dual task training. The aim of our work is to verify that training based on motor learning with small tools leads to greater results in the fall prevention. Motor learning training allows creating working strategies to respond to the multiple causes of falls
Methods: We created two groups, each of 36 participants aged ≥71 years, who scored between 24 and 25 on the Tinetti Test. It was proposed to them to perform an hour of activity twice a week for 3 months. Group A performed dual task training, Group B performed motor learning training. At the beginning and at the end of treatment participants received a clinical and cognitive examination that included Mini-Mental State Examination (MMSE), Forward Digit Span Test, Tinetti Test, and Timed "Up-and-Go".
Results: All participants in both training groups showed improvement in all tests. The average values obtained before and after treatment in the following tests in each group: Group A: Digit Span Forward 2.7–3.8: Timed "Up-and-Go" 13.1–11.2. Group B: Digit Span Forward 2.9–4.3; Timed "Up-and-Go" 12.9–10.5. Group B participants showed significant improvement on Tinetti Test (mean 2.1, p < 0.001) compared to Group A (mean 1.38, p = 0.07).
Conclusion: Motor learning training has proved to be more effective that dual task to improve motor and cognitive functions and fall prevention.

Metabolism and nutrition

P-345
Distribution of a snack in the evening to reduce the overnight fast in an acute geriatric ward

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Background: After ten to twelve hours fasting, liver glycogen store are depleted and muscular proteins become the energy substrates of the organism, that could lead to a deterioration of the nutritional status and accelerate sarcopenia. During hospitalization, the organization of nursing work and the time distribution of meal often lead to prolong the overnight fast.
Method: In February 2015, the time of overnight fasting was observed before and after the distribution of a snack before night. During 14 days, four types of collation were proposed: yogurt, homemade milkshake, solid or liquid dietary supplement industry. The time between the last food consumption day and breakfast the next day was measured at study inclusion. Treatment compliance was also evaluated in all patients.
Results: Sixty-two patients were observed (age of 84±4 years), 87% lived at home (13% in a nursing home). 16% did not need external help to eat while 74% required logistical help and 10% required the presence of the nurse. About one third of the patients were malnourished. The duration of the night fasting without distribution of evening snack was about 14H. It was reduced to 10 h 45 to 12 h 30 after the distribution of the snack. 70% of the snacks were eaten, 77% were not eaten because of a lack of appetite or taste, 19% because a medical condition and 4% because a logistic organization.
Conclusions: In an acute geriatric ward, the introduction of an evening snack is well accepted and reduces significantly the duration of the night fasting.

P-346

Cost-effectiveness of multidisciplinary nutrition support in frail old adults: cluster RCT

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Objective: To assess the cost-effectiveness of multidisciplinary nutritional support for undernutrition in older adults in nursing home and home-care identified with the validated Eating Validation Scheme (EVS).
Methods: An 11 week cluster randomized trial with setting (home-care or nursing home) as the unit of randomization. Before start of the study a train-the-trainer intervention was performed involving educated nutrition coordinators.
In addition to the nutrition coordinator, the participants assigned to the intervention group strategy received multidisciplinary nutrition support. Focus was on treatment of the potentially modifiable nutritional risk factors identified with EVS, by involving physiotherapist, registered dietician, and occupational therapist, as relevant and independent of the municipality's ordinary assessment and referral system.
Outcome parameters used for the cost-effectiveness analysis were costs and time of the intervention, quality of life (by means of Euroquol-5D-3L); and change in weight.
Results: Respectively, 55 (46 from home-care) and 40 (18 from home-care) were identified by EVS and comprised the intervention and control group.
A difference was seen after 11 weeks in quality of life [0.758 (0.222) vs. 0.534 (0.355), p = 0.001]. Even though a small gain in weight was observed in the intervention group there was no difference in change in weight [0.12 (1.94) vs. −0.36 (3.89), p = 0.817]. The effect on quality of life, measured in terms of QALY gain relatively to control group, gave a cost-effectiveness ratio of DKK 46,000 per QALY gained.
Conclusion: Multidisciplinary nutritional support in older adults in nursing home and home-care identified with EVS compares reasonably well to other interventions found worthwhile in the Danish healthcare sector.

P-347

Prevalence of hypophosphatemia and relation to undernutrition in hospitalized geriatric patients

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Objectives: Hypophosphatemia is common in hospitalized patients with described prevalences from 5% to over 20%. It is associated with unfavourable outcomes and a risk factor for the refeeding syndrome. The growing geriatric population might be more prone to develop hypophosphatemia because of the frequent co-morbidity and relatively higher prevalence of undernutrition. Since data regarding hypophosphatemia in elderly patients is scarce, the aim of this study was to determine the prevalence of hypophosphatemia and the relation with nutritional status.
Methods: We conducted a retrospective cohort study including all patients electively admitted to the 24-bed acute geriatric unit of a large teaching hospital (Medical Centre Leeuwarden) between 1 January and 31 January 2014. Computerised charts were available for all patients and data was collected regarding patient demographics, laboratory findings and nutritional status. Hypophosphatemia was defined as serum phosphate <0.8 mmol/l. Serum phosphate levels were measured on the Roche Modular Analyzer and nutritional status was determined with the Mini Nutritional Assessment (MNA).
Results: We included 215 patients with a mean age of 83.3±7.0 years of whom 61.9% were female. Serum phosphate was measured in 173 (80.5%) of patients. At the time of admission, 16.8% (23.4% of males, 12.8% of females, ns) had hypophosphatemia. Undernutrition and risk of undernutrition was present in respectively 24.5% and 47.9% of patients. There was no association between nutritional status and hypophosphatemia (Chi Square, p = 0.85).
Conclusion: The prevalance of hypophosphatemia was 16.8%. Although (risk of) undernutrition was frequently present, no association was found between hypophosphatemia and nutritional status.

P-348

Energy and nutrient contents of food served and consumed by nursing home residents

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Background: The aim of this study was to compare the amount of energy and protein of served food in nursing homes with that actually consumed by the residents.
Methods: Nutrient content of the served food and the actual real food consumption was calculated for all meals during a 5-day period by a precise weighting method. Difference between consumed and served dietary intake was evaluated by the Chi^2 test.
Results: Twenty-seven subjects (77.8% of women, 86.4±7.79 years) from one nursing home in Liège, Belgium, were included in this study. These subjects had a mean BMI of 24.7±5.16 kg/m², a mean Tinetti score of 21.6±6.05 points and an average MMSE score of 22.1±5.32 points. Out of the 27 subjects, 17(63%) had a normal nutritional status according to the MNA, 9(33.3%) were at risk of malnutrition and 1(3.7%) was malnourished. The mean energy content of the served food was 1622±29.3kcal per day. However, residents did not eat the whole meal (1464.9±201.5kcal). The difference between energy served and energy consumed was statistically significant (p < 0.001). The average protein content of the food served was equal to 0.9±0.22 g/kg/day and the average consumption of protein by the residents was 0.89±0.22 g/kg/day. The difference between protein served and consumed was not significant (p = 0.89).
Conclusion: Meals served in a nursing home are not entirely consumed by patients. Indeed, the energy consumed is significantly less than that provided.However, residents consume almost all of the served proteins. These dietary intakes should be compared to nutritional needs, which varies according to nutritional status, BMI and functional status.

P-349

Malnutrition in older patients with type 2 diabetes is associated with increased frailty

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Introduction: Type 2 diabetes may be associated with malnutrition. This study explored the relationship between this association and frailty features in older patients.
Methods: Cross-sectional study among 172 older diabetic patients (83±4 years; sex ratio 1:1) admitted in a Belgian teaching hospital (2012–2013). Included patients had old age (≥75 years), type 2 diabetes mellitus, risk of functional decline (ISAR ≥2) and comprehensive geriatric assessment including a short mini-nutritional assessment (MNA-SF, range 0–14). We compared the

patients with malnutrition (MNA-SF ≤7/14) to those without malnutrition, using appropriate statistics (chi^2 and t-tests).
Results: The 44 diabetic patients with malnutrition (MNA-SF 5.8±1.6) – as compared to the 128 ones without malnutrition (MNA-SF 10.7±1.7) – were similar in age, gender, co-morbidities (e.g. hypertension 78%, ischaemic disease 62%, grade IV–V renal failure 22%) and common geriatric syndromes (e.g. multiple falls 49%, chronic pain 34%, visual impairment 33%, cognitive decline 32%). Diabetic patients with malnutrition more frequently presented with HbA1c <7% (62% vs. 46%, p = 0.004), which was less frequently measured during the hospital stay (57% vs. 72%, p = 0.01). They more frequently (p < 0.05) had dependence (ADL >3/6: 54% vs. 34%), nursing home residency (36% vs. 10%) and high risk of functional decline (ISAR ≥4: 70% vs. 46%). Their mortality rate in January 2014 was also higher (34% vs. 19%, p = 0.05).
Conclusions: Malnutrition was present in 1 in 4 older patients with diabetes mellitus. This subgroup of patients with diabetes and malnutrition deserves increased medical attention, as it shows higher prevalence of inappropriately low HbA1c, as well as higher risk of functional decline and mortality.

P-350
Easy-to-use clinical criteria for screening malnutrition in older patients with type 2 diabetes mellitus

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Introduction: In the daily practice, the mini-nutritional assessment short form (MNA-SF) is not systematically performed in geriatric inpatients. This study aimed at identifying some easy-to-use and effective clinical criteria for screening malnutrition in geriatric patients with diabetes.
Methods: Cross-sectional study in 172 older diabetic patients (83±4 years) admitted in a Belgian academic hospital. We compared the patients with malnutrition (MNA-SF ≤7/14) to those without malnutrition in terms of the five MNA-SF items (see below) and mid-arm circumference (MAC), using χ^2 and t-tests.
Results: The 44 diabetic patients with malnutrition (26%), as compared to the 128 without malnutrition, were similar in age and gender but presented smaller MAC (25.2±3 vs. 28.6±4 cm, n = 151, p < 0.001). MAC <27 cm (median value) was more frequent in patients with malnutrition (68% vs. 32%, p < 0.001) and offered fair screening characteristics (sensitivity 68%, specificity 67%). Comparing the MNA-SF items in patients with and without malnutrition, we observed differences in mobility problems (scores: 0.84 vs. 1.25; Δ = 0.41), neuropsychological troubles (1.02 vs. 1.48; Δ = 0.46), body mass index (1.41 vs. 2.68; Δ = 1.27, n = 121) and in reports of weight loss (0.82 vs. 2.13; Δ = 1.31), psychological stress/acute disease (1.09 vs. 1.69; Δ = 0.60) and food intake decline (0.59 vs. 1.46; Δ = 0.87) over the past 3 months.
Conclusions: The largest score differences in MNA-SF items between the two groups were body mass index (missing data in 30%), food intake decline or weight loss over the previous three months. Any of these three criteria or MAC <27 cm should prompt further nutritional assessment in settings where MNA-SF is not systematic.

P-351
Insulin sensitivity and secretion in older patients differ according to age at diabetes diagnosis

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Introduction: Little is known on insulin sensitivity and secretion in older patients with type 2 diabetes mellitus (DM2), a heterogeneous group of patients.
Methods: Cross-sectional study of 210 consecutive older (≥75 years) patients followed for DM2 at the outpatient diabetes clinic of an academic hospital. DM2 was classified as habitual-onset diabetes (HODM2) when diagnosed <65 years or elderly-onset diabetes (EODM2) when diagnosed ≥65 years. Insulin sensitivity and β-cell function were assessed by HOMA modeling. Statistical significance (p < 0.05) of differences was assessed using Student's t-test, Welch's test or Fisher's Exact test.
Results: Patients with EODM2 (n = 88; 82.6±5 years), as compared to HODM2 (n = 122; 81.2±6 years), had a shorter history of DM2 (10±5 vs. 26±10 years). Both groups were not different in terms of cardio-vascular risk factors and DM2-related complications, except at the micro-vascular level (EODM2 vs. HODM2: 45% vs. 72%). Concerning metabolic profile, EODM2 significantly differed from HODM2 in 4 anthropometric and metabolic characteristics: lower BMI (26.6 vs. 28.2 kg/m^2), lower prevalence of obesity (18% vs. 27%), higher insulin sensitivity (66% vs. 53%) and higher residual β-cell secretion (68% vs. 52%). Although HbA1c was similar in both groups (7.31% vs. 7.62%), HbA1c <7% was more frequently observed in EODM2 patients than in HODM2 ones (49% vs. 37%). EODM2 patients, as compared to HODM2 ones, received significantly less intensive anti-diabetic regimens, specifically oral ones (bi- or tri-therapies: 28% vs. 59%) and insulin (32% vs. 66%, p < 0.001) at a lower mean daily dosage (0.47 vs. 0.57 IU/kg).
Conclusion: EODM2 patients had specific metabolic features and differ from HODM2 ones. Thereby, because of their higher risk of hypoglycemia, EODM2 patients should be treated with lighter glucose-lowering therapy.

P-352
Citrulline and nutritional, functional and cognitive status in healthy ageing SUVIMAX2 population

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Objectives: As citrulline (Cit) supplementation increases lean body mass and mobility in old rats, we hypothesized that a decrease in plasma Cit could contribute to muscle alterations with aging. The objective of this study was to describe temporal variations in plasma Cit in aging volunteers. Therefore, we performed a cross-sectional study in 2007 and a longitudinal study (between 1994 and 2007) on the association between plasma Cit and nutritional, functional or cognitive status.
Methods: Volunteers from the SUVIMAX2 cohort aged >65 in 2007 that had benefited from a complete nutritional, functional and cognitive evaluation were identified (n = 337). Plasma Cit was

measured by ion exchange chromatography from 1994 and 2007 blood samples.
Results: In 13 years, plasma Cit decreased from 35.9±7.6 to 33.9±7.7 μmol/L ($p < 0.001$) and the main determinant was renal function ($p = 0.005$). In 2007, and in women only, plasma Cit was negatively associated with weight ($p = 0.001$), waist circumference ($p = 0.01$) and fat mass ($p = 0.001$). The variations in plasma Cit between 1994 and 2007 were positively associated with waist circumference ($p = 0.03$). There was no association between functional or cognitive status and plasma Cit in 1994 or 2007.
Conclusions: Our study shows for the first time that plasma Cit decreases with aging in healthy volunteers, even if the clearance of the creatinine decreases. However, there was no association with functional or cognitive function in this healthy population. Additional studies are required to further clarify the connection between plasma Cit and body composition.

P-353
Prevalence of malnutrition in 274 elderly diabetic patients in different geriatric structures

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Objectives: Diabetes is highly prevalent in elderly subjects and the risk of malnutrition too. The objective of this study is to determine the prevalence of malnutrition in the diabetic patients.
Methods: Multicentric descriptive study. 274 patients with diabetes were included in the consultations, day hospitals, acute care, rehabilitation care, nursing homes, and long term care of five geriatric departments. The collected data included comprehensive assessment of geriatric evaluation, nutritional status and diabetes. Malnutrition was defined as weight loss, BMI <21, albuminemia <35 g/l or MNA-SF <7.
Results: According to the structure patients were aged 83±6 to 85±6. Diabetes was known for 15.7±13 years, and last measured HbA1c was 7.1±1.5%. Macrovascular complications were ischemic cardiopathy (35%), lower limbs arteritis (18%), and cerebrovascular disease (35%). Microvascular complications were retinopathy (30%), nephropathy (39%) and neuropathy (17%). Ten % had skin ulcers. Treatment for diabetes was none in 48%, 37% had oral treatment, 26% had insulin and 18% had both oral drugs and insulin. The prevalence of malnutrition was 27% in consultation, 23% in day hospital, 53% in acute care, 66% in rehabilitation, 9% in nursing homes and 21% in long-term care.
Conclusions: Malnutrition is highly prevalent in elderly diabetic patients. Systematic screening for malnutrition in older patients should not overlook diabetic patients, because prescriptions for diet and drugs may have to be adapted.

P-354
Relationship between institutionalization, nutritional parameters and mortality

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Objective: To evaluate the repercussion of institutionalization in nutritional parameters and mortality amongst elderly people.
Method: A descriptive study was carried out by monitoring new entries in a nursing home with capacity for 140 residents during 3 years. Weight, age, body mass index (BMI) and Barthel Index (BI) were logged on admission; weight loss percentage (≥4%) and mortality after 12 months.
Results: 101 new entries were recorded between 2011 and 2013. All new residents were monitored, except for 3 that failed to register all data on admission.
With an average of 81.4 years of age, a total or severe (0–39) BI is observed on 61.6% of cases and moderate, minor or independent BI on 34.4% of cases.
On admission 71.4% registered a BMI ≥22 and 28.6% a BMI <22. In the group with BMI ≥22, 54.2% showed a more severe BI score. Of these, 14.2% passed away after 12 months and 15.7% showed weight loss ≥4%. For the remaining 45.7% with a lower BI, mortality was 4.2% and weight loss ≥4%.
In the group with BMI <22, 71.4% showed severe or total dependency BI. 14.3% of these died and 3.5% showed weight loss ≥4%. From the lower dependency group 3.5% died and 7.1% registered weight loss ≥4%.
Conclusions: Mortality is greater for high dependency individuals in both BMI groups. Higher weight loss in the better BMI group may be due to a more exhaustive intervention on those with worse BMI.
High dependency individuals should be closely monitored, regardless of BMI.

P-355
Relationships among the levels of care needs, dysphagia and malnutrition

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Objective: This study was aimed to evaluate the relationships among the levels of care needs, dysphagia, and malnutrition in community-dwelling disabled older people who were eligible for Long-Term Care Insurance in Japan.
Methods: A cross-sectional study of baseline data of 1142 community-dwelling older people (81.2±8.7 years) from KANAGAWA-AICHI Disabled Elderly Cohort (KAIDEC) study was conducted. Data included the participants' demographic characteristics, nutritional status (Mini Nutritional Assessment short-form: MNA-SF), dysphagia severity (Dysphagia Severity scale: DSS), and the levels of care needs of participants which were classified into seven levels according to the Long-Term Care Insurance program in Japan. Statistical analysis used the chi square test and jonckheere-terpstra trend test.
Results: We found that only 27.8% participants were classified as being well-nourished (MNA-SF ≥12). According to the DSS classification, 65.8% of the participants were assessed as normal swallowing function. The higher prevalence of malnutrition was associated with severer levels of DSS. Moreover, DSS, MNA-SF, and the levels of care needs had significant relationships among each other.
Conclusion: The findings suggest that the majority of the disabled community-dwelling older people with the higher levels of care needs were associated with dysphagia and malnutrition.

P-356

Association of loneliness scale (UCLA) with drugs, smoking, nutritional status, and gender in elderly with dementia

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Loneliness is an important indicator of well-being. However, we have limited understanding of loneliness in minority aging populations. The UCLA, Loneliness Scale, is a commonly used measure of loneliness. It is applicable to patients with dementia of different origin.
The aim of this study is to investigate the effect of drugs, smoking, nutritional status and gender on loneliness scale (UCLA) with dementia.
Methods: It was conducted a cross-sectional study on 144 elderly subjects (mean 80.72: ds 7.71); (106 females, 38 males). Questionnaire was used to evaluate subjectively the number and severity of disease states, and loneliness index was computed using the revised UCLA Loneliness Scale (mean 26.59: ds 15.934). We found a number of items such as smoking, gender, nutritional status in particularly using the Mini nutritional assessment (mean 17.877: ds 3.71), and it was assessed the number of drugs.
Results: The regression model showed significant evidence on Loneliness Scale for gender ($B = 4.7$, $P < 0.05$), in fact men have a score of 4.7 points more than women. Intriguing but no significant relationship among smoking ($B = 5.9$; $P = 0.185$), drugs ($B = 0.78$; $P = 0.22$), and nutritional status ($B = -0.61$; $P = 0.13$) were found.
Conclusion: There were several factors that influenced loneliness in particular smoking, number of drugs, male gender, and malnutrition its play a negative role.

P-357

Osteoporosis in elderly women during hospitalization. Intention to treat following FRAX index cutoff

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Objectives: In the evaluation of risk fractures with FRAX index, is considered the cut-off estabilished from the study of Nakatoh S. et al., in 2013, that underline that patient need a treatment when FRAX index is greater than 10.5%. The aim of the study was to identify the prevalence osteoporosis and osteopenia and assess the patients that must be effectively treated with a fitting therapy following the FRAX index.
Methods: The sample is made by 358 subjects (women; mean 81.2±7.8), BMI 24.1±5.3 kg/m^2, T-score (−2.34±1.31) and FRAX index (18.85±11.5) are evaluated. An analysis of frenquencies was performed to assess the prevalence of normal bone density, osteopenia, and osteoporosis, following the OMS criteria (≥−1 normal, −2.5 to <−1 osteopenia; <−2.5 osteoporosis).
Results: This study underlined that 46.1% of subjects had osteoporosis (T-score <−2.5), 41.2% is affected by osteopenia (T-score −2.5 to <−1) and 12.7% presented a condition of normality (T-score ≥−1).
About FRAX index, the percentage of patients that need a treatment are 87.3% (FRAX >10.5%), instead of patients with normal condition (FRAX <10.5%) that are 19.7%.
Conclusions: The 87.3% of present a condition of reduction bone mineral density (osteopenia and osteoporosis), but if consider factors that are associated with risk fractures, only the 80.3% really require a therapy with Vit.D integration, calcium or pharmacological support.

P-358

Micronutrient status change in institutionalized elderly patients receiving an oral nutritional supplement (ONS)

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Objectives: The ONS Renutryl® Booster has been specifically formulated to meet the need of elderly in terms of energy, proteins and micronutrients. This work evaluates the micronutrient status change after 28 days of daily supplementation.
Methods: Open-label, interventional, prospective, multicenter study performed between 2012 and 2014 in 16 nursing homes and long-term care with non-severely malnourished patients ≥70 years. Primary endpoint: change in a composite endpoint including micronutrient plasma concentrations of magnesium, selenium, zinc, vitamin A, E, C, B9 and B12. Statistics were performed using O'Brien rank sum test, paired Student's test and rank sum test.
Results: 67 patients were included [age (mean±SD): 84.9±8.6 years, BMI: 22.5±3.8 kg/m^2, women: 69%]. 36 patients had BMI ≤21, 20 had MNA-SF ≤7, 12 had lost weight (5% in one month or 10% in six months) and 12 had albuminemia ≤35 g/L. At inclusion, 85% of the patients had at least one micronutrient deficiency. 50 patients completed the study. After 4 weeks of supplementation, the following criteria had significantly improved between day 1 and day 28: micronutrient composite endpoint (250±12; 352±12*), body weight (kg) (57.9±10.7; 58.4±10.1*), dry lean body mass (kg) (8.2±10.8; 9.1±11.7**) and transthyretinemia (g/l) (0.22±0.05; 0.24±0.06**) (mean±SD, *$p < 0.0001$; **$p < 0.001$).
Conclusion: One month of this ONS improves the global and micronutrient status of non-severely malnourished institutionalized elderly.
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P-359

Evaluation of nutrition-related measures in the case of the elderly people using the home-meals delivery service provided by the Local Government of Vitoria-Gasteiz

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Introduction: The home-meals delivery service is provided by the municipal social services department and the data that it handles on service users are exclusively administrative.
Aims: To verify the nutritional state of the users, optimise resources using nutrition-related measures and evaluate their effects in improving the nutritional state of this group of people.
Methods:
1. Evaluation of nutritional status in user's home using MNA-SF.
2. Nutrition-related measures: Dietetic guidelines, educational material, increase in portions and calorie content of the meals provided. Further evaluation of nutritional status using MNA-SF, 3 months later.

Results: 1st. evaluation: 80 service-users (35 M; 45 F); average age: 83.6 (±5.5). Malnutrition was found in 10% (8 users), 37.5% were at risk of malnutrition (30 users) and the remaining 61.5% had a normal nutritional state.
2nd. evaluation: 39 elderly people (21 M; 18 F); average age 84.7 (±4.5). The remaining users had died, were out of town, no

longer used the service or did not want to take part. One user had malnutrition (2.56%), 12 were at risk (30.7) and 66.67% of users had an adequate nutritional state.

Conclusions:

1. These users of the service form a group with a high risk of malnutrition which requires a closer follow-up.
2. Although the number of cases in the follow-up is low, the data support a greater development of the home-meals service as a resource to improve the nutritional state of its users.

P-360

Long-term effect on access to bedside-supervision of a trained nutritionist in geriatric wards

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Objective: The aims were to examine nutritional status in patients admitted to geriatric wards in the year of 2013 compared to 2011, and long-term effect of having access to bedside-supervision by a trained nutritionist for a limited period of time.

Methods: In all patients admitted to two geriatric wards during a period of 11 weeks in 2013, we collected data from electronic patient records on age, sex, length of stay, weight at admittance, weight on discharge, risk of malnutrition, dietary intake during stay, nutritional intervention, and plans for nutritional follow-up. These data were compared to similar data collected for all patients admitted to the same two wards in a similar time-span in 2011 in which the staff had access to bedside-supervision by a trained nutritionist.

Results: Preliminary result shows that, compared to patients admitted in 2011 (n = 238), patients admitted in 2013 (n = 85) were more likely to receive less than 50% of their estimated energy need (24% vs. 41%, p = 0.047) and had lower intake of protein (24.6 g/day vs. 36.2 g/day, p < 0.001). Both groups were just as likely to be in risk of malnutrition (81% vs. 87%, p = 0.86), and none of them lost weight during their hospital stay. Length of stay modified the effect on weight.

Conclusion: The positive effect of having access to a trained nutritionist seems to diminish with time. Ensuring that geriatric patients receive sufficient nutrition during hospital stay remains a challenge. Further research into the effect of length of stay and nutritional status is needed.

P-361

Geriatric profile of diabetes in the elderly

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Introduction: Diabetes is a common disease in the elderly. It potentially has a negative effect on the quality of life because of its chronicity and its mutivisceral complications. Our purpose is to study gerontological characteristics in a population of diabetic patients older than 65 years.

Patients and Methods: Retrospective study about diabetic patients older than 65 years who were hospitalised in our department of internal medecine between 2000 and 2011.

Results: There were 75 patients: 42 women and 33 men. The middle age was 70 years. 74% of them were polypathological and/or polymedicated. 90% had at least 3 fragility characters. The middle diabetes evolution period was about 10 years and 3 months. Loss of autonomy was present in 33.3%. Dementia was noticed in 2.7% of cases accociting a recently diagnosed diabetes. There was no correlation between the occurrence of dementia and macro- and microangiopathy. A depressive syndrome was noted in 13.3%. Uro-vesical pathology was seen in 16.6% (urinary incontinence in women and prostatic adenoma in men). Cerebral stroke occurred in 20%, orthostatic hypotension in 5%, blindness in 5%, amputation in 5%, disabling neuropathy in 5%, fall with hip fracture in 1 case, arthrosis in 1 case. Dehydration was seen in 13.3% in association to fever or metabolic disorders. Denutrition was present in 12%.

Conclusion: Diabetes is a chronic disease which deeply influences life quality of the elderly, especially when they are polypathological and polymedicated.

P-362

Management of diabetic patients and dyslipidemia in primary care to prevent cardiovascular disease (CVD)

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Objective: Assess the lipid parameters of laboratory presented the patients with type 2 Diabetes Mellitus (T2DM) controlled in primary health care-.with the purpose of providing comprehensive and continuous care that improves your cardiovascular risk.

Methodology: The authors conducted a cross sectional study applied to selected patients (n = 104, 52 males(M) and 52 women(W)) chosen by non-probability sampling in a row, among Type 2 Diabetic patients attending our clinic included in the Service Care for diabetic patients Portfolio Services Primary Sacyl and evaluates the parameters of lipid profile:Total-cholesterol(TC),HDL-cholesterol(HDL-C),LDL-cholesterol(LDL-C) and triglycerides(TGs). The data is collected in an Excel spreadsheet and are analyzed using the SPSS9.0 for Windows.

Results:

1. 1-T2DM age: 90–95 (1M, 0W), 85–90 (1M, 2W), 80–85 (7M, 5W), 75–80 (7M, 7W), 70–75 (4M, 11W), 65–70 (10M, 10W), 60–65 (16M, 9W), 55–60 (2M, 3W), 50–55 (4M, 5W).
2. TC ≤185 mg/dl: 46T2DM (44%, 25M, 21W). TC ≥230 mg/dl: 17T2DM (16%, 4M, 3W).
3. HDL-C ≥40 mg/dl: 75T2DM (72%, 30M, 45W). HDL-C ≤35 mg/dl: 15T2DM (14%, 13M, 2W).
4. LDL-C ≤70 mg/dl: 8 T2DM (8%, 4M, 4W). LDL-C ≥70 and ≤100 mg/dl: 26T2DM (25%, 16M, 10W). LDL-C ≥130 mg/dl: 36T2DM (34%, 14M, 22 W).
5. TGs ≤150 mg/dl: 69T2DM (66%, 34M, 35W). TGs ≥200 mg/dl: 9T2DM (6.6%, 7M, 2W).

Conclusions: It is concluded that only 46% of patients with type 2 diabetes have TC ≤185 mg/dl, with HDL-C ≤35 mg/dl in 15% and LDL-C ≥130 mg/dl in 34% of the cases, only 8% have LDL-C ≤70 mg/dl which recommendation is the goal of treatment in T2DM patients (very high cardiovascular risk) as the guide for the management of dyslipidemia ESC/EAS 2011 (European Society of Cardiology/ European Atherosclerosis Society). Therefore it must implement an improvement plan with enhanced care interventions from the AP to obtain query control objectives in the lipid profile of patients with type 2 diabetes controlled on Primary Health Care to improve their cardiovascular risk.

P-363

The relationship between oral health and frailty

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Objective: To evaluate the relationship between oral health and Frailty among older residents living in long-term care settings.

Methods: Design: A prospective cohort study. Setting: one veteran home in Taiwan. Participants: A total of 314 residents in veteran home

Main outcome measures: Dentist assessed denture function, Frailty status (Fried's criteria), The Mini Nutritional Assessment-short form (MNA-SF), ADL (Barthel index), MMSE (Mini-Mental State Examination).

Results: A total of 314 participants (86.5±4.92 years, all male) are living in the veterans home, only 220 participants completed the Dentist assessment in 2011. The prevalence of frailty was 6.6%, pre-frailty: 86.8% and non-frailty: 6.6% in 2013. The frail condition has poor MNA-SF score (<7) compared to pre-frail and non-frail (12.5% vs 0% vs 0%, $p < 0.001$), poor Barthel index score (87.2±9.7 vs 93.5±9.6 vs 100±0, $p < 0.001$), poor MMSE score (22.4±3.2 vs 25.2±3.3 vs 26.8±2.2, $p < 0.001$), but not related to poor denture function.
Conclusions: Frailty has the relationship among poor nutrition status, poor ADL function and poor cognitive function, but not in poor denture function in 2 years follow up in older residents living in long-term care settings.

P-364
The prevalence of oral problems, malnutrition and association between oral problems and malnutrition of nursing home residents

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Objectives: The aim of this study was to assess the prevalence of experienced dental/denture problems, chewing problems, swallowing problems and malnutrition and the association between these problems and malnutrition of nursing homes residents on somatic and psychogeriatric nursing home wards in The Netherlands.
Methods: A secondary analysis of the data of 2013 of the National Prevalence Measurement of Care Problems (LPZ), an annually conducted cross-sectional, multi-center study in nursing homes in The Netherlands.
Results: A total of 2,232 nursing home residents, 599 residing at somatic and 1,633 residing at psychogeriatric wards were assessed by health care professionals. The prevalence of dental/denture problems, chewing problems and swallowing problems in somatic wards was respectively 5.5%, 23.0% and 22.0% and 6.8%, 30.0% and 10.2% in psychogeriatric wards. The prevalence of malnutrition in somatic wards was 9.3% and in psychogeriatric wards 16.1%.
In psychogeriatric wards there was a significant association between the presence of experienced dental/denture problems, chewing problems ($p < 0.001$ both) but not for swallowing problems ($p = 0.107$) and malnutrition. There was no significant association between oral problems and malnutrition in residents on somatic wards.
Conclusions: Malnutrition in psychogeriatric nursing home residents was more prevalent than in nursing home residents of somatic wards. No clear association was found between oral problems and malnutrition of residents on somatic wards. Only in psychogeriatric wards experienced dental/denture and chewing problems were related to malnutrition, suggesting that oral problems of psychogeriatric residents more often lead to malnutrition.

P-365
Nutritional screening of patients at a memory clinic – association between patients' and their relatives' self-reports

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Aims and Objectives: To increase knowledge of nutritional screening in cognitive impaired by comparing individual reports by patients and relatives of the Nutritional Form For the Elderly (NUFFE).
Background: Undernutrition is a significant problem among people with dementia.
Design: A cross sectional prospective study.
Method: Application of the NUFFE-NO in addition to cognitive tests in a memory clinic.
Results: A total of 213 patients, mean age 73 years, 53% females, 32% single home-dwellers and 15% below the age of 65 were included in the study. The mean MMSE score was 23.2 and 50% failed the five-point Clock Drawing Test. Patients' and relatives' NUFFE-scores yielded comparative results, however the patients were inclined to report higher nutritional state compared to their relative' scores. By self-reported NUFFE-scores, 32% were at medium to high risk of undernutrition. NUFFE-scores from their closest relatives revealed 43% of the patients at medium to high risk. Involuntary weight loss was reported by 42% of the patients, and in 26% of the sample BMI-values were below 22 kg/m^2.
Conclusion: The study demonstrates that a significant proportion of patients at the memory clinic were at nutritional risk. Corresponding results exist between patients' and their relatives' NUFFE-scores, however patient assessed scores were somewhat more well-nourished than their relatives. The discrepancies seem to increase with more severe cognitive impairment. In our sample, females and single dwelling individuals are at a higher risk of undernutrition compared to males and cohabitants. Scores from the MMSE-test and CDT might predict the probability of weight loss.

P-366
Uric acid as negative marker of endothelium-independent vasodilation in older women

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Objective: Uric acid (UA) is an inflammatory agent and potential mediator of human diseases. Endothelial dysfunction is thought to be the key event in the development of cardiovascular events in older population. Despite the potential contribution of UA to endothelial dysfunction most studies have been conducted in few adult subjects in specific diseases, with no objective test of endothelial function. Thus, we evaluated the relationship between UA and Endothelial vasodilation in older persons of Prospective Investigation of the Vasculature in Uppsala Seniors (PIVUS) Study.
Methods: This cross-sectional study involved 852 community-dwelling men and women aged 70 years with data on vascular function and uric acid. We evaluated endothelium-dependent vasodilation (EDV), endothelium-independent vasodilation (EIDV), flow-mediated vasodilation (FMD). We used multivariate regression models adjusted for BMI (Model 1) and for confounders (BMI, high-sensitivity CRP, HDL-cholesterol, smoking, SHBG, hypertension; Model 2).
Results: In men, in Model 1, log (uric acid) was not associated with log(EDV) (β±SE = 0.16±0.70, P = 0.82), log(EIDV) (−0.77±0.68; P = 0.23), log(FMD) (−0.38±0.67; P = 0.58). In women, in Model 1, uric acid levels were negatively associated with EIDV (−0.89±0.44; P = 0.04). However, no significant relationship was found between uric acid and EDV (−0.38±0.40, P = 0.35), and FMD (0.39±0.46, P = 0.40). Interestingly, the significant relationship between uric

acid and EIDV was attenuated but was statistically significant in Model 2 (−0.32±0.17, P = 0.056).
Conclusions: In older women, but not in men, uric acid is negatively and independently associated with EIDV, suggesting its role as surrogate metabolic marker rather than determinant of endothelial function in older individuals.

P-367
Impact of switching from a Brand to a Generic macrogol on prescriptions and doses for patients with chronic constipation in the UK

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Objectives: To compare prescription numbers and doses (20 sachets/pack) for chronic constipation patients switched from branded macrogol (MOVICOL) to generic macrogol (LAXIDO), and those who switched back.
Methods: Retrospective real-world, longitudinal patient and prescribing data from 397 UK GP practices (2,186 GPs, 13,567 patients; January–December 2013; CSD-division of IMS Health) were analysed in two cohorts of chronic constipation patients: (1) patients prescribed branded macrogol, switched to generic; (2) patients prescribed branded macrogol, switched to generic (Switch-1) and returned to the brand (Switch-2). All patients were tracked from initiation to treatment end. Annualised prescriptions and doses/patient changes in each cohort were analysed (one- and two-sided t-test for two-sample assuming unequal variances).
Results: Males/females aged ≥13 years were analysed. In cohort (1), N = 3109, M = 0.63, SD = 8.29, prescription numbers (+8%) and doses (+13%) per patient/year showed an average increase. Absolute increase in prescription numbers (+0.6) and doses (+1.7) were significant ($p < 0.05$), and observed across all age groups (elderly [65+], middle-aged [36–64], young adult [19–35], adolescent [13–18]). In cohort (2), N = 91, M = −3.41, SD = 1.65, prescription numbers (−24%) and doses (−11%) per patient/year showed an average reduction during Switch-2. Additionally, absolute increase in prescription numbers (+5.0) and doses (+4.9) at Switch-1 was significant ($p < 0.05$).
Conclusions: Chronic constipation patients switched from branded to generic macrogol required a significantly higher number of prescriptions and doses than previously required. Patients who switched back from the generic to the branded macrogol required fewer. Factors impacting changes in prescription e.g. efficacy, convenience, and compliance require further investigation.
Analysis was funded by Norgine.

P-368
Metabolical and functional characteristics of octogenarian men using statins

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Objectives: Despite lack of clear trial evidence, statins are increasingly started in older patients and there are recent concerns about adverse effects on glucose metabolism. We compared octogenarian statin users and nonusers.
Methods: In the Helsinki Businessmen Study (socioeconomically homogenous group of men born in 1919–1934, n = 3309) clinical data are available from midlife to old age. A random subgroup of survivors participated in clinical studies in 2010/11 (n = 527), and there were 255 and 261 statin users and nonusers, respectively. All men were homeliving and mean age in groups was 83 years.
Results: Older statin users had had significantly higher cholesterol level than nonusers (6.7 vs. 6.1 mmol/L, $P < 0.001$) already in midlife, but in a majority statin had been started in old age; only 26% had used a statin >10 years. Current mean LDL cholesterol levels were 2.3 and 3.0 mmol/L ($P < 0.001$) among statin users and nonusers, respectively. There were no differences in BMI nor functional variables including MMSE, walk speed, handgrip strength and peak expiratory flow between users and nonusers. Of laboratory variables, creatinine, urate, glucose and homeostatic model assessment-insulin resistance (HOMA-IR) index were higher, and quantitative insulin sensitivity check index (QUICKI), and HDL cholesterol lower among statin users. Nutrition marker prealbumin was significantly increased ($P < 0.001$) among statins users and it was independent of BMI.
Conclusions: While no functional differences were noted between octogenarian statin users and nonusers, users had signs of impaired glucose but better nutritional status. Metabolic effects of statins in older people may be complex.

P-369
nutritionDay in nursing homes – Nutritional strategies for residents with dysphagia

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Objective: Dysphagia complicates oral nutrition (ON) and often requires alternative feeding routes. The aim was to determine nutritional strategies for nursing home (NH) residents with dysphagia compared to residents without dysphagia.
Methods: NH residents participating in the nutritionDay project (2007–2013) with complete data on dysphagia and nutritional strategy were included (N = 27,361). Information on different kinds of nutritional strategies [ON, oral nutritional supplements (ONS), tube-feeding, parenteral nutrition (PN)] was combined and prevalence rates calculated for residents with and without dysphagia.
Results: Prevalence of dysphagia was 13.7%. Almost all residents without dysphagia (98.7%) received ON solely, including 77.0% with normal, 6.7% with unknown, 5.3% with texture-modified, 2.3% with enriched diets, and 7.4% with ON plus ONS. The remaining 1.3% received ON plus tube-feeding or ON plus PN. Of all residents with dysphagia, 79.3% received ON solely, including 24.3% with normal, 3.0% with unknown, 29.1% with texture-modified, 3.9% with enriched diets, and 19.0% with ON plus ONS. 18.5% received tube-feeding, including 8.0% with solely tube-feeding, 10.2% with tube-feeding plus ON, and 0.3% with tube-feeding plus PN. The remaining residents either received total PN (0.7%) or PN plus ON (1.5%). Modified ON, ON plus ONS, and artificial nutrition were all significantly more frequent in residents with dysphagia (Chi^2-Test, $p < 0.05$, Bonferroni correction).
Conclusion: In NH participating in the nutritionDay, most prevalent nutritional strategies for residents with dysphagia were texture-modified and normal diets, ON plus ONS, ON plus tube-feeding, and tube-feeding alone.
*Medical Nutrition International Industry supported the realization of this analysis.

P-370

nutritionDay in nursing homes – Prevalence rate and characteristics of residents with dysphagia

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Objective: Dysphagia is a serious health problem in nursing home (NH) residents with an increased risk of malnutrition. The aims of this analysis were to determine prevalence of dysphagia and characteristics of affected residents.
Methods: Adult NH residents participating in the nutritionDay project (2007–2013) with complete data on dysphagia, 17 resident characteristics and 3 nutritional status variables were included (n = 23,790). Univariate logistic regression analyses were performed for all variables to predict dysphagia, and significant variables ($p < 0.10$) included in a multivariate analysis (backwards, with Bonferroni correction).
Results: Dysphagia was reported in 13.3% and was significantly associated with all variables except "musculoskeletal disorders". In the multivariate analysis, 12 variables remained in the model (Nagelkerke's $R^2 = 0.465$, $p < 0.002$, aROC = 0.894). Odds ratios (OR [95% CI]) of dysphagia were higher in "immobile" (6.13 [5.32–7.07]) and "partially mobile" (2.06 [1.78–2.37]) than in "mobile" residents. "Severe" (2.13 [1.82–2.48]) and "slight/moderate cognitive impairment" (1.40 [1.20–1.64]) were associated with a higher risk of dysphagia compared to "normal cognition". Odds ratios of dysphagia were also increased in residents with "chewing problems" (9.09 [8.22–10.06]), "neurologic diseases" (1.47 [1.30–1.66]), "digestive diseases" (1.41 [1.21–1.64]), "contractures" (1.38 [1.25–1.54]) and "exsiccosis" (1.37 [1.17–1.60]). "Weight loss in the last year" (1.25 [1.13–1.38]), "malnutrition" (1.42 [1.22–1.65]) or "risk of malnutrition" (1.32 [1.17–1.49]) according to NH staff evaluation also increased the odds of dysphagia.
Conclusion: In NH residents, participating in the nutritionDay, physical and cognitive impairment, chewing problems, and poor nutritional status are significantly associated with dysphagia.
*Medical Nutrition International Industry supported the realization of this analysis.

P-371

Enteral nutrition, health status and perceived quality of life in advanced dementia: observational study

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Objectives: To evaluate the impact of enteral nutrition on 18-month survival, rehospitalization rate and quality of life perceived by caregivers in a cohort of elderly patients with advanced dementia discharged from hospital.
Methods: With a prospective observational study design, 196 multimorbid (≥3 chronic comorbidities) elderly (≥65 years) with advanced dementia (FAST≥5, CDR≥2) discharged alive from hospital were consecutively enrolled (68 M, mean age 82±8 years). Tube feeding through PEG (percutaneous endoscopic gastrostomy) was carried out in all patients with dysphagia and life expectancy greater than 30 days (59 subjects). Others (137 patients) were fed orally. After a mean follow-up of 17±6 months, survival, hospital readmissions and perceived quality of life were assessed through a telephonic interview with caregivers through a modified version of DEMQOL questionnaire.
Results: Mortality rate was 67% in PEG group (median survival 7.5 months) and 37% in the oral group (median survival 28 months, $p < 0.0001$ with Kaplan–Meier method). However, after correction for age, sex and dementia staging (FAST and CDR), the survival rate was similar in both groups (median survival 15vs15 months, $p = 0.35$). Hospital readmission rate (29%vs29%) and perceived quality of life (good 55%vs55%, acceptable 25%vs25%, poor 20%vs20%) were not statistically different between PEG and oral group.
Conclusions: Tube feeding does not seem to affect prognosis and perceived quality of life in elderly multimorbid patients with advanced dementia. Tube feeding is generally carried out in patients with a more severe disease and perhaps too late in clinical course.

P-372

Assessment of vitamin D levels in geriatric patients in the university hospital

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In the present study, it was aimed to determine the vitamin D levels of geriatric patients referring to the university hospital.
Material and Method: The patients 65 years of age or older referring to our hospital between 01.1.2015 and 01.04.2015 were screened retrospectively. The level 25OH vitamin D of ≥30 ng/ml was argued as sufficient. The levels between 20–30 ng/ml defined as insufficient and ≤20 ng/ml as deficient.
Results: A total of 545 elderly patients were included in the study. The mean age of the population was 73.43±6 years, 67.2% of the participants were men. The most frequently seen conditions were hypertension (25.7%). The mean level of vitamin D was 54.11±45.24 ng/ml. Vitamin D level was sufficient in 66%, insufficient in 14.8% and deficient in 18.6% of patients. In the patients with dementia, vitamin D levels were lower than other patients having other chronic disease and the difference was significant statically ($p = 0.03$).
Conclusions: It was shown that the presence of dementia, a chronic disease, was associated with vitamin D deficiency.

P-373

Relationship between oral health and nutritional status in older patients admitted in a medical ward of a general hospital

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Objectives: Malnutrition is a frequent condition in elderly. Poor oral health status (OHS) can contribute to reduced oral intake and malnutrition. Our aim was to evaluate the relation between nutritional status and OHS among patients ≥75 years admitted in a medical ward.
Methods: Cross-sectional study during 1 day. Clinical and social characterization, including nutritional status (Mini Nutritional Assessment, bioimpedance) and dental examination.
Results: 100 patients were included, average age 83.7 years, 63% males, average Cumulative Illness Rating Scale Geriatrics 11.2, average Barthel score before admission 62.6. Prevalence of malnutrition and risk of malnutrition were 70% and 28%, respectively. Average number of teeth (ATn) was 6.7±8.4 (0, 33), 36% used oral prosthesis. Prevalence of total edentulism, caries and periodontal disease were 46%, 24% and 21%. Malnourished

patients (MN) presented higher ATn (7.7 vs 4.3, p 0.049) and lower prevalence of caries (22.9% vs 26.7%, ns) and periodontal disease (20% vs 23.3%, ns). However, toothbrushing (TB), toothpaste (TP) and dental prosthesis (DP) utilization was related to better nutritional status (TB: MN 40% vs 71.4%; TP: MN 40% vs 67.9%; DP: 22.8% vs 64.3%, $p < 0.005$). Patients with dental prothesis showed a trend for a higher mean triceps skinfold (20.8 vs 17.2, $p = 0.07$) and a lower mean fat-free mass (Deurenberg equation) (36.9 vs 41.8, $p = 0.08$).
Conclusions: Dental prosthesis, toothbrushing and toothpaste are related to better nutritional status. Surprisingly, higher number of natural teeth was associated to reduced lean mass. Further studies are needed to clarify the role of natural dentiture in nutrition.

Organisation of care and gerotechnology

P-374
Improving patient care and confidence within the Multi Disciplinary Team (MDT) by improving handover

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Introduction: In geriatric medicine we manage complex patients. Most geriatric units hold morning board rounds and weekly MDT meetings. New plans for patients are made on ward rounds and are not always handed over to colleagues. At our unit Nurses and health care assistants (HCA) change and handover in the afternoons without Doctors. Patients' health can change at any time and family concerns and questions need to be addressed especially in the afternoons when visiting times start. Would afternoon handover improve patient care and staff satisfaction?
Methods: Two questionnaires were done. The first questionnaire was designed to understand what our colleagues felt about afternoon handover. The nurses and HCAs were asked to choose an intervention they felt would improve handover. The intervention chosen by the majority was then implemented. Post intervention another questionnaire was done to decide whether the intervention improved the quality of patient handover and patient care.
Results: Questionnaire 1 showed that 77.8% of nurses felt handover was poor and compromised patient care. 88% thought patient health was put at risk by poor handover. 56% suggested the presence of a Doctor in nursing and HCA handover would be the best intervention to improve handover.
Questionnaire 2 showed that 100% of nurses and HCAs felt the presence of a doctor at afternoon handover was helpful, improved patient care and reduced morbidity and mortality.
Conclusions: Results suggest afternoon handover on Geriatric units improve patient care, prevent prolonged inpatient stays and reduce morbidity and mortality. It also increases satisfaction and confidence within the MDT.

P-375
Telemedicine and geriatric teleconsultations between the University Hospital of Nancy and retirement homes: current situation after eight months of experimentation

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Introduction: To improve the medical care of institutionalized elderly patients through advances in information and communication technologies, geriatric physicians of the University Hospital of Nancy carried out, since July 2014, remote and live consultations for retirement homes residents.
Objectives: To analyze the progress and reasons for using teleconsultations during the experimental phase of the project: from July 1st 2014 to February 15th, 2015.
Method: Data collection was performed retrospectively, from the informations contained in the report of each consultation.
Results: During the trial period, including two nursing homes for a total of 167 residents, 47 teleconsultations were performed. There were 37 different patients (28 women), 8 residents received several "follow up" teleconsultations with reference to the initial medical problem. The average age of the 37 patients was 86.7 years. Each teleconsultation took place with the obligatory presence of the geriatrician and the patient. The patient may be accompanied by the nursing home physician and/or a nurse.
We recorded 52 reasons for using teleconsultations: neuropsychiatric problems (34%), skin disorders (31%), advice on optimizing treatments taken by the patient (23.2%), help support patient in palliative care (5.9%), "other reasons" (5.9%).
Conclusion: This experiment shows that the need for geriatric expertise is important in nursing homes. By enriching exchanges among health professionals, telemedicine improves the links between hospital and medico-social structures.

P-376
Online secure message use by elderly patients in a primary care practice

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Objectives: Some primary care practices have introduced online patient portals that allow secure messaging between patients and providers to improve access. It is unclear to what extent these are utilized by the elderly. Our objective was to study the use of electronic secure messaging by elderly patients in our primary care practice.
Methods: This was a retrospective analysis of secure message use by patients 65 years and over that are followed by Department of Employee and Community Health (ECH), Mayo Clinic, Rochester. Data was obtained from administrative and electronic medical record. We evaluated 37,330 secure messages recorded in 2012 for current ECH patients with research consent to determine the proportion from patients 65 years and older. We analyzed a computer generated random sample of 10% of messages to explore patterns of use by the elderly.
Results: 34,050 messages were from 11,877 patients (90.8%) aged under 65 years. The remaining 3,280 messages were from 1,197 patients aged 65 years or over (9.2%). Currently patients 65 years and older comprise 14.7% of the ECH population. In a random sample of secure messages by the elderly the content was related to symptoms (41%), requests for prescriptions (13%), and tests or consultations (22.6%).
Conclusion: Electronic secure messaging using the online patient portal was utilized by a fair proportion of the elderly in this study and may be a viable option to improve access in primary care. There is need to further study and address possible barriers to electronic secure message use by the elderly.

P-377
Dysphagia in care homes

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Objectives: In the daily work in care homes, dysphagia is a syndrome which has a greatest impact on the quality of life of people with dementia, families and staff, especially in their lasts year of life.
The objective was to demonstrate that deliver high quality care to residents with dementia, improve symptoms such as dysphagia, improve quality of life and other aspects associated with the development of dementia

Methods: Data obtained from electhronichal clinical records. All residents who have died in care home(41) were included. Excluding deads in Hospital(9). Residents without dementia (9) were excluded.
Results: 100% of people with dementia and dysphagia (22) required monitoring and involvement of the interdisciplinary team in the last days of life (symptom control, comfort care, the family continued support and follow-up the end of life).
84.4% of deaths with advanced dementia (with or without dysphagia), haven't been referred to emergencies or have required any hospital or geriatric referral in the last 12 months.
Conclusions: Advanced dementia and its complications are the most frequent reason of death in care homes.
Dysphagia has a great impact on the QoL of residents, family and staff (being present in 68.8% of advanced dementia in the last 12 months of life).
Dysphagia has strong impact on residents, for causing complications. With its control, an indicator of quality of care and the need of increase the involvement of all staff and make the necessity of changes in care plan.

P-378
When community care takes a step into geriatric research

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Background: Geriatric research has traditionally involved geriatric patients, and has found place mainly in hospitals and the specialised part of the healthcare sector. Despite this, most elderly spend their time in the community and some are in regular contact with the community care. A new research platform has been created in Norway where the municipal arena is the principal scientific partner. This is exemplified by Lørenskog nursing home, one of 40 Centres for Development of Institutional Services in Norway, running a collaborative project called "New technology for reduction of pain caused by reduced circulation in the lower leg of the elderly". The aim of the project is to improve peripheral circulation in the lower limbs.
Objectives: The main objective of the project has been user-controlled development and testing of technology to improve quality of life for patients with reduced circulation in the lower leg.
Methods: The three main objectives of the project were: A: To develop a device that could improve reduced circulation in the lower leg. B: To investigate the effect on blood flow due to treatment. C: To evaluate the device in nursing homes in relation to compliance data and quality of live.
Results: The project has developed a device, a boot, producing a pulsating negative pressure. The device increases blood flow, measured with ultrasound in the Dorsalis pedis artery. The third part of testing of the device in nursing homes, is still in progress.

P-379
Older adults' room preference in an acute hospital setting: single versus shared accommodation

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Objective: The objective of the survey was to determine whether older adults would prefer to be in a single room or a room shared with other patients following admission to an acute hospital.
Methods: In March 2015, we surveyed inpatients on their room preference. Using a physician administered questionnaire, information was obtained from patients who agreed to participate. Patients were asked their preferred choice of room and their preferred meal location either at bedside or a common dining room with other patients. Reasons for their answers were also sought.
Results: 160 patients (80 men and 80 women) participated in the study. Mean age was 78 years (65–96 years) and average length of stay was 23 days (1–233 days). 116 (72.5%) patients were in shared rooms while 44 (27.5%) patients were in single rooms. 62% of patients in shared rooms said they would prefer shared accommodation, whereas 63.6% of patients in single rooms expressed preference for single rooms. A higher number of patients (71.6% of those in shared rooms and 52.3% of those in single rooms) preferred to have their meals at their bedside.
Conclusion: The results from our survey shows that the room type patients were already exposed to was likely responsible for the marked difference in room preference. Contrary to other arguments, our report suggests that older inpatients will do well in any room they are in as long as issues regarding privacy and protected meal times are addressed.

P-380
Survey on geriatrics in 19 countries

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Aims: We investigated the status of geriatrics and position of geriatricians by a survey in 19 countries.
Methods: Electronic survey was delivered for a convenience sample of 19 geriatricians in 19 countries.
Results: In 10 countries geriatrics was specialty of its own, in seven a subspecialty and two countries geriatrics was not recognized as specialty. The number of geriatricians per capita 80+ years varied between 400 to >6000, mean being about 2100. Most respondents thought that their country should double the number of geriatricians. The most common working place for geriatricians was acute geriatric ward or rehabilitation. There was, however, wide range of positions for geriatrics in various countries. While most thought the most adequate place for geriatricians is acute geriatric ward some also would have placed geriatricians to coordinate community care, outpatient clinics and memory clinics. All thought that acutely ill or multimorbid geriatric patients should be taken care by geriatricians, 63% would place geriatricians also in nursing homes, and 79% to take care of dementia patients. 89% thought that GPs should take care of older people in community care. The biggest problems in older people's care according to the responders were lack of geriatric knowledge, attitudes, and lack of geriatricians. According to respondents, older people's health promotion or comprehensive geriatric assessment were not well implemented in their countries. Of the respondents, 56% thought geriatrics is not a popular specialty in their country.
Conclusions: The position of geriatrics and organization of older people's care varies widely between countries.

P-381
Positive impact of Bio Psycho Social (PBS) assessment on nursing home organisation

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Introduction: Admission in nursing home (NH), key moment in elderly person life, should be considered as a milestone in

our collaborative management. Patient data collection must be comprehensive to help nurses/aid nurses taking into account any Bio Psycho Social (BPS) dimension of the person.
Objectives: The main objective was to establish an exhaustive BPS assessment in our nursing home. The secondary objective was to evaluate our BPS by our nurses/aid nurses using a qualitative questionnaire and a team focus group assessment.
Methods: We have performed the BPS according a modified geriatric comprehensive assessment; medical screening was done before the inclusion process to avoid any unstable acute pathology. Evaluation by focus group method was done after the process, anonymous and qualitative questionnaire was performed 7 days after the last inclusion.
Results: Between 10/10/2014 and 30/04/2015, the admission committee met 18 times, 81 cases were screened and the project team has made 29 BPS assessments. A total of 84% of nurses/aid nurses have considered better understanding of the patient and they have claimed more self satisfaction in doing their own job.
Conclusion: BPS approach could be summarized by answering to five simple questions who, how, why, when and by whom, before any admission in NH. Assessment was based on a total interdisciplinary, each professional player in the nursing home was important. Beyond the workers satisfactions we have achieved a positive impact on the organization. This approach also represents a significant managerial level.

P-382
The MARIO European Project – Managing active and healthy aging with use of caring service robots: Aim and design

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Objectives: The MARIO project (Managing active and healthy aging with use of caring service robots) is a European research projectfinanced under the Horizon 2020 research and innovation framework. It involves10 partners from 6 EU countries. The main aimis to develop a robotic system capable to effectively address the needs of the elderly in different settings through a multidimensional multidisciplinary user centred approach facing loneliness, isolation, dementia and health status recognition.
Methods: The project will last 36 month and isstructured in 11 work packages (WP). In the first phase an extensive international survey in an elderly frail populationwill be performed. The questionnairewill be builtusing a structured approach involvingfocus groups, end users, health care associations, health care and social workers and experts in the field. In parallelthe consortium will develop the required architectural and technical activities to integrate the robot hardware with the different sensorsrequired to monitor and interact with the patients, developing also the end user interface and a redesigned of a pre-existing robot platform. The last phase is about testing and validation of the prototypein three different settings: hospital, long term care and private houses.An intense dissemination activity will be carried out in different European countries involving all the different tiers involved in the care process.
Conclusions: The MARIO project represents a novel approach to design and put in action a companion robot anditsambitious outcomes will be: to facilitate and support people with dementia and their caregivers, reduce social exclusion andisolation and determine health status changes autonomously, thus improving the care process.

P-383
Potentials for optimizing pain management in nursing homes

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Objectives: Pain increases with age and successful pain treatment depends on adequate pain management. The aim of this study was to analyse the pain situation and pain management in Austrian nursing homes to identify potentials for optimizing pain management.
Methods: A non-experimental pre-post-study in 12 randomly selected Austrian nursing homes operated by the same company was conducted. Nurses and residents were asked about their perceptions of pain management. Pain assessment of cognitively intact as well as cognitively impaired residents was conducted using standardized questionnaires and observations. Baseline data was used to generate potentials for optimizing pain management. Examples for best practise in pain management were explored using qualitative group interviews with nurses.
Results: Qualification of health-care professionals and systematic pain assessment are important aspects for optimizing pain management. Cooperation between nurses, physicians and other involved health-care professions are also essential for pain management as well as the availability of analgesics and physicians in acute pain situations on the weekend. Nurses received semi standardized pain management tutoring and a systematic pain assessment was implemented. Some of the participating nursing homes went above and beyond given pain management practices and proactively optimized pain management, e.g. non-medical pain treatments, in-house qualification and pain-workshops for all involved health care professions.
Conclusions: Improving pain management is possible. However, it requires that all involved parties buy into changing current practice. Internal and external structures must be adapted to improve pain management and residents must be involved.

P-384
Low adherence to fall related advice in older persons evaluated in a falls clinic

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Objectives: Multifactorial interventions have positive outcomes in terms of fall prevention. However, translating these results to the clinic is difficult. This study documents the adherence to multifactorial fall interventions of older persons, assessed in a falls clinic by a multifactorial falls evaluation.
Methods: Older persons who consulted the falls clinic were interviewed 2 and 6 months later to evaluate the adherence to the proposed multifactorial interventions.
Results: This study is ongoing. At the time of the conference, we will report results about 60 patients. Preliminary results on the 9 first patients show that 3 experienced a fall within 2 months after their falls clinic visit. On average 12.4±2.9 advices were given to the patients in the falls clinic of which 39.9% were

implemented after 2 months. Advices to consult a physiotherapist, to use a walking aid, behavioral or environmental modifications were applied in 66.7%, 37.5%, 44.4% and 6.3% of patients respectively. Patients disregarded the advices mostly for financial reasons or because they considered the advices not helpful or unnecessary. Vitamin D supplementation was deemed necessary in 88.9% during the falls clinic consultation; 81.3% complied after 2 months. Only 40% of patients followed the advice to reduce their fall risk medication. Additional medical examinations were cancelled by 21.4% of patients mainly because of transport problems.

Conclusions: Adherence of older persons to fall prevention advices needs to be improved to reduce the risk of falling. Falls clinics should prioritize and limit the advices and search solutions to reduce compliance barriers.

P-385

Implementation of pain assessment tool changes nurses attitudes towards pain management in nursing homes

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Objectives: A systematic pain assessment in nursing homes is necessary to detect pain and identify details for adequate treatment planning. Used instruments must be valid, reliable, practicable and easily integrable into the nursing assessment process. Aim of this presentation is to show study results and strategies for systematic pain assessment in nursing practice.

Methods: A non-experimental pre-post-study in 12 randomly selected Austrian nursing homes operated by the same company was conducted. Pain of cognitively intact and impaired residents was assessed using standardized questionnaires and observations. Results were used to select instruments for a computer assisted pain assessment integrating screening and detailed assessment. The implementation of this tool was evaluated including nurses' perspectives on pain management and assessment with standardized questionnaires.

Results: Pain assessment using different instruments is common, but raises after intervention from 61% to 84%. Most nurses use self-assessments for cognitively intact residents, but very few use the observation technique in cognitively impaired residents. At baseline 68% of nurses stated they do not use any observational pain assessments and 50% of those using such tools could not name any. After the intervention, 87% of nurses stated to use a form of proxy pain assessment and 80% rated the changes in pain assessment favourable.

Conclusions: The nurses' attitudes towards pain assessment can be positively influenced by implementing a systematic tool as long as nurses receive training, the tools are practical in their usage and they can be easily integrated and adapted for resident documentation.

P-386

Outpatient care of a Portuguese geriatric patient

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Introduction: In Portugal we often still rely on hospitalization to expedite the study of a given patient's pathology. We don't always remember the implications that this decision brings to their life. This has become increasingly important since, due to the current political and social conjecture and the economic difficulties experienced in recent years, many people lost their economic independence, increasing the responsibility load of the remaining family sustainers.

Goal: The authors present the case of a male patient, 89 years old, with known history of arterial hypertension, diabetes mellitus, ischaemic heart disease, benign prostatic hypertrophy and vertiginous syndrome, referred to an Internal Medicine consultation due to normocytic and normochromic anemia. The patient complained of melenas. The previous study showed iron deficiency, augmented uremia, and an inconclusive upper digestive endoscopy and colonoscopy.

It was suggested to the patient to be hospitalized for stabilization and study of gastrointestinal bleeding. He refused and preferred an outpatient approach due to having many financial and family responsibilities – spouse with dementia and unemployed son with schizophrenia – depending on him. Endoscopic capsule revealed intestinal angiodysplasia. He was referred to an Immunohemotherapy consultation and treated with oral and intravenous iron with consequent anemia correction.

Conclusion: It is becoming clearer to every geriatric practitioner that outpatient care, when possible, is a valid and preferable choice to follow our elderly patients. In a country where Geriatrics is still in development, we reached the same conclusion. The patient suggested the best choice.

P-387

Integrated long term care models in low middle income countries remote and rural areas

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Objectives of the study: To create an integrated care management model for elderly care in rural and outermost areas in Greece. To develop community based targeted care bundle in case/disease management, community care and at home, rehabilitation and assisted living services by Health Ecosystems and the creation of spin-off structures for their autonomy at territorial level.

Methods used:

1. Creation of Health Ecosystems in mountainous and insular regions with remote areas and elderly population for chronic patients and elderly people advocacy.
2. Activation of Living Labs and technological clusters in Greece to handle eHealth and mHealth provision organization and create the marketplace for AAL solutions.
3. Community and State Agreements with the local private medical service providers and social workers to offer pro-rata free services to elderly population in remote areas in exchange with state compensation measures and incentives
4. Impact investment in those areas to sustain the Health Ecosystems

Results obtained: One pilot Health Ecosystem created in the Region of North Aegean and Dodecanese in Eastern Greece with the participation of all related social care givers, health providers, GP and nurses, private companies, PPP, hospitals and clinics and resorts. A Living Lab is coordinating Assisted Living Solutions. Impact investment platform was organized. Community based social care established and marketplace for Assisted Living solutions set

Conclusions: The model in LMIC to provide long term community based care is related to the administrative and organizational capacity of the regions as well as to the ability of the local stakeholders to handle change management and in furthering innovation in RLA.

P-388
Discharge summaries: maximising opportunities to improve transition of care

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Objectives: Studies have demonstrated discharge summary quality is insufficient in terms of timeliness, transmission, and content.
We introduced an 'enhanced' discharge summary for older people discharged from our Acute Medical Unit to improve the transition of care between secondary and primary care, and to improve patient understanding.
Methods: We compared consecutive discharge summaries against approved discharge documentation standards before and after changes in our practice. We also asked a cohort of older patients and their General Practitioners (GPs) to comment on the quality of our new discharge summaries.
Results: We reviewed 60 discharge summaries, 30 before and 30 after the intervention.
Before, 12(40%) of summaries were written by a clinician involved in the patient's care and this improved to 23(76%). The mean number of quality components increased from 4.75 to 5.2, with the number of summaries including all 6 components increasing from 10(33%) to 16(53%). Information for patients, written in non-medical language, was included in 9(30%) summaries before and 22(73%) after.
Patients found discharge summaries useful especially when signposting information was included. However, only 2/11 (18%) had the written information explained to them verbally, which they would have liked. Only 5/11 (45%) of GPs responded and all described the new summary as good or excellent.
Conclusions: Discharge summary quality is improved when completed by a clinician involved in the patient's care.
Simple changes to discharge summary content, including signposting information, are viewed positively by patients and GPs, but patients would prefer both verbal and written information.

P-389
Geriatric medicine in Poland

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Poland belongs to those countries in Europe with the lowest relative numbers of geriatric beds and geriatricians. Thus, the aim of the study was to characterise geriatric care in Poland.
The data for this analysis was obtained from national and local registers.
As of December 31st 2014 there were 343 certified geriatricians and 818 geriatric beds (2.2 beds and 0.9 geriatricians per 100000 inhabitants). As far as geriatricians are concerned, 41 were older than 65 years and 23 – older than 70 years. Moreover, only about 50% of them were active in the geriatric field, due to limited number of geriatric units throughout the country. This state results from restricted funding of geriatrics by the National Health Fund which is responsible for public health care system in Poland.
There are strong regional differences in the distribution of geriatric care is Poland. The best values has the Silesia region, with a total of 256 geriatric beds. However, even in this region the number of beds decreased by more than 10% between 2012 and 2014.
In this context it must be pointed out that, according to a recent publication by the High Chamber of Control in which yearly costs of health care for patients after geriatric and internal hospitalisation were compared, the amounts spent were lower for those who were hospitalised in geriatrics (about 400 Euro).
In conclusion, with no changes in the health care system in Poland the future of geriatric medicine is uncertain.

P-390
Robots in the care for elderly – defining users requirements

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"ENRICHME" (Horizon 2020) project tackles the progressive decline of cognitive capacity in the ageing population adopting an integrated platform with a service robot for long-term human monitoring and interaction. In this context, it is important to explore the impact of such a system on the users' life (elderly and caregivers). However, robots' role must be defined carefully by taking into consideration not only complex ethical and legal issues but also the users' needs and expectations. This study aims to develop a tool to collect opinions about the robot-related requirements.
Based on the literature review and experts' opinions the Users' Needs, Requirements and Abilities Questionnaire (UNRAQ) was developed. It assesses the users' willingness to interact with robots and the role of robots considering also the social and assistive perspective. Pictures of the Kompaï robot are shown to the users in order to give them a more realistic image of the robot concept. Data are collected in France, Greece, Italy, Netherland, Poland, and UK.
The preliminary results show that currently THE elderly are not ready to manage with robots, but they will be able in the near future as the technology becomes more popular. They want the robot to instruct them what to do in case of any problem with its operation. They believe that they should control over the robot. It should be noted, though, that also caregivers express the wish to control over the robot.
Our preliminary results show the usefulness of the UNRAQ as a tool to analyze robot-related requirements.

Pharmacology

P-391
STOPP/START version 2 criteria for potentially inappropriate prescribing in hospitalised Spanish elderly

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Introduction: Screening tool of older people's prescriptions (STOPP) and screening tool to alert to right treatment (START) criteria were first published in 2008.
Version 2 of STOPP/START, with 114 criteria, represents a 31% increase in the total number of criteria included in version 1.
Objectives: Assess the prevalence of potentially inappropriate medication use in older people.
Method: We retrospectively studied patients hospitalised at Geriatric Department during October to November 2014. Diagnoses and pre-admission medication were recorded.
Results: 100 patients were included, mean patient age was 85.26±5.4 years. 72% were female. Mean Charlson's index: 1.97. Mean number of prescription medicines: 7.9. Polypharmacy (≥ 5 drugs): 76%. Excessive polypharmacy (≥10 drugs): 38%.
Potentially inappropriate medications (PIMs): STOPP identified 94 PIMs affecting 70 patients, the most frequently encountered PIM

was benzodiazepine (taken for ≥4 weeks; increase the risk of fall) and use of proton pump inhibitor.
START detected 48 potential prescribing omissions in 44 patients. Calcium-vitamin D supplementation in osteoporosis was the most frequent (40%). Omissions corresponding to vaccines (Pneumococcal vaccine) and the cardiovascular system involving 25% and 30% of patients respectively.
Conclusion: The STOPP-START criteria reveal that pre-admission PIM use is highly prevalent among elderly patients, the most frequently was benzodiazepine. The prescribing omissions detected by the START criteria require intervention.

P-392
STOPP/START criteria version 2 and 2012 Beers' criteria: Are they complementary?

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Introduction: Some important essential differences between STOPP/START and Beers criteria remain, principally the list of START criteria and the avoidance of mention of some Beers criteria drugs that are now absent from most European drug formularies
Objectives: Assess the prevalence of potentially inappropriate medication use in older people.
Method: We retrospectively studied patients hospitalised at Geriatric Department during October to November 2014. Diagnoses and pre-admission medication were recorded.
Results: 100 patients were included, mean patient age was 85.26±5.4 years. 72% were female. Mean Charlson's index: 1.97. Mean number of prescription medicines: 7.9. Polypharmacy (≥5 drugs): 76%. Excessive polypharmacy (≥10 drugs): 38%.
Potentially inappropriate medications (PIMs): STOPP identified 94 PIMs affecting 70 patients, the most frequently encountered PIM was benzodiazepine (taken for ≥4 weeks; increase the risk of fall) and use of proton pump inhibitor. Beer's criteria identified 51 PIMs affecting 36 patients, the most frequently encountered PIM was short-intermediate acting benzodiazepine.
The correlation between both criteria was weak, with a Kappa index of 0.22.
Conclusion: Pre-admissión PIM use is highly prevalent among elderly patients, the most frequently was benzodiazepine. Because the majority of criteria PIMs do not overlap in Beers and STOPP, both list could be complementary.

P-393
Quality of pharmacotherapy in old age: focus on lists of Potentially Inappropriate Medication (PIM lists). Results from the European Science Foundation exploratory workshop

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Objectives: On June 12–14, 2014, experts gathered in Ghent, Belgium, for a European Science Foundation workshop on pharmacotherapy in old age, aiming to define the requirements for electronic assessment of Potentially Inappropriate Medication (PIM) lists.
Methods: 15 experts from 8 European countries. The program consisted of 5 sessions: conceptual framework; repository of PIMs out of existing lists of PIMs; identification of PIMs suitable for electronic assessment based on routinely collected data; relationship with quality indicators; international collaboration. Draft recommendations were proposed based on the panel discussions, which were again discussed by the experts to achieve consensus for the final recommendations.
Results: The experts agreed that a repository should be maintained of all existing PIMs, which are part of at least one existing list, and which have undergone efforts of validation of their contents. PIMs suitable for electronic, broad, and regular evaluation of pharmacotherapy should be identified, with the distinction between drug-oriented and more clinically oriented PIMs. Prerequisites for electronic assessment involve precise codification of medication, clinical data and the decision rules to permit secondary use of routinely collected clinical data in specific settings and on national as well as international level. Throughout the development of PIMs, researchers should consider their suitability for electronic application and semantic interoperability.
Conclusion: PIM lists are mainly used in research settings or in preparation of medication chart reviews. The requirements for automated electronic use of PIMsin routine auditing of the quality of pharmacotherapy in old age are yet to be fulfilled in most countries.

P-394
Potentially inappropiate use of drugs in patients attending a geriatric day hospital

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Objectives: To describe potentially inappropriate prescriptions before and after an intervention in a Geriatric Day Hospital (GDH).
Material and Methods: We reviewed retrospectively the clinical records of all patients discharged from a Geriatric Day Hospital in one year. Drug treatment was assessed at the times of admission and discharge, using 2014 STOPP-START criteria.
Results: 139 subjects included, mean age 80. On admission, 97 (69.8%) met at least one STOPP criteria. The most common criteria were: use of full-dose PPIs for more than 8 weeks (49.6%), use of drugs that increase the risk of falls (24.8%), benzodiazepines for more than 4 weeks (24.1%) and use of long-term NSAIDs for the symptomatic treatment of osteoarthritis (5.6%).
At admission, 40 patients met at least one START criteria (28.8%); the most prevalent were: lack of antiresorptive treatment or bone anabolic steroids in patients with known osteoporosis (8.5%), lack of calcium supplements and vitamin D (5.6%) and non-use of acetylcholinesterase inhibitors for mild to moderate Alzheimer's disease or dementia with Lewy bodies (4.2%).
At GDH discharge, the most frequent STOPP criteria was still the use of PPIs without a clear indication (42.5%) and the most frequent START criteria was not using antiresorptive or anabolic bone in osteoporosis (4.2%).
Conclusion: The most prevalent inappropriate drug treatment in patients attending a GDH was the chronic use of PPI for more than 8 weeks, and this was not improved at GDH discharge.

P-395
Inappropiate use of drugs before and after an intervention in a geriatric day hospital

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Objective: To study the prevalence of inappropriate prescriptions before and after an intervention in a Geriatric Day Hospital (GDH).
Material and Methods: We reviewed retrospectively the clinical records of all patients discharged from a Geriatric Day Hospital in one year. Drug treatment was assessed at the times of admission and discharge, using 2014 STOPP-START criteria.
Results: 139 subjects were included, mean age 80. The mean number of STOPP criteria at admission was 1.93±1.09, reduced at

the time of discharge to 1.10±0.31 (p < 0.001). The mean number of START criteria at admission was 0.74±1.40, at discharge 1.22±0.44 (p = 0.18). Mean number of drugs used at admission was 7.95±3.32 and at discharge 7.85±3.20 (p = 0.52).
97 subjects had at least one STOPP inappropriate drug at admission; of these, 36 (37.1%) had no inappropriate drug after discharge from the HDG. Of the 41 subjects who did not meet any STOPP criteria on admission, only 4 (9.8%) were discharged on a potentially inappropriate drug (p < 0.01).
40 subjects needed at least on START listed drug on admission in 36 (90%) these drugs were started. Of the 99 subjects who did not meet any START criteria on admission, 5 (5.1%) met at least one at discharge (p = 0.28).
Conclusion: After a non targeted geriatric intervention in a HDG, appropriateness of drug use improved significantly, specially in stopping potentially inappropriate drugs.

P-396
Inappropriate use of antiplatelet therapy in older patients on anticoagulant therapy for atrial fibrillation

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Introduction: Older patients on anticoagulation for atrial fibrillation are sometimes on antiplatelet therapy (AP) which significantly increases the risk of major bleeding. Using recent geriatric guidelines, we studied AP inappropriateness in these patients.
Methods: Cross-sectional study in 317 patients (84±5 years) in a Belgian teaching hospital (2008–2010) with older age (≥75 years), atrial fibrillation, elevated risk of cardio-embolism (CHADS2≥2), long-term anticoagulation, and comprehensive geriatric assessment. The annual risk of major bleeding was predicted using the HEMORR2HAGES score. The main endpoint was the inappropriate use of AP in the absence of recent coronary artery disease (i.e. >12 months after myocardial ischemia or coronary stenting).
Results: AP, used in 89 patients, was inappropriate in 77 of them. These 77 patients with inappropriate AP differed from the 228 patients without AP therapy in male gender (57vs.43%, p = 0.04), diabetes mellitus (32vs.18%, p = 0.01) and ischemic vascular disease (62vs.45%, p = 0.01). They did not differ in geriatric syndromes and functional/cognitive status. Their predicted annual risk of major bleeding was higher than the risk of the 228 patients without AP (9.3±2% vs. 7.4±2%, p < 0.001). Withdrawing AP in these 77 patients would reduce their annual bleeding risk to 7.5±3%.
Conclusions: AP withholding or withdrawing in the absence of a recent ischemic event or coronary stenting might prevent each year 2% of major bleeding in this older population on anticoagulation. Geriatricians, cardiologists and diabetologists should aim at a consensus on the appropriate anti-thrombotic regimen in older patients in atrial fibrillation.

P-397
Four-year prescription trends of profile of antipsychotics use in patients with dementia

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Objectives: The aim is to describe and compare the profile of demented patients according to the duration of antipsychotics (AP) use over a four-year.
Methods: A retrospective study was conducted from 2009 to 2012 among PACA-Alz Cohort including patients with at least one reimbursement of anti dementia drugs and/or obtained registration with the chronic condition 'Alzheimer's disease or related diseases' (n = 33,041 in 2012). According to the maximal AP exposure without interruption per year, 3 groups of patients were identified: non users, simple users (maximal exposition without interruption ≤3 months), chronic users (maximal exposition without interruption >3 months).
Results: Psychotropic drug consumption increased over the study period (from 68.5% in 2009 to 70.8% in 2012) particularly Benzodiazepines (from 42.6% to 47.6%). The part of patients who had at least one AP dispensing was rather stable (from 25.9% to 26.5%); 19.3–14.3% of the patients were AP simple users and 7.3–12.3% chronic users. In comparison to non users, AP users consumed more benzodiazepines, antidepressants or memantine. Simple users were men (OR = 1.2 95% CI[1.1–1.3]) over 85 years old (OR = 1.2 95% CI[1.1–1.2]). Chronic users were similar to other group users except for BZD (OR = 3.4 95% CI[3.1–3.6]) and anticholinesterases (OR = 0.9 95% CI[0.8–0.9]).
Conclusion: The AP consumption in demented patients remains high but stable over the years despite several warnings. However few of these patients are long term users. Efforts for AP reduction should focus for those. Identifying the profile of those should help doctors in routine practice.

P-398
Medication use in community-dwelling older adults in Bogota, Colombia

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Objective: To determine the number and type of medications that are routinely used by a sample of older adults in the capital of Colombia, and determine how many of those prescriptions are potentially inappropriate.
Methods: Data comes from the SABE Bogotá Study, a cross-sectional study conducted in the capital of Colombia in 2012. A total of 2000 adults aged 60 years and older were interviewed and sociodemographic, health, cognitive and anthropometric measures were collected as well as medication use. A multi-stage cluster sampling methodology was used to select participants.
Results: A total 1249 female and 751 male subjects answered the questionnaire, 1514 of them (75.7%) have 5 years of education or less. Self-reported prevalence of hypertension was 60.0% for women and 55.4% for men; the prevalence for diabetes was 17.5% for women and 17.4% for men respectively; 311 subjects (15.6%) were not taking any medication (range 0–14; median 3). The average number of medications was higher for women than men (3.5 vs. 2.79) and 548 subjects (27.4%) were receiving 5 medications or more. Of the 6470 medications being used, 443 (6.9%) were potentially inappropriate according to the Beers criteria.
Conclusion: Despite the frequency of polypharmacy and potentially inappropriate medication use in our sample, it is lower than in previously Latin America studies. Regardless, polypharmacy remains an important issue among older adults that needs to be addressed.

P-399

Determinants of prescription of vitamin D supplementations in nursing homes: an online survey among general practitioners

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Background: The aim of this study was to assess the prescription profile of vitamin D supplementation in nursing homes and its potential determinants.
Methods: A link to an ongoing online survey was sent to general practitioners (GPs) having at least one patient in a nursing home in Liège, Belgium.
Results: Out of the 120 GPs contacted so far, 50 (41.6%) participated in the survey. Among them, 27 (54%) systematically prescribe vitamin D to their institutionalized patients and the 23 (46%) others prescribe only sometimes. The main reasons for prescribing vitamin D cited by GPs who do so systematically are as follows: because they believe nursing home residents are mostly deficient in vitamin D status (92.6%), because they believe vitamin D supplementation prevents osteoporotic fractures (81.5%), and because vitamin D supplementation is recommended by various scientific societies (44.4%). GPs who do not prescribe systematically vitamin D supplementation supplement some patients mainly on the basis of results of a blood test (86.4%), following a diagnosis of osteoporosis (86.4%) or in case of prevalent fractures (45.5%). Interestingly, 47% of GPs always prescribe the same dose of vitamin D. For the remaining 53%, the dose prescribed mainly depends on the results of the blood test (96.2%). At last, 54.2% of GPs always prescribe calcium in combination with vitamin D.
Conclusion: More than half of GPs systematically prescribe vitamin D to their patients living in nursing homes. The other GPs usually prescribe vitamin D following a blood test or a diagnosis of osteoporosis.

P-400

The Multidimensional Prognostic Index (MPI) predicts central nervous system-related adverse drug events (CNS-ADRs) in older patients admitted to hospital: a prospective 3-year observational study

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Objective: To evaluate the risk factors for CNS-ADRs in a cohort of elderly hospitalized with ADR.
Methods: Patients aged ≥65 years hospitalized to a Geriatrics Unit for an ADR according to the World Health Organization Adverse Reaction Terminology during a study period of 3 years. The causality and avoidability of ADRs were assessed using Naranjo and Hallas criteria. Multidimensional Prognostic Index (MPI), a validated tool to predict mortality based on a standardized comprehensive geriatric assessment (CGA) including eight domains, i.e. functional (ADL, IADL), cognitive (SPMSQ), nutritional (MNA), risk of pressure sores (Exton-Smith Scale), comorbidity (CIRS), drug use and co-habitation social status was performed at baseline in all patients.
Results: The prevalence of ADRs was 7.3% (274 ADRs of 3,745 patients admitted to hospital in the study period, mean age 84.7±6.8 years). 36 cases (13.1% of all ADRs) were CNS-related ADRs, i.e. stupor state (n = 20, 55.5%), delirium (n = 8, 22.2%), syncope (n = 4, 11.1%), tremor (n = 3, 8.2%), headache (n = 1). 89% of the CNS-ADRs occurred in patients with severe grade MPI-3 (high mortality risk). 92% of cases were considered to be avoidable ADRs. Multivariate analysis demonstrated that severe cognitive impairment (SPMSQ, OR = 1.34, 95% CI 1.17–1.56) and MPI value (OR = 1.74, 95% CI 1.32–2.30) were the two only risk factors significantly associated with the presence of CNS-ADR. Moreover, the use of CNS drugs was associated with ADR in older patients with a severe grade of MPI (OR = 1.44, 95% CI 1.15–1.78).
Conclusion: A proper stratification of the frail older subjects admitted to hospital by using MPI may identify patients at high-risk for CNS-ADRs.

P-401

Use of intravenous haloperidol in hospitalized older adults

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Introduction: Haloperidol is often used in symptomatic management of delirium episodes. Although it is approved for intravenous (IV) use in many countries, numerous cases of QT prolongation (QTP), Torsades de Pointes (TdP), and sudden death have been associated with IV haloperidol.
Objectives: Evaluate the use of haloperidol in hospitalized older adults.
Method: We retrospectively studied patients hospitalised at Geriatric Department during October to November 2014 who received at least one dose of IV haloperidol. Diagnoses and pre-admission medication were recorded.
Results: 31 patients (100 patients admitted in this period) received at least one dose of IV haloperidol, all of them had delirium.
Mean patient age was 86.31±4.5 years. 70.96% were female. Mean Charlson's index: 1.76. Mean number of prescription medicines: 7.4. Polypharmacy (≥5 drugs): 74.19%.
The median dose of haloperidol given was 4.11 mg, and 64.5% received 5 mg for their first dose. 41% received a second dose.
83% had an ECG performed within 7 days before their first dose of haloperidol.
QTc was not calculated prior to haloperidol administration (avoid IV haloperidol for baseline QTc of 500 ms or greater).
Conclusion: Although the proarrhythmic potential of haloperidol has been well established in the literature, IV haloperidol has been used without care concordant with expert recommendations.

P-402

Advanced age and medication prescription

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Objectives: To describe in a large, national representative, sample how prescription of medications varies across age groups, with specific focus on the oldest old.
Methods: This is a cross-sectional study using 2013 data from the OsMed Health-Database, which comprises all prescribed medications reimbursed by the Italian National Healthcare System in community setting. The study population amounts to 15,931,642 individuals (26.8% of the overall Italian population). Individuals aged ≥65 years or older are 3,378,725 (21.2% of the study sample). The main outcomes assessed were mean number of medicines and Defined Daily Doses (DDD) prescribed in 2013 and the use of individual medications.
Results: The mean number of prescribed medications progressively raised from 1.9 in the age group <65 years to 7.4 in the group 80–84 years and then declines, with a more marked reduction in the group aged 95 or older, which receives a mean number of 2.8 medications. A similar pattern was observed for the mean number of DDD. Among participants aged 65 or older, proton pump inhibitors were the most commonly prescribed medication (40.9% of individuals 65 or older), followed by platelet aggregation inhibitors (32.8%) and

statins (26.1%). For most of the medications examined a decline in prescription was observed among individuals aged ≥90 years.
Conclusions: The burden of medication treatment progressively increases till age 85 years and substantially declines after age of 90 years with an inverse U shaped relationship. Patterns of medication prescription widely vary across age groups.

P-403
Antidepressant drugs and the risk of hyponatremia – a Danish register-based cohort study

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Background: Depression is a frequent and serious condition. Drugs used for treatment have several side effects, including hyponatremia. Hyponatremia reduces cognitive functioning and balance, and increases mortality. Studies have shown an association between Selective Serotonin reuptake inhibitors (SSRI) and hyponatremia. Whether the association is similar with other antidepressants, is less clear. The aim of this study is to increase our knowledge of the association between different types of antidepressants and hyponatremia.
Methods: This is an observational Danish register-based cohort study using nationwide registers from 1998 to 2012. The study population consists of all individuals in The Northern Region of Denmark. The associations between different antidepressants and hyponatremia, and the chance of having a blood sample for sodium taken, were analyzed using the multivariable Poisson regression model.
Results: There were 449,965 individuals included in the study. Analysis showed a statistical significant increased risk of hyponatremia for all antidepressants $p < 0.001$, except for Mianserin $p = 0.12$. The IRR (Incidence risk ratio) for having a p-sodium measured was highest with Citalopram (IRR 3.1) and Mirtazapin (IRR 3.0), lowest with Mianserin (IRR 1.7). For all antidepressants, the IRR for hyponatremia was highest within the first 2 weeks after initiating treatment.
Conclusion: The study shows an increased risk of hyponatremia for all antidepressant drugs, with a tendency of less risk with NaSSA's. The results may be affected by the fact, that patients using Mianserin were less likely to have p-Sodium measured, and thereby underestimating the risk of hyponatremia. The risk was higher within the first weeks.

P-404
Macrolide co-prescription with statins: an Oxford University Hospitals (OUH) NHS Trust audit

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Objectives: The macrolide antibiotics erythromycin and clarithromycin inhibit cytochrome p450 3A4 (CYP3A4) which is involved in the metabolism of many commonly prescribed drugs including simvastatin and atorvastatin. When these statins are co-prescribed with macrolides, the serum concentration and risk of statin toxicity increases. There is a greater risk of this occurring in geriatric patients and patients with multiple co-morbidities. The Medicines and Healthcare Products Regulatory Agency (MHRA) advises against co-prescription of erythromycin and clarithromycin with simvastatin and atorvastatin. This audit's objective was therefore to assess adherence to the MHRA guidance in the 1800-bed OUH Trust.
Methods: Electronic drug charts were used to identify patients across the trust who had been co-prescribed a macrolide and statin during their current admission.
Results: 68 patients (M:F 40:28) received a macrolide antibiotic during their current admission. Mean age was 70±17.7 years (range 19–96). None of the 4 patients who were prescribed erythromycin had a concomitant statin prescription. 60 were prescribed clarithromycin and of these, 15 were taking a statin on admission. Of these, 5 people, with an average age of 76.4 (range 60–87), did not have the statin suspended.
Conclusions: 5 of 15 patients continued to remain on a statin when prescribed a concomitant macrolide. With an average age of 76.4 years, this problem occurred in older people who have a higher risk of developing statin toxicity. These findings demonstrate that an alert to remind prescribers of this interaction on the trust's Electronic Prescribing system would be useful to eliminate co-prescriptions.

P-405
Psychotropic drug prescription is associated with falling in nursing home residents

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Objective: The objective of this study was to assess the association between fall incidence and the prescription of psychotropic drugs on a day to day basis in nursing home residents. Falling is a common problem among elderly. Previous studies suggest that the use of psychotropic drugs increase the risk of falling. However, the contribution of these drugs on fall risk among nursing home residents has not been quantified on a daily basis until now.
Methods: In this retrospective study, we collected data about fall incidence and the prescription of antipsychotics, antidepressants and benzodiazepines for each day over a 2-year period. Residents were included if they lived in one of the nine nursing homes of the Vitalis WoonZorg Groep in Eindhoven, the Netherlands. Generalized Estimating Equations was used to analyze the association between psychotropic drug prescription and falling.
Results: A total of 2,368 nursing home residents were included, which resulted in a dataset of 538,575 person-days. The prescription of psychotropic drugs resulted in almost a threefold increase in fall risk (OR 2.99; 95% CI 1.58–5.63). The prescription of antipsychotics (OR 2.00; 95% CI 1.60–2.51), benzodiazepines (OR 1.47; 95% CI 1.18–1.84) and antidepressants (OR 2.78; 95% CI 1.72–4.48) was also associated with an increased fall risk.
Conclusions: The prescription of psychotropic drugs is associated with a strongly increased risk of falling among nursing home residents. For this population, psychotropic drugs should be prescribed with great caution.
Financial disclosure: None.

P-406
Ofloxacin-induced fulminant hepatitis: a case report

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Introduction: Fluoroquinolones (FLQ) are widely used for treatment of bacterial infections in elderly patients. FLQ are known

to cause liver enzymes increase as a class effect. Severe liver injury, like fulminant hepatitis, remains rare but sometimes fatal.
Objectives: To report a fatal case of a patient treated with ofloxacin who developed fulminant hepatitis.
Observation: This case concerns a 84 year-old female patient, with history of chronic alcoholism. She has been treated with ofloxacin (400 mg per day) for cystitis. Three days after the beginning of treatment, she developed fulminant hepatitis (ALAT: 1484 UI/L, ASAT: 5206 UI/L). Meanwhile, she had hypoglycemia, hypotension and bradycardia. The patient died three days after the beginning of the symptoms. Liver function tests performed 15 days before were normal.
Conclusion: The hepatotoxic mechanism of fluoroquinolones is not completely understood. Trovafloxacin marketed in 1997 was withdrawn from the European market two years later because of its hepatotoxicity secondary to a toxic metabolite. The formation of this metabolite is linked to some functional groups of the structure of trovafloxacin, which are not found in other fluoroquinolones. The rapid onset, recurrence of a more serious attack if rechallenge and the lack of common metabolites argue for an immuno-allergic mechanism. Given the scarcity of the effect, it is difficult to compare the incidence among different fluoroquinolones. Both physicians and patients need to be aware of potential symptoms and take prompt action if signs of hepatotoxicity emerge, especially in elderly fragile patients.

P-407
Drug-induced taste disorders: prescribing analysis in French nursing homes

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Introduction: Taste disorders may lead to drug noncompliance, nutritional deficiencies, diseases increase and depression. They are suspected adverse reactions in 11% of cases of elderly polymedicated population. Many diseases are also involved in these disorders.
Objective: To overview drugs associated with taste disorders based on nursing home prescriptions
Methods: 104 resident's prescriptions were analysed. A descriptive analysis of the population was carried out. A research was performed for each drug in reference books, literature and European database of suspected adverse drug reaction reports (Eudravigilance) to determine whether the drugs could be responsible for taste disorder.
Results: Among the 104 prescriptions, there were 78 women (75%) and 26 men (25%) with a median age of 87 years (range 45–106). The median number of drugs lines was 8.5 (range 1–20). 905 drug lines were notified with 234 different drugs; taste disorders were described for 66 of them in reference books (mostly drugs acting on the renin-angiotensin system and antidepressants).
Conclusion: According to bibliography, taste disorder as a iatrogenic effect can be explained by different mechanisms: xerostomia, especially with anticholinergic drugs, zinc deficiency, copper or vitamin A as well as altered sense of taste. Lots of drugs may be responsible of taste disorders and this problem greatly affect residents quality of life and health. Physicians should be aware of drug related taste disorder and may try to find alternative therapy.

P-408
Accumulation of potentially harmful drugs and its association with mortality among older people in assisted living facilities in Helsinki and in nursing homes in Kouvola, Finland

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Objective: Because little is known how the use of potentially harmful drugs according to various criteria overlaps and accumulates among older residents in institutional settings and how this accumulation affects their prognosis, we wanted to investigate the use, accumulation and overlapping of various PHDs (categories: anticholinergic properties (DAPs), >2 psychotropics and Beers' drugs) among older people in institutional settings in Finland. We compared the characteristics and mortality of residents using PHDs from one, two or three categories with those using none.
Methods: The data of residents (N = 326) was collected in assisted living facilities in Helsinki and in nursing homes in Kouvola, Finland. Three different criteria for PHDs were used (DAPS, Beers' drugs and use of >2 psychotropic drugs at one time). Participants' quality-of-life was assessed by 15D measure and psychological well-being scale (PWB). Mortality during three follow-up years was retrieved from central registers.
Results: Of participants, 12.6%, 28.2%, 38.0% and 21.1% used PHDs according to three, two, one or none criteria, respectively. Those using PHDs according to three criteria had highest number of medications, lowest PWB and a trend towards lower 15D. Largest proportion of those using no PHDs had best self-rated health. There was no difference in comorbidities, cognition or functioning between the groups. There was no association between use of PHDs and three-year mortality.
Conclusion: The use of PHDs in institutional settings is common when defined by various PHD criteria. Their use is associated with lower QOL.

P-409
Mortality in very old patients using statins with high cholesterol and albumin serum levels

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Objectives: To evaluate the association between statin therapy and mortality in elderly patients aged 80 years or more.
Methods: A historical prospective study in a single Internal Medicine department during one year. Included were all elderly patients aged 80 years or more using statins upon hospital admission and hospital discharge (n = 317; study group), and all elderly patients aged 80 years or more neither using statins upon hospital admission nor upon hospital discharge (n = 386; control group). The all-cause 3-year mortality rate was studied in both groups as well as its association with statin therapy.
Results: The final cohort included 703 elderly patients: 413 (58.7%) were women; the mean age was 86±5 years. Overall, 350 (49.8%) patients died within three years of hospital discharge. The all-cause 3-year mortality rate was lower in the study group than in the control group (143 vs. 174 patients; 40.9% vs. 49.3%; relative risk 0.84; 95% confidence interval 0.73–0.97; p = 0.028), but a logistic regression analysis showed that statin therapy was not independently associated with mortality. In a subgroup analysis of 88 (12.5%) patients aged 86 years or more with both high total-cholesterol and albumin serum levels, the cumulative survival rate

was actually lower in patients using statins compared with patients not using statins.
Conclusions: In the general population of elderly patients beyond the age of 80 statin therapy is not associated with reduced mortality, and in well-nourished patients beyond the age of 86 this therapy might be even associated with lower survival.

P-410
Potential glycemic overtreatment in patients admitted to the geriatric ward

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Objectives: The aim of the study was to identify high-risk of serious hypoglycemia patients who had evidence of intensive glycemic treatment.
Methods: Cross-sectional study of patients hospitalized in 2009–2010 with a diagnosis of type 2 diabetes, and receiving insulin and/or oral antidiabetic drugs before hospitalization. Intensive glycemic control was defined as the hemoglobin A1C level (HbA1C) less than 6.0%, less than 6.5%, or less than 7.0% at admission. The primary outcome measure was an HbA1C less than 7.0% in patients who were aged 75 years or older, who had a diagnosis of cognitive impairment or dementia, or who had end-stage renal disease – GFR <30 ml/min/1.73 m^2.
Results: There were 213 diabetic patients, who received insulin or oral antidiabetic agents before hospitalization, with an HbA1c test result documented in the medical record. 65.7% received sulfonurea, 39.1% metformin, 30.9% insulin, and 3.9% acarbose (34.3% received sulfonurea alone, 20% sulfonurea with metformin, 7.4% sulfonurea with insulin, 16.1% insulin alone, 4.8% insulin with metformin, and 12.2% metformin alone). No other glucose lowering medications were reported.
We identified 66 patients (31%) as the denominator for the primary outcome measure; 43.9% had a HbA1C value less than 6.0%, 54.5% less than 6.5%, and 69.7% less than 7.0%.
Conclusions: Patients with risk factors for serious hypoglycemia represent a large subset of individuals receiving hypoglycemic medications admitted to a geriatric ward; almost three fourth of them had evidence of intensive treatment and it pointed to the need for more diabetes treatment control in this group.

P-411
Prescriptions' modifications in atrial fibrillation patients before and after admission to Geriatrics department. Facts and Myths

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Introduction: Atrial Fibrilation (AF) concerns 9% of the population over 75 years old and its prevalence increases with age. Recommendations on the use of anticoagulants are made upon the balance of hemorrhagic and thrombotic risk factors scores. Nevertheless the best choice remains difficult.
The aim of this study is to describe the AF management before and after admission to Geriatrics department and to identify the criteria influencing the therapeutic decisions.
Methods: This retrospective study was performed on the 2012 data of the Geriatric Dept. of the Nancy University Hospital. All patients hospitalized during this year, with a history of AF in discharge letter were included in this analysis. The treatment data were collected at admission and at discharge of the hospitalisation.
Results: Among 126 patients (women 66.7%; mean age 85.6±5.9), 51.6% were receiving an anticoagulants at admission and 60.3% at the end of hospitalisation. Very few of them (2.4% and 0.8%, respectively) received a novel oral anticoagulant (NOA). The patients were treated by anti-arrhythmic agent in 65.9% at the beginning and 71.4% at the end, mostly by beta blocker.
Conclusions: Most of the patients were receiving anticoagulants drugs. Among them the vast majority were receiving anti-Vitamin K drugs and very few NOA. The prescription of anti-arrhythmic drugs depends mostly on patients' co-morbidity and doctor's experience. The on-going studies on NOA will provide more data concerning the efficacy and the safety of this new class.

P-412
Vitamin D testing in older adults with falls and fracture is a must

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Introduction: Vitamin D deficiency (vdd) is common in older adults who often have less sun exposure. Vdd is associated with poor muscle function and bone pain. Birschoff ferrari et al 2009 concluded that vitamin d supplements can reduce the risk of falls by 19% in persons over the age of 65 years. Given this, we looked at the correlation between vdd and fracture in a cohort of older adults receiving rehabilitation in an inpatient united kingdom community hospital setting.
Methods: Medical records of patients admitted with falls from January 2012 to December 2013 were analysed. Demographics, risk factors for falls, fracture type and vitamin d levels were collated; diagnosis was according to institute of medicine thresholds; deficiency <30 nmol/l (vdd), insufficiency 30–50 nmol/l (vdi).
Results: 200 patients out of 607 patients were identified. There was a female predilection (114). The age range was 60–95 years. The commonest risk factors were polypharmacy, sepsis and dementia. 74 (37%) had vdd, 54 (27%) had vdi whilst 72 (36%) had adequate vitamin D levels. 151/200 patients sustained a fracture; the commonest fracture being fracture neck of femur (75) with fractures of the ankle (19), pubic rami (17), femur (10), elbow (7), humerus (6), wrist (5), tibia (4) and others (8) accounting for the rest. 89/151 (59%) patients who had a fracture had vdd.
Conclusion: Vdd and vdi is highly prevalent in older patients with a fracture. It is therefore important that all older adults with fractures having rehabilitation are screened and treated to maximise the benefits of rehabilitation.

P-413
Correction of Vitamin D and parathyroid hormone concentration (PTH) in patients with acute hip fracture and low 25 hydroxy-vitamin D. Results at 3 months by a replenishment protocol

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Objective: To known the effectiveness of a replenishment protocol in the correction of vitamin D levels in hip fracture (HF) patients with vitamin D deficiency.
Method: Patients aged 65 and over consecutively admitted with HF between 25th January 2013 and 26th February 2014 and enough fit as to be followed-up in the ambulatory office were included. Besides of demographic, clinical, and geriatric assessment variables, vitamin D and PTH levels were assessed at admission and three months after discharge.
Results: We studied 134 patients with a mean age of 82.9 years (DS 6.3), 80.6%. Female. The fracture was extracapsular in 73 (54.5%) patients. At admission, 127 patients (94.5%) had 25OHD <31 ng/ml, and 98 (73.1%) had 25OHD <20 ng/ml. Fifty-two (39.1%) had secondary hyperparathyroidism (SHPT). Patients with vitamin D <21 ng/ml received 180,000 IU Calcifediol per os

during hospitalitation and at discharge 16,000 IU once a month and daily 800 IU vitamin D + calcium 1000 mg. Patients with vitamin D between 21 and 30 ng/ml received at discharge 16,000 IU once a month and daily 800 IU vitamin D + calcium 1000 mg. Three months lather 106 patients (80.9%) had more than 30 ng/ml, 18 (13.7%) had between 20 and 30 ng/mL and 7 patients (5.3%) had 25OHD <20 ng/ml. Only 18 patients (14%) had SHPT.

Conclusions: An intensive replenishment Vitamin D protocol rapidly reduces the frequency of Vitamin deficit and correct the SHPT in most cases.

P-414

Comparative analysis of the potentially inappropriate medication in patients during their 1st geriatric appointment, by Beers 2012 and STOPP/START criteria

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Introduction: The risk of morbidity and mortality associated with drug therapy in older people requires care to avoid the use of potentially inappropriate medications (PIM). The optimization of drug therapy by Beers 2012 and STOPP/START criteria can help in reducing the use of PIM prescription improving therapeutic safety in older people.

Objectives: Characterize and compare PIM prescription in the older people (≥65 years) in the first geriatric appointment.

Methods: Descriptive study.Medication analysis of 100 patients, in their first geriatric appointment through application of the Beers 2012 and STOPP/START criteria.

Results: Patients' media age was 80.6 years (65–92), most of them were women (69%). The total number of diseases was 554 with a mean of 5.54 per patient (2–12), total number of prescribed drugs was 753 (media of 7.53 drugs/patient, drug limits for patient 0–16). According to the 2012 Beers criteria, 54% of patients were taking at least one PIM and 30% were taking drugs to be used with caution. By STOPP criteria 48% of the patients were taking at least one PIM and 15% of the patients were taking drug duplications. By START criteria 10% of the patients weren't taking any needed drugs.

Conclusions: This study showed that either using Beers 2012 or STOPP/START criteria, the studied patients were taking a high number of inappropriate medications, drug duplications and missed some needed drugs what reduces therapy safety. With the use of any of these criteria health professionals would be able to avoid PIM and to get better clinical outcomes for their old patients.

P-415

Pharmacological treatment of elderly subjects in Poland – PolSenior study

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Objectives: The aim of the study was to describe qualitative and quantitative aspects of pharmacotherapy of elderly individuals in Poland.

Methods: The analysis of pharmacotherapy was done among 4873 elderly individuals (F: 2345, M: 2519, average age: 79.3±8.69 (F – 79.2±8.86; M – 79.4±8.53).

Quantitative and qualitative analysis of pharmacotherapy was done both in all analyzed group and within 5-years age cohorts ([1]: 65–69, [2]: 70–74, [3]: 75–79, [4]: 80–84, [5]: 85–89, [6]: 90+). Regarding prescribed (Rp) and over the counter (OTC) drugs the number of persons who did not take any drugs in the last week and those who regularly consumed 1–5, 5+ or 10+ drugs was calculated.

Results: The average number of drugs (Rp+OTC) was 5.1±3.56 (F: 5.5±3.54 vs M: 4.8±3.55, $p < 0.001$; age cohorts – 1: 4.2±3.32, 2: 4.9±3.54, 3: 5.3±3.47, 4: 5.7±3.62, 5: 5.5±3.57, 6: 5.3±3.66). Regarding polypharmacy – 10.4% of all subjects (507 persons) declared not to take any drugs (F: 7.5% vs M: 13.1%, $p < 0.001$) while 46.7% (2277) took 1–5 drugs (F: 46.7% vs M: 46.9%, ns), 42.9% (2089) >5 drugs (F: 45.6% vs M: 40.3%, $p < 0.001$), 7.3% (354) >10 drugs (F: 8.3% vs M: 6.3%, $p < 0.01$). The most prevalent group of drugs taken were: musculoskeletal drugs (81.3% of all subjects; F: 77.4% vs M: 85.0%, $p < 0.001$), cardiovascular agents (75.0%; F: 80.0% vs M: 70.3%, $p < 0.001$), alimentary tract drugs (50.2%; F: 54.6% vs M: 46.0%, $p < 0.001$), central nervous system drugs (35.9%; F: 41.0% vs M: 31.1%, $p < 0.001$).

Conclusions: The prevalence of polypharmacy among the elderly subjects in Poland is high.

P-416

Identification and comparison of rates of inappropriate drugs in elderly population

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Objective: Chronic polypharmacy for elderly people has been published as potentially inappropriate due to several adverse events. According to Beers and Laroche criteria and the new recommendations of the management of high blood pressure in elderly patients, we have aimed to realize a practice review.

Method: Three reviews (on 2010, 2011 and 2014) were conducted using the same assessment methodology on 50 prescriptions in hospitalized elderly patients. We have used the Haute Autorité de Santé tools with a list of falls inductors drugs (including anti-psychotic, benzodiazepines, anticholinergic). In 2014 we have added the new criteria: more than 1 diuretic (D) or 3 anti hypertensive agents (AH) and absence of central anti-hypertensive drug (CAH).

Results: The mean age of patients was 84±6 years; the average number of items prescribed per patient was 12±4 drugs. In 2014 the ratio of inappropriate drugs prescriptions was 12% and the prescriptions containing more than 2 psychotropic drugs also 12%. Benzodiazepines with long half-life were prescribed in 12% and they were used as antiepileptic in 66%. Drugs with anticholinergic properties were prescribed in 12%. Only 2 patients exhibited inappropriate prescription with D, AH and CAH drugs.

Conclusion: The inappropriate drugs prescriptions decreased in 2014 in comparison to 2011 (22%) and 2010 (18%). Our 2014 practice review teaches us that the chronic polypharmacy still a real challenge in elderly patients. A handy booklet entitled "Memo of best practice of medicinal prescription at the elderly person" has been created and shared to the medical team.

P-417

Potentially harmful drugs and 3.5-year mortality in all institutional residents in Helsinki

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Background: Antipsychotics have been suggested to increase mortality in older institutionalized patients. Less is known about the prognostic value of drugs with anticholinergic properties (DAPs), opioids and proton-pump inhibitors (PPI). The prognostic value of antipsychotics, DAPs, PPIs and opioids was investigated among all institutionalized residents in Helsinki.

Methods: All residents (N = 3404) in nursing homes and assisted living facilities were assessed in 2011 for demographics, functioning, diagnoses, use of drugs and well-being. Their mortality was retrieved from central registers in 2015. All mortality analyses are adjusted for age, gender, and comorbidities.
Results: Mean age of participants was 84.2 y, 75.6% were females, and 43.5% were bed-bound. 25.5% were malnourished according to MNA, 71.9% suffered from dementia, and mean Charlson comorbidity index 2.4. The mean number of regular drugs was 8.0 among both men and women, and 91.4% were administered psychotropic drugs. Of residents, 37.5% received opioids either regularly or as-needed, and 28.2% atypical antipsychotics, 47.5% DAPs and 38.1% PPIs. Opioid use was associated with increased mortality (HR 1.33, 95% CI 1.22–1.45). The finding was the same when only those without cancer were included (HR 1.34, 95% CI 1.23–1.47). Use of atypical antipsychotics was associated with decreased mortality (HR 0.90, 95% CI 0.81–0.99), and the finding was the same when only dementia patients were included. Use of more than two DAPs increased mortality (HR 1.35, 95% CI 1.02–1.79). PPIs did not affect mortality.
Conclusions: The benefits and harms of various potentially inappropriate drugs should be balanced among institutionalized residents.

P-418
A botulinum jigsaw

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Case report: 83-year-old man presented with dysarthria and dysphagia four days post botulinum toxin (BT) injection and dialatation for oesophageal dysmotility. This was his third BT injection to lower oesophagus. He has had no complications previously. Past medical history includes achalasia and depression. On examination he had ptosis, squint right eye and slurred speech. The initial working diagnosis was symptoms secondary to BT injection or pseudobulbar palsy secondary to cerebrovascular disease. CT head showed chronic small vessel disease and old right sided infarct. MRI scan did not show any acute changes. Stroke team was not convinced this was acute stroke. Speech and language therapist felt he had an unusual dysarthria and severe dysphagia and advised to be kept nil by mouth and commence nasogastric tube feeding. Neurology review found slightly weak neck flexion and noted that he was unable to whistle. He felt whilst the temporal association with BT is clear the spatial distribution of his problems do not clearly replicate the BT and alternate diagnosis of myasthenia should be excluded and advised blood test including full blood count, plasma viscosity, acetylcholine receptor and anti musk antibodies, ACE and CK which were all normal and nerve conduction study which showed locally disseminated NMJ blockade due to BT which can have remote effects from the injection site.
Conclusion: As botulinum toxin is used widely across various specialties these days including aesthetic medicine for various medical conditions, one should be aware of the rare side effects associated with it.

P-419
Changes in drug prescribing during a care episode in a geriatric clinic

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Aim: The aim was to study how an episode of care in a geriatric clinic influences the drug prescribing and which factors are associated with changes in prescribing.
Method: Medical records for patients with the main diagnosis pneumonia, during 2005 and 2010, were studied with respect to drug prescribing at the beginning and end of the care episode. We studied the extent and quality of prescribing with respect to length of care episode, comorbidity, age and sex. The results from 2005 and 2010 were compared with each other and with the opinions of the specialist physicians at the clinic.
Result: Polypharmacy was very common during both years, and the number of drugs was two units higher 2010 compared to 2005. The drugs that increased the most were antithrombotic agents, loop diuretics, beta blocking agents, analgesics, and proton pump inhibitors. The quality of drug prescribing, according to Swedish national indicators, was largely better in 2010 compared to 2005. The care episode led to a marginal decrease in the number of prescribed drugs, but to an increase in quality of drug use in 2010. The changes in drug prescriptions were more extensive for patients with long episodes of care, high comorbidity and high age.
Conclusion: The geriatric care contributed to a higher quality in drug prescribing in 2010 and led to a decrease of the number of drugs used during both years, however the contribution was small compared to the general increase in drug prescribing to these patients between 2005 and 2010.

P-420
Influence of a geriatrician in the benzodiazepine prescription in a hospital unit: comparison between two cohorts

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Aim: Compare prevalence of benzodiazepine prescription between two cohorts of elderly patients with a hip fracture admitted to an intermediate care unit (ICU) in two different periods of time. To evaluate the influence of a geriatrician on this prescription.
Patients and Methods: Retrospective study of two cohorts of patients: cohort A (n = 129) were from an Orthopedic Surgery and Traumatology Unit (OSTU) (no geriatrician) and cohort B (n = 128) from an Orthogeriatrics Unit (OU) (integrated geriatrician in team). A comprehensive geriatric assessment was performed. Characteristics of both cohorts, prevalence of benzodiazepines prescription at admission in ICU (at discharge of acute hospital) and new prescriptions were compared.
Results: In comparison between both cohorts were found differences between age:cohort A:81.0±9.2 versus cohort B:83.4±8.1 ($p = 0.02$)) and functional status at admission (Barthel index (BI):30.8±25.1 versus 16.1±13.7, respectively ($p = 0.002$)); no differences in sex or in functional and cognitive previous status and at discharge of ICU. Prevalence of benzodiazepine prescription at discharge of acute hospital was 71 (55.0%) in cohort A and 25 (19.5%) in the B ($p < 0.0001$); previous admitted to the hospital (home) was 37 (28.7%) and 36 (28.1%), respectively ($p = 0.9211$). Proportion of the new prescriptions at discharge from acute hospital was 40 (56.3%) in cohort A and 4 (16.0%) in B ($p < 0.005$).
Conclusion: Prevalence of benzodiazepine prescription at discharge of the OU was lower than at OSTU. Prevalence of new prescription was higher in the OSTU. Presence of a geriatrician influences in non prescription drugs considered inappropriate in elderly patients

P-421
Antalgic efficacy of transdermal fentanyl in the elderly

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Objectives: To analyze the efficacy in the management of non-cancerous pain by transdermal fentanyl in elderly patients.

Methods: Inclusion of 31 patients of 60 years and older receiving a lingering treatment by transdermal fentanyl from January 2013 to February 2014. We carried out the measures of daily peroral dose of grade 3 opioids in morphine-equivalent and dose correspondences observed during a relay of transdermal Fentanyl and a grade 3 peroral morphinic.
Results: Average age of the patients: 80.6 (±8.3) years. Sex ratio M/F: 1.4.
Three groups:
1. Patients treated by transdermal fentanyl with a complete analgesia (41.95%)
2. Patients treated by transdermal fentanyl combined with interdoses of peroral morphinics (38.70%). Pain control was obtained only by means of regularly administered interdoses.
3. Patients for who were realized a transdermal fetanyl–peroral morphinics relay due to its insufficient efficacy (19.35%). The dose of peroral morphine that allowed a complete pain control was different from the recommended dose (ratio average daily dose of peroral morphinic/theoretical morphinic dose 0.11–2.38). In 2/3 of the patients, the administration of half of the peroral recommended dose caused the appearance of signs of morphine overdose.

Conclusion: The efficacy of the analgesic treatment by transdermal fentanyl varies significantly in the elderly. The clinical dose equivalence of peroral morphine doesn't always correspond to recommendations. We suggest starting the transdermal Fentanyl–peroral morphine relay by 1/3 of the peroral dose recommended and adjust it rapidly according to the clinical response.

P-422
Asymptomatic bradycardia due to rivastigmine and delirium in an elderly patient with Lewy Body Dementia

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Objectives: Rivastigmine is a reversible cholinesterase inhibitor (ChEI) with demonstrated efficacy in thetreatment of Lewy Body Dementia (LBD). Although brain is the main target organ during rivastigmine therapy, cardiac muscle tissue, which is rich from cholinesterase, could be adversely affected.
Case report: An 83-year-old male patient was brought to the department of geriatrics by his relatives for routing control. The patient, who was being followed for probable LBD, had been receiving rivastigmine 18 mg patch. On his physical examination, blood pressure was 125/80 mmHg, heart beat rate was 45–50/minute. On his analyses performed just after hospitalization, there was sinus bradycardia (heart rate: 46/min), a PR interval of 0.24 sec, and incomplete right bundle branch block on his electrocardiogram (ECG). Blood biochemistry demonstrated normal hepatic, renal, thyroid functions and no electrolyte imbalance. Cardiac enzyme levels were within the normal ranges. Echocardiography revealed no pathological sign except for mild mitral insufficiency. Considering that bradycardia has resulted from rivastigmine use, the drug was discontinued. His bradyarrhythmia disappeared on the next day (heart rate:68/min). Rivastigmine was commenced again to verify rivastigmine–bradycardia relation and it was observed that bradycardia developed again.The rhythm of the patient returned back to normal after discontinuation of rivastigmine therapy.
Conclusion: Patients that are receiving ChEIs such as rivastigmine should be monitored in cardiac aspect even they are asymptomatic. If another potential cardiotoxic drugs are added to the therapy of these patients, phsyicians should keep in mind that the risk of bradycardia may increase, and hypotension, syncope or confusion may ocur.

P-423
Survey of prescribing data of older adults at dispensing pharmacies

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Objectives: To clarify the status of potentially inappropriate prescribing in older patients based on prescription data collected at dispensing pharmacies.
Methods: We examined the prescriptions of 180,673 patients over 65 years of age (mean age: 76.1±7.7) dispensed at 585 pharmacies during the period between October 1 and October 31, 2014.
Results: The average number of prescriptions was 4.0±3.2 in the entire study population, 25% of which were prescribed more than 6 medications. There was a trend that the number of prescriptions increased with advancing age. The prescription of medications on the "List of drugs requiring caution in prescribing to older adults", released by the Japan Geriatrics Society in 2005, accounted for 22.9% of the total prescriptions. The most commonly prescribed drugs on the list were loxoprofen (3.6%, excluding topical usage and external application), followed by etizolam (3.5%) and brotizolam (3.4%).
Conclusions: The present survey clarified status of medication to older patients based on actual prescribing record at dispensing pharmacies. Prescription rates of drugs on the list were higher than we had expected. Despite accumulating evidences of potential harms in older population, chronic use of benzodiazepines confirmed in the present survey needs particular attention. Medication review, which is becoming a standard procedure in hospital pharmacies, needs warranted in the community healthcare for older population, who are susceptible to potential harms of drugs requiring caution. Creating a system for comprehensive review of prescribed medications by making maximal use of multidisciplinary expertise would be necessary to endorse safety of pharmacotherapy in community-dwelling older population.

P-424
Warfarin dose standardizing adjustment in home healthcare patients in Qatar

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Introduction: Home Healthcare Services (HHCS) in Qatar caters to around 950 patients with multiple comorbidities. Out of these 10% of patients are on warfarin for conditions like atrial fibrillation and valve replacement to prevent stroke and blood clots. Inappropriate adjustment of warfarin dose after monitoring of International Normalization Ratio (INR) results in complications like stroke, blood clots or bleeding.
Objective of the project: To improve Warfarin dose adjustment by HHCS physicians, according to the international guidelines, from 45% to 90% from February 02, 2014 to April15, 2015.
Methods: The project team reviewed literature for evidence based guidelines for Warfarin dose adjustment. Based on these guidelines a template was created. It consisted of two parts including an evidence based guideline and a prescription which had to be filled by the physician during each dose adjustments. Template also gave information about the probable weeks for next INR test. The staff was instructed to trigger the physicians to complete the checklist. All physicians, staff and clinical pharmacists were educated on use of the template.
Measurement and improvement: Base line data in March 2014 showed only 45% of patients had their warfarin dose adjusted according to evidence based practices.
After intervention in July 2014 92% of patients had their warfarin dose adjusted according to evidence based practices.

P-425
A study to increase the applicability and validity of the FORTA (Fit fOR The Aged) List in Europe

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The population of elderly people in Europe is constantly growing. Nonetheless, the pharmacotherapy of the aged is still in many cases inappropriate. Many studies have shown that a large fraction of the elderly is subject to over- and/or undertreatment. The major problem is that for most of the medications there is little to no evidence for efficacy and safety in elderly patients. Moreover, the presence of multimorbidity and consequently polypharmacy escalates this issue. In order to adequately address this problem and to increase the appropriateness and quality of pharmacotherapy of older people, our group has developed a clinical aid called the FORTA List. FORTA was originally proposed by Wehling and the FORTA List was validated by experts from Germany and Austria in a Delphi Consensus procedure. Besides this, we assessed FORTA's utility in a pilot clinical trial and in a randomized controlled prospective study. These two studies demonstrated that FORTA significantly improves the quality of medical therapy. In addition, even some secondary endpoints of our studies were improved. Therefore, we planned to conduct a consensus validation of a country-specific FORTA list in 7 European countries/regions to increase the applicability of FORTA. For this purpose, we selected the leading experts in the field of geriatrics, geriatric psychiatry, neurology and pharmacy with high experience in pharmacotherapy to validate the FORTA List in a Delphi consensus procedure. Finally, we are going to use the results of our study to develop a European FORTA List which will serve to increase the applicability of FORTA.

P-426
Clinical validation of the FORTA (Fit fOR The Aged) List in a prospective randomized controlled clinical study

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The lack of evidence of the efficacy and safety of many drugs has been a major issue in the pharmacotherapy of the elderly. Hence physicians and other healthcare providers face difficulties in choosing the appropriate medication for the aged on a daily basis. The FORTA categorization (A: Absolutely; B: Beneficial; C: Careful; D: Don't) was proposed as a clinical aid for increasing the quality of pharmacotherapy in the elderly. The FORTA list was developed in a Delphi process and a pilot clinical study indicated its practicability. To further assess the effectiveness of FORTA we conducted a prospective randomized controlled trial in hospitalized patients in a geriatric ward. Nearly half of our cohort, received standard care and the other half received standard care plus the FORTA method. We determined the changes in medication and over- and under-prescription rates according to FORTA as well as alterations of relevant clinical endpoints such as the Barthel Index (BI), number of falls, pain scale and Tinetti Tool score between admission and discharge. In a preliminary analysis, both over- and under-treatment was reduced significantly in the intervention group versus the standard care group. In addition, the number of A-labeled drugs increased and the number of C- and D-labeled drugs decreased significantly in the intervention group.However, the number of drugs and thus polypharmacy remained unchanged. Based on our results, FORTA has great potential for use as an aid to optimize the pharmacotherapy of the aged.

Pre- and postoperative care

P-427
The use of fascia iliaca block infusions in patients presenting with neck of femur fractures

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Objectives: A study found Fascia iliaca block infusion (FIBi) use in patients with Neck Of Femur fractures (NOF) resulted in a reduction in hospital length of stay (LOS) and pain score despite a reduction in opioid usage[1]. In our hospital, single fascia compartment blocks are administered for symptom control. We aim to deduce the effects of FIBi on pain control, mobility and LOS in patients with NOF fractures.
Method: 55 patients with a NOF fracture admitted between August 2014 and January 2015 were recruited. 21 patients were given FIBi and 34 (control) had regular analgesia as per trust guidelines. Baseline characteristics were compared between the 2 groups. Pain and mobility score were compared post-operatively days 1, 2 & 3.
Results: Baseline characteristics compared age in FIBi (80) and controls (84); resident status (86% vs 94% from own home), preadmission mobility (55% vs 47% mobile without aid) and ASA grade (2.24 vs 2.21). FIBi use resulted in lower pain score (1.78 vs 1.86) and improved average mobility score (1.52 vs 1.25) ($p = 0.66$ & $p = 0.22$ respectively). Acute LOS (11 vs 13.5 days) and overall Trust LOS (15.7 vs 17.9 days) in the FIBi group was reduced. 81% patients in the FIBi were discharged to usual residence within 30 days compared to 67.6% of control
Conclusion: FIBi use in NOF fracture patients resulted in better post-operative pain control and improved mobility with a reduction in the total LOS of 2.2 days with potential savings of £242,000 in a year (Trust bed stay costs £275).

P-428
Geriatricians provide high quality, safe and valued service on acute orthopaedic unit. POPS-SO, perioperative care of older people undergoing surgery – Salford Orthogeriatrics

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Objectives: The role of geriatricians in management of older patients with acute fractures is well recognised. The orthogeriatric service at Salford Royal NHS Foundation Trust was expanded in 2013 to promote high quality care for older orthopaedic patients. We aimed to assess the impact of our expanded service on staff.
Methods: Our Service provides comprehensive geriatric assessment, daily medical review and multidisciplinary boardrounds. There are weekly multidisciplinary team meetings and Harm Free Care evaluations (reviews of blood, radiology and microbiology results with weekend handover).
An anonymous electronic survey aiming to assess the impact of the service was sent out in May 2015.
Results: We received 30 replies; 17 were from doctors, and 13 were from nursing staff, AHPs and members of the service team. Most respondents (29/30) had daily or frequent contact with the service. All respondents felt that the service was very helpful and provided high quality patient care as well as value in communication with

patients and relatives. Twenty-two respondents had involvement in the geriatricians' ward rounds and all those felt these were of excellent quality. Twenty-two respondents had involvement in Harm Free Care and weekend handover and all felt it was of excellent quality.
Qualitative responses were assessed and a word cloud obtained. Amongst the reactions worth highlighting: "It has significantly improved patient care, reduced inpatient complications and improved communications with patients and families. It provided outstanding training and teaching opportunities".
Conclusions: Geriatricians' input on orthopaedic wards is viewed positively for staff satisfaction and multidisciplinary team work.

P-429
Gait speed as predictor of outcomes of elective cardiac surgery in older patients

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Objectives: Cardiosurgical risk can be assessed using the EuroSCORE. In older patients, increasing evidence suggests that such risk assessment should include frailty status. We hypothesised that preoperative gait speed, as an indicator of frailty, may contribute to predict postoperative mortality.
Methods: Older patients aged ≥75 years consecutively admitted for elective cardiac surgery (valvular, coronary, both, TAVI) were recruited. EuroSCORE and gait speed were measured. Demographic data, Edmonton Frail Scale (EFS), functional status, comorbidity and mortality (1 and 3 months) were recorded. Data were analysed using independent t-tests and ROC curves were constructed to measure the accuracy of the gait speed for 1- and 3-month mortality.
Results: Full data for follow-up and gait speed were available for 94 patients (mean age 79.8±3.5, 47.3% were female); 56/94 were independent for ADL. Mean EFS was 6.8±3.1. Mean gate speed was 0.64±0.2m/s. One- and 3-month mortality was 4/94 (4.2%) and 5/94 (5.3%) respectively. Gait speed was significantly higher in survivors compared with non-survivors at 1 (0.68±0.23m/s vs 0.43±0.06m/s, $p = 0.037$) and 3 months (0.68±0.23m/s vs 0.46±0.07m/s, $p = 0.034$). Area under the ROC curve for prediction of 1-month mortality by preoperative gait speed was 0.86, 95% CI: 0.77–0.92 and 0.83, 95% CI: 0.74–0.90 for 3-month mortality.
Conclusions: In older patients admitted for elective cardiac surgery, preoperative gait speed was significantly associated with 1- and 3-month mortality. In older patients, composite index including EuroSCORE and gait speed might increase the accuracy in mortality prediction. Further analyses combining both parameters and determining cut-offs values are needed.

P-430
Geriatrician's skills are recognised and valued on general surgical wards. POPS-SG, perioperative older people undergoing surgery – Salford General Surgery

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Objectives: Increasing numbers of older people are undergoing surgery as a result of an ageing population and advancing techniques. Although benefits of surgery are comparable in both older and younger people, the former are more likely to experience medical complications.
In 'An Age Old Problem' (2010), it is recommended that 'routine daily input from Medicine for the Care of Older People should be available to elderly patients undergoing surgery'.
After introducing an elderly medicine liaison service to our general surgical wards, we assessed its impact on staff.
Methods: An elderly medicine liaison service delivered by 2 consultant geriatricians was introduced to our general surgical wards in September 2014; consisting of comprehensive geriatric assessment, multidisciplinary interventions, daily medical patient reviews and weekly multi-disciplinary team meeting.
An anonymous e-survey aiming to assess the impact of the service; was completed in the second half of April 2015 by surgical doctors, allied health professionals (AHPs) and nursing staff.
Results: 30 responses were received (14 doctors and 16 nurses and AHPs). All respondents 30 (100%) felt that patients benefitted from the service. Of those who had attended a MDT meeting, 16 (100%) felt this was useful. Thirteen (94%) junior doctors felt they benefitted educationally from the service.
Conclusions: An elderly medicine in reach service into general surgery is viewed positively on surgical wards seven months after its deployment; with perceived clinical and educational benefits for patients and staff respectively.

P-431
Geriatrician's skills are valued and bring quality to a major trauma service. POPS-ST, perioperative care of older people undergoing surgery – Salford Trauma

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Objectives: The rate of older people admitted to hospital following a major trauma is increasing. Comorbidity, polypharmacy, functional and cognitive impairment are a common occurrence, these individuals require longer hospital stays and develop more complications.
In order to improve the outcomes of 'Silver trauma' patients, an elderly care in reach service was deployed in September 2014 (POPS-ST, perioperative care of older people undergoing surgery – Salford Trauma).
We aimed to assess the impact of our consolidated POPS-ST Service on staff.
Methods: Older major trauma and spinal patients undergo comprehensive geriatric assessment, daily medical reviews and regular multidisciplinary meetings.
An anonymous electronic survey was sent out in March 2015 inviting healthcare professionals to provide their opinion of the service.
Results: We received 30 replies; 10 of these were from consultants and the rest from nurses, junior doctors, support staff and therapists. Most interviewees were aware of the service (26/30). All those who replied to our survey felt the in reach Elderly care Service either greatly improved (88%) or improved (12%) patient care. Most responders (83%) benefitted educationally from interaction with the geriatricians.
Qualitative responses were assessed and a word cloud obtained. Amongst the reactions worth highlighting: "excellent source of knowledge for all health care professionals" and "a genuine and invaluable service to very vulnerable people".
Conclusions: An elderly medicine in reach service for older trauma patients is viewed positively by staff seven months after its deployment; it is felt to benefit service users and act as a valuable educational resource.

P-432

Perioperative Comprehensive Geriatric Assessment is associated with reduced inpatient length of stay

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Objectives: Older surgical patients are frail and often have multimorbidity. They develop more perioperative medical complications and have longer inpatient length of stay (LOS). Current guidelines state that best practice for older people undergoing surgery should involve comprehensive geriatric assessment (CGA) and access to a geriatrician. CGA reduces inpatient LOS and medical complications in older patients undergoing orthopaedic surgery, but limited data exists evaluating its impact in other surgical populations. We aimed to investigate whether a CGA approach for older patients undergoing gastrointestinal cancer surgery could also reduce inpatient LOS in an urban tertiary referral surgical unit.
Methods: We established a geriatrician-led CGA liaison service for patients aged 70 and over undergoing surgery for gastrointestinal cancer. Pre-operative CGA was conducted in a rapid-access outpatient clinic directly after diagnosis for patients deemed to be high risk either as a result of frailty or multimorbidity. Proactive post-operative multidisciplinary medical and therapy support was embedded on the surgical ward to provide early post-operative medical review and rehabilitation.
Results: We calculated the LOS for patients undergoing gastrointestinal cancer surgery aged 70 and over in a 6 month period both before and after the introduction of the CGA liaison service. There was a 31% reduction in the LOS following the intervention.
Conclusions: Perioperative CGA and post-operative geriatrician support is associated with reduced inpatient LOS in patients aged 70 and over undergoing gastrointestinal cancer surgery.

	Pre-intervention (32 patients)	Post-intervention (42 patients)
Total LOS	423	383
Mean LOS (days)	13.2	9.1

P-433

Differences in baseline characteristics and outcomes of older persons requiring hospital admission after introduction of an elderly care in reach service. Perioperative care of older people undergoing surgery – Salford General Surgery (POPS-SG)

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Objectives: The purpose of our study was to describe the impact of an elderly care in reach service on patient outcomes.
Methods: We compared all surgical patients (general, colorectal or upper gastrointestinal) over the age of 74 discharged from hospital between February 1st and March 31st 2014 with those assessed by our in reach Service between February 1st and March 31st 2015.
Results: Initial group (IG) (n 53) patients' mean age was 81.3 years, 50% females, 81% emergencies, two in-hospital deaths, 3.7% deaths and 20.7% readmissions before day 30. Length of stay was 10 days and 28% required review by generalists. Our in-reach team (IR) assessed 63 individuals with a mean age of 81.4 years, 39% females, 79% emergencies, 4 in-hospital deaths, 0 deaths and17.4% readmissions before day 30. Length of stay was 12 days and 23% required non-surgical reviews. Present complains and diagnoses were similar (abdominal pain and vomiting, cholecystitis and cancer). IG Patients had 3 comorbidities on average compared to 5.1 and took 6.3 medications compared to 8.2. 49% of IG patients underwent medication review as opposed to 100% IR (with an average reduction of 2 medications). There was a significant increase in the recognition of complications i.e. anaemia (5.6 vs. 57.1%), acute kidney injury (1.8 vs. 31.7%) and constipation (1.8 vs. 61.9%).
Conclusions: An elderly care in reach service was able to increase comorbidity and complication recognition, medication optimisation and reduce out of hours reviews by non surgical specialists. There was no significant change in clinical outcomes.

P-434

Predicting 30 day mortality after hip fracture: validating the use of National Hip Fracture Database (NHFD) data

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Objectives: The NHFD and Royal College of Surgeons of England (RCS) have described a model with six predictive factors from the NHFD dataset for casemix adjustment of 30 day mortality. Several other outcome prediction tools have previously been described. We set out to compare the NHFD-RCS model with the most widely used of these – the Nottingham hip fracture score.
Methods: We used the expanded dataset of our 2013 Anaesthetic Sprint Audit of Practice (ASAP) – data for 7,906 patients aged 60+ years, who had hip fracture surgery in May–July 2013. We linked to Office of National Statistics death data to identify patients' mortality status 30 days after admission. We used the first six weeks' data (4,045 patients) to recalibrate the models, and the next six weeks' data (3,861 patients) to validate them. Multiple imputation was used to manage missing data.
Results: Several variables (AMT score, fracture type, some individual comorbidities) were not significant predictors in univariate analyses. After adjusting for other patient characteristics we found age, sex, ASA grade (NHFD-RCS model), and number of comorbidities (Nottingham score) to be the strongest predictors. Both models displayed similar discriminative power; the highest c-statistic achieved by each being 0.74. Both models over-estimated mortality risk for patients in highest risk groups.
Conclusions: Both models achieved moderate predictive performance. In further work using NHFD data, we will explore the scope for additional NHFD fields (eg. AMT score and deprivation) to improve the NHFD-RCS model's performance – for use with individual patients and in hospital benchmarking.

P-435

Hip fracture following an inpatient fall: using the National Hip Fracture Database (NHFD) to identify the true scale of this challenge

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Objectives: Hip fracture outcome is especially poor for people who sustain this injury while an inpatient. Pre-existing medical and psychiatric problems often prove challenging. In 2009 the UK's National Patient Safety Agency (NPSA) identified 840 hip fractures after inpatient falls. We set out to identify the true incidence of such presentations.
Methods: During 2013 the NHFD collected data from all 182 trauma units in England, Wales and Northern Ireland. We identified 64,838 hip fractures in people aged >60; over 95% of all such fractures. We

recorded each patient's age, mobility and residence at the time of fracture.

Results: In total 2,699 (4.2%) presentations were people who were already inpatients. A further 450 (0.7%) were people in rehabilitation units. A very small proportion of these 3,149 injuries may have arisen without an inpatient fall, but <3% were pathological fractures, many of which still presented following a fall. Both mortality and length of stay were significantly greater than for other patients with hip fracture.

Conclusions: This annual total of 3,149 is three times higher than previous estimates based on critical incident reporting. Inter-hospital variation was considerable – individual trauma units reporting from 0 to 7.6% (mean 4.9%) as being current inpatients. We are developing this approach as a marker of serious inpatient falls. The NHFD website therefore now features 'live' online charts which provide inpatient hip fracture data specific to each trauma unit – so hospitals can monitor the effectiveness of local initiatives to prevent inpatient falls and hip fractures.

P-436
The incidence of periprosthetic femoral fractures after total hip replacement in the Pirkanmaa Hospital District, Finland during 2002–2010

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Objectives: As population ages, increasing number of patients with hip replacements are at risk of experiencing periprosthetic fracture. The aim of this study was to determine the incidence trends of periprosthetic femoral fractures in a Finnish region.

Methods: We conducted a retrospective analysis of 154 patients treated for femoral periprosthetic fractures between 2002–2010 in the Pirkanmaa Hospital District, Tampere, Finland. The incidence was determined in relation to the number of hip replacements at risk in the area. The incidence rate ratio (IRR) was calculated using the Poisson regression model.

Results: The annual incidence in 2002 was 1.6/1,000 THA (95% CI 0.73–3.02), increasing to 3.1/1,000 THA (95% CI 2.10–4.43) by 2010 (IRR 1.13, 95% CI 1.06–1.12, $p < 0.001$). In subgroup analyses, a statistically significant increase in the incidence was observed in all age-groups in women but not in men. The average occurrence of periprosthetic fracture was 6.7 years after the last hip replacement. Early fractures (occurring <1 year postoperatively) accounted for 27%, late fractures (1–8 years) for 37% and very late fractures (>8 years) for 34% of the fractures. Very late fractures were associated with old age, chronic disease and functional disability, whereas early fractures were often related to uncemented fixation of the hip replacement.

Conclusions: We observed a significant increase in the incidence of periprosthetic fractures independent of the rise in annual numbers of hip replacements. Patient profiles differ between early and late periprosthetic fractures, and particularly very late fractures seem comparable to fragility fractures of the aged.

P-437
Self-rated health and the functional outcome of primary knee replacement in the aged

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Objectives: Factors predicting the outcomes of joint replacement in the aged are poorly understood. We evaluated how self-rated health (SRH) associates with performance in activities of daily living (ADL) in knee replacement recipients.

Methods: Information about ADL performance and global SRH were collected from 300 knee osteoarthritis patients aged 75 years or over using a mailed questionnaire before and one year after primary knee replacement. Primary outcome was the number ADLs activities that the patient was able to perform without difficulty.

Results: Of the 165 patients (mean age 79 years, 63% females) who responded both to pre- and postoperative questionnaire, 36% considered their health good/very good, 51% fair, and 13% poor/very poor before the operation. These groups were similar in terms of age ($p = 0.367$), sex ($p = 0.902$), body mass index ($p = 0.601$), Charlson comorbidity index ($p = 0.645$), and severity of OA ($p = 0.302$). After surgery, the proportion of patients with good/very good SRH increased to 48%.

Preoperatively, patients with good/very good SRH were able to perform more ADLs without difficulty than those with fair or poor/very poor SRH (7 out of 10 vs. 5 and 4, respectively; $p < 0.001$). Postoperatively the respective figures were 9, 8, and 6.5 ($p < 0.001$). The change was similar in all groups ($p = 0.723$). Improvement was observed in all ten ADLs independent of preoperative SRH although not all changes reached statistical significance.

Conclusions: Self-rated health predicts ADL performance following knee replacement but it does not seem to affect how much the patients gain from surgery.

P-438
Hip fracture outcomes in patients with Parkinson's disease

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Objectives: Patients with chronic idiopathic Parkinson's disease (PD) are at a high risk for fractures, particularly of the hip. The causes may be multifactorial, including poor balance and other forms of neurological dysfunction. Osteopenia and osteoporosis leading to decreased bone mass are common in these patients.

The aim of this audit of a prospective hip-fracture database was to establish outcomes from hip fracture in people with and without PD living in North West Surrey.

Methods: Using data collected prospectively for the National Hip Fracture Database for Ashford & St. Peter's NHS Foundation Trust in the UK. Data was reviewed between Dec 2012 and Dec 2014. The type of fracture, time to surgery, length of stay, home to home for PD patients was calculated and compared for people without PD.

Results: 28 PD patients were identified and the results reported in the table.

	PD patients	All patients
Age (y)	82	84
Female	60%	72.2%
Mobility without aids	21.4%	48.3%
AMTS	6.4	6.9
Fracture-intrascapular	69.1%	56.2%
Theatre within 36hrs	89%	82%
Length of stay (days)	26.1	21
Home to home in 30 days	28.5%	58.1%
Mortality	7.7%	5.5%

Conclusions: PD patients with hip fracture tend to have a longer hospital stay and unlikely to return home within 30 days. Multidisciplinary teams managing these patients need to be more aware of these patients and their potential complications so as to improve outcomes. Ideally preventing these fractures whenever possible is better because of its debilitating nature.

P-439

12 months impact of an Orthopaedic Early Supportive Discharge (OSD) team in our hip fracture service

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Objectives: NICE clinical guidelines says "Consider early supported discharge as part of the Hip Fracture Programme, provided the Hip Fracture Programme multidisciplinary team remains involved and, the patient is medically stable and, has the mental ability to participate in continued rehabilitation and, is able to transfer and mobilise short distances and, has not yet achieved their full rehabilitation potential."
Methods: The OSD team is made up of a physiotherapist (band 7), an occupational therapist (band 6), a nurse (band 6) and 2 therapy assistants (band 3). The team working within the hip fracture unit started reviewing patients on 1st March 2014 and has completed 12 months. There is a virtual board round led by the Orthogeriatrician.
Results: 12 months period, 178 patients (105 hip fractures) were taken; 423 hip fractures presented. These patients are taken on average 7 days post surgery. This has reduced our Trust Length of Stay (LOS) for hip fracture patients from 21.5 days (March-Feb 2014) to 18.2 days (March–Feb 2015) without a change in readmission (7.89% to 7.57% respectively). Patients sent to the rehabilitation hospital (part of the Trust) have reduced from 44.2% to 23.6%; hence our Home to Home within 30 days has increased from 53.99% to 61.22%. Mortality remains unchanged 4.83% to 4.96%. 99.3% patients said they were extremely likely/likely to recommend the service to friends and family.
Conclusion: OSD should be part of all hip fracture service as it reduces LOS and increases home to home discharge which leads to significant savings.

P-440

Effectiveness of a specific multidimensional intervention program in 509 hip fracture patients. Results at 3 and 6 months after discharge

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Background: There are unknown factors affecting the outcome of hip fracture (HF) patients. Among them five main factors are Physical Function, Bone Health, Nutrition, Pain and Anemia (FONDA factors in their Spanish acronim).
Objective: To assess the effectiveness of a specific intervention program in HF patients addressed to correct FONDA factors at 3 and 6 months after discharge.
Methods: All HF patients admitted during one year in a university Hospital were included. Besides of demographic, clinical, and geriatric assessment variables, ability of walking, handgrip strength, vitamin D, protein and albumin levels, muscle mass index (MMI) (by Bioimpedanciometry), and anemia were assessed at admission and three and six months after discharge.
Results: We included 509 HF patients, 134 of them were followed-up after discharge. Mean age was 82.99 (±6.3) and 80.6% were women. Main results are shown in the table.

	Admission	3 months	6 months
MMI	8.6 (±2.2)	8 (±1.6)	8 (±1.7)
Handgrip strength	16.1 (±7.3)	19.3 (±6.8)	20 (±8)
Total protein	6.8 (±0.8)	6.8 (±0.5)	6.9 (±0.5)
Haemoglobin	12.9 (±1.6)	13.3 (±1.3)	13.7 (±1.3)
Albumin	3.2 (±0.4)	4 (±0.4)	4.1 (±0.4)
Vitamin D	16.2 (±8)	56.4 (±37)	41.6 (±19.8)
Barthel Index	96.1 (±5.2) (Previous)	87.2 (±15.4)	89.2 (±13.2)

Conclusions: HF patients treated by an intensive multidimensional intervention program including the specific management of physical function, bone health, nutrition, pain and anaemia achieve a high rate of normalisation of their levels of clinical, functional and analytic parameters and the vitamin D replenishment at a short and medium term.

P-441

Multiple medication use and renal insufficiency predict mortality in an older hip fracture population

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Objectives: To examine pre- and perioperative predictors of mortality after hip fracture.
Methods: Population-based prospective data were collected on 1245 consecutive hip fracture patients aged ≥65 years. Outcome was mortality at 1 year. Independent variables were age, sex, body mass index, fracture type, American Society of Anesthesiology (ASA) score, delay to surgery, urinary catheter removal during acute hospitalization, estimated creatinine clearance (eCCr) by the Cockgroft-Gault formula, number of regularly taken medications, use of hypnotic benzodiazepines and z-hypnotics (BZD-Z), diagnosis of memory disorder, prefracture mobility, and living arrangements.
Results: In multivariate analysis by the Cox proportional hazards model, the number of regularly taken medications (4–10, HR 2.80, 95% CI 1.68–4.47; or >10, HR 4.04, 95% CI 2.36–6.92) and severe renal insufficiency (eCCr <30 ml/min, HR 2.55, 95% CI 1.49–4.37) were strong predictors of mortality at 1 year. Other independent predictors of 1-year mortality were male sex, older age, ASA score 4–5, mobility level and >72 hour delay to surgery. Use of BZD-Z was not associated with mortality. In the age- and sex adjusted univariate analyses ASA score 3, diagnosis of memory disorder, not living in own home and not having the urinary catheter removed during hospitalization also predicted mortality.
Conclusion: In older hip fracture patients, multiple medications and severe renal insufficiency increase the mortality risk after hip fracture. Careful assessment of comorbidities is essential in the care of geriatric hip fracture patients. Geriatric patients with increased risk of hip fracture require regular critical evaluation of renal function and adjustment of medications.

P-442

Factors associated with poor clinical outcome in elderly hip fracture

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Objectives: Analyze the factors that determine the hospital stay of geriatric patients with hip fracture, and describe the factors associated with variables indicative of poor outcomes.
Determinate the influence of the application of a clinical pathway for such results.
Methods: A total of 412 geriatric patients and that were admitted for fragility due to hip fracture in the Hospital of Avila, Spain between 2010 and 2013 were retrospectively analyzed. Variables considered indicatives of poor outcomes were mortality, number of complications during admission, number of drugs at discharge and new institutionalization rate. In 2013 an integral clinical pathway based on scientific concepts and review of evidence was applied.

Results: Preoperatory stay, presence of surgical wound infection and the need for pre-existing disease control are the main predictors of long-stay.
The risk of in-hospital mortality has been influenced by age, polypharmacy and the highest degree of prior dependence. Age over 85, high comorbidity and polypharmacy is associated with more complications.
The ASA >III, previous diagnosis of dementia and more than 72 hours of surgical's time delay was associated with more complications and more drugs at discharge.
A greater number of drugs at discharge was associated with higher frequency of institutionalization.
The application of multidisciplinary protocols provides a decrease in hospital mortality and increased detection of complications during admission, keeping the same number of drugs at discharge and lower gross rate of infections.
Conclusions: The identification of factors associated with a worse outcome for these patients should be used to neutralize them, been one of the working pillars of the orthogeriatric model

P-443
Frailty seems a better guideline for selection of patients eligible for geriatric assessment rather than type of fracture

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Objectives: The objective of this study is to investigate the selection of patients admitted to the orthopedic unit regarding geriatric assessment. Is the current selection based on femoral neck fracture adequate or are better criteria needed?
Methods: Data was obtained retrospectively from charts of 127 patients, 65 years and older admitted to the orthopedic unit, Copenhagen University Hospital, Herlev, September 2014 to October 2014, regardless of cause of admission. Mean age 81.7 years, 91 female and 36 male. A modified frailty index (MFI) of 11 different frailty indicators was used to asses if the current selection resulted in the right patients getting geriatric attention.
Results: Mean frailty score was 3.17. The hit-rate of geriatric assessment was 51.6%, and of the 40 geriatric assessments made, 7 were done outside the hip-fracture unit. A geriatric assessment was made in 75% of the 53 patients with a frailty index value above the cut-off of 3.5.
Conclusions: There seems to be a need for better selection of patients in regards to geriatric assessment. On admission to the orthopedic ward, a number of criteria should be addressed in selecting who is eligible for a geriatric assessment. The current selection that only takes patients with a femoral neck fracture into account leaves us seeing only 75% of those in need for a specialist in geriatric medicine. Furthermore with a hit-rate of only 51.6% the capacity to see all of those in need is there, but could be used more efficiently.
Financial support from commercial parties: None.

P-444
Emergency laparotomy in the older patient. Perioperative care of older people undergoing surgery – Salford General Surgery (POPS-SG)

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Objectives: The purpose of our study was to describe the characteristics of a cohort of elderly patients undergoing emergency laparotomy and elderly care in reach input.
Methods: We carried out a prospective interventional non-randomised study of frail older adults requiring surgical admission. All individuals underwent comprehensive geriatric assessment, targeted multidisciplinary interventions and discharge planning.
Results: Between September 6th 2014 and March 31st 2015 a total of 17 individuals endured emergency laparotomy. Mean age was 82 years (72–97), 9 were females, 9 lived alone (5 on discharge), 5 with a spouse (4 on discharge), 1 in residential, and 2 in a nursing home. Ten patients mobilised with no aids, 3 used a cane, 3 walking frame and one required hoisting. Four required help with basic activities of daily living (ADL) and 7 with instrumental ADL. They presented on average 4 (0–7) comorbidities; hypertension (14), anaemia (7) and renal impairment (6) being the most frequent. The most common complaint was abdominal pain (10); whilst complicated hernia (8) and colonic cancer (4) were the most frequent diagnosis. Average medications on admission were 9 (3–15) and 7 (3–13) on discharge. Heparin was used in all patients and antibiotics in 16. Complications included anaemia (12), constipation (10), delirium (7) and acute renal impairment (7). Discharge was delayed in 4 cases; length of stay was 20 days (6–50), 2 individuals died in hospital (11.7%) and one more within 30 days.
Conclusions: Older persons undergoing emergency laparotomy present significant comorbidity, polypharmacy, multifactorial aetiology and high morbi-mortality.

P-445
Clinical outcomes of older persons admitted to general surgical wards. Perioperative care of older people undergoing surgery – Salford General Surgery (POPS-SG)

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Objectives: The purpose of our study was to establish factors associated to increased morbidity and mortality during hospital stay and at 30 days post discharge.
Methods: This is a prospective study of older adults requiring surgical admission (general surgery, colorectal or upper gastrointestinal). All individuals underwent comprehensive geriatric assessment, targeted multidisciplinary interventions and discharge planning.
Results: Between September 6th 2014 and March 31st 2015 a total of 161 consecutive patients with a mean age 81.5 years (70–97) were assessed by our in reach team.
The most common complications included anaemia (50%), constipation (47%), delirium (27%) and acute kidney injury (24.8%). A total of 27 discharges were delayed for a non-medical reason and length of stay was 25 (3–70) in this group. Length of stay was also longer in elective admissions and surgery, particularly elective laparotomy. Univariate analysis revealed different factors associated with in-hospital mortality including: old age, diagnosis of cancer, dementia, delirium and functional decline during admission. Seven patients died within 30 days of discharge (4.96%). Mean age was 79 years (71–86), six lived in the community, 2 had dementia, 5 cancer diagnosis and 4 comorbidities on average (2–8). Length of stay was 23 days (9–63). At 30 days, 27 patients were readmitted to hospital (17.6%) either electively (ERCP 4 patients, 1 nasojejunal feed tube insertion) or as emergencies for management of complications (wound infection, ileus) or cancer progression.
Conclusions: Comorbidity, delirium and functional impairment are potentially reversible factors that increase in-hospital mortality and should be managed adequately.

P-446

Goal setting for functional recovery and using fast track principles after total knee replacement allows earlier discharge home

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Background and Purpose: Attitudes towards hospitalization are often reinforcing passive coping strategies among patients. We therefore implemented new concepts and care pathways at our orthopedic surgery department to activate patients. The aim of our study was to determine the effectiveness of these innovations on inpatient recovery of activities (IROA) and length of hospital stay (LOS) after total knee replacement (TKR).
Methods: In this single-center, cohort study (n = 738, 73% female, 70±9.1 year) data were collected over a period spanning 5 years. During this period we transitioned from a (1) joint care® pathway (care organized in a timetable) to a (2) function tailored care pathway (functional goal setting and promoting activity during hospitalization), (3) pathway 2 combined with fast-track principles (state of the art surgical and anesthiological procedures to minimize surgical stress). Our primary outcome is IROA, measured by the Modified Iowa Levels of Assistance Scale (MILAS). We compared the three patient groups using one-way analysis of variance, adjusting for preoperative predictors of recovery.
Results: Transitioning from joint care® (n = 171), to function tailored care (n = 360), to fast track (n = 207) resulted in a statistically significant reduction of time to achieve IROA and LOS. Mean (standard deviation) IROA was 4.3 (0.9), 3.5 (0.9), and 3.1 (1.0) days respectively ($p < 0.01$) and LOS was 5.0 (1.7), 4.1 (1.2), and 3.7 (1.3) days respectively ($p < 0.01$).
Conclusion: A tailored care pathway using functional goals and fast track principles for patients undergoing TKR patients significantly accelerated the IROA by 1.2 days and shortened LOS by 1.3 days.

P-447

Usefulness of pre-op screening checklist on fast-tracking hip fracture surgery in a tertiary Hospital. Pilot in Singapore

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Objectives: Evidence based effective hip fracture programme can optimise hip fracture management. Hence, a pilot was implemented between July and November 2014, in our hospital, as a part of Valuedcare hip-programme, adopted from Geisinger (USA). The emphasis was to improve fast-track (FT) surgeries (<48 hrs) and length of stay (LOS), on patients >65 yrs aided by a pre-op check-list consisting common clinical parameters and lab investigations, embedded within an Ortho-geriatric care bundle along other best practice elements(BPE).
Method: We performed a retrospective descriptive analysis of the pilot data on outcomes whilst also measuring the influence of check-list on FT surgeries.
Results: Of 139 cases, 127 (80.5%) >65 yrs; 112 (88%) operated. 57 (50%) were FT; 40 (70%) check-list compliant. 55 (49%) operated >48 hrs; 32 (58%) check-list compliant.
There was significant improvement in fast-track surgeries compared to baseline 19% ($p < 0.001$). Mean LOS decreased from 13.0 to 9.0 days ($p < 0.001$) in FT patients. The overall compliance for check-list was 65% ($p < 0.0001$). The odds of pre-op check list compliance in improving the FT was (OR) 1.69 (95% CI 0.774 to 3.690), P = 0.187.
Conclusion: We noted significant improvement in outcomes with the pilot implementation, mandating sustainment, enhancement and study of critical other outcomes including functions, complications, readmissions and quality of life. Significant compliance with check-list, may have guided the team in assessing fitness and listing for surgery; however the usefulness of check-list in FT surgery can be further evaluated in future study, designed and powered for the same.

P-448

Baseline characteristics of older surgical persons admitted to a tertiary hospital. Perioperative care of older people undergoing surgery – Salford General Surgery (POPS-SG)

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Objectives: The purpose of our study was to describe the characteristics of a cohort of elderly surgical patients admitted to general surgical wards and reviewed by an elderly care in reach service.
Methods: This is a prospective study of older adults requiring surgical admission (general, colorectal or upper gastrointestinal). All individuals underwent comprehensive geriatric assessment, targeted multidisciplinary interventions and discharge planning.
Results: Between September 6th 2014 and March 31st 2015 a total of 161 consecutive patients with a mean age 81.5 years (70–97), 22.9% elective and 51 undergoing surgery, were seen by the in reach team on average 4 times (1–23). 53.4% were females, 91.9% lived in the community; 146 mobilised independently, 77% independent for basic and 59% for instrumental activities of daily living.
Mean number of co-morbidities was 5 (0–13), 118 patients had 4 or more and the most frequently recorded were hypertension (113) and active cancer (50).
Abdominal pain (65/161), was the most common presenting complaint whilst cholecystitis (20/161) and colonic cancer (19/161) the most common diagnosis. Patients took on average 8 (0–26) medications and 136 (84%) had more than 3. In total 148 received thromboembolic prophylaxis, 105 intravenous antibiotics and 86-probiotic therapies.
Mean length of stay was 14 days (1–70); in hospital fatality was 4.9% and 4.5% at 30 days with a 7 and 30-day readmission rates of 7.8% (12/153) and 17.6% (27/153) respectively.
Conclusions: Older persons admitted to surgery commonly present significant comorbidity, polypharmacy, a multifactorial aetiology and are most often managed medically without surgical intervention.

Psychiatric symptoms and illnesses

P-449

Medication dosage and orthostatic decline of blood pressure among geriatric inpatients

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Objectives: Evidence is scarce regarding the association between cardiovascular or psychotropic drugs and orthostatic hypotension.
Methods: Cross-sectional study of 100 patients admitted to the geriatric ward of an academic hospital. The maximum decline in systolic (SBP) and diastolic (DBP) blood pressure (mmHg) between the lying and the standing position (1 or 3 minutes) was measured. The defined daily dose (DDD) on the day of the orthostatic testing was used to calculate the dosage of vascular (V) [diuretics, ACE inhibitors/angiotensin inhibitors, calcium channel blockers, β-blockers, central α-agonists, peripheral α-blockers, nitrates] and central nervous (N) [benzodiazepines, antipsychotics, antidepressants, opiates] medications.

Results: The lying SBP and SDP were respectively 136±21 and 72±14 mmHg in the 100 patients (85±5 years, 58% women; 7.7±4 medications, DDD: V 1.0, N 0.74). In standing position, SBP declined (mean±SD 12±17 mmHg), decreasing in 77 patients. In SBP multivariate model (adjusted r^2: 93%), the blood pressure decline was significantly ($p < 0.05$) and positively correlated with age, diabetes, history of falls, and number of medications, but not with the DDD of any of the nine medication classes. DBP also declined in orthostatism (11±5 mmHg), decreasing in 74 patients. In the DBP multivariate model (adjusted r^2: 87%), the decline was significantly ($p < 0.05$) and positively correlated with age, diabetes, stroke and anemia, but again not with the DDD of any medication class.
Conclusion: The lack of correlation between the medication dosage and the orthostatic decline in blood pressure is an argument against their causal association in geriatric inpatients.

P-450
Prevalence of depressive symptoms in elderly people: Example of a suburban and a rural region in Manisa, Turkey

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Objectives: The aim of this study is to determine the prevalence of depressive symptoms in two different settlement regions (rural and suburban) of Manisa and evaluate the potential risk factors.
Methods: The population of this cross-sectional study was 2,040 elderly individuals who were leaving at the region of two randomly selected primary medical services (one at rural area, other at suburban area) in March 2013. The sample size was calculated using the software of Epi info 7.0; thereby, 340 geriatric individuals were enrolled. Each individual was randomly selected from his/her registration at the administrative office of Manisa Public Health. All data were collected by face-to-face interview and a standardized questionnaire form, that involved sociodemographic characteristics, Katz index and Depression scale for geriatrics, was used. The rate of participation was 97.9% (n = 333). The study activities were approved by the Celal Bayar University Institutional Review Board. All data were evaluated using descriptive analysis, chi square test and multivariate analysis.
Results: The mean age of the study group was 71.8±5.4. The majority of individuals (77.5%) had a chronic disease for which continuous drug administration was required, 51.1% was women, 34.2% was graduated from elementary school and 17.7% was living alone. The prevalence of depressive symptoms was 38.7% (suburban area 44.6%, rural area 36.2%, $p > 0.05$).
Conclusion: Multivariate analysis demonstrated that the risk of depression is significantly high in individuals who were living alone, had no education, need of support during daily activities, experienced an adverse event lately and exposed to mistreatment.

P-451
Electroconvulsive therapy for comorbid major depressive disorder with dementia

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Objectives: We report the case of a 74-year-old patient, treated by electroconvulsive therapy (ECT) for a severe and treatment-resistant psychiatric disorder. We review some studies about ECT and its efficacy for elderly patients with depression, bipolar disorder and psychosis
Methods: A caucasian woman, living at home with her partner, with a history of major depressive disorder and suspected Lewy bodies dementia, initially presented a recurrent depressive state non-responsive to antidepressant drug therapy. She displayed opposing attitude, anorexia and parkinsonism. Tomodensitometry imaging revealed some microangiopathic lesions in the brain, and electroencephalogram showed seizures.
Results: Diagnosis of acute catatonia was confirmed by a psychiatrist. Leviracetam therapy was started along with enteral nutrition. Benzodiazepines failed and the patient was dying. After nine ECT sessions, the patient woke up, started eating and walked a few steps, but cognitive disorders increased with hallucinations and disorientation. Institutionalization was finally planned, with only antidepressive drug therapy. ECT can be life saving for older adults who exhibit symptoms of acute catatonia.
Conclusions: Elderly patients have a lower tolerance to medication due to age-associated pharmacokinetic changes and increased sensitivity to psychotropic medications, such as anticholinergic and orthostatic hypotensive side effects. Otherwise they have higher rates of neuropsychiatric comorbidities. ECT can be effective in treating neuropsychiatric conditions, such as catatonia and parkinsonism. Benzodiazepines are used as first-line treatment for mild-to-moderate catatonia. Some authors also have suggested alternative medications such as midazolam, memantine, topiramate and amantadine. Most patients experience some adverse cognitive effects during and after a course of ECT.

P-452
Depression and pain: Prevalence, medication and comorbidity in long-term care residents

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Objectives: Depression and pain are common conditions in long-term care residents and often occur together. The study investigates (1) the prevalence of depressive symptoms, antidepressive treatments, experienced pain, the prevalence and type of antalgic treatments and (2) the relationship between depression and pain in long-term residents in Luxembourg.
Methods: The study sample consisted of 194 residents (age 47–102). Exclusion criteria were an MMSE <16. Medical charts were examined retrospectively. We assessed age, gender, MMSE, current antidepressive and chronic pain medication, the emotional status using the GDS5, and pain experience using the DoloPlus scale.
Results: In total, 39.7% of the patients were treated with pain medication and 51% of all long-term residents were treated with antidepressants. A total 38.1% were classified as depressed with the recommended GDS5 cut-off ≥2. Interestingly, 16.5% of the depressed residents were without appropriate antidepressant treatment. We found furthermore that depressed patients with a GDS5 ≥2 scored significantly higher in the DoloPlus scale ($p = 0.01$), required a higher number of different pain relievers ($p = 0.03$) and were treated with more potent antalgics ($p = 0.02$) than patients with a GDS5 <2.
Conclusions: Pain and depression are very common in long-term care residents and clearly influence one another. Despite this knowledge, depression is often under-diagnosed in geriatric patients and the present findings suggest that depressed patients experience more pain and require a quantitatively and qualitatively different pain therapy than non-depressed patients. Special attention in long-term care residents should be allocated to depressive symptoms and pain expressions.

P-453

Prevalence of impulse control disorders and obsessive compulsive disorder in elderly patients with Parkinson's disease

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Objectives: To estimate the prevalence of ICDs and OCDs in a population of elderly patients with Parkinson's Disease living in the community, compared with the general elderly population.
Materials and Methods: Cross sectional study projected to enroll a total of 250 subjects with Parkinson's Disease aged 65 or more, during a period of one year. An age matched reference group has been selected. Participants underwent comprehensive clinical evalutation. ICD have been assessed using the Italian version of the Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease, whose linguistic validation has been conducted in a preliminary phase. OCD are assessed using the Italian version of Obsessive Compulsive Inventory-Revised.
Results: Results from ad interim analysis will be presented. At present 95 persons have been enrolled, 64 patients with PD and 31 controls. The two groups show similar demographic characteristics, cognitive and functional status. Prevalence of depression and use of psychotropic medications is higher in patients with PD. A high prevalence of ICD is present in both groups (35.3 in PD vs. 29% in controls). Compulsive-impulsive behaviors and OCD were equally frequent in both groups. Patients with PD and ICD have a higher prevalence of depression use of dopamine agonists, antidepressants and benzodiazepines, while compulsive behaviors are associated with living alone, being depressed and higher use of benzodiazepines.
Conclusions: Using validated instruments we detected a high prevalence of ICD, impulsive-compulsive and OCD both in the PD patients and in the general elderly population, suggesting common neurodegenerative processes in the mesocortical and mesolimbic pathways.

P-454

Catatonia: an unexpected complication

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Objectives: Catatonia is a complex, rare syndrome characterized by the inability to move normally and includes behavioral, motor and systemic signs. The pathophysiology of catatonia is unknown. A delay in diagnosis, contraindication to certain therapies and unexpected complications may result a fatal association.
Methods: 85 years old woman admitted to hospital with left hip fracture. No history of falls reported, the patient slowly slides from the sitting position without reflexes or voluntary movements to avoid the fall. Medical History: NSAIDs intolerance. Hypertension. Ischemic transitory accident 4 years ago. Factor VIII deficiency. Functional status: Katz G, Barthel 0/100. Physical examination (iconographic material provided): stupor and catalepsy. Wax flexibility, negativism and posturing.
Results: Blood test and drug screening: no relevant findings. Electroencephalography: generalized encephalopathy. Brain MRI: calcified meningioma (35×45 mm) at Poster presentationsior fossa. Diffuse leucoaraiosis, mainly frontal. Final diagnosis: catatonia. High risk of bleeding contraindicates the use of electroconvulsive therapy (ECT). Poor response to intravenous benzodiazepines and memantine.
Key conclusions:

- Catatonia is a complex syndrome with several different manifestations and three primary subtypes: retarded, excited and malignant.
- Treatment with intravenous lorazepam is usually effective (60–80% of the cases). ECT should be started without delay in severe cases or with no response to benzodiazepines. Contraindication for ETC leads to consider other treatments like antipsychotics or glutamate antagonists.
- Among possible complications are described dehydration, malnourishment, thrombotic events and urinary tract infections, but a hip fracture in a syndrome characterized by the absence of movement is a very uncommon situation.

P-455

The correlation between dizziness and mental health in Korean adults

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Objectives of the study: Patients experiencing dizziness may display not only physiological symptoms, but also psychological symptoms such as anxiety and depression. The purpose of this study was to examine whether mental health of Korean Adults is associated with dizziness.
Methods used: This study was based on data from 2010–2012 Korea National Health and Nutritional Examination Surveys. A total of 8,313 individuals aged 40 years old or older who participated in the survey on dizziness and mental health were ultimately selected as the final study subjects.
Results obtained: The severity of dizziness was classified as "Not dizzy", "Dizzy", and "Falling". The results revealed that severe dizziness led to a significant increase in stress ($P < 0.0001$) and depression levels ($P < 0.0001$), and suicidal ideation ($P < 0.0001$).
For the comparison of dizziness prevalence according to the mental health status, responses given on the mental health survey were used to categorize subjects in regard to experience with stress, depression, and suicidal ideation. The comparison of the odds ratios of each group in terms of the dizziness prevalence revealed that dizziness increased in the groups that had experienced stress, depression, and suicidal ideation than in the groups that had not.
Conclusions reached: This study found that a close correlation exists between dizziness severity and mental health status in Korean Adults. Based on this finding, it can be recommended that dizziness and mental health problems should not be treated as two separate conditions, as there is a close correlation between them.

P-456

The Slipping Syndrome: about 16 cases

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Introduction: Slipping syndrome (SS) is a purely affection which is a fast decompensation of the general, hemodynamic and psychiatric state upon an acute affection which is cured or seemingly cured.
The purpose of our studies is to list the cases of SS and to determine the main triggering factors.
Material and Methods: We listed all cases of SS in a over of ten years. The diagnosis was retained on somatic signs (change of general state, adipsy, dehydration, bedsores, urinary disorders, abdominal meteorism, unexplained relapse of a cured affection) without organic t substratum, and psychological troubles. In every case, the clinical and paraclinical explorations were negative. As triggering factors, we retained falls, surgical operations, conflicts and hospitalizations.
Results: 16 cases of SS 10 women and 6 men. The average age was of 76 years. Triggering factors were the hospitalization in 70%, falls in

30%. In every case, there was a change of the general state; extracellular dehydration in 70%, urinary disorders in 33%, abdominal meteorism in 33% an hypothyroidism in one case, bedsores in 25%, relapse of an infectious in 25%, and confusions in 50%. A care of nursing,nutrition and antidepressor was established. The evolution was marked by 3 deaths and the improvement of the state at 13 other patients.
Discussion: Slipping syndrome is a severe affection causing death in the majority of the cases. It is important to know how to detect it and especially to prevent it.

P-457
Narcolepsy in the elderly: a case report

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Objectives: Narcolepsy is a rare syndrome with a very low prevalence (0.04%). Main symptoms are chronic daytime sleepiness with cataplexy (emotionally-triggered muscle weakness), hypnagogic hallucinations (as the patient is falling asleep) and sleep paralysis (inability to move immediately after awakening).
Methods: 77 years old woman admitted to hospital with left pertrochanteric hip fracture, unable to remember the episode. No traumatic brain injury associated. After surgery presents daytime sleepiness (sleep attacks, 2–3 minutes each) and cataplexy episodes related to pleasant emotions (iconographic material provided). Medical History: no relevant (except arthrosis). Functional status: Katz B, Barthel 85/100.
Results: Polysomnography: reduced sleep efficiency and spontaneous awakenings. REM sleep 8 minutes after sleep. Multiple Sleep Latency Test: mean sleep latency 1.6 minutes. Sleep Efficacy Index: 0.75. REM latency: 0.0 minutes. Blood test and drug screening: no relevant findings, except HLA-DR2 positive haplotype. Cranial computed tomography: no lesions detected. Final diagnosis: Narcolepsy type 1. Treatment with sodium oxybate 2.25 g/12h, with quickly response (cataplexy). Later on modafilin 200 mg (1–0–0).
Key conclusions:
- Narcolepsy involves the loss of hypocretin neuropeptides (orexin-A and orexin-B) that have excitatory effects and increase the activity of many brain regions involved in the promotion of wakefulness.
- The DQB1*0602 haplotype (a subtipe of DR2) is present in 95% of patients with cataplexy. Nevertheless, environmental factors appear to be more relevant.
- Cataplexy can lead in elderly patients to several complications related to falls, specially hip fracture. It is important to treat not only narcolepsy, but also age-related risk factors for severe lesions.

P-458
Validity and reliability of "AM SAD", a short geriatric depression screening tool, in Turkish elderly people

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Objective: Depression is a serious public health problem among the elderly and screening for depression in the elderly for primary care physicians is essential.The objective of this study was to evaluate the validity and reliability of the "AM SAD" and to compare the results with DSM-V depression criteria in Turkish elderly people.
Methods: This study was conducted in a geriatric division of a tertiary hospital in the west part of Turkey, Izmir. A total of 186 elderly outpatients were included in the study. Translation from the original English version was performed according to the standardized methods. Yesavage Geriatric Depression-15 Scale (YGDS), and the "AM SAD" were administered following by the Mini-Mental Status Examination (MMSE). Patients were assessed for depression using DSM-V criteria and the results were compared with AM SAD.
Results: A significant correlation was established between YDGS-15 and AM SAD scores (r: 0.64, $p < 0.001$). AM SAD had also a mild–moderate significant correlation with DSM-V criteria that were depressive or not (r: 0.58 and r: 0.41, respectively). With a cut-off score of ≥2 points, the AM SAD showed sensitivity of 94% and specificity of 78% in the detection of depression in geriatric patients. The area under the receiver-operating characteristics curve (95% confidence interval) for the AM SAD was 0.92 (95% CI 0.873–0.968), $p < 0.001$.
Conclusion: AM SAD which has a moderate correlation with DSM-V criteria could be useful for screening depression in Turkish elderly patients in the primary care clinics.

P-459
Gender differences in the elderly taking antidepressants when visiting the emergency department

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Objective: To determine if there's a difference between genders during visits made to the Emergency Department in the population of 65 years and older taking antidepressant medications and its influence on the decision for hospitalization.
Material and Methods: We included elderly patients 65 years and older that visited the emergency department between January and October 2012. We obtain information through interviewing the patient and/or companion and by going through the medical record. We gathered their socio-demographic, toxicology, medical history (past and present) and recent medications. After calculating the sample size and by doing randomization, we did a statistical analysis of the data collected.
Results: We analyze the information of 674 patients (53% women) with a mean of 78.5 years of age. From these, 27.6% were taking an antidepressant at the time of the Emergency Department consult, of which 71% ($p < 0.001$) were women. We also observed that 37.4% of the patients that consulted the ER were taking an anxiolytic drug, of which 67.9% were women ($p < 0.001$). We obtained a statistically significant difference between past medical somatic illnesses and gender: women consulting the ER had significantly more cognitive impairment, cardiovascular risk factors and joint disease; while men had more lung and oncologic disease, and a significantly higher tobacco and alcohol consumption.
Conclusions: In the study it can be observed that women taking antidepressants make more visits to the ER compared to men, not having a significantly relation regarding the decision for hospitalization. Also we saw difference between genders and their past medical somatic diseases.

P-460
Relationship between elderly patients taking antidepressant and hospital admissions

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Objective: Determine the impact of antidepressant treatment as an independent protective factor for emergency hospitalizations in people aged 65 and over.
Methods: All patients 65 years and older, who visit Parc Taulí Hospital's Emergency Department between January and October 2012, were included. A total of 36176 medical emergencies were attended; 15791 (43.65%) were 65 years or older, and 25.93% were admitted. Sociodemographic variables, medical history, polypharmacy, cognitive pathology and toxic consumption were obtained. The current psychopharmacological treatment was collected. Sample size was performed to obtain significant differences. Simple randomization, a descriptive statistical analysis, and parametric tests were performed by using a statistical computer software.
Results: 674 patients (53% women) were evaluated, with mean age 78.45±7.93. 27.6% of cases (71% women) were receiving antidepressants. 83 individuals (24.6%) among the total number of admitted patients (337), and 103 cases (30.6%) among the patients who were not admitted, previously used antidepressant treatment. All the treatment dosages are within the therapeutic range. After a comparative analysis, the relationship between the previous use of antidepressant treatment and being admitted to hospital was not statistically significant in our global sample. This relationship was statistically significant among the group of sample aged 75 and over ($\chi^2 = 6.610$, fd = 1, sig. 0.012).
Conclusions: Antidepressant treatment is associated with a decreased risk of hospital admission for urgent medical conditions in people aged 75 and over. This may be a protective factor against their admission at Emergency department and potentially may be a quality criterion to prevent complications in this population group.

P-461
A clinical rule increases adequate monitoring in patients using lithium in a general hospital

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Objectives: Admission to a general hospital increases the risk for supra- or subtherapeutic lithium concentrations in patients using lithium. This may result in either lithium toxicity or psychiatric deterioration. We aimed to investigate whether introducing a clinical rule selecting patients using lithium followed by intensified monitoring of lithium treatment improves patient safety.
Methods: Patients ≥18 years using lithium from May 2009 to October 2013 during admission to the Diakonessenhuis, a general hospital in the Netherlands, were included. Adequateness of monitoring of lithium treatment before and after implementation of a clinical rule was evaluated retrospectively. The clinical rule identifies admitted patients using lithium and prompts the clinical pharmacist to collect information regarding lithium treatment and inform the clinical psychiatrist. Consequently, the psychiatrist proactively suggests a psychiatric consult to the treating physician. Adequate monitoring was defined as a preventive psychiatric consult and a serum lithium level within 48 hours after admission.
Results: 107 admitted patients before and 136 admitted patients after implementation of the clinical rule were included. Adequate monitoring (preventive psychiatric consult and serum lithium level within 48 hours) was more frequent after implementation of the clinical rule (26.5% vs. 7.5%, $p < 0.001$). Results were similar for patients ≥65 years (23.3% vs 7.9%, $p = 0.02$) compared to those <65 years (30.2% vs 6.8%, $p = 0.003$).
Conclusions: This clinical rule is effective in improving adequate monitoring of patients using lithium during hospitalisation on a somatic ward. This intervention may improve patient safety in this vulnerable subgroup of patients during general hospital admission.

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Symposia

Invited symposium

S-02
The old kidney – challenges and possibilities

R. Pettersen
Lovisenberg Diacon Hospital, Oslo, Norway

Chair: Renate Pettersen, MD PhD, Geriatric Department, Lovisenberg Diacon Hospital, Oslo, Norway

As a consequence of the increasing lifespan in Europe and other parts of the world, clinicians will face an increasing prevalence of renal dysfunction in the older population – due to both physiological changes and disease. The processes involved are complex and represent a challenge for the clinician. The increasing prevalence of end-stage kidney disease in this age group also raises questions about choice of treatment. In this symposium, important basic mechanisms and new aspects of the assessment of renal function will be presented, as well as new data on transplantation outcomes.

Water and electrolyte physiology in old age – clinical and experimental data (Professor Elias Lianos, Athens, Greece): The homeostatic control of water and electrolyte balance by the aging kidney is impaired, the key reason being that the physiologic limits for the excretion of water, sodium, potassium, and hydrogen ions are narrowed. As aging progresses, the risk of hyper- or hypovolemia increases owing to impaired water handling. Control of potassium level also becomes impaired resulting in hyperkalemia, particularly when patients receive certain drugs. Specific changes in water and electrolyte homeostasis include: decrease in total body water, urinary concentrating ability, aldosterone secretion/effect, thirst mechanism and free-water clearance, and an increase in antidiuretic hormone (ADH). Despite these changes, body fluid homeostasis is effectively maintained under normal day-to-day circumstances. Problems are frequently iatrogenic and arise when older patients are placed under fluid restriction or are prescribed medications that further derail the already impaired homeostatic control of water and electrolytes. Awareness of age-related limitations of fluid and electrolyte homeostasis can help the physician prevent complications such as hypotonicity and hypertonicity, hyperkalemia, and volume depletion.

Differences between decreased GFR and renal failure: clinical, social and economic consequences from the geriatric angle (Professor Juan F. Macias Nunez, Salamanca, Spain): Chronic renal insufficiency (CRI) is identified by a decrease in GFR. It is a clinical daily practice to diagnose CRI based on the critical value of eGFR <60 ml/min by means of the MDRD screening formula, not validated for persons aged >70 years. We should always remember the difference between screening formulae and diagnosis. Diagnose of CRI should be confirmed by doctors in persons suspicious of CRI by screening formulae.

The normal ageing process is characterized by a decrease in GFR without repercussion in the equilibrium of the internal milieu. GFR reaches a peak between 120–130 ml/min/1.73 m^2 at the age of 30, attenuating at a constant rate of 0.8 ml/min/year, although for persons aged 70–110 years, the decline averages 1.05 ml/min/year. Establishing an incorrect diagnosis of CRI will have some undesirable effects. The worst is that may deny aged individuals appropriate treatment for other diseases (oncological, haematological or others) and also prevent from being included in clinical trials because the tendency to equalize CRI to eGFR <60 ml/min. To overcome this error, we found that the association of haematocrit, urea and gender (HUGE) according to the following formula:

L = 2.505458 − 0.264418·Hematocrit + 0.118100·Urea [+ 1.383960 if male],

showed the highest ability to discriminate CRI from non CRI individuals. The HUGE formula, with data obtained from a general population, offers a straightforward readily available and inexpensive tool to differentiate CRI from eGFR <60 ml/min particularly useful in persons >70 years.

Kidney transplantation – a treatment option for the failing old kidney? (Associate Professor Kristian Heldal, Skien, Norway): The general population is getting older. The dramatic increase of patients developing end-stage renal disease (ESRD) has occurred predominantly in the older adult population. In old patients with ESRD the nephrologists will need to decide further treatment. The options are; medical treatment only, life-long dialysis or kidney transplantation (KTx). There are very few absolute contraindications (active infection, recent malignancy), but many relative or potential contraindications in older patients considered for KTx. Worldwide, organs available for transplantation are limited. Many transplant centers therefore set an upper age limit for KTx. In Norway there is no upper age limit. Even octogenarians may be transplanted. It is vital that patients who are accepted for KTx are those who will derive most benefit, and correct selection of patients is therefore of outmost importance.

Currently older patients are evaluated for transplantation using the same algorithm as used for younger patients. Survival analyses have revealed that even patients older than 70 years of age will benefit from transplantation compared with permanent dialysis with the proviso that the patient is capable of tolerating surgery and the subsequent medical treatment (i.e. burden of immunosuppression). Prolonged time on dialysis treatment and presence of acute allograft rejection, have been identified as modifiable risk factors for poor survival. To shorten the time on dialysis before transplantation, it is important to increase the number of available donor organs. This can be done by use of living donors or older deceased donors for older patients. By optimizing the immunosuppressive therapy number of acute rejections can be reduced. The post operative cost of a successful KTx is approximately 8000 €/year while continued dialysis costs 7–80,000 €/year. KTx is thus an attractive treatment option for eligible patients both in terms of survival and economics

Even if transplantation increases survival, information about older patients' health related quality of life (HRQOL) after transplantation is lacking. At present we are conducting a study comprising approximately 200 kidney transplant candidates with the aim of describing HRQOL longitudinally from time of wait listing until five

years post transplant. We are also investigating possible ways to improve current selection criteria for KTx in the elderly.

S-03
Improving the care for older patients with cancer

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Presentation 1: Surgical oncology – what does the surgeon need from the geriatrician? Speaker: Riccardo Audisio (UK)
Presentation 2: Geriatric intervention in frail older patients operated for colorectal cancer – does it improve outcome? Speaker: Nina Ommundsen (NOR)
Presentation 3: Geriatric assessment in older cancer patients – what is the evidence? Speaker: M. Hamaker (NL)
Presentation 4: Common biology of cancer and ageing. Speaker: Claire Falandry (F)

Introduction (Siri Rostoft, MD, PhD, Oslo University Hospital)
Increasing age is the most important risk factor for cancer development, and a declining mortality from heart disease and other non-cancer causes leaves an elderly population at high risk of developing cancer. Many patients in the aged population will have co-existing problems such as chronic diseases, dementia, and frailty, while others are fit well into their 80s or 90s. Careful patient assessment is necessary in order to avoid both over-treatment and under-treatment. In the recent years, a geriatric assessment has been advocated as a useful tool to assist clinicians in making treatment decisions in older cancer patients. This symposium will give an overview of the evidence that is available with a particular focus on geriatric assessment and surgery. It will be discussed how the geriatrician in collaboration with the surgical team may improve care for older surgical cancer patients.
In addition, the final talk will investigate the link between cancer and aging. Is there a common biology for cancer and aging? What are the theories that explain the association between cancer and aging?

1. Surgical oncology – what does the surgeon need from the geriatrician? (Professor Riccardo A. Audisio, University of Liverpool, Consultant Surgical Oncologist, St Helens Teaching Hospital; email: raudisio@doctors.org.uk): Cancer surgeons do not need geriatric input; they firmly believe that they are entirely capable of deciding how and when best to operate on their patients. After all, the largest majority of cancer patients they deal with, on a daily basis, is senior patients. They are used to it.
Surgeons check drains and catheters meticulously, they monitor patients' temperature; it must be admitted that most of them make the right decision. But what happens when things go wrong? Could a problem not be anticipated? And if not, are we entirely sure that surgeons could not do any better?
Surgeons are proud to state that it is indeed the surgical procedure that saves live, more than any other treatment plan; if this is the case it is predominantly their responsibility if cancer outcomes of older patients are far worse than for younger ones [1].
Surgery is the best treatment we have in hand; for the time being the removal of the cancerous growth cures most patients [2]. On the other hand, we shall never forget that surgery comes at a price: it should be offered at the time where other, less intrusive, alternatives are not viable. Overtreatment is not good surgery, even if the procedure is performed to perfection.
Regrettably, the evidence for surgical procedures on older patients is scanty and clear cut data should be retrieved in order to substantiate the most appropriate management in this age group. Prospective, phase IV "real world" trials will be very useful in providing an answer to most unsolved issues (e.g. is axillary surgery always needed for breast cancer patients?). This will assist in minimizing undertreatment: tailoring the appropriate surgery is still resting on a rule of thumb.
This is where surgeons have started absorbing the art of frailty assessment from geriatricians; there is a whole world of information to be captured and put in place. A careful, well balanced, decision should be made [3].
Beside assisting in the decision making, geriatricians have also been crucially helpful in advising on how to master rehabilitation and prehabilitation: between the fit patient who is ready to receive extensive surgical treatment, and the frail individual who should be denied surgery, sits a large number of vulnerable ones. These individuals should be considered for correction of anaemia and malnourishment, rehydration, depression and so on. Physical and mental weaknesses should be tackled and corrected. There is substantial evidence that quick screening tools can be used in clinical practice; they are helpful in predicting surgical outcomes, thus assisting the decision making process and treatment planning [4,5].
Finally, a rather obscure area of clinical practice is postoperative delirium: its prevalence is very high when, different from everyday clinical practice, it is accurately monitored and detected. Delirium associates to increased number and severity of postoperative complications and lethality, longer hospital stay and costs. It is indeed a very important area where more lessons can be learned on how best to care for elderly patients surgically treated.

2. Geriatric intervention in frail older patients operated for colorectal cancer – does it improve outcome? (Nina Ommundsen, MD, Dept. of Geriatric Medicine, Akershus University Hospital; email: ninaommundsen@gmail.com): Colorectal cancer is a major cause of morbidity and mortality in the older population. The primary treatment is surgery. In general, older patients tolerate elective surgery well, but in the frail group of older patients, postoperative complications are prevalent.
Through a preoperative Comprehensive Geriatric Assessment (CGA), the geriatric team can adress multiple aspects of each individual patient's health, such as comorbidities, use of medication, ADL function, cognitive status and nutritional status. The result of the CGA can be used to estimate the patient's level of frailty, and through this it can give valuable prognostic information. However, the CGA also pinpoints targets for intervention and preoperative optimisation of each patient. Typical targets for intervention are malnourishment, comorbidities, functional decline and harmful polypharmacy.
The presentation will give examples on how to perform a preoperative CGA-based geriatric intervention in frail older patients with colorectal cancer, and summarize the evidence for such a method.

3. Geriatric assessment in older cancer patients – what is the evidence? (M. Hamaker): Currently used measures for quantifying a cancer patient's vitality, such as performance status, do not appear sufficient for differentiation within the heterogeneous elderly population. In particular, geriatric syndromes can be present even in those with a good performance status and can easily be missed if not especially looked for. Therefore, a 2005 International Society of Geriatric Oncology task force recommended that a comprehensive geriatric assessment (CGA) should be implemented for older cancer patients. At that time, the task force could not recommend any specific approach above others due to lack of cancer-specific evidence. Ten years have passed and despite numerous publications on this subject, many questions still remain to be clarified.
This presentation will provide an overview of the currently available evidence on the use of geriatric assessments for older cancer patients, with regards to capturing the health status in this patient population, predicting prognosis, treatment-related complications and the impact on oncologic and non-oncologic treatment decisions.

4. Common biology of cancer and ageing (Professor Claire Falandry, University of Lyon, Geriatrics Unit, Centre Hospitalier Lyon Sud; email: claire.falandry@chu-lyon.fr): Aging induces the

accumulation of degenerative diseases and particularly cancer. During the second part of last century, many theories of aging have been proposed, to explain biologically this epidemiological link. According to the Mutation accumulation theory, aging and cancer have a common driver, the mutation burden. According to the Antagonist pleiotropy theory, genes may confer advantages in early life but become harmful in the elderly, inducing aging phenotypes, while the Disposable soma theory describes the ability, in superior eukaryotes, to distinct germ lines from somatic cells, conferring a higher protection against aging in germ cells.
Strikingly, all these theories have found support during modern biology era with experimental evidence on telomere biology, senescence and stem cells regulation pathways. However, increasing lines of evidence support on the top of these pathways the existence of evolutionary-conserved programs, which regulate the balance of energy. According to a Hyperfunction theory, aging is a quasi-program favoring both age-related diseases and cancer that could be tuned down by longevity pathways regulation.
This presentation will summarize these hypotheses and the experimental data accumulated in the last sixty years, linking aging and cancer.

Invited symposium: Pre- and postoperative care

S-04
Quality improvement in hip fracture care

I. Saltvedt[1], O. Sletvold[2], D. Marsh[3], A. Johansen[4], G. Pioli[5]
[1]St Olavs hospital, Trondheim, Norway; [2]Norwegian University of Science and Technology (NTNU), Trondheim, Norway; [3]University College London, London, England; [4]University hospital of Wales, Cardiff, England; [5]ASMN Hospital, Reggio Emilia, Italy

Hip fractures are common among frail elderly patients and may have serious consequences as impaired mobility, function, quality of life, increased mortality and considerable costs for the society.Because of the ageing population, the burden of disease from fragility fractures is going to increase to a frightening extent and current clinical systems will have to evolve to cope. In this symposium research based upon audits, surgical methods and orthogeriatric care that has been shown to improve outcomes for hip fracture patients will be presented.
Rising to the global challenge (David Marsh): Whilst Europe and North America will see a doubling of hip fracture numbers in the next few decades, in the emerging economies, six-fold increases are expected. Disaster can only be prevented if two strategies are vigorously followed: (i) prevent as many hip fractures as possible by secondary prevention – reliably delivered to every fragility fracture patient (including vertebral fractures) and (ii) manage the fractures that do occur in the most cost-effective way, which means multidisciplinary care, particularly orthogeriatric co-management.
The mission of the Fragility Fracture Network is to promote these strategies globally, by focusing on the patients who present with fractures and the (most often) orthopaedic surgeons who look after them. While the two strategies above are the key message, good outcomes also depend crucially on high quality surgery and the FFN pays careful attention to this, not least because that gets the attention of the surgeons.
Ageing bone heals, but it does so slowly and therefore the surgical fixation has to remain strong for a long time; this is a challenge when the bone is porotic, with greater risk of pull-out of implants. Furthermore, protection from weight-bearing is not realistic in frail patients so the limb has to be structurally stable immediately post-surgery. Strategies to meet these surgical challenges include use of intramedullary fixation, fixed angle devices and joint replacement when a metaphyseal fracture is too difficult to fix. It is important to realise that anti-resorptive drugs do not interfere with the fracture healing process, except when a diaphyseal fracture is very rigidly fixed. The latter surgical technique should therefore not be used in fragility fractures and anti-osteoporotic treatment should always be given as soon as possible, to prevent the next fracture.
The National Hip Fracture Database (NHFD) – Audit in Action (Antony Johansen): All 180 trauma units in England, Wales and Northern Ireland are now routinely uploading data to the National Hip Fracture Database (NHFD) that is the largest national hip-fracture audit in the world with 65,000 records each year and over a third of a million patients since 2007. Over 95% of all new cases are included. These data are used to audit each patients' care against standards defined by the British Orthopaedic Association, the British Geriatrics Society, and the National Institute for Health and Care Excellence (NICE).
Data are fed back to individual hospitals, and in its annual report the NHFD also provides comparison of data, allowing units to benchmark their performance against other hospitals which allow the identification of 'outlier' hospitals to whom advice and specialist support can be offered.
This continuous process of quality improvement has supported major changes in the care offered to patients. In particular it has allowed NHS England to incentivise orthogeriatrician support to Hip Fracture Programmes that were central to NICE Guideline CG124, and this has supported trends for progressive reductions in mortality and length of stay after the injury.
Our results are set alongside data from national data sources to allow a more comprehensive picture of final length of stay and mortality. Casemix adjusted reporting on two key measures (30 day mortality, and successful return to own home by 30 days) is used to compare different hospitals' outcomes.
Clinicians and managers have used NHFD participation to prompt, monitor and evaluate clinical and service developments to improve the quality and cost effectiveness of hip fracture care. The report includes brief summaries of successful innovations that might encourage similar developments elsewhere.
Overview of orthogeriatric treatment (Giulio Pioli): In the preoperative phase the goal of medical management is to maximize the proportion of older hip fracture patients that undergo a quick surgical repair. Usually about one third of elderly hip fracture patients has abnormalities or active diseases at admission but only less than 5% have medical problems that need a surgical delay greater than 24 h. Fluid management and pain control should be started very early possibly in the emergency department as part of the initial orders given for emergency care. A complete geriatric assessment is the best way to identify and quantify medical and psychosocial comorbidities and pre-fracture functional abilities in order to elaborate a comprehensive therapeutic plan for preventing postoperative complications and scheduling rehabilitation and discharge planning. However, almost half of the patients experiences some minor medical complication in the early postoperative phase, 15% develop major cardiovascular events such as heart failure, myocardial infarction or stroke and 4–8% experiences a chest infection or sepsis. Standardization of the management of the most common features of the perioperative phase is an established way to improve the quality of the intervention and the outcome in the postoperative phase. Subjects with hip fracture and pre-existing disabilities may benefit, to a great extent, from shortening bed rest time. However, the overall goal of treatment for all patients is early mobilization, in an effort to prevent the complications associated with prolonged immobilization and to return the patient to functional activity.
Orthogeriatric co-management of hip-fracture patients; results from two Norwegian RCTs (Olav Sletvold): Recently results from two Norwegian randomized controlled trials on orthogeriatric care of hip-fracture patients has been published; the Oslo

Orthogeriatrics Trial (2014) and the Trondheim Hip Fracture Trial (2015). The experimental setting included pre- and postoperative geriatric care in an orthogeriatric ward. Both studies evaluated the impact of comprehensive geriatric care (CGC) provided throughout the entire hospital stay, with just fracture evaluation, surgical treatment and consultative input from orthopedic surgeons.
All patients admitted acutely with a hip fracture were screened. Patients were excluded if the fracture was a part of a high energy trauma or if patients were moribund at admittance. In the Oslo Orthogeriatrics Trial all other hip-fracture patients were eligible. In the Trondheim Hip Fracture Trial home-dwelling persons >70 years of age, previously able to walk 10 meters, were eligible.
Both studies enrolled and randomized participants in the Emergency Department to receive treatment in an experimental geriatric or in a traditional orthopedic ward. In the Oslo study there was focus on prevention of delirium and the primary outcome was cognitive function. In Trondheim there was focus on mobility, ADL and use of health care services. The primary outcome was mobility.
In both centers the patients were assessed at 4 and 12 months after surgery. Main results for the Oslo study showed no significant difference in cognition at 4 and 12 months. However, significant better mobility was found in patients not admitted from nursing homes. In the Trondheim study statistically significant and clinically meaningful differences on the primary outcome. A range of short- and longer-term secondary outcomes were in favour of treatment in the geriatric ward, being cost-effective, as well.

Invited symposium

S-05
Delirium in elderly patients

B.E. Neerland
University of Oslo, Oslo, Norway

Chair: Bjørn Erik Neerland, MD and PhD-candidate, Geriatric Department, University of Oslo, Norway (NO)
Speakers and titles:
- Daniel Davis (UK): Delirium and long-term cognitive impairment: population insights
- Leiv Otto Watne (NO): CSF studies in delirium – what have we learned so far?
- Giuseppe Bellelli (IT): Management of delirium in hip fracture patients (and other geriatric patients)

Delirium is a serious neuropsychiatric condition, characterized by acute and fluctuating disturbance in attention and awareness, reduced orientation to the environment and alteration in cognitive domains [1]. It occurs across all health-care settings and populations, but it is especially common in acute medical and surgical patients, and in palliative care services. Delirium is distressing for patients and caregivers, and independently associated with a number of adverse clinical outcomes. The pathophysiology of delirium has not yet been fully elucidated, and the management of delirium still remains challenging for healthcare workers.
Delirium and long-term cognitive impairment: population insights (Daniel Davis, UK): Though delirium is now established as a strong predictor of cognitive decline in older adults [2–4], whether it accounts for additional, inter-related or unexplained pathological injury contributing to dementia has not been examined. It is possible that when dementia follows delirium it has a different pathological profile compared to dementia that develops without delirium. Therefore, understanding how delirium affects the evolution of dementia, in the context of a particular burden of pathology, may offer new insights into independent mechanisms explaining cognitive decline after delirium.
This talk will present data examining a key hypothesis: that faster cognitive decline associated with delirium would act independently of the cognitive decline associated with classical dementia pathology. Accordingly, we investigated the extent to which delirium and classical dementia pathology contributed to associated cognitive decline in three unselected population-based cohort studies with neuropathology autopsy data (n = 987).
We show that people with both delirium and higher levels of classical dementia pathology demonstrate the greatest cognitive decline. Delirium, in the presence of dementia-related neuropathology, was associated with cognitive decline beyond that expected for delirium or the neuropathology itself. This means that delirium may be independently associated with pathological processes driving cognitive decline which are different from classical dementia pathology. These findings suggest new possibilities regarding the pathological correlates of cognitive impairment, positioning delirium and/or its precipitants as a critically inter-related mechanism. Showing this in three unselected samples, further attests to the broad significance of these findings and their applicability to the wider population.
CSF studies in delirium – what have we learned so far? (Leiv Otto Watne): Given the magnitude of the problem, delirium pathophysiology has been greatly understudied and is poorly understood. In overviews of biomarker studies, the most striking finding is the low number of patients included [5, 6]. While delirium is clearly a phenomenon that affects the brain, most biomarker studies have been done in the periphery (serum or plasma). Analysis of cerebrospinal fluid (CSF) has great potential, since CSF might more closely reflect changes in the central nervous system. There is however ethical and practical difficulties in obtaining CSF from patients with delirium, and only a few studies exist. One possibility to obtain CSF is to include patients that undergo surgery in spinal anesthesia, since such patients will have a lumbar puncture anyway. Accordingly, most CSF studies in delirium have been done in patients with hip fracture.
This talk will present the most important findings of the existing CSF studies in delirium. The talk will also address the some of the challenges in doing biomarker studies in delirium.
Management of delirium in hip fracture patients (and other geriatric patients) (Giuseppe Bellelli): In patients with hip fracture, the prevalence of preoperative delirium ranges from 15% to 23%, while the incidence of post-operative from 12 to 53%. Delirium is potentially preventable, and interventions can be effective in preventing delirium in adults who are at risk [7]. These preventative interventions should be tailored to each person's needs, based on the results of an assessment for clinical factors that may contribute to the development of delirium. Such clinical factors include cognitive impairment, disorientation, dehydration, constipation, hypoxia, infection or other acute illness, immobility or limited mobility, pain, effects of medication, poor nutrition, sensory impairment and sleep disturbance. However, implementation of standardized nonpharmacological delirium prevention strategies is challenging and adherence remains low.
This talk will present and discuss the most important studies on non-pharmacological and pharmacological management of delirium.

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S-06
Acute functional decline

A.H. Ranhoff
University of Bergen, Bergen, Norway

Chairs: Anette Hylen Ranhoff, Norway and Renzo Rozzini, Italy

Acute functional decline in older people is first of all an indicator of acute disease. But it is also a prognostic factor for further functional decline and mortaliy in the acute ill older person. It is a common phenomenon as half of the older patients admitted to medical departments are shown to have decline in function during the last two weeks prior to hospitalisation.

In this symposium we will discuss risk assessment, risk factors and rescilience to acute functional decline and also possibilities for intervention to preserve function in older acutely ill persons.

Risk assessment of the older person at risk of functional decline (Matteo Cesari, Gérontopôle, Centre Hospitalier Universitaire de Toulouse, Toulouse, France): Disabling conditions at old age represent a major burden for both the individual's quality of life as well as for the sustainability of public health systems. Therefore, relevant efforts have been produced in the last decades for supporting the detection of older individuals at risk of negative outcomes (in particular, functional loss) across all the healthcare settings. In this context, the so-called frailty syndrome has attracted the interest of the scientific community as a potential condition to which targeting preventive and therapeutic interventions. Nevertheless, although there is an almost universal agreement about the theoretical foundations of frailty, its operationalization is still controversial. Multiple instruments have been proposed in literature over the past years, but no consensus has yet been reached about a possible "gold standard". Interestingly, studies have demonstrated that although the capacity of available instruments at predicting negative health-related events is consistently present, the agreement of these tools at identifying the same risk profile is relatively modest. Such issue poses serious problems in the standardization of the assessments and care, especially if considering (1) the heterogeneity of the older population, and (2) the different characteristics of the settings where the assessment should be conducted.

In this presentation, issues related to the risk assessment of the older person at risk of functional decline will be described and discussed. Possible solutions (largely relying on the adoption of objective models) will be proposed.

Acute functional decline before hospital admission. Limitation and decline in functional status in an elderly population are predictors of mortality (Renzo Rozzini, Poliambulanza Hospital, Brescia, Italy): The change in function after an acute disease could be viewed as the mirror of a broader condition of inability to react to stressful events, and for this should be assessed as a relevant prognostic indicator. The issue of functional change, as a marker of clinical stability or instability (homeostasis) in the context of an ill older adult, goes back to the concept of frailty, one that has proved difficult to define operatively.

Some authors have suggested that the loss of homeostasis might be a good indicator of frailty. Most clinicians, and for that matter many of the public, can recognize frail elderly persons when they see them. However, when asked to provide the characteristics that make a particular person frail, they are often at a loss. Focusing the attention on acutely ill hospitalized patients, it may be observed that functional status at admission and the functional change after an acute disease are mirrors of a broader condition of inability to react to stressful events. The inability to remain functionally stable after an acute illness (i.e., the loss of function) might be an evident epiphenomenon of frailty. Interventions aimed to maintain, regain, or improve functional performance; they can improve quality of life of elderly persons and reduce health care utilization and risks of admission to a nursing home.

In this presentation data from an acute care of the elderly unit will be presented and discussed.

Acute functional decline and the Tipping Point Theory in Older Adults (Marcel G.M. Olde Rikkert, Department of Geriatrics, Radboudumc, Nijmegen, The Netherlands): As a leading physician member of the SPARC center which embodies the Synergy Programme for Analyzing Resilience for Critical Transitions, in complex biological systems (see:http://www.sparcs-center.org), I will present the analysis of critical transitions in functional decline of frail older adults over their tipping points of independent functioning. Being part of SPARC I aim to catalyze novel insights in the mechanisms that govern resilience and critical transitions in geriatrics and complex geriatric syndromes such as syncopes, delirium and acute functional loss. I will show examples of how the knowledge successfully acquired in studying complex biological models can now be applied to frail older persons. By the SPARC's collaboration we are able to add further knowledge on complex systems theory from medical biology to clinical gerontology, and thereby delivering added value to research, clinical practice and teaching geriatrics.

Moreover, I will present the latest findings of our Coach2Move project which proved that exercise training can improve frailty, and is a cost-effective intervention in increasing resilience in adults aged 75 years and over. The Coach2Move strategy was developed together with older adults and professionals, and is based on: (1) motivational interviewing techniques to answer the personal question: why would you start to move? (2) Explore the barriers in relation to physical and social activity, (3) Set priorities based on physical examination and clinical reasoning. (4) Decide together on meaningful goals. (5) Coach on self-management and self-efficacy to increase long term results. (6) Accept help from family, friends and/or professionals. (7) Stratify the intensity based on recovery.

The results show that a patient-centered focus on exercise, self-management, and coaching is the key in restoring resilience and again achieving adequate physical activity levels for older adults. Investing in personalized and goal directed activating therapy should have priority in frail older adults, and probably is far more safe and effective than drug therapy.

S-07
Dementia, Biomarker, Genetics and Experimental treatment

N. Bogdanovic
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Chairs: Nenad Bogdanovic, Professor, University of Oslo, Norway, and Mustafa Cankurtaran, Professor, Hacettepe University, Turkey

Last two decades have brought improvements in understanding of dementia pathogenesis, diagnostic assessment and symptomatic therapy. After introduction of amyloid cascade hypothesis in 1992 by John Hardy (please see Key symposium on dementia on 18th September a.m.) the clinical and preclinical research were focused on development of new biomarkers of dementia diseases to improve the diagnostic procedure by "shifting to the left"

the clinical assessment of cognitive impairment. Introduction of the novel imaging techniques, MRI and PET and CSF biomarker have enriched the visualisation of neuropathological features in living individuals who have a higher risk to develop dementia. Moreover, identification of the cognitive impaired but not demented patients has ultimately led to identify early Alzheimer patients to be included in the trials. In parallel with improvement of the clinical assessment, genetic research has shed more light in understanding not only the classical mutations but rather diverse genetic polymorphisms and gene-gene interactions. Ultimately, the novel experimental disease-modifying-drugs and therapeutic substances have shown a promising effect to ameliorate the accumulation of amyloid protein in the brain. This symposium will stress the latest "breaking the ice" developments in clinical and experimental dementia research.

CSF biomarkers for Alzheimer's disease – update on established biomarkers and new developments (Kaj Blennow, MD, PhD, Professor, Clinical Neurochemistry Laboratory, Dept. of Neuroscience and Physiology, Gothenburg University, Mölndal Campus, Mölndal, Sweden): Research advances in Alzheimer's disease (AD) molecular pathogenesis have given several drug candidates targeting β-amyloid (Aβ) and recently also tau pathology that are tested in clinical trials. However, the list of anti-Aβ trials failing to show clinical benefits indicate that trials need enrol patients before neurodegeneration is too advanced, to give drug candidates a chance to show clinical efficacy, and to enrich for patients that do have AD pathology. To manage this, biomarkers will have a critical role.

The CSF biomarkers total tau (T-tau), phospho-tau (P-tau) and Aβ (Aβ42 or Aβ42/40 ratio) have consistently been found to have high diagnostic accuracy to identify AD already in the early (prodromal) disease stage. Given that CSF Aβ42 show identical diagnostic performance for AD as amyloid PET at only a fraction of the cost, it is likely that CSF biomarkers will be important tools for AD diagnostics.

However, standardization is needed since current ELISA methods have high between-lab and between-batch variability. The IFCC-WG for CSF proteins aims to develop a Certified Reference Material (CRM) for distribution to assay vendors and laboratories to harmonize assay readouts. A mass spectrometry-based Reference Measurement Procedure (RMP) has been developed for Aβ42. Biotech companies are developing high-quality fully automated assays with minimal analytical variability. Taken together, these efforts will allow uniform cut-off levels and enable the large-scale introduction of CSF biomarkers in diagnostic routine.

New developments include assays to monitor soluble Aβ oligomers and synaptic dysfunction. Recent studies show a marked increase in CSF levels of both the presynaptic protein SNAP-25 and the dendritic protein neurogranin in AD dementia and prodromal AD, with higher neurogranin levels predicting a more rapid cognitive decline and with progression to AD dementia. This type of synaptic biomarkers may be valuable to select early AD cases for inclusion in trials, and to monitor drug effects on synaptic function and integrity.

Dementia genetics – current status and future potential (Ole A. Andreassen MD PhD, Professor, NORMENT KG Jebsen Centre, University of Oslo, Oslo University Hospital, Oslo, Norway): The heritability of late onset Alzheimer's disease (AD) is fairly high, but most of the genetic risk is unknown. ApoE was for a long time the only identified risk gene, but recent technological developments have revolutionized this type of research. Now it is possible to genome-wide association studies (GWAS) of hundred thousand participants, and the largest study to date identified 19 single nucleotide polymorphisms (SNPs) tagging risk loci.

Epidemiological findings suggest a relationship between (AD), and other neuropsychiatric disorders, as well as inflammation and dyslipidemia. However, the nature of these relationships is not well understood. We investigated whether these phenotypic associations arise from a shared genetic basis ('pleiotropy'). We investigate overlap in (SNPs) associated with clinically diagnosed AD and Parkinson's disease (PD) and between AD and C-reactive protein (CRP), triglycerides (TG), high (HDL) and low-density lipoprotein (LDL) levels.

We demonstrate polygenic overlap between AD, inflammation, and plasma lipids and identify three novel genome-wide significant variants conferring increased risk of Alzheimer's disease. Our findings identify the tau-associated MAPT locus as a site of genetic overlap between AD and PD, and support the hypothesis that inflammatory mechanisms and dyslipidaemia influence Alzheimer's pathogenesis.

Studies of rare gene variants have recently revealed gene variants with protective properties (in APP) which may lead to development of new drug targets. We also recently found risk variants in TREM2 and ABCA7, which suggest an involvement in immune mechanisms and membrane transport in AD pathology.

The recent findings in the molecular genetics mechanisms of dementia have provided new knowledge about disease pathogenesis, as well as new opportunities for development of new treatment regimens.

The role of imaging in dementia: Methods for research and clinical practice (Lars-Olof Wahlund, Professor, Section for Clinical Geriatrics, NVS department, Karolinska Institutet, Stockholm, Sweden; lars-olof.wahlund@ki.se): Neuroimaging has become increasingly important in the clinical assessment of dementia as well as in clinical research. Today we use imaging biomarkers for several of dementia disorders. With MRI and CT the structural changes in dementia can be assess with high precision. The specific changes seen in for instance Alzheimer's disease are easily detected early in the disease process using MRI or CT. This knowledge has been implemented in the new suggested criteria for Alzheimer's diseases publish by Dubois et al some years ago. Last years it has become possible to study the key pathological processes in the brain of Alzheimer's disease by assessing amyloid in the brain using PET technique. This fact and the fact that glucose metabolism can be studied in several dementia disorders has made it possible to use these techniques for biomarkers in disease modifying clinical trials. The talk will include a review of the most modern methods used in dementia workup as well as in dementia research for both diagnostic purposes and as biomarker for effect evaluation in clinical trials on disease modifying drugs.

Novel and experimental therapeutics in Alzheimer's Disease (Nenad Bogdanovic MD, PhD, Professor, Geriatric Department, Memory Clinic, Oslo University Hospital, UiO, Oslo, Norway): Alzheimer's disease (AD) is presently incurable and treatable only in terms of modest delay of symptomatic progression. The unmet need for more effective pharmacological intervention is becoming mandatory as the patient population increases. Only symptomatic drug therapies have been approved for treating AD; cholinesterase inhibitors (ChEIs), and memantine, an NMDA receptor agonist, or donepezil, a ChEI. The lack of novel treatment options beyond ChEIs and memantine is due to insufficiently understanding of Alzheimer's disease pathophysiology.

Last 20 years, the Amyloid Cascade Hypothesis (John Hardy 1992) is providing the neurobiological rationale in the development of the new drugs against AD, suggesting that decreasing beta-amyloid protein load in patients could have an ameliorating effect. Unfortunately failure of several amyloid clearance therapies within the last 3–4 years has dramatically broadened the landscape of pathways that are under investigation. Moreover, it has been shown that making a diagnose of AD based on the presence of the beta-amyloid in the brain is not an easy task without employment of biomarkers and the failure of some very promising compounds

was due to enrolment of the clinical AD patients without evidence of amyloid in the brain. Development of passive and active immunization, beta and gamma-secretase inhibition or RAGE receptor inhibitors are recently appreciated as the promising future treatments. Furthermore, novel experimental drug candidates directing towards alternative targets to amyloid molecule have been suggested. Compared to amyloid-based approaches, drugs targeting tau, metabolic actors such as insulin and NGF manipulators, multitarget anti-inflammatory agents and metal chelators are in the beginning of clinical development. Anti-tau approaches, in particular, are promising because clinically investigation of tau is an unexplored frontier, hitherto there is an evidence that tau dysfunction has been positively correlated to other neurological diseases characterized by loss of cognitive function including Pick's disease, parkinsonism and frontotemporal dementia.
A broader therapeutic intervention that can operate on multiple targets would increase the chances of finding a successful mechanism of action.

Symposium: Metabolism and nutrition

S-08
Impact of nutrition for health of older people: Asian's perspective

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Introduction: Nutrition plays a very important role in healthy aging and the prevalence of malnutrition became higher when people getting older. This symposium aimed to report issues of malnutrition in Asian countries, which includes community-dwelling older people, older patients in the acute hospitals and those who lived in the retirement communities.
Role of protein and vitamin D intake for disability and cardiovascular disease (Presenter: Dr. Hidenori Arai, National Center for Geriatrics and Gerontology, Japan): Along with the aging of the society, the prevalence of sarcopenia and cardiovascular disease is estimated to be increasing in the future in Asian countries. For the prevention of these disorders, the role of nutrition should be more highlighted in the field of geriatrics. However, little evidence has been provided to address appropriate nutrition focusing on protein and vitamin D for the prevention and disability and cardiovascular disease in the elderly. Therefore, we hypothesized that low protein and vitamin D intake results in sarcopenia without affecting the development of cardiovascular disease in community-dwelling elderly in Japan. We studied the protein and vitamin D intake in community-dwelling elderly through questionnaire. Based on the questionnaire, we divided the cohort into quartiles and followed them up for 2 years. We found that the elderly with lowest intake of protein and vitamin D had a significantly higher incidence of disability in 2 years. When we divided the cohort into young old and old old, the difference was only significant in old old. We also found a significant association between vitamin D intake and skeletal muscle mass. However, we did not find any effect on cardiovascular disease. In conclusion, our data indicate that sufficient protein and vitamin D intake is important for the prevention of disability in old old.
Malnutrition in hospitalized Malaysian elderly (Presenter: Dr. Philip Jun Hua POI, University Malaya Medical Centre, Kuala Lumpur, Malaysia): Hospitalised elderly are frequently identified as being malnourished. Malaysia is a fast developing country with a growing elderly population, and more elderly are now seeking limited geriatric health services. The prevalence of malnutrition in hospitalized elderly Malaysians is wholly dependent upon identification of this condition by the medical and nursing staff. Due to the heavy clinical workload, this opportunity is often missed due to the lack of agreement in screening the patients. A local malnutrition risk screening tool for hospitals (MRST-H) was developed. This new screening tool was tested for reliability and was found to have an excellent Kappa index of agreement amongst the raters (dietitian / nurse). It is hoped that this new screening tool will help identify malnourished hospitalized Malaysian elderly more efficiently, and allow early intervention.
Malnutrition and swallowing difficulty among dependent community-dwelling older people in Japan: prevalence and consequences (Presenter: Dr. Masafumi Kuzuya, Department of Community Healthcare & Geriatrics, Nagoya University Graduate School of Medicine, Nagoya, Japan): This study aimed to determine the prevalence of malnutrition and the swallowing difficulty and to examine the association of these problems with subsequent mortality or hospitalization during a 1-year follow-up among community-dwelling dependent older people. The study population consisted of 1142 community-dwelling dependent older people (men: 460; women: 682) with physical or mental disability in some degree. They were eligible for long-term care insurance, lived in Kanagawa and Aichi prefectures, and were provided various home care services. Nutritional and swallowing statuses were evaluated by Mini-Nutritional Assessment-Short Form (MNA-SF), and Dysphagia severity scale (DSS), respectively. Data also included the clients' demographic characteristics. Overall, 16.7% and 55.4% were diagnosed as malnutrition and at risk for malnutrition, respectively. The prevalence of dysphagia was 8.6%. The prevalence rate of malnutrition increased as dysphagia severity increased. Although the malnutrition was associated with mortality and hospitalization, no apparent association was observed between the swallowing difficulty and these events. In conclusion, the results highlight the need for effective prevention to reduce the poor nutritional status among community-dwelling dependent older people.
Impact of malnutrition on physical, cognitive function and mortality among older men living in Veteran Homes: A prospective cohort study in Taiwan (Presenter: Dr. Liang-Yu Chen, Center for Geriatrics and Gerontology, Kaohsiung Veterans General Hospital, Taiwan): This prospective cohort study enrolled 1,248 male residents aged equal or more than 65 years for study. Malnutrition was defined based on the MDS RAP trigger. The mean age of participants is 83.1 ± 5.1 years, and the prevalence of malnutrition was 6.1%. Inadequate dietary content (57.9%) and unintentional weight loss (31.6%) account for the majority of malnutrition identified by MDS tool. Higher 18-month mortality rate (25% vs. 14.2%), higher baseline CCI (median 1 vs. 0), and higher baseline sum of RAP triggers (median 8.5 vs. 5) were noted among residents with malnutrition. Furthermore, malnutrition was shown predictive for functional decline (OR: 3.096, 95% CI: 1.715–5.587) and potential cognitive improvement (OR: 2.469, 95% CI: 1.188–5.128) among survivors after adjustment for age, body mass index and CCI. In conclusion, malnutrition among older men living in veteran homes was associated with multimoridities and higher care complexity, and was predictive for mortality and functional decline.
Summary: For community-dwelling older people, vitamin D supplementation was very important to muscle mass but not cardiovascular disease. In Japan, the prevalence of dysphagia reached 8.6% among community-dwelling older people and they became more malnourished as the dysphagia becoming more severe. In the retirement communities, malnutrition was associated with multimorbidity and care complexity, which was predictive for poorer functional outcome. However, malnutrition may be protective for cognitive decline, which may be related to the survivor effects instead of the effect of malnutrition per se.
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S-09

"nutritionDay in nursing homes" – present state and future prospects

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Introduction: Nursing home residents are at high risk of malnutrition for various reasons, and malnutrition is widespread in this mostly very old and frail population group. This is of relevance since malnutrition is related to many unfavourable health outcomes and increased healthcare costs.

Effective measures for nutritional therapy are available, prerequisite is, however that nutritional problems and malnutrition are recognized. Currently the significance of the problem is not very well perceived and in many institutions prevention and treatment of malnutrition do not receive appropriate attention.

Thus, the aim of the nutritionDay project is to improve knowledge and awareness of malnutrition in health care institutions and to overall enhance the quality of nutritional care. The initiative started in 2006 in the hospital setting in a few countries and meanwhile developed to a worldwide project (www.nutritionDay.org). On one specific day every year ("nutritionDay") hospital wards and nursing homes around the world have the opportunity to participate and thus to monitor and benchmark the institutions' nutritional care at an international level.

At the same time, a continuously growing database develops containing information about the nutritional situation of nursing home residents all over the world. This database is available to scientists who contribute to the project. Analysing these data provides the opportunity to better understand differences between institutions within one country as well as cultural differences between countries.

The vision of the organizers is that nutritionDay can be developed further and will be adopted as a surveillance tool to monitor malnutrition at national levels and at the same time helps to better understand the role of various structural and individual determinants of malnutrition and to develop strategies to improve nutritional care.

Objectives: After participating in this symposium, participants are aware of the problem of malnutrition in institutionalised older persons and the importance of adequate nutritional care to prevent and treat malnutrition.

Participants are informed about the nDay project as a tool to increase awareness of malnutrition and know about the opportunity to participate and make nutritional care a subject of discussion in their own institutions.

Participants will also get an idea how to promote and implement the project in their country and know about the possibility to become part of the project as a country representative, who will also have access to the scientific database.

Finally participants will learn about the dynamic nature of the project and possible future strategies and developments.

Presentations:

1. The nutritionDay project – an overview and update of findings (Dorothee Volkert): This presentation will give a review of the project and will report latest results of the database evaluation.

In 2007 nutritionDay was performed for the first time in nursing homes with the overall aim to evaluate the current state of the nutritional status of nursing home residents using easy to complete questionnaires. Meanwhile the project is well established in nursing homes around the world. Up to now more than 700 nursing home units with more than 28,000 residents from 21 countries have participated.

nutritionDay data document a great heterogeneity in units' as well as in residents' characteristics between different countries. Malnutrition according to BMI, MNA, weight loss and low food intake is widespread in all countries with great variance in the prevalence between countries and also within countries between participating units. Malnutrition is more prevalent in frail, functionally impaired residents than in functionally unimpaired and is clearly related to a poor outcome after 6 months. The role of institutional factors, like regular weighing or screening for malnutrition or the presence of a dietitian is presently unclear and subject of current analyses.

2. nutritionDay initiative in Styria – best practice – experience from Styria (Regina Roller-Wirnsberger, MD, Medizinische Universität Graz, Austria): In 2012 a low awareness of the impact of nutrition on individual outcome and wellbeing of nursing home residents and a lack of data regarding nutritional care was noticed in the province of Styria in Austria. Furthermore, documentation and nursing concepts for nutritional care used within long term care varied significantly and a lack of guidelines was recognized.

It was therefore of interest to get information about the nutritional situation of nursing home residents as a basis for political decisions regarding quality assurance of nutritional care. A multi-stakeholder partnership was raised between nursing homes, universities and members of the provincial government which allowed training of nursing home staff about malnutrition, facilitated nutritionDay participation by support from students and allowed political commitment.

As a result 61 Styrian institutions (about one third of all nursing homes in Styria) participated in nutritionDay in nursing homes on November 8th, 2012. In 104 units 3106 residents were screened for malnutrition on that day. Results were made available for each institution and a comprehensive report about the Styrian results in comparison to Austria and other European countries was produced. As a result, national guidelines for nutritional care were developed and quality of nutritional care is now checked in all nursing homes on a regular basis by legal officers.

In summary, the multi-stakeholder approach makes the Styrian initiative innovative as it reaches out to political decision makers on the one hand and to health care professionals, who are working in the field, on the other. This approach led to changes on structural and political level as well as increased awareness of health care professionals which finally results in improved quality of nutritional care.

3. Future needs and developments: targeting malnutrition and mobility disability (Marcello Maggio, MD, Geriatric Clinic Unit University Hospital of Parma, Italy): The nutritionDay pursues the goal of improving the awareness of malnutrition in nursing homes (NH) and other settings. The instruments actually used in this initiative to screen malnutrition and the food consumption in NH residents participating at ND include the Mini Nutritional Assessment short-form and qualitative and quantitative evaluation forms of food consumption. This information is useful to generate predictors of outcomes at 6 months such as mortality and hospitalizations. However, one the main consequences of malnutrition in nursing homes is the deterioration of physical function and the onset of disability. This phenomenon has a huge impact on NH organization, by increasing the costs and decreasing the quality of life of participants. The chair stand test is a simple objective test of physical function which deserves particular attention for a number of reasons: 1) It is an independent risk factor of mortality. 2) It can be more easily performed than other tests such as gait speed because the space necessary to complete the walking test is often not available. 3) It is a mirror of muscle mass and function more than other physical tests. 4) Recent data coming from randomised intervention trials suggest that it is a sensitive marker of nutritional intervention in older persons.

In summary, the inclusion of a simple objective test of physical function sensitive to nutritional interventions might be of enormous importance to increase the significance of information

collected during the ND and the quality of care in institutionalised subjects. Future studies are needed to address its role as indicator of standard quality of NH.

Concluding section: In summary, the audience will be informed about the current state and future options of the nutritionDay project and will be invited to participate with their own institutions at the next nutritionDay on November 19th, 2015.

The symposium will bring persons together, who are interested in nutritional care of older institutionalised people and will invite them to participate and build an international network of experts in this field.

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- Dorothee Volkert: incidental lectures for medical nutrition companies (Nutricia, Nestlé, Fresenius)
- Regina Roller-Wirnsberger: no conflict of interest
- Marcello Maggio: participation in a clinical trial of Nutricia Advanced Medical Nutrition, Danone Research (PROVIDE)

Symposium: Geriatric education

S-10

Dissemination and action to promote Physical Activity (PA). Educational and behavioral aspects to increase PA in clinical practice

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Symposium: Dissemination and Action to promote Physical Activity (PA)

Educational and behavioral aspects to increase PA in clinical practice (EUGMS conference September 2015 in Oslo), hosted by EUNAAPA. Chair: Ellen Freiberger; Co-Chair: Nico van Meeteren.

Chair's Expertise: Ellen Freiberger is currently working as an Associated Professor at the Institute for Biomedicine of Aging at the University of Erlangen-Nürnberg. She is member of the Steering Committee of EUNAAPA since 2006. Her research area is the development and implementation of exercise intervention program for older persons with the special focus on fall prevention. In addition the education for exercise instructors to enhance physical activity in older persons and exercise instructors in fall prevention working with older persons has also been part of her research activities.

Co-Chair's Expertise: Nico van Meeteren, physiotherapist and neuroscientist, is currently Executive Director and Secretary General of the Dutch Topsector Life Sciences and Health and Professor of Physiotherapy, Physical Functioning of People with Chronic Disease at Maastricht University in the Netherlands. From 2011 on Van Meeteren is Chair of EUNAAPA. His research concerns the functional recovery in (fragile) persons with all sorts of chronic loco-motor tract (related) pathologies, both in the preclinical and clinical setting as well as in society at large. Focus of research is: keeping up peoples' physical activity, functioning and vitality despite their chronic disabling conditions and consequently encouraging their sustainable participation in society.

Symposium Program and Target Audience: It is common understanding that exercise as well as physical activity (PA) among community-dwelling older adults has beneficial effects on health determinants. Given the fact that maintaining independence and high functional status is of the utmost importance to older persons one might think that older persons are lining up for exercise classes. Despite evidence of positive impact of physical activity, a huge proportion of older people do not full fill the required amount of physical activity to gain positive health or functional effects. Several domains of determinants for PA have been indicated spanning from personal, interpersonal, environmental to political domains. This symposium addresses several domains of determinants for increasing physical activity in older age and will target a wide audience, ranging from clinicians to researchers to health care professionals and, of course, the population of the elderly themselves.

Rationale for the Symposium: Ageing is in the long run accompanied by chronic health conditions such as diabetes, sarcopenia and heart failure. The pathway to declining function in older age is further encouraged by an increasingly sedentary lifestyle stemming both from culture as well as from our nowadays prevailing infrastructure. Almost 60% of older adult's reported sitting for more than 4 h per day. Promoting physical activity in society at large and, in the context of its sub-settings, in an interdisciplinary team seems mandatory for a gradual sustainable increase in PA levels and function on a population base. Health care personal, peers or family members as well as politician play an important part in the promotion of PA in older adults. One barrier in the interdisciplinary approach of promoting PA in older adults are missing recommendations for physical activity in Europa and standardized educational training curriculum for physical activity. The symposium will provide newly created recommendations and training curriculum based on the state-of-the-art as well as address motivational and functional aspects to increase physical activity level on older persons.

Learning Objectives: After this symposium participants will be able

- To be familiar with recommendation for physical activities (Nico van Meeteren)
- To be introduced to the training curriculum for physical activity (Elisabeth Rydwik)
- To gain competence about motivational aspects in physical activity promotion (Erwin Tak)
- To become familiar with the functional approach from the behavioral side (Ellen Freiberger)

1. Rome in to action (Nico van Meeteren): The world, as seen as a complex dynamic system, is constantly changing and likewise are people and their in- and explicit thoughts and handlings at all levels, from macro to micro. These dynamics find their parallels in our demographics and in our behavior and life style, especially in our physical activity habits. Our physical activity decreases worldwide with increasing negative effects for our health and physical functioning. Joint durable action is requested in order to counteract this global process, especially for the elderly. Consequently EUNAAPA and several international, mostly EU partner-organizations concerned with physical activity in the elderly issued recommendations for policymakers, researchers and professionals in order to advise them how to act in the macro and micro context to provide means to gradually and sustainably increase physical activity for the next elderly generations. These recommendations are collectively known as "The Rome-Statement" and during this symposium the statement is presented and debated in order to improve them where possible or even necessary and to further disseminate them towards all relevant settings, institutes and people involved.

2. Training curriculum by EUNAAPA (Elisabeth Rydwik): The EUNAAPA trainings curriculum will act as a solid recommendation to use in development of different kind of courses for people working in public health, healthcare and NGO organisations on how to stimulate physical activity and reduce sedentary behaviour among older adults. The curriculum is based on, and includes, the latest evidence on the topic of promoting PA in older persons.

The curriculum mainly focuses on teaching and promoting exercise interventions and physical activity and can be used for different professionals. The course organisers need to adapt the content and the level depending on the participants pre-knowledge, the context in which participants are active and the possibility to implement the knowledge of the course. The curriculum can be used as a whole or one can choose to use only parts of it. The length of the course depends upon the level of details, the participants pre-knowledge, how much of the curriculum that is being used and the background of the participants. It can vary from one day up to two weeks. It can also be used in Bachelor or Master Programs at universities. The curriculum is divided in two parts: 1) Description of the older adult and 2) How can we increase physical activity and reduce sedentary behaviour among this population? The curriculum will be presented and discussed during the symposium.

3. Motivation and PA; which roads (not) to take (Erwin Tak): Despite the abundance of evidence on the positive effects of physical activity on health and functioning some older adults still believe that PA is unnecessary or potentially harmful, 45% do not meet recommended levels and 40–50% drops out of structured exercises after joining. Motivational aspects play an important role in this and offer opportunities to improve adherence and maintenance.

Common determinants and barriers for being physically active, including social, physical, practical and personal aspects will be discussed. A special focus will be on social influences which are thought to be of great importance in older adults such as interpersonal, individual and program characteristics. Finally several practical recommendations will be addressed that can be targeted in geriatric practice will be addressed including proving feedback, quality aspects and individually tailoring of program contents. Changing physical activity behavior is difficult, but there are things that can be done to improve physical activity in older adults.

4. Functional approach (Elisabeth Rydwik): Functioning in terms of the qualitative and quantitative aspects of behavior and life style are as unique and personalized as the fingerprints of a person of each individual person and sustainable behavioral change is in general hard to establish and if established at its best for most cases for a limited period of time. Best durable results of life style and behavior changes in the respect of physical activity seem to be caused by changing local/regional context in a combination of infrastructure (relatively fast working procedure) and culture (relatively slow working procedure) with help of all relevant stakeholders. Functioning itself can be seen as constant lifelong purposeful and more or less intended management of the interrelated dynamics of ones 'self' on the one hand and the environment on the other hand. Physical (in)activity is one of the most intense behaviors that constitute functioning and contributes heavily to pertaining one's health, be it in people with or without (co)-morbidities. Physical training and activity in the context of functioning demands knowledge of aforementioned actual insights as "the intentional body" in the context of the 'action approach', rather than knowledge about substantial body as is nowadays mostly seen in and used by the 'motor approach'.

5. Discussion (Nico van Meeteren – Chair EUNAAPA): Setting the challenges towards Horizon 2020

Disclosures: Ellen Freiberger has no conflict of interest. Nico van Meeteren has no conflict of interest. Erwin Tak has no conflict of interest. Elisabeth Rydwik has no conflict of interest.

*With the exception of the introduction and discussion all speakers have been provisionally accorded.

Erwin Tak,(PhD) is a Health Psychologist and employed by TNO in the Netherlands, with a main interest in behavioral aspects of physical functioning for people with chronic diseases. Erwin joint EUNAAPA from the scratch, that is from 2005 on, and nowadays has the role of secretary of EUNAAPA.

Elisabeth Rydwik, Associate professor, Karolinska Institutet, Dept of Neurobiology, Caring Sciences and Society, Division of physiotherapy; Stockholm County Council, Research and development unit for the elderly, Jakobsberg's hospital. Her research interests are in the area of physical activity and exercise as well as in physical functioning in older people.

S-11
Innovating for a reason: using new educational technologies to improve learning in geriatric medicine

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Brief introduction to the topic: It is recognised that teachers who are excited by new technologies may use them without considering their impact on learning. Considering 'pedagogy before technology' may lead to more rational application of technologies within proven practices and models of teaching (Beetham & Sharpe, 2007). Emerging technologies represent a paradigm shift in education allowing democratisation of information, the generation of online, global communities and portability resulting from the ubiquity of personal mobile and wireless devices. These technologies thus represent an opportunity, but it is crucial that teachers using them assume both a creative and a critical approach to their implementation.

Symposium Objectives:

- Showcase examples of technological innovations being used globally to teach geriatric medicine
- Summarise the core educational theories underpinning the use of technology-enhanced learning in its different forms
- Highlight the added value that technological innovations offer
- Acknowledge the barriers that may limit widespread implementation of innovative teaching

Symposium Overview:

– Using innovative teaching to tackle the big issues facing geriatric medicine (Adam Gordon)
– Simulation (James Fisher)
– e-Learning (Desmond O'Neill)
– Social Media (Joanne Pattinson)

Introductory Talk: Using innovative teaching to tackle the big issues facing geriatric medicine (Adam Gordon): The demographic imperative means that all doctors need to know about assessment and management of older patients with frailty. Consensus curricula for what we need to teach undergraduates about such patients have been published but are still not taught in many medical schools (Oakley et al, 2014). At a postgraduate level, there is the dual challenge of educating non-geriatricians about how to care for older patients and what to teach as part of higher medical training in geriatric medicine. Particular challenges are: making space in overcrowded syllabuses to cover complex topics related to ageing; addressing doctors' attitudes and behaviours towards older patients with frailty and the multidisciplinary teams who support them; and ensuring consistency of teaching when presentations in geriatric medicine are variable and evanescent. Innovative teaching approaches can allow these issues to be tackled by: taking information-dense didactic teaching outside of the normal working day to make space for more nuanced issues requiring face-to-face teaching (e-Learning); providing reproducible experiences without disadvantaging vulnerable patients (simulation); and providing students with safe fora within which to explore their and others' attitudes and beliefs (social media). These topics will be considered in turn by educators from around the UK who have used technology to change how and what their students learn.

Sub-section 1: Simulation (James Fisher): Simulation mannequins for medical education were first used in the 1960's, since then rapid technological advances have resulted in the development of mannequins of increasing fidelity (Cooper and Taqueti, 2008). Subsequently, the use of simulation mannequins in medical education has gained acceptance (Gordon et al., 2004). The use of simulation to teach geriatric medicine has been described with specialty trainees (Birns et al., 2012, Dasgupta et al., 2012, Mehdi et al., 2014), multi-disciplinary groups of doctors and nurses (Ross et al., 2013) and medical students (Fisher and Walker, 2014).
This sub-section will:

- Describe existing simulation teaching programmes, including example video footage of such teaching.
- Explore how teachers can develop scenarios "reflecting the messy realities and challenges of clinical practice" (Kneebone, 2009). The aspiration is that immersive simulation scenarios, showcasing the complexity of frail, multi-morbid older patients, can act as 'threshold concepts' for learners (Meyer and Land, 2005), and thus help students develop new perspectives on elderly care.
- Discuss the debrief process during learning via simulation and share a debrief model: 'debriefing with good judgement' (Rudolph et al., 2006).

Sub-section 2: e-Learning (Desmond O'Neill): Teachers in geriatric medicine can struggle to find space to teach necessary theory whilst ensuring that adequate consideration is given to complex clinical issues like ethics and communication (Gordon et al., 2010, Lane, 2000, Johnson, 2004, Ruiz et al., 2007). Computer assisted learning (CAL) packages provide an effective way of teaching fact-heavy topics (Eng, 2005, Chao et al., 2012, Hills et al., 2009), allowing face-to-face teaching to focus on more complex clinical issues, without increasing the total teacher contact time (Ruiz et al., 2007, Blundell et al., 2011).
This sub-section will:

- Focus on the current forms of e-learning in use – taken from examples in geriatrics educational literature – ranging from basic CAL packages to podcasts.
- Explore the concept of blended learning, defined as "the combination of different learning environments in order to facilitate the acquisition of knowledge and skills" (Duque et al., 2013), and how this can overcome problems with e-learning such as learner isolation and lack of facilitation.
- Discuss how to incorporate e-learning into syllabuses as part of a blended learning approach.

Sub-section 3: Social media (Joanne Pattinson): Social media can provide a means for learners and teachers to connect and share ideas, experiences and resources. Twitter, for example, is an online social networking service accessible from any Internet-capable device, that since its inception in 2006, has gained over 200 million registered users (Kassens-Noor, 2012).
This subsection will:

- Discuss current social media platforms used in medical education.
- Consider how teachers might incorporate social media into teaching, providing practical examples and teaching tips. Exemplar geriatric medicine social media resources and users will be signposted.
- Discuss and debate the potential pitfalls associated with social media in this context will be highlighted, with reference to published guidance from professional statutory bodies across the EU.

Conclusion: A criticism levied against innovative teaching is that it is simply "change for change's sake". This is a temptation to be avoided. We must always innovate for a reason. By harnessing the best of available technologies and by mapping these to identified challenges in teaching about geriatric medicine, we can help to move care for our patients forward. We have provided practical examples within this symposium. There are considerable opportunities for cross-national learning on these issues. Pan-European forums to share lessons between educators in geriatric medicine should be further encouraged.

Symposium Learning Outcomes:

1. Identify the types of e-learning available and how they can be utilised in a geriatric medical education setting.
2. Recognise the advantages that a blended learning approach may have both in terms of facilitating learning of complex topics whilst also freeing up teacher time.
3. Appreciate how simulation-based learning can be incorporated into the delivery of geriatric medicine teaching on a multitude of clinical topics and to a variety of professional groups.
4. Recognise that the debriefing process is a critical component to learning derived from simulation and recall a logical framework for a structured debrief.
5. Identify the current social media platforms whose use is gaining momentum in the field of medical education.
6. Appraise the added value, and the potential pitfalls, of the application of social media in geriatric medical education.

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SIG Symposium

S-12
An international overview of nursing home research: EUGMS and AMDA I

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EUGMS–AMDA symposium I (90 minutes). Contributions with specific abstracts. *Chair:* prof. Jos Schols, Maastricht University, Maastricht, The Netherlands

5 presenters (each 18 minutes incl. time for 1–2 questions of the audience)

1. Presenter: Daniel Swagerty, MD, MPH (Professor of Family Medicine and Internal Medicine, Associate Chair for Geriatrics and Palliative Care, Department of Family Medicine, Associate Director, Landan Center on Aging, University of Kansas School of Medicine, Kansas City, Kansas USA; dswagert@kumc.edu). Title: Palliative and End of Life Care in the Nursing Home: A Comparison between the Netherlands, Canada and the United States.

There is considerable evidence that nursing home (NH) residents throughout the world do not receive optimal palliative and end-of-life care. However, a variety of strategies have been undertaken to improve this care required for our most venerable, frail older adults. A comparison of the clinical approaches and systems of care will be described and compared for the Netherlands, Canada and the United States. Internal palliative care programs, formal hospice services, and greater reliance on interprofessional team care will be highlighted as improvements in usual nursing home care when staff, family members and the NH resident face the increased and focused care needs associated with comfort care and the dying process.

2. Presenter: Cees Hertogh, MD, PhD (Professor of elderly care medicine & geriatric ethics, Chair research division for elderly care medicine, Chair University Network of Organizations for elderly care (UNO VUmc), Department of general practice & elderly care medicine, EMGO Institute for health and care research, VU University Medical Center Amsterdam; cmpm.hertogh@vumc.nl). Title: Palliative care and complex multimorbidity: the need for new paradigms.

Older persons admitted for long term nursing home care generally suffer from complex multimorbidity and have a limited life expectancy, with mean length of stay until death varying from 1.5 to 2.4 years. In principle, these simple facts entitle them to receive care inspired by a palliative care philosophy, but this is not standard practice in nursing home care. There are various reasons for this lack of a palliative care approach. They will be analyzed with an emphasis on conceptual and ideological factors. Data will be presented to illustrate the need for refocusing 'chronic' nursing home care toward an emphasis on geriatric palliative care.

3. Presenter: Paul R. Katz, MD, CMD (Professor of Medicine, Chair Department of Geriatrics, College of Medicine, Florida State University, Chair AMDA Foundation; pkatz1@rochester.rr.com), on behalf of the investigator group including also: Arif Nazir MD, CMD, Jurgis Karuza PhD, Charles Crecilius MD, CMD, Martin Smalbrugge MD,PhD, Cees Hertogh MD,PhD, Sid Feldman MD, CMD, Andrea Moser MD, CMD. Title: The Prevalence of Positive and Negative Levels of Engagement Among Nursing Home Physicians: An International Perspective.

The link between physician practice and quality of care in the nursing home has previously been attributed to three critical dimensions including commitment, competency and organizational structure. Another heretofore unexplored dimension linking physician practice to care outcomes in PA-LTC is "engagement". Low levels of engagement, often referred to as "burnout" may be associated with medical errors, decreased patient satisfaction, increased staff turnover, increased costs, physician impairment, absenteeism and family disruption. Although the prevalence of physician burnout and its potential negative impact on physician performance and quality of care is well described, there are no studies that explore engagement/burnout specific to the post-acute and long term care setting. Utilizing the Maslach Burnout Inventory (MBI for US and Canada; UBOS for Netherlands) and the Utrecht Work Engagement Scale (UWES) physicians practicing in nursing homes in Canada, the Netherlands and the US were surveyed electronically in order to quantify both positive and negative levels of engagement. Both Canadian and Dutch physicians exhibited low levels of burnout as demonstrated in scores for emotional exhaustion (5.33 and 4.62) and depersonalization (42.48 and 42.07) respectively. Both cohorts scored high on the subscale of personal accomplishment. Paralleling the Personal Accomplishment sub scale, the UWES engagement scale indicated higher levels of physician engagement. Results for the US cohort will be compared to the Canadian and Dutch nursing home physicians as well as

the relationship between engagement levels and key demographic and organizational factors. This first of its kind exploratory study sets the stage for additional investigations that will more fully explore the engagement/burnout continuum in the long term care setting, its impact on a host of quality measures and resultant policy implications.

4. Presenter: Jos M.G.A. Schols, MD, PhD (Professor of Old Age Medicine, Department of Family Medicine and, Department of Health Services Research, Caphri – School for Public Health and Primary Care, Maastricht University; jos.schols@maastrichtuniversity.nl, www.maastrichtuniversity.nl, www.LPZ-UM.eu). Title: Monitoring of basic quality of care; an international prevalence measurement of care problems.

In many countries, the quality of basic care in nursing homes is often point of discussion. Therefore, audits, defined as a monitor of quality of care, are increasingly applied as a strategy to improve both professional practice and quality and safety of care. A prerequisite to enable a reliable international comparison of the results of these audits is the use of identical instruments and methodology.

LPZ-International meets this requirement. It involves an internationally uniform audit of the prevalence of care problems and related quality indicators in different healthcare sectors, including hospitals, care homes and home care. The measurement was originally developed and only performed in the Netherlands, but currently also in Austria, Switzerland and New Zealand. For each care problem (pressure ulcers, incontinence, malnutrition, falls and restraints) relevant data are gathered on three levels: at patient level, next to patient characteristics, data about the prevalence, prevention and treatment of each care problem are gathered. At ward/department level and also at institutional level, specific structural quality indicators are measured. Participating institutions enter their data into a web-based data-entry program and shortly thereafter, they receive an overview of their own results and the results at national level to enable a process of benchmarking. This uniform way of measuring internationally is a significant step forward in gaining insight into the quality of basic care in different healthcare settings in different countries and may lead to more awareness and care improvement programmes.

5. Presenter: Iva Holmerová, MD, PhD (on behalf of the SIG NH LTC: Associate Professor – Charles University in Prague, Faculty of Humanities, Centre of Expertise in Longevity and Long-term Care (CELLO) and the Centre of Gerontology; Visiting Professor – University of the West of Scotland, SHNM Alzheimer Scotland Centre for Policy and Practice; iva.holmerova@gerontocentrum.cz). Title: SIG on nursing home care: competences of physicians in long-term care.

Most of the residents of different types of facilities that can be defined as nursing homes are older persons – geriatric patients. The numbers of persons who need and will need nursing home care are increasing across Europe. This is caused mainly by demographic changes and changing patterns of diseases and despite increasing efforts in many countries to provide more integrated, community based care. Data from many countries show also that the health status of nursing homes residents has become more complex, especially in the last decade. Whereas in previous times these institutions also accommodated persons with mild or moderate disabilities, most of the present residents suffer from severe disabilities, caused by geriatric syndromes, most often dementia. This development requires re-consideration of competences of physicians who provide care to this very vulnerable group of residents. European countries have (or have not) approached this problem in different ways. The topic of this presentation is to present the SIG LTC exploration of competences of physicians in long-term care.

S-13
An international overview of nursing home research: EUGMS and AMDA II

J. Schols
Dept. HSR – Maastricht University, Maastricht, Netherlands

EUGMS – The European Union Geriatric Medicine Society aims to develop geriatric medicine in the member states of the European Union as an independent specialty caring for all older people of the European Union with age-related diseases. In addition EUGMS promotes education and continuing professional development e.g. by developing and implementing evidence-based guidelines for the most efficacious preventive and treatment strategies for older people in the European Union. The EUGMS has close links with a variety of international networks including the UEMS Geriatric Medicine, IAGG and the European Academy for Medicine and Ageing (EAMA). More recently contacts have been laid with AMDA in America.

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EUGMS–AMDA symposium II (90 minutes). Contributions with specific abstracts. *Chair:* prof. John Morley, Saint Louis University School of Medicine St. Louis, USA.

5 presenters (each 18 minutes incl. time for 1–2 questions of the audience)

1. Presenter: Finbarr C Martin, MD, FRCP (Consultant Geriatrician and (Hon) Professor of Medical Gerontology, Guys & St Thomas's NHS Trust and King's College London, London, UK; Finbarr.martin@gstt.nhs.uk). Title: NHS support for independent sector nursing homes in the UK: what does happen? What should happen? – Emerging results from the OPTIMAL study.

3–4% of age 65+ adults in UK live in care homes. Only 1% of nursing homes are owned by the National Health Service (NHS) but all nursing care and 65% of general care is funded publically. All residents are entitled to free NHS services but most traditional primary and community care is unsuitable for their needs. Many local NHS organizations have attempted new models of care but there is little evidence of what works best. Systematic reviews gathering data from providers, care homes managers and residents have provided some insights into potential key success factors. The OPTIMAL study uses realist methodology to evaluate various types of provision to ask: what works? in what context? with what outcomes?

2. Presenter: Prof. Robert Bernabei (Professor of Geriatrics, Department of Geriatrics, Neurosciences and Orthopedics, Università Cattolica del Sacro Cuore, Rome, Italy; roberto.bernabei@rm.unicatt.it) also on behalf of G. Onder. Title: Data from the SHELTER project on nursing homes in 8 EU countries.

The Services and Health for Elderly in Long TERm care (SHELTER) study, is a project funded by the European Union, aimed at implementing the interRAI instrument for Long Term Care Facilities (interRAI LTCF) as a tool to assess and gather uniform information about nursing home (NH) residents across different health systems in European countries. A 12 months prospective cohort study was conducted in 57 NH in 7 EU countries (Czech Republic,

England, Finland, France, Germany, Italy, The Netherlands) and 1 non EU country (Israel). Mean age of 4156 residents entering the study was 83.4±9.4 years, 73% were female. ADL disability and cognitive impairment was observed in 81.3% and 68.0% of residents, respectively. Clinical complexity of residents was confirmed by a high prevalence of behavioral symptoms (27.5% of residents), falls (18.6%), pressure ulcers (10.4%), pain (36.0%) and urinary incontinence (73.5%). Overall, 197 of the 198 the items tested met or exceeded standard cut-offs for acceptable test-retest and inter-rater reliability after translation into the target languages. The SHELTER study, by the implementation of the InterRAI LTCF led to the creation of a database that was used to assess characteristics, risk factors and outcomes of NH residents in Europe. Such a dataset can be used to govern the provision of long-term care across different health systems in Europe, to answer relevant research and policy questions and to compare characteristics of NH residents across countries, languages and cultures.

3. Presenter: Prof. JE Morley (Director of Divisions of Geriatrics and Endocrinology, Saint Louis University School of Medicine, St. Louis, USA; morley@slu.edu). Title: The IAGG – initiative to increase quality of care and research in nursing homes around the world.

Despite the increase of the number of institutionalized older people, clinical research in nursing homes is still scarce. The improvement of the quality of care in nursing homes, however, depends on future evidence from scientific studies performed in these settings, their feasibility in real life conditions and the successful dissemination of these new clinical evidences. In the presentation the IAGG-GARN initiative in this field will be reviewed. The current state of research in long term care will be presented and the needs, highlighted by an IAGG consensus group and based on evidence based gaps in the literature, will be addressed. Attention will be paid to the need for more randomized trials and the need to test new drugs on nursing home residents before they come on the market. The same counts for the use of meaningful activities in nursing homes. The use of MDS 3.0 as a research tool will be discussed. Finally, the definition of a nursing home and the types of nursing home seen around the world will be explored.

4. Presenter: Prof Desmond O'Neill (Prof of Medical Gerontology, Trinity College Dublin, Ireland; doneill@tcd.ie). Title: The interface of geriatric medical services with nursing homes in Europe

In most countries in Europe, medical care is provided by visiting general practitioners.

This presentation will review aspects of the interface between hospital and geriatric medical services, explore the efficiency of in-reach/out-reach programmes in the existing literature and consider the training and infrastructural needs in terms of training and structure of geriatric medicine in Europe.

5. Presenter: Yves Rolland, MD, PhD (Professor of Geriatrics, Department of Geriatric Medicine, INSERM 1027 / Gerontopôle of Toulouse, France; rolland.y@chu-toulouse.fr). Title: Improving the quality of care in nursing homes: results from the IQUARE controlled trial

Authors: Yves Rolland, PhD, Celine Mathieu, MS, Christine Piau, MD, Françoise Cayla, MD, Catherine Bouget, MD, Bruno Vellas, PhD, Philipe de Souto Barreto, PhD.

Background and Objectives: To examine the effects of a global intervention of professional support and education to the nursing home (NH) staff on (1) quality indicators, and (2) residents' functional decline and emergency department visits.

Design: Two arms, non-randomized multi-centric individually tailored controlled trial, with 18-month follow-up. Setting. NHs in France.

Participants: 175 volunteer NHs and 6,275 residents randomly selected within each NH. Interventions. NHs were allocated to either a quality audit and feedback intervention (control group; n = 90 NHs, 3,258 residents) or to the quality audit and feedback intervention plus collaborative work meetings between the hospital geriatrician and NH staff (experimental group; n = 85 NHs, 3,017 residents).

Measurements: At the nursing home level: Prevalence of assessment for the kidney function, cognition, risk of pressure ulcers, behavioral disturbances, depression, pain, weight, and prevalence of transition to the emergency department. At the resident level: Ability to perform basic activities of daily living.

Results: At baseline, NH quality indicators were generally low (with large standard deviations) and annual rate of transition to the emergency department was high (about 20%) and similar in both groups. The intervention had a significant positive effect on the prevalence of assessment of pressure ulcer risk, depression, pain, and the prevalence emergency department visits. The intervention had no significant effect on functional decline.

Conclusion: Operational and human relationship between hospital geriatricians and NH leadership staff based on the audit and collaborative discussion about quality indicators improved some aspects of the quality of care in NHs.

Trial registration: NCT01703689

S-14
How to get published?

J.-P. Michel
EUGMS, Geneve, Switzerland

My recent role as editor in chief of the EUGMS journal, European Geriatric Medicine, gave me the opportunity of better identifying the tricks to get published. The structure of any research papers is well known, mainly composed by 3 major parts:

- the title attracts the readers' attention. The authors list includes no ghost participants in the work. The abstract advertises the paper and strongly influences whether or not your work is considered. The key words make it easy for indexing and searching
- The main text is not unlimited. The introduction has to address the problem. The methods have to say how you address it. The results have to be clear and understandable.
- To last the conclusion justifies the importance of your work and indicates its practical implications. Before ending don't forget the acknowledgements and the ethics committee approval. Your references have to be in accordance with the authors' guide of the journal you selected to send your paper.

Writing your scientific paper is easier, more logical and more effective if you start by preparing figures and tables, then methods, results and discussion, before establishing the conclusion and finishing with introduction and title and abstract.

Before launching your manuscript, be sure that it is ready, verify its format and considering your results, be sure you targeted the appropriate journal and followed carefully the authors' guide.

S-16
Joint symposium EUGMS SIG Falls Prevention and Fracture/ProFouND/EIP on AHA/EUNAAPA

H. Blain
Centre Hospitalier Régional Universitaire de Motpellier, Montpellier, France

Chairs: Hubert Blain, Chris Todd and Ellen Freiberger

Overview:

Lecture 1: What is The Best Strategy to Prevent Hip Fracture? The EUGMS Viewpoint (Hubert Blain, Tahir Masud, Chris Todd, Patricia Dargent-Mollina, on behalf EUGMS)

Lecture 2: A ProFouND Update: The European Network to Prevent Falls (Chris Todd)

Lecture 3: Using Technology to Predict, Detect, Assess and Prevent Falls (Jochen Klenk)

Lecture 4: Logic-Based Foundations Within Fall Prevention Recommendations (Patrik Eklund)

Abstracts:

Lecture 1: What is The Best Strategy to Prevent Hip Fracture? The EUGMS Viewpoint: Fracture occurs when the intensity of the mechanical load applied on a bone is greater than the strength of the bone. Non-vertebral fracture, and hip fracture especially, are most often induced by a fall from standing height. Prevention of non-vertebral fractures, and particularly hip fractures, is a major concern for older people, the group at highest risk of fall. A third of people aged 65 or older fall at least once a year and 40% of them are repeat fallers. Hip fracture occurs in 2% of falls and impaired balance can predict about 40% of hip fractures. Falls prevention is one of the main weapons in the armoury to prevent hip fractures. Recent meta-analyses conclude that multiple-component exercise including balance training reduces significantly the risk of sustaining non-vertebral fracture, whatever the risk of falling, suggesting that this kind of intervention has to be encouraged in all people aged 65 or older. Further randomized controlled trials need to be conducted to increase our knowledge on the kind of exercise intervention (multicomponent intervention or multifactorial intervention based on an individual risk assessment) that is most efficient in the prevention of hip fracture depending on frailty status and the estimated risk of falling of participants. We must extend the use of falls prevention strategies as proposed by the European Commission funded Prevention of Falls Network for Dissemination (ProFouND)(www.profound.eu.com) who have produced a series of factsheets on bone health and exercises strategies. http://profound.eu.com/profound-factsheets-english/.

Around one third of hip fractures are due to bone fragility. Half of those patients with a hip fracture have a history of previous fractures. BMD measurement supplies significant information on the hip fracture risk independently from the history and risk factors of falls. Screening both subjects at risk of fall and bone fragility is suitable in order to optimize the identification of patients at high risk of hip fracture and to permit an effective hip fracture prevention strategy. Anti-osteoporosis drugs should be targeted towards patients with previous fragility fracture or low BMD (a T-score lower or equal to −2.5 with risk factors of fracture), in whom these drugs have shown to be effective to prevent non-vertebral fractures, including hip fractures.

Lecture 2: A ProFouND Update: The European Network to Prevent Falls: Each year, 35% of over-65s experience one or more falls. Approximately 100,000 older people in the EU27 (countries within the European Union) and European Economic Area countries will die from injury from a fall. There is strong evidence for the prevention of falls, including the use of strength and balance group exercise, multi-component home exercise, Tai Chi, multi-factorial assessment and intervention. However, it is not always a priority to invest in prevention and where services are offered the evidence is often modified or not applied. The likelihood of achieving positive outcomes is also reduced by non-fidelity of staff, non-adherence by older adults or lack of maintenance by older adults or staff with time limited programmes and lack of follow-up.

The Prevention of Falls Network for Dissemination (ProFouND) is an EU funded Thematic Network focusing on falls prevention. We aim to bring about dissemination and implementation of best practice in falls prevention across Europe. ProFouND's objective is to embed evidence based fall prevention programmes for elderly people with the help of novel technologies and effective training programmes available in at least 10 countries/15 regions. We achieve this through the creation of evidence based information and resources that can be accessed and downloaded from our website (profound.eu.com) alongside the development of the ProFouND Falls Prevention Application (PFPApp) for use by healthcare practioners across the EU. ProFouND provides cascade training for the delivery of evidence based strength and balance exercises for the prevention of falls across Europe. Through collaboration with other networks we create networks and forums for stakeholders in the field of information and communication technologies (ICT) and health, engaging with industry to facilitate the development and adoption of technological solutions to falls.

A full update will be given on progress. We have developed a large collection of best practice resources, including factsheets for use by practitioners, resources to guide practice development and to help increase awareness about falls and fall prevention. We have trained a large cohort of cascade trainers (80–100) based in 10 EU countries, who have started training exercise instructors in some 46 regions, well in excess of our targets. We have developed the App and it is now available for use. In October 2015 we will launch a major falls awareness campaign across EU. We are organising the second European Falls Festival (eufallsfest.eu) in Bologna February 2016. EUFF2016 has the theme of Implementing Innovation into Policy and Practice.

ProFouND thus aims to bring about real change in falls prevention by promoting evidence based practice on many levels:

- Individual older people and families
- Health and social care practitioners
- Health care provider organisations
- NGOs and representative organisations
- Policy makers, governments and health authorities
- Technology providers

Lecture 3: Using Technology to Predict, Detect, Assess and Prevent Falls: Falls in older people remain a major public health challenge leading to injury and disability. Serious health and social consequences including fractures, poor quality of life, loss of independence, and institutionalisation are common. The annual costs due to falls range between 0.85% and 1.5% of the total health care expenditures. Therefore, important issues are the accurate identification of persons at high risk, the detection of falls, the recording and analyses of biomechanical and environmental characteristics of falls and the development of effective fall prevention measures.

Most of the knowledge on falls to date is derived from epidemiological studies, interviews and intervention studies. The contribution of objective measurements using information and communication technology (ICT) is still modest but increasing. Several new approaches and results will be presented including video recordings, mobile health devices, body-worn sensors and smartphones.

In the field of fall prediction the performance of most conventional fall risk models is weak compared to models estimating, for example, cardiovascular risk. Although many fall risk factors are known, they seem to reflect the individual fall risk insufficiently. A recent study demonstrated a considerable improvement in model sensitivity when adding physical activity data measured by body-worn sensors. Furthermore, a new concept to estimate fall risk was proposed considering the actual time under risk measured by accelerometry.

Objective measurement of real-world fall events itself can improve the understanding of falls in older people and enable new approaches to prevent, predict, and detect falls. However, these events are rare and hence challenging to capture. Recently, a Canadian research group demonstrated that video footage could fill in some of the knowledge gaps pertaining to the contextual factors of falls. Besides video footage biomechanical data measured by body-worn sensors can add further knowledge. The FARSEEING consortium started to build a meta-database of real-world falls, currently including sensor signals of more than 200 fall events. Based on these data new algorithms for fall detection have been developed. Automatic detection of falls has become a more and more important aim in last few years because it could enable rapid

intervention, increasing the sense of security of older persons, and reducing some of the negative consequences of falls.
Finally, ICT can support fall prevention measures. The PROFOUND app for example can support health care professionals such as general physicians, physiotherapists or community nurses in the decision-making and counselling process regarding older persons living at home and being at risk of falling. The app could be started from different information such as the result of a sensor-based assessment or as part of a clinical pathway after an injurious fall.
In summary, technology can help to improve identification of persons at fall risk, to guide these persons to specific fall prevention interventions according to individual deficits, to understand the biomechanics of falls and to automatically detect falls and call for help.
Lecture 4: Logic-Based Foundations Within Fall Prevention Recommendations: In this presentation we identify the overall scope and structure of classifications and terminologies necessary for a European information and registry infrastructure based on existing registries for frailty, injuries, fractures, and interventions, focusing on frailty and fall-related injuries. A common language, indeed based on a formal logic language, a 'lative logic' presenting and entirely new approach to logic-based medicine (complementing evidence-based medicine), including the overall scope and structure of classifications and terminologies, is needed to harmonize existing national and regional guidelines, and provide an enrichment of them into an extended European Guideline for Fall Prevention. Spatial and geometric data alone will not suffice, and purely device and electronic approaches to active and healthy ageing will turn out to be all too shallow. Nomenclature and terminology based approaches are taking over and will establish success stories. On the one hand, our approach has the ambition to support the development of a personalized prevention guideline, developed in cooperation with professionals for professionals, with prevention action focusing on individuals rather than populations. On the other hand, it is intended to be a guide to design, commitment and implementation of fall prevention programmes within regions and municipalities. Our approach responds specifically to the needs and visions described in "Growing the Silver Economy in Europe". We position ourselves e.g. with respect to ongoing and new silver economy related policy initiatives within the European Commission as represented by several Directorate-Generals. We strengthen economic sustainability of outcome, which is an important support for the industry. The Commission and its DGs has recognized the need to overcome obstacles caused by fragmentation of data. Our fall prevention approach contributes to bridge these gaps, seen as absence of nomenclature and common language across DGs. Providing that common language, our approach is expected to be useful also for further work within the DGs and in particular for communication and dialogue between the DGs. Our approach also supports the assembly of the global approach with a European wide partnership (Ecosystem for Innovation) and a regional/local approach (Ecosystems of Implementation), including modelling of pre-commercial procurement.

SIG Symposium: Pre- and postoperative care

S-18
Successful aging creates new challenges in geriatric cardiology – TAVI as novel treatment in aortic stenosis

T.M. Norekvål[1], D.E. Forman[2], A. Schoenenberger[3], L.L.S.P. Eide[4], A. Ungar[5], E. Skaar[6]
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Chairs: Tone M Norekvål, Bergen, Norway and Elisabeth Skaar, Bergen, Norway
Cardiac treatment has great a potential in reducing mortality and morbidity, yet the oldest patients have an increased risk when undergoing invasive procedures. Future patient care will most likely be more individualized in the oldest patients and considerations of patient preferences, comorbidities and risk/benefit assessment more emphasized than today. In this symposium we aim to accentuate cardiac care for the elderly, with a special focus on treatment of aortic stenosis.
Cardiac care for Older Adults – Time for a New Paradigm? (Daniel E. Forman, Pittsburgh, USA): A key challenge for today's cardiology providers is to better match provision of cardiovascular care to the circumstances and preferences of our older patients. More adults are surviving into old age when vulnerability to cardiovascular disease predictably accelerates. Ironically, while cardiology providers often speak of "patient-centered care", implications of fundamental aging dynamics remain poorly delineated. Aging has transformative bearing on cardiovascular disease such that traditional standards of efficacy become relatively less reliably aligned with outcomes that are necessarily satisfying to older patients. Application of TAVI reflects many of these complex issues. With TAVI, cardiology providers have evolved the technical proficiency to treat life-threating aortic stenosis even in debilitated patients. However, beyond the fact that patients can survive the procedure, benefits often remain ambiguous. The Partners trial showed, for example, that only a subset of the patients receiving TAVI and successfully enduring the procedure actually benefitted in terms of functional and quality of life gains, i.e., resiliency cannot be assumed. Whereas therapeutic efficacy has traditionally been oriented to mortality and morbidity, for many older adults the range of meaningful endpoints is often broader, e.g., quality of life, function (physical function and cognition), independence, pain, and personal cost are often their dominating patient concerns. Unfortunately, trials that have served as the basis of "evidence" for cardiovascular guidelines have excluded senior cardiovascular patients with relevant age complexities, and which thereby limit generalizability to the "real" older patients who providers actually treat. Adding to the challenge, the impact of aging varies considerably in each patient, and traditional risk-stratification tools rarely stratify in respect to integral aging dynamics. While frailty has, for example, recently been recognized as an important consideration, metrics to evaluate frailty remain relatively controversial. Overall, a key opportunity for cardiology in 2015 is to address aging as a transformative dimension of health that mandates reconsideration of precepts and methods of cardiovascular care.
Comprehensive Geriatric Assessment prior to TAVI procedure (Andreas W. Schoenenberger, Bern, Switzerland): Comprehensive geriatric assessment (CGA) in the context of TAVI is of great importance. TAVI is predominantly performed in older patients. Older patients frequently have functional limitations in addition

to their higher burden of co-morbidities. CGA measures these functional limitations which are of importance for several reasons. First, CGA uncovers functional limitations which would go undetected, if not screened for. The detected functional problems are important for prevention during the TAVI procedure (e.g., delirium prevention in patients with cognitive impairment). Second, CGA might help identifying TAVI patients who likely benefit from additional geriatric interventions before or after the procedure (e.g., geriatric rehabilitation). Third, functional limitations (e.g., cognitive impairment, mobility impairment, or disability) are determinants of prognosis after TAVI. Many established risk scores, such as EuroSCORE or Society of Thoracic Surgeons (STS) score, insufficiently assess the risk of elderly co-morbid patients undergoing surgical cardiovascular procedures. CGA therefore helps improving risk stratification. Fourth, CGA domains may be used for a more detailed assessment of TAVI outcomes beyond mortality and adverse events. For all these reasons, use of CGA in the context of TAVI is of great importance.

Post-operative Delirium in Octogenarians after Surgical and Interventional Cardiac procedures (Leslie SP. Eide, Bergen, Norway): A high incidence of postoperative delirium (PD) has been identified in elderly cardiac patients, a patient group where the prevalence of aortic stenosis is high. TAVI is an option to patients with AS not suitable for surgical aortic valve replacement (SAVR).

Until recently, it was unclear if the incidence of PD after less invasive treatments such as TAVI was the same as after SAVR. In a recent article, Eide et al., 2015, identified a lower incidence of PD in octogenarian patients receiving TAVI when compared to octogenarians treated with SAVR. Differences in the time of onset and course of PD between treatment groups were also described.

Negative outcomes of PD in terms of functional decline have been reported after cardiac surgery. Eide et al, was also able to determine the negative consequences that PD has on ADL and IADL function at 1 month follow-up, especially in TAVI patients. In conclusion, PD is still an unwanted outcome, also after more gentle techniques such as TAVI.

Update from the CGA-TAVI study of EUGMS (Andrea Ungar, Florence, Italy): In 2012, the European Union Geriatric Medicine Society (EUGMS) undertook a Web based survey on TAVI for geriatricians across Europe. The survey revealed that the involvement of geriatricians in the care of patients undergoing TAVI is, in general, low. Only 17% of respondents who referred patients for TAVI in the previous two years were members of a multidisciplinary cardiac team. The EUGMS recommends that geriatricians should be involved at an early stage of management and should have a substantial impact on decision-making, rehabilitation and long-term care of elderly patients with AS requiring valve-replacement therapy. Therefore, the EUGMS carried out a prospective, observational study designed to evaluate the effectiveness of TAVI from the perspective of the geriatrician: Transcatheter Aortic Valve Implantation Registry with Comprehensive Geriatric Assessment (CGA-TAVI). The study is ongoing in different European centers. The incorporation of CGA-based measures into clinical decision-making related to patients with AS may be essential for providing the best possible care to this vulnerable group of patients. Implementation of CGA into clinical routine before treatment is essential for decision-making in frail older patients affected by severe symptomatic AS.

These presentations are of high quality and we expect the audience to get a thorough understanding of the challenges in geriatric cardiology, with a special focus on TAVI. We have no financial support from commercial parties.

SIG Symposium

S-19
Geriatric Emergency Medicine – the future of modern healthcare …

S. Conroy
University of Leicester, Leicester, United Kingdom

Rationale: For older people, attendance in the emergency room is a "sentinel event" that can mark the start of significant functional impairment and loss of independence. From a clinical perspective, the initial assessment in the emergency department is critical to ensuring subsequent good quality decision making and care. In the context of a growing collaboration between the European Society of Emergency Medicine and the European Union Society of Geriatric Medicine, we propose a symposium that will report on common emergency presentations in older people and the latest research and educational proposal for Geriatric Emergency Medicine.

Chairs: Abdel Belou (FRA) Anna Björg Jónsdóttir (ICE)

Talk 1: Management of polytrauma in older patients in the Emergency Department, speaker, Abdel Belou, FRA

Talk 2: Presentation and outcomes of out of hospital cardiac arrest in older patients, Abdel Belou, FRA

Talk 3: Academic Geriatric Emergency Medicine – a roadmap for research and a draft European GEM curriculum, Fredrik Sjostrand (SWE)/Simon Conroy (UK))

Learning Objectives: From this symposium participants will be able to:

- Develop an understanding of the Emergency Medicine approach to polytrauma in older people
- To review the outcomes from cardiac arrest in older people
- To input into the future academic agenda for GEM in Europe
- To develop and network with experts in the field

SIG Symposium: Infectious diseases and vaccines

S-20
Vaccine for seniors: present and future

G. Gavazzi[1], S. Maggi[2], J. Flamaing[3], J. Gaillat[4]
[1]University of Grenoble Alpes, Grenoble, France; [2]National Research Council, Aging Branch, Brescia, Italy; [3]Department of Geriatric Medicine University Hospitals Leuven and KU Leuven, Leuven, Belgium; [4]Division of Infectious Diseases, Pringy, France

Prof Joahn Flamaing (Belgium) Prof Stefania Maggi (Italy), Dr Jacques Gaillat (France), and Prof G. Gavazzi (France) on behalf of vaccine group of EUGMS.

Introduction: As individuals age, and disability increases, prevalence and incidence of most of infectious diseases increase; several infection are preventable by vaccination. However, if vaccinations for children are well accepted and firmly organised in many countries, vaccination for elderly shows lower interests. Indeed it seems that immune senescence leads to decreased efficacy that may decrease the interest in vaccination in the oldest population. Yet, there is a requirement to better know which infection may be efficiently prevented by vaccine in elderly population.

We then propose on behalf of vaccine study group of EUGMS a symposium regarding controversies of known and already used vaccines (health care workers/) but also news and future available vaccines.

Prof Joahn Flamaing (Belgium) Prof Stefania Maggi (Italy), Prof G Gavazzi (France) and Dr Jacques Gaillat (France) will present the 4 following topics:

- Pneumococcal vaccine: What to do after CAPITA? (JF)
- Flu vaccine in elderly population: What to do after the Cochrane review? (SM)
- Health care workers flu vaccine: What to do after the Cochrane review? (GG)
- Recent and future vaccine: Zoster vaccine as an exemple (JG)

Outlines:

Pneumococcal vaccine, What to do after CAPITA? (Prof Joahn Flamaing, Division of Gerontology and Geriatrics, dept. Clinical and Experimental Medicine, KU Leuven, Belgium): Streptococcus pneumoniae is the most important bacterial cause of pneumonia. Children, immunocompromised individuals, persons with comorbid disease and the older population are susceptible to pneumococcal disease. Pneumococcal infections are treated with antimicrobials.

For decades the 23-valent pneumococcal polysaccharide vaccines (PPV23) was the only vaccine available for the prevention of pneumococcal disease in adults. PPV23 prevents invasive pneumococcal disease (IPD) in healthy adults, but there is no hard evidence that non-invasive disease is prevented, nor that it prevents IPD in high-risk populations and the elderly.

The pneumococcal conjugate vaccines (PCV7 and subsequently PCV13) have demonstrated a high efficacy in preventing both IPD and non-IPD in children. Moreover, prevention of IPD occurred in the adult and older population by vaccinating children (herd effect).

PCV13 is now available for the prevention of IPD and pneumonia in adults. In contrast to the PPV23 PCV13 induces a boostable immunological memory and also protects against pneumococcal pneumonia (CAPITA trial).

The pneumococcal serotype epidemiology, influenced by direct and indirect effects of pneumococcal vaccination must guide the choice of pneumococcal vaccine strategies. Until new vaccines (protein and/or whole cell vaccines) become available, combining the advantages of the PCV13 with the broad coverage of PPV23 can be preferred.

This lecture gives the audience insight in the complex interaction between pneumococcal serotype epidemiology and pneumococcal vaccination. The attendees will be able to value pneumococcal vaccination guidelines and to adopt pneumococcal vaccination strategies with more knowledge.

Flu vaccine in elderly population: What to do after the Cochrane review? Prof Stefania Maggi, Institute of Neuroscience, National Research Council, Italy): Influenza vaccination of elderly individuals is recommended worldwide as people aged 65 and older are at a higher risk of complications, hospitalizations and deaths from influenza. Trivalent inactivated vaccines are the most commonly used influenza vaccines and their public health safety profile appears to be acceptable. We will present the evidence from experimental and non-experimental studies carried out in older individuals, taking into account the biases affecting observational studies. We will discuss:

1. The recommendations by Jefferson (Cochrane review, 2010) that an adequately powered publicly-funded, placebo-controlled RCT needs to be conducted over several influenza seasons, and
2. The interventions to increase influenza vaccination rates of those 60 years and older in the community, recommended in the review by Lorenzetti (Cochrane review, 2014)

Health care workers flu vaccine: What to do after the Cochrane review? (Prof G. Gavazzi, Department of geriatric Medicine, University of Grenoble-Alpes, and University hospital of Grenoble, France): As Flu vaccine in elderly population is less effective than in younger population, and as flu is one of the first cause of death, directly and indirectly, the idea of protection of the most susceptible elderly population (Nursing home, Hospitalized population) vaccinating health care workers against flu has been proposed for decades (so called "herd immunity"). Although several studies demonstrated its interest particularly in nursing home, a recent Cochrane review (Thomas RE, et al. Cochrane Database Syst Rev 2013) stated to the inefficiency of HCW vaccination to prevent flu in elderly population living in long-term care facilities. Data eist also in other facilities and need further analysis.

In the present lecture, we will discuss the limitations of published data and the latest statement of the Cochrane review in this field. In order to be able to participate to the implementations of flu vaccine programs we will also provide factors associated with acceptance and refusal of flu vaccine by Health care workers.

Recent and future vaccine: Zoster vaccine as an example (Dr Jacques Gaillat, Division of Infectious Diseases, Hospital of Annecy-Genevois, France): Behind the two killers, influenza virus and Streptococcus pneumoniae, Herpes zoster virus (HZV) is probably the third plague for the elderly. The burden of disease is important with an annual HZ incidence throughout Europe, varying by country from 2.0 to 4.6/1 000 person-years with no clearly observed geographic trend. Shingles are not commonly life threatening but they can be complicated. Postherpetic neuralgia (PHN), the most common complication of herpes zoster, may have a serious impact on quality of life and functional ability, particularly in the elderly. The risk of zoster itself and the risk of post zoster pain increase with age, sharply after 50 years. The social and economical consequences are also a reason of concern. Antiviral drugs prescribed early improve the acute phase of infection but there impact on the reduction of post zoster pain is a subject of debate.

Shingles developed as a result of reactivation of latent chickenpox virus (VZV). In this context a prophylactic vaccine against VZV represents a promising clinical approach to limit the debilitating complications of herpes zoster, including PHN.

Two kinds of vaccines have emerged, one with an attenuated live varicella virus, already licensed in Europe and the US (Zostavax®), and a candidate Herpes Zoster subunit (HZ/su) vaccine (GSK).It combines gE, a protein found on the HZ virus, with an adjuvant system, AS01.

In this presentation we will review the burden of illness, the vaccine efficacy and safety and cost-effectiveness of vaccination.

Conclusions: Though different levels of evidences, flu vaccine are still recommended and need to be better implemented in elderly population, and in health care workers providing care for elderly population; there are requirements for modifications of pneumococcal vaccine and zoster vaccine outlines in many countries.

The educational goals of the symposium are: (1) to enhance knowledge regarding recent studies about vaccinations in elderly population, (2) to give the audience the opportunity to better challenge with controversial data, (3) to better adapt the implementation of available vaccines in target populations, (4) to encourage geriatricians participating in Public health advisory board for vaccine.

SIG Symposium

S-21
Palliative medicine

S. Pautex
University Hospital Geneva, Geneva, Switzerland

Ninety per cent of deaths across the EU occur among people over 65 years old. Furthermore, unexpected death has largely been replaced by diseases with an elongated end-of-life trajectory such as cancer, cardiovascular diseases or neurodegenerative diseases as dementia. Treating these patients' complex medical, social, psychological and

spiritual needs requires state-of-the-art palliative care and adequate structures.

Chairs: Prof. Nele Van den Noortgate (University Hospital Gent, Belgium); Dr Sophie Pautex, University Hospital Geneva, Switzerland)

1. Care co-ordination at the end of life in severe dementia – the case of pneumonia (Kirsten Moore, University College London, Great-Britain): A growing number of people are living and dying with dementia, however, there is limited evidence regarding the best approach to providing palliative care in various care settings. This study aimed to develop a complex model of integrated palliative care for people with advanced dementia across different care settings and to pilot it in two care homes. Using a realist approach and based on multiple qualitative and quantitative data sources and international literature a set of statements were developed to inform the development of an integrated palliative dementia care model. Each statement was evaluated for appropriateness and necessity, irrespective of costs, using the RAND/UCLA Appropriateness method. Twenty-nine statements were agreed upon and were then developed into a model of care. The model of care was piloted in two care homes in two Clinical Commission Groups in London and adapted to local needs and resources. The results of this model will be presented.

2. The interRAI Palliative Care assessment tool. An added value for the patient, the health care provider or the researcher? (Aline Sevenants, Belgium): The interRAI Palliative Care instrument (interRAI PC) is a CGA which evaluates the needs of adults requiring palliative care in all healthcare settings. Health care providers can use the outcomes (scales and clinical assessment protocols) that can be calculated from the assessment for designing, evaluating and adjusting care plans. The data can also be used for research. In this presentation, we will look at opportunities and pitfalls for all of these potential users of the instrument

3. Propositions to promote collaboration and integration between geriatric and palliative medicine/care in Europe: results of focus groups (Sophie Pautex, University Hospital Geneva, Switzerland): Closer interaction between geriatric medicine and palliative care is an important precondition in order to realize high quality palliative care for older people. An interest group consisting of active members of the EUGMS and EAPC has been set up and started working out the objectives formulated in the manifesto "Palliative Care for older people in the European Union". This European-level working group aims to ultimately make recommendations on how to improve palliative care for older people in Europe that can be used by policy-makers and national organizations in order to change to their circumstances for organizing better palliative care for older people. A first step (STEP1) in reaching this goal is to identify and describe ways to promote collaborations and possibly better integration between geriatric and palliative medicine/care in Europe by organizing four focus groups during the EAPC-EUGMS congresses. The results will be presented.

Symposium: Cognition and dementia

S-22

Falls in cognitive impairment and dementia: identifying those at risk and developing novel interventions

F. Kearney[1], R. Harwood[2], V. Booth[3], K. Pitkälä[4], J. Ryg[5]
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Chairpersons: Dr Jesper Ryg MD, PhD. Department of Geriatric Medicine, Lillebaelt Hospital Kolding, Denmark; Dr Fiona Kearney, Department of Geriatric Medicine, Nottingham University Hospitals NHS Trust, UK.

Introduction: Older adults with cognitive impairment and dementia have an increased risk of falling compared with age-matched individuals without a cognitive impairment, equating to a 70–80% chance of falling within a year. The economic impact on health services from the falls experienced by these individuals and the carers and families of older adults with dementia is considerable. In the 12 months following a fall health and social care costs can increase by as much as 4 times. Preventing falls in this group is now a pressing matter for both health and social care economies. However standard falls prevention strategies, effective in non-cognitively impaired populations fail to reduce falls in older adults with cognitive impairment and dementia.

Objectives: This symposium will explore why such interventions are inadequate in those with cognitive impairment, detail neuropsychological assessment batteries to help with risk stratification, and identify potential treatment targets, adaptive strategies and novel approaches to preventing falls in this group. This symposium will also explore the evidence for fracture prevention interventions, specific to those with dementia.

Presentations:

1. Evaluation of neuropsychological deficits and gait abnormalities in older adults with mild cognitive impairment (25 minutes, 5 minutes for questions), Professor Rowan Harwood, Professor of Geriatric Medicine, Nottingham University Hospitals, UK: This presentation will summarise the latest literature on neuropsychological risk factors and gait irregularities relevant to older adults with mild cognitive impairment who fall. This will also be informed by the results of a National Institute of Health Research study which is drawing to a close in Nottingham, UK measuring neuropsychological deficits and gait abnormalities in older adults with mild cognitive impairment undergoing assessment through the memory services. The results of this study will provide information on prevalence of deficits in this group, feasibility of delivering neuropsychological evaluation in a real world clinical setting, in addition to the tests most likely to yield relevant information (both computer based tests, and paper based tests). This will be informative to a wide audience managing falls in older adults with cognitive impairment where significant gaps currently exist with regard to assessment and adequate risk stratification of this group.

2. Development of an intervention to reduce falls in older adults with mild cognitive impairment (25 minutes, 5 minutes for questions), Ms Vicky Booth, Research Physiotherapist, University of Nottingham, UK: Evidence for effective falls prevention strategies for older adults with cognitive impairment remains sparse. Proposed reasons for this include failure to recognise specific cognitive deficits that predispose to falls in addition to failure to adapt falls prevention strategies to the specific cognitive deficits of the individual. Exercise has been demonstrated to

improve physical and cognitive function in dementia populations. However, the effect on preventing falls in a dementia population is conflicting. Combining a standard falls rehabilitation programme with a cognitive component is a novel and emerging area of health evidence. This presentation will summarise the results of a systematic review that is currently being undertaken at the University of Nottingham to evaluate the effectiveness of combined cognitive and physical interventions on the risk of falls in cognitively impaired older adults. This presentation will also summarise research work from Nottingham, UK on the development of a tailored falls prevention intervention for older adults with cognitive impairment. This has been developed by adapting conventional falls prevention strategies drawing on neuropsychological rehabilitation techniques and informed by focus groups and workshops comprising dementia-specialist therapists, in addition to collaboration from rehabilitation therapists in the areas of learning disabilities and traumatic brain injury.

3. Possibilities to reduce falls and fractures among people with dementia (25 minutes, 5 minutes for questions), Professor Kaisu Pitkälä, University of Helsinki, Department of General Practice, Finland: This presentation will summarise the evidence for effectiveness and feasibility of interventions to reduce fall-related fractures in dementia. The following types of interventions will be discussed: (1) exercise interventions; (2) interventions to reduce psychotropic medications and other drugs related to falls; (3) nutritional guidance and vitamin D; (4) hip protectors; and (5) environmental modifications. The presentation will also summarise the findings of three randomised controlled trials that have been performed in, and coordinated by the University of Helsinki on both home-dwelling and institutionalised patients with dementia. This will incorporate a discussion about how the stage and severity of dementia are associated with the outcome of the individual interventions. The presentation will also discuss future prospects of intervention studies aiming to reduce falls in dementia.

Conclusion: This symposium explores new and emerging research evidence addressing falls and fracture prevention in older adults across the spectrum of cognitive impairment and dementia, presented by clinicians with extensive experience of delivering complex interventions in dementia cohorts in both clinical and research settings. The learning objectives for this symposium are:

1. To identify and understand the role of specific cognitive factors that contribute to falls risk in older adults with cognitive impairment.
2. To share practical tips with regard to which neuropsychological assessments to use to assist with risk stratification of this patient cohort.
3. To understand and appraise the evidence for combined physical and cognitive rehabilitation strategies to prevent falls in older adults with cognitive impairment.
4. To share practical insights into developing and delivering a neuropsychology-informed falls prevention intervention for older adults with cognitive impairment.
5. To understand the role of exercise to reduce falls risk in older adults with dementia, emphasising the duration and intensity of intervention required.
6. To appraise the evidence for interventions to reduce falls and fractures specific to an older population with dementia and to highlight how these interventions differ in their effectiveness depending on stage and severity of dementia.

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Late-breaking abstracts

Oral presentations

O-091

Cut-off points for muscle mass, not for grip strength or gait speed, determine variability in the prevalence of sarcopenia

F. Masanés[1], X. Rojano[2], A. Salvà[2], J.A. Serra-Rexach[3], I. Artaza[4], F. Formiga[5], F. Cuesta[6], A. López Soto[1], D. Ruíz[7], A.J. Cruz-Jentoft[8]
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Background: The EWGSOP criteria proposed different methods and cut-off points for each of the three parameters included in the definition of sarcopenia (muscle mass, muscle strength, physical performance). This facilitates the implementation in the clinical practice, but limits comparability between studies and leads to wide differences in published prevalences of sarcopenia. The aim of this study was to assess how changes in cut-off points for muscle mass, gait speed and grip strength affects the prevalence of sarcopenia according to the EWGSOP criteria.
Methods: Cross sectional analysis of 298 older individuals from outpatient clinics and 276 from nursing homes. We measured muscle mass through bioimpedance, grip strength and gait speed and assessed how changes in cut-offs changed the prevalence of sarcopenia in both sets.
Results: For MMI in women a rise from 5.45 to 6.68 kg/m^2 increased sarco-penia from 4% to 23% in outpatient clinics and from 9% to 47% in nursing homes. In men a rise from 7.25 to 8.87 kg/m^2 increased sarcopenia from 1% to 22% in outpatient clinics and from 6% to 41% in nursing homes. Changes in speed and strength had limited effect in the prevalence of sarcopenia.
Conclusion: Muscle mass cut-off points are the most important parameter that influences the prevalence of sarcopenia in these populations. Changes in cut-off points for gait speed and grip strength had a limited impact.

O-092

Blood pressure and dementia: The HUNT-HMS Study

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Objectives: Blood pressure has been a subject of interest in the epidemiology of dementia due to observations that vascular factors may be associated with Alzheimer disease and vascular dementia. However, results regarding blood pressure remain inconclusive. The focus of this article is on the association between dementia and blood pressure on a prospective case-cohort study population-based sample.
Methods: Utilizing data obtained during the period of 1995–2011, 983 participants of the HUNT-HMS study were diagnosed with Alzheimer disease, mixed dementia or vascular dementia. Dementia subjects were 67 percent female, had an average age of 60, and a blood pressure average of 143 systolic over 87 diastolic during their participation in the first HUNT study that occurred in 1984–1986. Incident dementia was ascertained in individuals up to 27 years thereafter and multiple logistic regression analyses were conducted examining the association between blood pressure and AD, mixed AD or VaD.
Results: Data was nonlinear and an interaction with age and systolic blood pressure occurred around 60–65 years of age. No association with blood pressure and dementia in samples under the age of 65. Over the age of 65, inverse associations between systolic blood pressure and AD were observed. Adverse associations between systolic and diastolic blood pressure and VaD were also observed.
Conclusions: We question whether inverse associations between systolic blood pressure and dementia can be due to a survival bias.

O-093

Prevalence, mortality and readmission of people with dementia, delirium and other cognitive spectrum disorders in the general hospital

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Objective: To understand the outcomes of cognitive spectrum disorders in the general hospital.
Methods: *Study design:* Cross sectional study examining routine hospital data from all acute medical hospital admissions aged 65 years and over. *Setting:* NHS Fife, Scotland, UK 2012. *Participants:* All patients aged 65 years or older underwent the Older Persons Routine Acute Assessment (OPRAA) within the first 24hrs of admission.
Variables: Variables accessed via OPRAA include: Abbreviated Mental test (AMT), Confusion Assessment Method (CAM), Clinical assessment of delirium undertaken by trained specialist nurses, Documentation of the presence of a pre-admission diagnosis of dementia, and Katz Activities of daily living scale. The OPRAA dataset is linked to the Scottish Morbidity Records 01 (SMR01), the General Register Office (GRO), and the master Community Health Index (CHI).
Statistical methods: Prevalence rates for all cognitive spectrum disorders were calculated. Outcomes of mortality and readmission were calculated for patients with and without cognitive spectrum disorders. The χ^2 test was used for comparison of outcomes between those with and without cognitive impairment.
Results: *Participants:* In total 9133 admissions were recorded for individuals aged 65 years and over for the time period Jan–Dec 2012.
Main results: The prevalence of any cognitive spectrum disorder in emergency admissions aged 65 years and over was 34.5% (95% CI 33.4–35.6). Twenty three point five percent 23.5% (95% CI

22.5–24.5) had delirium and 10.5% (95% CI 9.8–11.2) had known dementia.
Mortality was high for older adults admitted to hospital; at 30 days after admission 14.4% (95% CI 13.5–15.3) had died and this rose to 31.9% (95% CI 30.8–33.0) at 1 year after admission. Mortality was significantly higher for those with any cognitive spectrum disorder: 29.8% (95% CI 27.6–32.0) at 30 days after admission and 61.5% (95% CI 59.1–63.8) at 1 year. There was no significant difference in mortality between the individual cognitive spectrum disorders.
Conclusions: This data allows the prevalence and mortality of the individual cognitive spectrum disorders to be seen in context. Delirium is more prevalent than known dementia. Undiagnosed dementia is common. Mortality is high. The presence of any cognitive spectrum disorder worsens prognosis.

O-094
The association between osteoarthritis and subsequent change in weight and muscle strength

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Objectives: Research has shown that obesity and muscle weakness are important risk factors for osteoarthritis. However, the consequences of osteoarthritis regarding changes in weight and muscle strength are inconclusive. The aim of this study was to investigate the association between osteoarthritis and changes in weight and muscle strength in a European sample of older men and women.
Methods: Data of the European Project on OSteoArthritis (EPOSA) were used, which includes pre-harmonized data from six European cohort studies on older community-dwelling persons aged 65–85 years. Osteoarthritis of the knee and/or hip was defined according to the American College of Rheumatology criteria. Weight and handgrip strength were measured at baseline and after one year follow-up.
Results: Men with osteoarthritis (14.6%) had a mean weight change of −1.1% (SD 4.0) compared to −0.5% (4.0) in men without osteoarthritis. Mean change in grip strength was −6.7% (18.9) and −1.2% (27.3), respectively. Women with osteoarthritis (26.2%) had a mean weight change of −0.3% (5.0) vs. −0.5% (4.4) in women without osteoarthritis. Grip strength change was −1.4% (33.2) and −3.0% (27.3), respectively. Linear regression analyses adjusted for demographics, lifestyle and morbidity showed a significant association between osteoarthritis and loss of grip strength in men only [B −4.55 (SE 2.31), p = 0.05]. Osteoarthritis was not associated with change in weight in both sexes.
Discussion: Osteoarthritis of the knee and/or hip in men is significantly associated with one-year loss of grip strength. Osteoarthritis disease management should focus on prevention of muscle strength loss to prevent further deterioration of physical functioning.

O-095
Which patients benefit from orthogeriatric treatment? Results from the Trondheim Hip Fracture Trial

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Objectives: The Trondheim Hip Fracture Trial demonstrated that comprehensive geriatric care (CGC) in a geriatric ward gave better mobility and function as compared to traditional orthopedic care (OC) at four months. Objectives of this study is to investigate whether the effect of CGC depended on the subgroups of age, gender, type of fracture, or pre-fracture function measured by Nottingham Extended ADL scale (NEAS).
Methods: Home-dwelling hip fracture patients >70 years were randomized to receive CGC (n = 198) or OC (n = 199). Differences between subgroups at four months were analyzed using a linear mixed model with interactions between treatment (CGC-OC), time, and subgroup.
Results: Subgroup analyses showed beneficial effect of CGC on mobility in females, intra-capsular fractures (ICF) and patients with pre-fracture NEAS ≥45, the effect was independent of age. CGC was beneficial for p-ADL in patients <80 years, females, and patients with pre-fracture NEAS <45, the effect was independent of fracture type; beneficial effect on i-ADL was found in patients <80 years, females, ICF and pre-fracture NEAS ≥45, while impact on cognition was shown for patienst with ICF.
Conclusions: In the present post-hoc hypothesis generating study we found that irrespective of age, gender, type of fracture or pre-fracture i-ADL CGC was more efficient than OC in one or more functional outcomes. The interaction analyses suggest that patients with the best prognosis (younger patients, patients with intra-capsular fractures and high pre-fracture function) profited most from CGC.

O-096
Effect of nutritional supplementation and structured physical activity on walk capacity in mobility-limited older adults: results from the VIVE2 study

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Objectives: The primary objective of this study is to examine the impact of a combined intervention of nutritional supplementation and structured physical activity, compared to a placebo, on 400M walk capacity in a cohort of mobility-limited older adults across two sites (Boston, MA, USA and Stockholm, Sweden).
Methods: Mobility-limited [Short Physical Performance Battery (SPPB) ≤9] and vitamin D insufficient (serum 25(OH)D ≥9 & ≤24 ng/ml) older adults were recruited for this study. All subjects participated in a physical activity program (3x/week for 24 weeks), involving walking, strength, balance, and flexibility exercises. Subjects were randomized consume a daily nutritional supplement (150kcal, 20g whey protein, 800IU vitamin D, 4 fl. oz. beverage) or placebo (30kcal, non-nutritive). Primary outcome was gait speed assessed by the 400M walk.
Results: 149 subjects were randomized into the study (mean age 77.5±5.4; female 46.3%; mean SPPB 7.9±1.2; mean vitamin D 18.7±6.4 ng/ml). Adherence across supplement and placebo groups was similar for the physical activity intervention (75% and 72%, respectively) and the study product (86% and 88%, respectively). After the intervention period both groups demonstrated an improvement in gait speed with no significant difference between

those who received the study product and placebo (0.071 and 0.108 m/s, respectively (p = 0.06)).
Conclusions: Observations from this study suggest improved gait speed, i.e. 400M walk capacity, following a 24 week physical activity program, but no further improvement was shown for the investigational study product.

O-097
Effect modification by CYP2C9 genotypes on benzodiazepine-related fall incidents, a meta-analysis

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Objectives: Benzodiazepine use is a well-known fall-risk factor. Pharmacological effects of benzodiazepines vary between individuals, and are potentially influenced by genetic variations. Therefore, we investigated whether polymorphisms in genes encoding drug metabolising enzymes – CYP2C9*2 and *3 – modify benzodiazepine-related fall risk. Both variants encode for a decrease enzyme metabolism phenotype.
Methods: Data from 3 Dutch population-based studies, concerning community-dwelling elderly, were used. Falls were assessed using self-report or registry data. Benzodiazepine use was based on pharmacy records or self-report. CYP2C9*2 and *3 genotypes were determined. Multivariate cox proportional hazard models were used to determine benzodiazepine-related fall risk. Results were stratified on CYP2C9 genotypes and subsequently meta-analysed.
Results: Of the 11,485 participants, 3,705 encountered a fall during follow-up (total follow-up = 91,996 years). Compared to non-users, current benzodiazepine use was associated with an increased fall risk in all three studies, combined HR = 1.26 (95%CI 1.13; 1.40). The presence of CYP2C9*2 and *3 alleles modified benzodiazepine-related fall risk. Those carrying at least one variant *2 allele and using benzodiazepines, had an 51% increased fall risk, compared to non-users, HR = 1.51 (95%CI 1.11; 2.05). Those carrying no variant *2 alleles and using benzodiazepines had an 15% increased fall risk, compared to non-users, HR = 1.15 (95%CI 1.01; 1.32). Results were similar for *3 alleles.
Conclusion: Our results indicate that CYP2C9*2 and *3 allele variants modify benzodiazepine-related fall risk. These results form a step towards personalized medicine in the field of medication-related falls. However, since the exact role of CYP2C9 in benzodiazepine metabolism is not fully revealed, additional research is warranted.

O-098
Long-term evaluation of the Ambulatory Geriatric Assessment – a Frailty Intervention Trial (AGe-FIT) – clinical outcomes and total costs after 36 months

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Objective: To compare mortality and costs of health and social care between participants with access to care based on Comprehensive Geriatric Assessment (CGA) in an out-patient care setting with a control group receiving usual care only. The comparison was done 36 months after inclusion.
Methods: Randomized controlled trial. Inclusion criteria: community-dwelling, aged ≥75 years, ≥3 hospitalisations the last year and ≥3 medical diagnoses. Mean age 82.5 years.
Results: A total of 208 participants in the intervention group (IG) and 174 in the control group (CG).
Participants in the IG lived longer than the participants in the CG. 27.9% (n = 58) in the IG versus 38.5% (n = 67) in the CG had died. HR = 1.49; CI; 1.05–2.12; P = 0.026. Mean number of inpatient days was lower in the IG (intervention 15.1 (SD 18.4), control 21.0 (SD 25.0), P = 0.01.
No differences in the overall costs between the IG and CG including costs for home-help service and nursing home. Mean cost during the 36-month period after baseline assessment expressed as USD/patient (SD) in the IG was 71905 (85560) versus 65626 (66338) in the CG: P = 0.43.
Conclusion: Better survival and fewer days in hospital three years after baseline assessment without increasing costs. This strengthens the positive results of a care based on CGA not only in acute care settings but also in outpatient care. A change of to-days health care organization focused on a one organ/disease is needed to a more comprehensive and preventive care of the oldest old.

Posters

P-462
Clostridium tetani bacteraemia in an elderly man with torticollis and infected necrotic wounds

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Tetanus is a disease caused by tetanus toxin produced by *Clostridium tetani*. Although spores of *C. tetani* are ubiquitous, tetanus remains rare in developed countries due to widespread vaccination. However, a significant proportion of the elderly remain unvaccinated and at risk. We describe here a case of *C. tetani* bacteraemia in a 77-year-old man with neck spasm – a finding previously not reported in medical literature.
Clinical work-up of a 77-year-old man admitted unconscious to hospital is described. Computerized tomography (CT) of the head suggested that an intracranial hemorrhage had left the patient helpless at his home for up to four days, leading to infected necrotic wounds. Upon presentation he was noted to have torticollis, which was confirmed by CT of the neck revealing neck muscle spasm. On admission, the patient was septicaemic and blood cultures were obtained, growing *Proteus mirabilis* and an anaerobic Gram-positive rod identified as *C. tetani* by MALDI-TOF mass spectrometry and 16S rDNA sequencing. The patient's necrotic wounds are considered the likely source of the *C. tetani* infection.
The case is remarkable as *C. tetani* has not previously been isolated from blood samples of a patient with tetanus. Tetanus should

be considered in potentially unvaccinated elderly with infected wounds.

P-463

Alcohol consumption and risk of dementia up to 27 years later in a large, population-based sample: The HUNT study, Norway

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Objectives: The relationship between alcohol consumption and dementia risk is unclear. This investigation estimates the association between alcohol consumption reported in a population-based study in the mid-1980s and the risk for dementia up to 27 years later.

Methods: The entire adult population in one Norwegian county was invited to the Nord-Trøndelag Health Study during 1984–86 (HUNT1): 88% participated. The sample used in this study includes HUNT1 participants born between 1905 and 1946 who completed the questionnaire assessing alcohol consumption. A total of 40,435 individuals, of whom 1,084 have developed dementia, are included in the analysis adjusted for age, sex, years of education, hypertension, obesity, smoking, and symptoms of depression.

Results: When adjusting for age and sex, and compared to reporting consumption of alcohol 1–4 times during the last 14 days (drinking infrequently), both abstaining from alcohol and reporting consumption of alcohol five or more times (drinking frequently) were statistically significantly associated with increased dementia risk with hazard ratios of 1.30 (95% CI 1.05–1.61) and 1.45 (1.11–1.90), respectively. In the fully adjusted analysis, drinking alcohol frequently was still significantly associated with increased dementia risk with a hazard ratio of 1.40 (1.07–1.84). However, the association between dementia and abstaining from alcohol was no longer significant (1.15, 0.92–1.43). Equivalent results for Alzheimer's disease and vascular dementia indicated the same patterns of associations.

Conclusions: When adjusting for other factors associated with dementia, frequent alcohol drinking, but not abstaining from alcohol, is associated with increased dementia risk compared to drinking alcohol infrequently.

P-464

Drug administration in selected Icelandic nursing homes

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Objective: Medication use in nursing homes is considerable and the prevalence of dysphagia is significant, affecting the administration of medications in their tablet form. The crushing of medications or mixing them with food can change the quality of a drug. The aim of this study was to investigate the status of drug administration with special focus on the crushing of drugs.

Methods: The study was conducted in two selected nursing homes. The nurses were observed as they prepared and administered the medication. The type of drug, number and if pills were split or crushed and capsules opened was registered. The mixing of medications with food was noted.

Results: Participants were 73, females 49 (67%).Preparing of 1917 drugs for 522 instances of drug administrations were observed. 54% of drugs administered during the study period were crushed and this was common practice if the residents had problem swallowing tablets. Coated tablets and tablets with extended release were crushed in 61% and 39% of cases. Acid resistant coated tablets and capsules were crushed in 54% and 29% of cases. The most common food item for mixing medication was apple puree.

Conclusions: The study showed that considerable amount of resources were wasted on drugs that can be expected to become unusable or change quality in their crushed form. Drug safety and efficasy was thus compromized. Published recommedations for proper drug handling and suggestions for alternative drug forms for patients with dysphagia proved to be limited.

P-465

The relationship between physical frailty and cognitive decline

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Objectives: Frailty is an important statement affecting physical, social and cognitive status of the elderly. This term has usually referred to physical phenotype. Recently, cognitive domain of frailty has been emphasized by the authors. In this study, we aimed to show whether physical frailty is associated with cognitive decline or not.

Methods: Fried frailty index was used for the evaluation of frailty. Five parameters (weight loss, exhaustion, weakness, slow walking speed and low level of physical activity) were evaluated. The patients were divided into three groups as robust if none of the mentioned criteria was affected, pre-frail if 1 or 2 were affected and frail if 3 or more were affected. All patients underwent comprehensive geriatric assessment. Cognitive functions were evaluated by using mini-mental state examination (MMSE) and clock drawing tests (CDT).

Results: One hundred one patients (31 robust, 43 pre-frail and 27 frail patients) (median age 73 years (min-max: 65–94) and 66.5% patients female) were included. Medians of age, gender and co-morbidities rates were similar between groups. Activities of daily living were more affected in frail group compared to pre-frail and robust group ($p < 0.001$). CDT score medians were similar between robust and pre-frail group but higher than frail group (6, 6 and 3 points, respectively, $p < 0.001$). Medians of MMSE test were significantly lower in frail group (24 points, min-max: 9–30) than pre-frail (27 points, min-max: 11–30) and robust group (29 points, min-max: 15–30) ($p < 0.001$).

Conclusions: This study has demonstrated that cognitive decline may be associated with physical frailty.

P-466

Factors associated with postoperative blood transfusion requirements in Proximal Femoral Fractures-Local population study

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Objectives: Proximal femoral fractures (PFF) are associated with high rates of blood loss requiring transfusion. The objective of this study was to identify risk factors for transfusion in the local

population and the impact transfusion requirement had on day one mobilisation.
Method: A retrospective study using data collated for National Hip Fracture database for period August-December 2014. Data was inclusive of anticoagulation.
Results: 115 patients were in the study with age range of 60–100, with a female predominance (female 84: male 31). 31 patients required blood transfusions (27%) and 10% requiring transfusion were anticoagulated. Age, gender, and ASA grade were not statistically significant risk factors. Fracture type (p value 0.019), operation type (<0.001), and pre-operative haemoglobin (0.015) were statistically significant. Intertrochanteric (42%), and intracapsular displaced (35%) fractures were associated with higher rates of postoperative transfusion. Fixation with Sliding Hip Screws (SHS) accounted for 48 % of post-operative transfusions whilst Intramedullary (IM) Nail accounted for 16%. Pre-operative haemoglobin <110 was associated with requiring transfusion (haemoglobin; 80–89 (100% transfusion rate), 90–98(83%), and 100–110 (77%)).
63% patients not receiving, compared with 74% of patients receiving transfusion mobilised day one post-operatively.
Conclusion: We identified similar risk factors as previous studies and this will guide our pre-operative and post-operative management. This study identified SHS rather than IM nail requiring post-operative transfusion at higher rates. This finding may be due to a combination of population size in study as well as operation preference (IM nail fixation-13% of total surgeries, SHS-34%)

P-467
Is frailty a prognostic factor for critically ill elderly patients?

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Objective: It was aimed to investigate the effects of frailty on clinical outcomes of the patients staying intensive care unit (ICU).
Methods: In this prospective study, 122 patients (59 frail, 37 pre-frail and 26 robust) were included. A frailty index (FI) (Krishnan et al. Age Ageing 2014) derived from comprehensive geriatric assessment parameters was used for the evaluation. The FI score of ≤0.25 was considered as robust, 0.25–0.40 as pre-frail and >0.40 as frail. The prognostic effects of FI were investigated and also, FI and APACHE II and SOFA scores, the prognostic scores using in ICU, were compared.
Results: Median age of the patients was 71 years-old (min-max: 60–101) and 50.8% was male. Mortality rate and median length of stay (LOS) of the patients in the ICU were 51.6% and 8 days (min-max: 1–148), respectively. Mortality rate in the hospital was significantly higher in the frail group compared to pre-frail and robust groups (73.1%, 62.2% and 45.8%, respectively, $p = 0.046$). Mortality rate in ICU was also higher in the frail group compared to pre-frail and robust groups (69.2%, 56.8% and 40.7%, respectively, $p = 0.040$). In multivariate analysis, it was found that LOS in ICU (OR: 1.067, 95%CI: 1.021–1.114), SOFA score (OR: 1.272, 95%CI: 1.096–1.476) and FI (OR: 39.019, 95%CI: 1.235–1232.537) were the independent correlates for the ICU mortality ($p = 0.004$, $p = 0.002$ and 0.038, respectively). There was weak but statistically significant positive correlations between APACHE II and FI scores ($r = 0.190$, $p = 0.036$).
Conclusions: As a conclusion, FI may be used as a predictor for the evaluation of elderly patients' clinical outcomes in ICUs.

P-468
The association of sarcopenia with depression and functional status among elderly persons

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Objective: Association of depressive symptoms and activities of daily living (ADL) and lower hand-grip strength (HGS) in older persons has been reported. Our aim is to evaluate the association of sarcopenia with functional status and depressive symptoms among elderly persons aged 65 years and older living at their homes in İzmir, Turkey.
Methods and Subjects: Community dwelling 861 ≥65 years old ambulatory people living in Bornova region in the center of Izmir were taken into the study which were selected from 'prevalence and risk factors of sarcopenia study' in the same district. For diagnosis of sarcopenia The European Working Group on Sarcopenia in Older People criteria were adopted. Geriatric Depression Scale-Short Form, ADL, The Lawton Brody Instrumental ADL (IADL) scale, calf circumference (CC), HGS, 6-m GS were applied. RESULTS: Mean age of 861 people was 72.2±5.8 years (58.9% females). Sarcopenia was identified in 40 elderly (4.64%). People with sarcopenia showed a statistically significant lower IADL score, CC, HGS, GS, BMI and statistically significant higher age. After adjusting for potential confounders, an increased risk of sarcopenia was found for age groups 75–84 (OR 4.4; 95% CI 1.4–14.3) and 85 and over (OR 9.1; 95% CI 1.5–52.9) and in those with low BMI (<22 kg/m^2) (OR 21.6; 95% CI 6.8–68.2).
Conclusion: Only IADL was associated with increased sarcopenia risk in ambulatory community dwelling elderly people. However ADL and depressive symptoms were not associated with increased sarcopenia risk.

P-469
Alzheimer and dementia: when the adult grandchildren become the primary caregivers of their grandparents …

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Background: Alzheimer's disease and other vascular cognitive disorders are common disturbances in the elderly. Dementia often has a serious impact on family life. Most demented patients are cared for at home by family members, usually elderly spouses. Adult grandchildren (AGC) are also a significant contingent of elder care providers. The number of AGC as caregivers is likely to increase because demented cases are expected to double by 2030 and triple by 2050.
Methods: The participants (dyad: demented grandparent (GP) and AGC) have been recruited through the system of the French National Alzheimer Data Base. A structured telephone non recorded interview lasting about 15 minutes was conducted with the AGC. They were asked what type of caregiving activities they provide for their GP and if they encountered physical or mental health problems associated with their caregiving experience.
Results: The sample group had 70 aged demented GP and 70 AGC. A vast majority of the AGC were women, mean age 38 years, married, employed. They had two children on average. The demented GP

were women, mean age 87-years-old. AGC have been providing care for 5 years or even longer. Half of the AGC felt stressed and more of one third had sleep disturbances. Nevertheless, the AGC considered themselves satisfied about their health, and they said they had a good quality of life.
Conclusion: Literature has begun to consider the contributions of this "forgotten generation".
The study highlights the important role that AGC play in family caregiving. Clinicians may need to pay particular attention to atypical family member caregivers such as AGC.

P-470
Traumatic musculoskeletal injuries in lower extremity in elderly and referral from primary care to orthopedic trauma service

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Aims: Using records from the Medical Record Information (MRI) to determine the incidence of Traumatic Musculoskeletal Injuries (TMI) and Fragility Fractures in Lower Extremity (FF-LE) in Elderly and referral from Primary care to Orthopedic Trauma Service to promote preventive activities from the Primary Care (PC) clinic and Specialist Orthopaedic Surgery and Traumatology (OST)
Method: Fragility Fractures are the most common complication after trauma among people over 65 years of age, consuming significant resources, health, social and economic developments in the process of diagnosis and treatment. The authors conducted descriptive cross-sectional study of patients with a diagnosis of FF in people over 65 of age with registration in the medical record Health Center Urban in Castille and Leon (Spain).
From the list of 16.294 patients with MRI: >65 years of age, 3615 (1562 men, 2058 women). Data are collected on a Excel spreadsheet and analyzed using SPSS 9.0 for Windows.
Results: TMI 627; 426 women, 201 men. Ratio female/male: 2/1.
FF-LE 337; 258 women, 79 men.
Hip Fracture: 203 cases (157 women, 46 men).
Femur fracture: 75 cases (58 women, 17 men)
Calcaneal fracture: 3 patients (2 women, 1 man).
Foot fracture: 56 cases (41 women, 15 men).
65% are between 81 and 85 years.
Conclusions: 50% of TMI have resulted in a FF-LE, with the highest incidence in women by a ratio of male/female 3/1. The age group with the highest incidence of FF-LE has between 81 and 85 years (65%). From these results, a *Clinical Improvement Plan* including the completion of a program of health education groups in our Health and promote preventive activities from the Primary Care (PC) clinic and Specialist Orthopaedic Surgery and Traumatology (OST).

P-471
Key role of the professionals in the Strategy of care for chronic patients in Castilla y León

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Objective: To improve health outcomes and quality of life of people with chronic diseases through a comprehensive quality care, adjusted to the level of care needs and in coordination with social services in an environment of sustainability.
Methods:
1. The "target population" selected in the so-called chronic patients pluriphatologic those in which coexist "two or more chronic diseases involving the occurrence of relapses and interrelated diseases that affect a special clinic fragility and a gradual decrease in their autonomy and capacity functional, generating strong demand for attention to different care settings (primary care, specialty care, social services)."
2. Strategic objectives:
   2.1. Ensure continuity of care
   2.2. Empowering and patient responsibility.
   2.3. Innovation and knowledge management

Results:
1. Population Groups stratified:
   G0: Healthy or not significant acute processes People.
   G1: Patients with stable disease or with low initial need for health care arena.
   G2: pluripatológicos or a stable disease in advanced stage with moderate need for health care patients.
   G3: severe patients with multiple pathologies with high health care needs and social needs often.
2. G3 2.58% (62702 individuals), G2 9.63% (233729 individuals), G1 18.33% (454 293 individuals), G0 the 69.08% (1,677,446 individuals).

Conclusions: The objective in the selected group as a target population, 62702 individuals, is a major challenge for the organization whose success will depend on:
1. Involvement and commitment of health professionals.
2. Participation of patients, their families and their associations.
3. The specific training of professionals.
4-An adequate information infrastructure to use a shared electronic medical record (EMR).

P-472
Evaluation of the knowledge of hygiene and postural care and an intervention on the same for the prevention and improvement of chronic low back pain in elderly patients who have a diagnosis of osteoarthritis lumbar

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Objectives: Quantify the improvement of chronic low-back pain, after a customized educational intervention on postural hygiene and care, and assess their impact on the ability to perform activities of daily living.
Methods: Cross-sectional study, applied to selected elderly patients with diagnosis of lumbar osteoarthritis and its main query is chronic low back pain (n = 50).
They are offered to participate in the study and in the case of accepting, they passed an initial questionnaire with 3 parts, the first with demographic data (age and type of daily activity), the second in which the pain characteristics described (location, characteristics, frequency, intensity, disability that occurs, involvement of sleep, use of analgesics and visual analog scale of pain intensity (VSA)) and a third data quality of life, mental state (Scale of anxiety/depression Goldberg) and the impact of low back pain using the Spanish version of the Roland-Morris Scale (scale of disability due to low back pain and sciatica).
A subsequent quiz is taken, in a scheduled visit last three months, after conducting an initial individual educational intervention, using the same metrics. The intervention consisted of an oral presentation of 15 minutes duration, supported by presentation of illustrated leaflets and easy understanding and interpretation, about hygiene and postural care in everyday domestic activities to consider and a table of basic daily exercises aimed tone and

strengthen the lumbar paraspinal musculature. Data are collected in an Excel spreadsheet and analyzed using SPSS 9.0 for Windows.
Results: Mean age 61.5±10.2SE. Percentage of patients with anxiety or depression was 14%. The average score on the VAS (range 0–10) decreased from 4.5±1.9SE to 3.9±2.4SE ($p = 0.02$). The mediates the Spanish version of the Roland-Morris (ERM), initial score was 12.7±2SD and after 3 months of 8.1±2SD ($p < 0.001$). The impact of hygiene and postural care in everyday domestic activities to consider and a table of basic daily exercises to tone and strengthen the lumbar paravertebral muscles in daily domestic activities (catch weight, social activities, lead, etc.) evaluated by reducing the score ERM, which occurred in 49.6% of patients. This reduction was significantly higher ($p < 0.05$) in patients with shorter evolution of the painful picture and continuous, higher intensity on the VAS, without concomitant depression and previous consumption of analgesics. Perception of improvement in 58.9% of patients. A moderate correlation between EVA and ERM ($r = 0.685$, $p < 0.001$).

P-473
The feasibility of chemotherapy in cancer of oldest-old patient after comprehensive geriatric assessment

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Introduction: Impact of cooperation between oncologist and geriatricians is supposed to benefit to older patients with cancer, despite any evidence-based proof of it. Frailty, revealed by comprehensive geriatric assessment (CGA), leads to modification of cancer treatment in about one quarter of elderly patients according to the literature. But very few data are available about feasibility of these modified treatments taking account of frailty.
Objectives: Our objectives are to evaluate feasibility of chemotherapy after modifications according to CGA results and factors related to it.
Methods: In our Unit for Coordinated OncoGeriatrics, chemotherapy for the oldest-old patients is realized in the geriatric unit or geriatric day hospital, meaning that the geriatricians are responsible of cancer treatment. Protocols of chemotherapy are decided by multidisciplinary staff including geriatricians and oncologists. Retrospectively, we reviewed the feasibility of chemotherapy for all patients treated from 2011 to 2013. Feasibility of chemotherapy was defined by the respect of doses of antineoplastic drugs and rhythm of administration, until the time of the first evaluation of efficiency according to the professional recommendations. In case of infeasibility, a percentage of ideal treatment was calculated according to doses and rhythm modifications. The Hurria's score was calculated for all patients and correlated to clinical toxicities observed.
Results: 140 patients were evaluable (90 women, 50 men, mean age: 84 years old). The majority were frail according to G8 (97%) or VES-13 (86%). Frailty was due to IADL (39%) or ADL (15%) alteration, symptomatic comorbidity (52%), cognitive decline (25%), malnutrition (66%) or depression (16%). Cancers were lymphoma (13%), multiple myeloma (4%), solid tumors mainly metastatic (81%) and which localization were digestive (43%), lung (14%), ovarian (9%), bladder (6%), breast (6%), prostatic (3%). Full feasibility of chemotherapy was observed in 45% of the patients. In the 55% of unfeasibility, only one third benefited of 70% of protocol. Alteration of protocol of chemotherapy was due to evident progression of cancer (60%), excessive toxicity (55%) or wishes of patients (6%). It seems to be correlated to previous malnutrition, alteration of ADL, or symptomatic comorbidity but it was not significant.
Conclusion: These data suggest that, despite CGA and careful follow-up by geriatricians, the feasibility of protocols of chemotherapy decided after consultation between oncologists and geriatricians remains weak. Evidence-based adaptations of protocols for the oldest-old cancer patients are strongly needed.

P-474
'Doctors don't talk to me'

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Objectives: Effective communication skills and a bio-psycho-social basis allow health care professionals to improve understanding of patients and their diseases, improve their acceptance of the treatment regimen, have a more efficient management of time, avoid burnout and increase their professional achievement.
Professional practice requires a lot of technical concentration and have very little time to act so it becomes easier and faster to know what's wrong if they ask the patient's companions.
Methods: The article it's an outburst we hear of elderly patients about health professionals at hospitals or health centers. Professionals ask for clarifications and hear complaints asking their companions without the person concerned can express how he/she feels and without being clarified about their fears and anxieties and then look for solutions for the problem in literature.
Results: The most common communication pitfalls include conversation blockers, silence, cross talk, technical dialogues that are difficult to understand by the patient or extensive dialogues without content. No one will be able to convey accurately complaints but the person concerned, the person who feels the physical and mental pain can convey trustworthiness.
Conclusions: This article provides a cognitive map suggesting important communication skills to enrich health professionals in a human and emotional way in their daily practice in caring for the elderly. Interpersonal relations is very important and can result on a bilateral basis of trust, a correct identification of the cause of the problem and to increase the diagnostic efficiency and consequently to create a more appropriate and effective therapy.

P-475
The VIPS practice model for dementia care – Do you want person centered care in your nursing home?

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The VIPS practice model (VPM) is an easy way to implement person centered care in nursing homes. The model provides a permanent structure for building a shared value base in the staff. The VPM provides health care staff with knowledge on how to use person centered care in daily practical care.
The VPM works well in combination with Dementia care mapping
Based on Tom Kitwood's theory summed up in Dawn Brooker's VIPS framework, the VIPS practice model is a staff training intervention for person centered care, which can be used in both nursing homes and in-home nursing.
The VIPS framework consists of four elements
- V – that all human beings have the same Value
- I – the care should be Individualized
- P – taking the Perspective of the person with dementia
- S – the psycho-Social environment, in which the person with dementia lives

Each element has 6 indicators giving concrete descriptions of the content of the elements.
The four elements in the VIPS framework are used in a weekly meeting structured to help staff reach consensus on how to meet a challenging patient-nurse situation. The discussion in the meeting has particular focus on the perspective of the person with dementia.
The VPM has set roles to ensure that all staff is involved in the decision making process and implementation of person centered

care. As a representative of the majority of staff, an auxiliary nurse holds the leading role as leader of the consensus meeting supported by the head nurse. The primary nurse is the spokesperson for the person with dementia, presenting the situation from the perspective of the person with dementia. The registered nurse responsible for the professional development in the institution has the role as an internal coach, and trains new members of staff.
The VPM has been tested in a large RCT in Norwegian nursing homes, and is found to reduce depression, psychosis and agitation. The model has also been tried out in several municipalities in in-home nursing, and clinical workers reported it was very useful in this setting as well.
We provide training for course instructors who train the staff in the nursing home or in-home nursing.
During a two day course, the VIPS practice model is presented and you are trained in conducting the model's introduction course. All the material for the course, including educational lectures on memory-sticks and written manuals are available in a starting-kit in English, Portuguese or Norwegian.
The course for the course instructors are available for RNs, psychologists and others who are interested in being resource persons for implementation of the VIPS practice model in their country.

P-476
New Profile of elderly patients with hip fracture and low impact preview fracture

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Objectives:
1. To determine the incidence of osteoporotic fractures or low impact on previous patients admitted with hip fracture.
2. To analyze the degree of implementation of anti-resorptive therapies in these patients.

Methods: Retrospective and descriptive study of a random series of 120 patients over 75 years attending emergencies in the University Hospital of Vigo in the year 2013 with a diagnosis of hip fracture.
Results: Of the 120 elderly analyzed in the study, 92 were women (76.6%) and 28 males (23.3%) with a mean age of 84.53 years.. Twenty-nine patients (24%) had suffered a fracture on prior impact: 28.95% hip, 13.16% vertebral, 10.52% Colles and 47.37% in other locations. Of the 29 patients with previous fractures, 13.8% vitaminD levels were collected, densitometry performed percentage was 3.5% and only 34.5% patientes had received treatment before hip fracture (4 were being treated at the time of the fracture and 6 were treated).
Conclusions: Although most predictive factor of risk in the development of fracture are age, personal or family history of fracture and BMD determination, in the series of patients analyzed, low implementation of management protocols in patients with established osteoporosis leading to the appearance of second low impact fracture is noted.

P-477
New Scales Elderly Patient Global Assessment applied to elderly patients with hip fracture

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Objectives: Analyze the potential relationship between the risk of hip fracture and the results of the scales Elderly Patient Global Rating geriatric patients.
Methods: Retrospective and descriptive study of a random series of 120 patients over 75 years attending emergencies in the University Hospital of Vigo in the year 2013 with a diagnosis of hip fracture.
Results: Of the 120 patients analyzed in the study, 92 were women (76.6%) and 28 males (23.3%) with a mean age of 84.53 years. Considering the Elderly Patient Global Assessment in the functional area, we found: grade 0 (normal walking) 30.83% of patients; Grade 1 (walks with some difficulty) 27.5%; Grade 2 (cane or similar) 17.5%; Grade 3 (helped by at least one person) 10.83%; Grade 4 (two people) 6.67%; and grade 5 (immobilization in bed or chair) 6.67%. Regarding the mental sphere in 75% of our patients any cognitive decline is not evidence. Only 10% of them were institutionalized.
Conclusions: In this series, a direct relationship between hip fracture, and functional, mental and social situation is evident; being at greatest percentage of fractures, those elderly with little functional impairment, without cognitive impairment and who live in home.

P-478
Falls and old age: results from a qualitative study carried out in a rural area of Turkey

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Objectives: Falls are the leading cause of morbidity and mortality in old age. It is possible to decrease the rate of accidents and falls by home modifications and individual education. Rural areas are often deprived from resources. The aim of this study is to evaluate rural houses regarding the risk of falls and home accidents, to identify the risky areas at home and to advise recommendations of home adaptation.
Methods: Qualitative methodology has been used. 15 interviews have been done in Adıyaman, Gölbaşı district. The Ergonomic Evaluation form has been used to evaluate the houses. The fall history has been taken. Interviews were audio-taped and pictures were taken. The elderly have been informed about risky areas at their homes and advises were given.
Results: The majority of the houses had major fall-risky areas and was not suitable concerning the physical limitations of the elderly. The stairs have been found as the main place of previous falls. Some participants experienced multiple falls at the same location however didn't do any change to prevent future falls.
Conclusion: Building a safe environment in old age is crucial for the prevention of falls and for an independent life. The older people living in rural areas often lack of resources available for in-home adaptations. Resources need to be allocated to rural areas in order to support aging in place.

P-479
Awareness and decision-making to advance directives among the elderly patients admitted at intensive care units in middle Taiwan

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Objectives: To understand awareness and intentions of advance directives (ADs) among the elderly patients admitted in the intensive care units (ICUs).
Methods: A cross-sectional questionnaire survey with purposive sampling among patients aged ≥55 years admitted at medical ICUs was conducted at a medical center in middle Taiwan. A structured questionnaire was designed for asking consideration of determining ADs.
Results: A total of 30 patients were enrolled, their mean age of was 70.4±11.64 years, 22(73.3%) were male. Only 10(33.3%) patients understood that they could decide ADs before the ICU admission, 13(43.3%) signed DNR. Although 20(66.6%) patients knew what endotracheal intubation is, 28(93.3%) did not know tracheostomy will be performed if difficult weaning of intubation occurs. The willings of patients themselves in the considerations of ADs were

most important, followed by the disease severity, and discussion with health care professionals. However, despite incurable diseases and terminal conditions, 12(40.0%) patients would follow the advice by doctors, 9(30%) wished to go home, and 5(16.7%) agreed hospice care. ADs would be considered if life expectancy is less than 3 months in 16(53.3%) patients, 4 to 12 months in 6(20%), but 7(23.3%) would never consider ADs. Patients who were married, high school educated, and their spouse as the main caregiver had higher awareness of ADs. Attitude was positive among patients with APACHE II scores ≥16 and spouse as the main caregiver.
Conclusion: Discussion and advice of medical professionals played an important role in decision of ADs. Education to medical professionals and patients might be of help.

P-480
Does obesity really lower dementia risk?

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Objectives: A paper by Qizilbash et al., published in Lancet Diabetes and Endocrinology in April this year, reported that underweight in midlife increases dementia risk, and contrasting previous research they reported that overweight in midlife lowers dementia risk. This study has been questioned because they considered individuals between 40–80 years of age at BMI assessment as a single group, mixing midlife and late-life BMI.
Methods: For this reason, we analyzed separately the dementia risk for three age groups at BMI assessment: 35–49, 50–69 and 70–80 years. Our data includes more than 80 000 participants in Norway followed-up for dementia related mortality, using Cox regression, with a maximum of 38 years of follow-up.
Results: Two aspects of our findings need to be considered. First, underweight both in midlife and old age was associated with increased dementia risk. Second, the association between overweight and dementia depended on age at BMI assessment; when BMI was assessed in midlife there was no decreased dementia risk, but when BMI was assessed in old age, high BMI was associated with decreased dementia risk.
Conclusions: Obesity involves increased health risk for several conditions. Based on the Qizilbash paper, global news corporations have reported that being overweight in midlife may reduce the risk of dementia. We believe the uncertainties concerning clinical relevance of the Qizibalsh paper findings should be noted, particularly that other studies find no such protective effect of midlife overweight. However, being underweight at different stages in life seems to be associated with increased dementia risk. To gain more knowledge about the associations between weight, dementia and the mechanisms involved, further investigation is warranted.

P-481
Assessment and treatment of memory problems in memory clinic setting: A study of 60 patients

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Aims: To analyse the clinical assessment, diagnosis and treatment of patients presenting with memory problems in the memory clinic
Patients and Methods: 60 consecutive patients case notes were audited who presented to memory clinic from Jan to July 2010. Their clinical assessment, investigations and treatment options were noted and their mini-mental score was charted over two years.
Results: Patients treated with choline esterase inhibitors showed stable MMSE over a period of two years whereas the patients who were not treated (for variety of reasons) continue to deteriorate rapidly.
Discussion and Results: Treatment with anti-dementia drugs can provide a good quality of life for elderly patients up-to a period of two years.

P-482
The Norwegian Cognitive Impairment After Stroke study (Nor-COAST)

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Objectives: After stroke more than 50 percent of the patients get post-stroke dementia (PSD) or mild cognitive impairment (MCI). This is an exponentially increasing patient population due to ageing of population and decreased mortality among stroke patients. The overall aim of The Norwegian Cognitive Impairment After Stroke (Nor-COAST) study is to establish a research platform that will improve competence on PSD and MCI in order to improve individual health outcomes following a stroke.
Methods: Nor-COAST is an ongoing descriptive cohort study with partners from all four Norwegian health authorities. Up to 1000 patients with acute stroke admitted to one of the six participating stroke units will be included. Data collection at baseline, discharge from hospital, at 3 and 18 months include evaluation of cognition, life style, physical activity, function, MRI, blood samples, activity monitoring (active PAL), and data on pharmacological and non-pharmacological secondary prevention.
Results: Nor-COAST will give increased knowledge on the following aspects of PSD / MCI: i) incidence and clinical phenotype ii) pathogenetic factors including MRI, biomarkers and genetics iii) importance of physical activity iv) the interaction between secondary prevention and development of PSD/MCI v) clinical methods that can identify risk patients.
Conclusion: Cognitive impairment after stroke is frequently overlooked, and we think that this study will increase competence, and that the results obtained can be used both in clinical care and later intervention studies.

P-483
Clinical trial for the evaluation of an adaptive robotic gait rehabilitation system with geriatric patients

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Objectives: The scarcity of resources in the healthcare sector calls for alternative ways of treatment and interventions. Robotic gait assistance systems which can be adapted to the patient's anatomy are one possible alternative. Project MOPASS developed an intelligent and adaptive system for gait rehabilitation which can help patients to train physiological gait patterns by the provision of constant feedback to the patient. This helps to substitute unphysiological gait patterns with more physiological gait patterns. Additionally new therapeutic treatment intervention will be created.
Methods: Within a clinical trail the usability and acceptance of the mobile robotic assisted gait rehabilitation system MOPASS was tested from the perspective of ten geriatric patients and three physiotherapists. Data was collected with the help of questionnaires and guided interviews. Information on wearing comfort, operability

of the system, safety and other empirical values was collected over a period of five treatment interventions.
Results: Future target groups like geriatric patients and physiotherapists were strongly involved in the development phase. Acceptance of patients and therapists was high despite initial concerns. MOPASS could easily be implemented in the current treatment schedule and patients had a high sense of security.
Conclusions: The results of this study helped in the development of robotic gait assistance systems and to increase the mobility of the system and flexibility of therapist. This process can help to transfer the concept of robotic gait rehabilitation systems from specialized medical institutions to local hospitals and even to the domestic environment of geriatric patients.

P-484
Promoting lifelong education through innovative teaching methods

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Objectives: Lifelong knowledge and continuous learning are the main goal of medical education. During the last decades medical education has evolved from the traditional lecture-discussion model to implementing active learning techniques such as problem based learning and variations thereof.
Methods: Literature search in PubMed combining two or more of the keywords "Medical Education", "Active Learning", and "Cognitive Theory". In addition PubMed and Google searches on "Social Media" and "Medical Education" have been performed. The analysis is partly based on the personal experiences gained as a student of the European Academy for the Medicine of Ageing (EAMA) where novel teaching strategies are frequently introduced.
Results: Classroom modification methods are promising techniques for making the learner an active contributor to the learning process. Based on the ICAP hypothesis; increasing the student's involvement with the curriculum will guide the learning process through the stages "Passive" – "Active" – "Constructive" – "Interactive", and finally lead to increased student knowledge. This insight supports the need for implementing teaching methods facilitating interactive lifelong learning, as opposed to a pure traditional curriculum based focus in medical education. Some methods such as "flash-lightning" and "museum/gallery walk" are easily implemented into an established curriculum, whereas others such as "flipped classroom" require more fundamental changes. Social media in medical education is currently in its early stages, future possibilities and the EAMA class of 2014–2016 video-projects, will be presented.
Conclusions: There are indications that innovative teaching techniques increase the ability to stay focused during long lectures, and might improve student's long term recall. More evidence is needed.

P-485
Cognitive characteristics in persons with young onset Alzheimer's disease and frontotemporal dementia in Norwegian memory clinics study population

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Objectives: The objective is to characterize and compare the cognitive function in persons with young onset Alzheimer's disease (AD) and Frontotemporal dementia (FTD), defined by symptom debut before the age of 65 years.
Methods: The study population is part of a two-year observational multicentre study of community-dwelling persons consisting of 50 persons with AD and 24 with FTD and their families, recruited from seven memory clinics from February 2014 to July 2015.
Comprehensive cognitive assessments were made at baseline according to the standardized diagnostic manual of the Norwegian Dementia Registry, including the Mini Mental Status Examination-Norwegian Revised (MMSE-NR), Clock Drawing Test (CDT), The Consortium To Establish A Registry for Alzheimer's Disease (CERAD) visuospatial figures and Word List Recall Test (CERAD-WLRT), and the Trail Making Test-A and B (TMT-A/B).
Results: At inclusion the two groups did not differ with regard to age, gender, education or occupational status. Further, no significant differences in medical or mental co-morbidity, or use of drugs were present. Median age was 64 years for the AD-group, and 63 years for FTD. Median Clinical Dementia Rating (CDR)-global score was 0.5 for both groups.
Preliminary findings showed that persons with FTD performed significantly better on the MMSE-NR, CDT, CERAD-WLRT, and TMT-B compared to persons with AD.
Conclusion: The FTD-group had significantly better results than the AD-group on most cognitive tests, including the CDT and the TMT-B, suggesting executive dysfunction as a more prominent cognitive disability in early stages of AD compared to FTD.

P-486
Ageing as a major public health problem and the governmental policies on ageing research

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Objective: To find out how beneficial are the national and multinational policies for the research on ageing, geronological and geriatric issues.
Method: Methods used include the analysis of national and multinational policy documents on ageing research funding and on the prospective geroprotective therapies, their registration and use in clinical practice, as well as biomedical stakeholder survey.
Results: Results obtained include the findings that many countries prioritize healthy ageing, but few countries have specifically designated funding for ageing research and geriatrics.
According to the EU Regulation No 1291/2013 of 11 December 2013 on establishing Horizon 2020 – the Framework Programme for Research and Innovation (2014–2020) and repealing Decision No 1982/2006/EC/, the issues of healthy ageing and ageing disease prevention should be a priority.
However, it seems that the issue of biogerontological research is in fact pushed into the background. There are only a few grant calls relevant for the prevention and treatment of ageing and ageing-related diseases. It is not quite clear from the publicly available papers how the decisions on ageing related disease are being made.
The reason for insufficient focus on innovative biomedical translational research on ageing could be the priorities of the European Innovation Partnership on Active and Healthy Ageing, which do not stress enough complex biomedical science development to protect the health of the elderly.
The United States provide an example of targeted governmental policy to support ageing research in the form of National Institute of Aging grant programs. Other places with programs like that (on much smaller scale) are Kazakhstan and Taiwan.
We found additionally, that the legal framework is not completely prohibitive to geroprotective therapy registration. For example, FDA's definition of disease seems to embrace degenerative processes. However, there still some challenges.

First, most countries do not practice the registration of geroprotective (health promotion, disease prevention) therapies. In general, very there are not many examples of the therapies used to prevent non-communicable disease, despite the growing amount of biomedical research in this field. The pharmaceutical and biomedical companies have to register geroprotective therapies as treatments for specific diseases, which adds the cost and diminishes the market share.
Secondly, clinical trials for geroprotective therapies might take longer to demonstrate the effect than those for most medicines, which risks to make such clinical trials prohibitively expensive.
Thirdly, some likely geroprotective substances are registered as supplements which limits their medical use.
Consequently, addressing the health challenges of aging requires revisiting the approaches to the legal status of geroprotective substances and therapies, their development, registration and use in clinical practice.
Conclusion: Greater advocacy efforts should be put into the promoting the research on ageing prevention, gerontology and geriatrics.

P-487
Physical activity patterns and mortality risk in older persons

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Objectives: Patterns of physical activity levels over time are largely unknown in older persons. The current study aims to identify patterns of physical activity, their prevalence, and their association with mortality risk in a representative population of older persons.
Methods: Data from 1700 participants from the Longitudinal Aging Study Amsterdam were used (mean age 71.8 years). Self-reported physical activity was assessed at baseline in 1995–96, and at 3 and 6 years follow-up. Physical activity patterns during 6 years were determined using K-means cluster analysis, separately among survivors and diseased. In addition, subsequent 10-year mortality risk was assessed in persons still alive at 6 years.
Results: Eight physical activity patterns were distinguished. The majority (55.3%) had a stable activity pattern: almost 30.2% was inactive at all three time points, 19.5% was moderately active, and 5.6% was active. The remaining persons changed their physical activity level (26.3%), or died during the 6 years of follow-up (18.4%). After adjustment for age, sex, smoking, chronic disease and functional limitations, subsequent 10-year mortality risk was lower in persons who were increasingly active (HR = 0.69, 95% CI 0.48–1.00) as compared with stably inactive persons. For the other activity patterns, no statistically significant associations with mortality risk were observed as compared with the stable patterns.
Conclusions: This study showed a high rate of stable inactivity in Dutch older persons. Increasing one's activity pattern in older age appears to reduce mortality risk.
The authors report no financial disclosures.

P-488
Active tuberculosis in patients over 65 years old

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Objectives: To assess the presentation and therapeutic response of active tuberculosis in patients 65 or over compared to those under 65.
Material and Method: A retrospective observational study was carried out, including patients, diagnosed with active tuberculosis, attended to in the IMIU between Jan/2002 and Dec/2011, excluding those with multirresistant tuberculosis.
Demographic characteristics, risks factors and location for TB, comorbidities, diagnosed method, presence of resistances, and treatment were compared. A multivariable analysis was made by means of logistic regression in order to establish the association of age 65 or older with the unfavourable evolution of tuberculosis, adjusted to gender, comorbidity and HIV infection.
Results: Those aged 65 presented a higher proportion of males with more comorbidities and contrary those under 65 presented a higher frequency of indigence, percentage of foreigners, background of previous contact with TB and more HIV infection.
Amongst those patients with PTB 71.6% of those aged 65 had baciloscopy (+) in relation with 81.3% of those under; however there were no differences in the outputs of the culture: 91.9% in patients aged 65 in relation with 93.1% in those under.
A multivariable analysis adjusted to age, gender, comorbidity and HIV infection, proved that being 65 or over was associated with unfavourable development of TB.
Conclusions: Patients with an active TB aged 65 in our series are more frequently male, Spaniards and present higher comorbidities except with HIV infection. Even though pulmonary TB is the more frequent form of presentation, oftenly has added extrapulmonary involvement and the sputum smear is not as profitable as in those under 65.

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Author index

Abdusalam, T., S133 (P-379)
Aberg, A.C., S178 (O-096)
Abete, P., S93 (P-232)
Abeyratne, R., S94 (P-235)
Abizanda, P., S86 (P-206)
Abraha, I., S5 (O-003), S21 (O-055)
Abrahams, J., S112 (P-304)
Abrahamsen, J.F., S32 (P-001), S102 (P-266)
Adachi, D., S9 (O-015)
Adruta, D.M., S63 (P-116)
Aertgeerts, B., S134 (P-384)
Afolayan, S., S81 (P-184)
Agarwal, S., S82 (P-192)
Ahmad, N., S185 (P-481)
Ahmed, L., S16 (O-041)
Akcicek, F., S64 (P-119), S91 (P-225), S131 (P-372), S181 (P-468)
Akhtar, Z., S146 (P-427)
Akishita, M., S145 (P-423)
Al Hamad, H., S115 (P-314), S145 (P-424)
Al Sulaiti, E., S115 (P-314), S145 (P-424)
Alaburic, S., S42 (P-040)
Alam, W., S145 (P-424)
Alarcon, T., S8 (O-012), S65 (P-126), S142 (P-413), S150 (P-440)
Albala, C., S46 (P-054)
Albéniz-López, J., S34 (P-009), S79 (P-179), S137 (P-395)
Alburquerque, J., S132 (P-377)
Aldigeri, R., S129 (P-366)
Alexa, I.D., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Alexander, K., S76 (P-167)
Alg, G.S., S95 (P-239), S132 (P-374)
Ali, A., S32 (P-003), S43 (P-042), S94 (P-235)
Ali, K., S22 (O-058), S29 (O-085)
Ali, M., S140 (P-404)
Alinaghizadeh Mollasaraie, F., S14 (O-032)
Alio, Z., S146 (P-428)
Alio, Z.R., S147 (P-430, P-431), S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Allen, C., S146 (P-427)
Allen, S., S104 (P-273), S105 (P-274)
Allepaerts, S., S123 (P-345), S124 (P-348)
Aller Fernandez, M., S69 (P-140)
Alliot, E., S142 (P-411)
Almkvist, O., S118 (P-324)
Alonso Bouzon, C., S85 (P-202), S118 (P-325)
Alonso García, N., S150 (P-442)
Altan, S., S106 (P-280)
Alves, M.J., S117 (P-322), S135 (P-386)
Alves, R., S41 (P-037)
Alwin, J., S179 (O-098)
Anani, Y., S64 (P-120)
Ancelin, M.L., S26 (O-074)
Andersen, H.E., S103 (P-267, P-268, P-269)
Andersen, M., S27 (O-076)
Andersen, S., S107 (P-284), S108 (P-285)
Andersen, S.E., S140 (P-403)
Andersen-Ranberg, K., S15 (O-035)
Andres, E., S44 (P-047), S102 (P-264)
Andrieu, S., S20 (O-052)
Andruta, D.M., S53 (P-080), S63 (P-115), S101 (P-260)
Angel, B., S46 (P-054)
Angell, J., S28 (O-080)
Antikainen, R., S21 (O-056)
Antti, K., S123 (P-343)
Antunes, A.M., S49 (P-067)
Antunes, M., S97 (P-245)
Anwar, M., S65 (P-125), S95 (P-238)
Aoyama, T., S9 (O-015)
Apalset, E.M., S17 (O-042)
Aquilina, T., S94 (P-236)
Araneta Herguedas, A., S85 (P-203)
Arboretti Giancristofaro, R., S20 (O-053)
Arciniegas, A.J., S84 (P-199), S138 (P-398)
Aregui, A., S125 (P-352)
Argentina, F., S8 (O-012), S65 (P-126)
Arias, E., S90 (P-220)
Arik, G., S180 (P-465), S181 (P-467)
Arsénio, P., S183 (P-474)
Artaza, I., S104 (P-270), S177 (O-091)
Arvidsen, P., S32 (P-002)
Asensio, F.M., S48 (P-061)
Ashe, M., S31 (O-090)
Ashraf, S., S22 (O-061)
Ask, H., S180 (P-463)
Askim, T., S185 (P-482)
Aspvik, N.P., S29 (O-086), S30 (O-087)
Attier-Zmudka, J., S46 (P-055)
Auger, F., S17 (O-044)
Augusti, A., S114 (P-312)
Aung, T., S32 (P-003)
Aussel, C., S127 (P-358)
Aviv, A., S44 (P-049)
Aw, D., S32 (P-003), S43 (P-042)
Awais, S., S88 (P-213)
Aygencel, G., S181 (P-467)
Azana Fernandez, E.H., S33 (P-007), S96 (P-242, P-243), S136 (P-391), S137 (P-392), S139 (P-401)
Azermai, M., S137 (P-393)
Azzi, J., S132 (P-375)

Babe, L., S44 (P-046), S102 (P-265)
Bach-Nga, P., S15 (O-038)
Bae, S.R., S121 (P-338)
Baecke, C., S122 (P-339)
Baeyens, H., S113 (P-306)
Baeyens, J.-P., S113 (P-306)
Baeza-Monedero, E., S80 (P-180), S137 (P-394, P-395)
Bagës Bafaluy, M.I., S46 (P-056)
Bagguley, K., S96 (P-241)
Bahat, G., S68 (P-135)
Bajaj, V., S130 (P-367)
Baldasseroni, S., S40 (P-034)
Baldereschi, G.J., S40 (P-034)
Baldwin, E., S79 (P-178)
Balédent, O., S46 (P-055)
Balode, A., S75 (P-164)
Band, B., S82 (P-192)
Barandiaran Amilano, M., S46 (P-056)
Barata, J., S117 (P-322), S135 (P-386)
Barattini, P., S136 (P-390)
Barber, L., S99 (P-255), S100 (P-256)
Barbosa, B., S34 (P-010), S114 (P-311)
Barbosa, R., S131 (P-373)
Barker, H., S146 (P-427)
Barone, A., S49 (P-066)
Barreira, S., S10 (O-018)
Barrona, J., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095)
Bas Aslan, U., S104 (P-271)
Bas Costas, N., S111 (P-301)
Basista, K., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221)
Baskan, E., S56 (P-091)
Bauer, J., S93 (P-230)
Bautmans, I., S47 (P-058), S84 (P-197)
Beaudart, C., S7 (O-010), S84 (P-197)
Becher, K., S19 (O-049)
Becheri, D., S73 (P-157)
Beck, A.M., S124 (P-346)
Becker, I., S101 (P-259)
Beckett, N., S6 (O-004)
Beeckmans, M., S124 (P-349), S125 (P-350)
Beijnen, J.H., S68 (P-138)
Beishuizen, S., S25 (O-070), S76 (P-168), S77 (P-169)
Bell, J.S., S141 (P-408)
Bellagha, J., S59 (P-103)
Bellelli, G., S93 (P-232)
Ben, M., S59 (P-102)

*Pagenumbers for abstracts are followed by the abstract number(s) in parentheses.

Ben Ghorbel, I., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Ben Nasr, M., S59 (P-100, P-101), S128 (P-361), S154 (P-456)
Ben Salem, T., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Ben Salem, W., S59 (P-102, P-103)
Benetos, A., S44 (P-049), S46 (P-053), S75 (P-163), S81 (P-189), S132 (P-375), S142 (P-411)
Bentivoglio, A.R., S154 (P-453)
Bentley, A., S33 (P-004)
Berg, N., S84 (P-198)
Bergh, S., S180 (P-463)
Bernabei, R., S9 (O-017), S18 (O-048), S26 (O-073), S47 (P-057), S65 (P-122), S70 (P-146), S93 (P-231), S139 (P-402), S154 (P-453)
Bernard, L., S18 (O-046)
Bernklev, T., S27 (O-076)
Berteaux, B., S46 (P-055)
Bertfield, D., S38 (P-025)
Bertholon, L.A., S15 (O-038)
Besdine, R., S96 (P-240)
Betomvuko, P., S147 (P-429)
Beuscart, J.B., S181 (P-469)
Beyer, I., S47 (P-058)
Beyer, M., S185 (P-482)
Bezzina, D., S99 (P-255), S100 (P-256)
Bianchi, L., S16 (O-039), S93 (P-232)
Bibián Getino, C.M., S58 (P-097), S86 (P-207)
Bielaková, K., S94 (P-233), S113 (P-307)
Bielza, R., S90 (P-220)
Biganzoli, L., S73 (P-157)
Bihin, B., S147 (P-429)
Bilgin, B., S118 (P-326)
Bioteau, C., S27 (O-077)
Biver, E., S84 (P-197)
Bjelke, B., S133 (P-378)
Bjertness, E., S185 (P-480)
Bjorkman, M., S141 (P-408)
Blain, H., S170 (S-16)
Blanchard, F., S119 (P-328)
Blandfort, S., S77 (P-170)
Blauw, G., S12 (O-026), S13 (O-029), S34 (P-008), S45 (P-050)
Bleaden, A., S134 (P-382)
Blin, O., S138 (P-397)
Blomhoff, R., S16 (O-041), S17 (O-042)
Bloxham, R., S110 (P-297)
Blundell, A., S94 (P-235), S96 (P-241)
Bo, M., S93 (P-232)
Boccia, G., S6 (O-005)
Bocquet, P., S76 (P-165)
Bogdanovic, N., S161 (S-07)
Bogen, B., S7 (O-009)
Bojesen, S., S113 (P-308)
Boland, B., S24 (O-067), S66 (P-128), S124 (P-349), S125 (P-350, P-351), S138 (P-396), S152 (P-449)
Boland, E., S64 (P-120)
Bologna, C., S49 (P-064), S127 (P-357)
Bondi, G., S16 (O-039), S88 (P-214)
Bonin-Guillaume, S., S66 (P-127), S138 (P-397)
Bonito, N., S100 (P-257)
Bonne, B., S27 (O-077)
Boonstra, C., S124 (P-347)
Booth, V., S55 (P-087), S104 (P-272), S175 (S-22)
Bor, H., S54 (P-081)
Borda, M.G., S84 (P-199), S138 (P-398)
Bosmans, J., S67 (P-130)
Bosnes, I., S118 (P-324)
Bosnes, O., S118 (P-324)
Bouati, N., S119 (P-330)
Boucherie, Q., S138 (P-397)
Boudokhane, M., S59 (P-100, P-101), S128 (P-361), S154 (P-456)
Bouillanne, O., S127 (P-358)
Boulanger, E., S17 (O-044), S181 (P-469)
Boulton, C., S28 (O-082), S148 (P-434, P-435)
Bourkel, E., S153 (P-452)
Boutaayamou, M., S119 (P-331), S120 (P-332)
Brackelaire, G., S64 (P-120)
Braco Forte, C., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Bramlage, P., S99 (P-252)
Branco, F., S57 (P-095)
Brandi, V., S9 (O-017), S26 (O-073), S47 (P-057), S65 (P-122), S93 (P-231)
Brandt, K., S92 (P-229)
Brás da Silva, V., S49 (P-067)
Braun, T., S112 (P-302)
Breining, A., S61 (P-107, P-108), S89 (P-218)
Breivik, J., S2 (KL-06)
Bridenbaugh, S.A., S8 (O-013)
Briggs, S., S22 (O-061)
Brock, P., S166 (S-11)
Broer, L., S179 (O-097)
Brouwer-Brolsma, E., S179 (O-097)
Bruce, H., S147 (P-430)
Bruel, S., S133 (P-381)
Bruyère, O., S7 (O-010), S84 (P-197, P-200), S85 (P-201), S119 (P-331), S120 (P-332), S124 (P-348), S139 (P-399)
Brzyski, P., S115 (P-315), S117 (P-321)
Bucher, A., S179 (P-462)
Buckeridge, D., S15 (O-037)
Buckinx, F., S7 (O-010), S84 (P-197, P-200), S85 (P-201), S124 (P-348), S139 (P-399)
Buckley, M., S77 (P-171)
Bueno, A., S89 (P-216)
Bueno Yañez, O., S46 (P-056), S85 (P-203), S126 (P-354)
Bulpitt, C., S6 (O-004)
Bunkowski, S., S116 (P-320)
Bunting, E., S30 (O-088)
Burcet, S., S75 (P-162)
Burgon, V., S148 (P-434, P-435)
Burkhardt, H., S57 (P-093), S146 (P-426)
Burns, J., S36 (P-016)
Butt, H., S133 (P-379)
Byberg, L., S119 (P-329)
Bystrytska, M., S62 (P-113, P-114)

Caballero Mora, M.Á., S55 (P-086), S85 (P-202), S118 (P-325)
Cabello Gimenez, M., S109 (P-289, P-290)
Cabrera Guerra, J., S138 (P-398)
Cai, A., S81 (P-187)
Calabrese, V., S1 (KL-04)
Calderón, V., S55 (P-086)
Calle, A., S25 (O-072), S78 (P-173), S107 (P-283)
Callier, M., S75 (P-163)
Calvo Aguirre, J.J., S46 (P-056), S85 (P-203)
Camacho, T., S117 (P-322)
Cambier, D., S122 (P-339)
Campos, C., S155 (P-459), S156 (P-460)
Cankurtaran, M., S180 (P-465)
Cano, C.A., S84 (P-199), S138 (P-398)
Cantet, C., S20 (O-052)
Capdepon, A., S127 (P-358)
Cardoso, I., S104 (P-273), S105 (P-274)
Carfì, A., S47 (P-057)
Carnicero-Carreño, J., S55 (P-086)
Carone, V., S33 (P-004)
Carriere, I., S26 (O-074)
Carrillo Gomez, R., S187 (P-488)
Carrizo, G., S78 (P-173)
Carrizo, M.G., S25 (O-072)
Carvalho, A., S34 (P-010, P-011), S60 (P-106), S66 (P-129), S114 (P-311)
Carvalho, I., S131 (P-373)
Casey, D., S134 (P-382)
Casino, J., S107 (P-283)
Castro-Diaz, D., S19 (O-049)
Catalan-Matamoros, D., S60 (P-105), S108 (P-288)
Cavalier, E., S139 (P-399)
Cavlak, U., S56 (P-091)
Ceccofiglio, A., S73 (P-155, P-156)
Ceda, G.P., S16 (O-039), S88 (P-214), S129 (P-366)
Cederholm, T., S93 (P-230), S112 (P-305), S119 (P-329), S129 (P-366), S178 (O-096)
Çelen, N., S10 (O-020)
Cella, A., S5 (O-002), S20 (O-053)
Celmlyn-Jones, J., S98 (P-250)
Cengiz Özyurt, B., S118 (P-326), S153 (P-450)
Cereda, E., S9 (O-014)
Cermakova, P., S11 (O-021)
Cerundolo, N., S131 (P-371)
Cesari, M., S20 (O-052)
Champenois, V., S43 (P-045)
Chan, C.C., S56 (P-092)
Chandra, A., S132 (P-376)
Chang, C.-M., S184 (P-479)
Chang, C.-Y., S33 (P-005)
Chang, M.-S., S33 (P-005)
Charru, P., S126 (P-353)
Chartier-Kastler, E., S19 (O-049)
Chase, J., S31 (O-090)
Chatterjee, M., S56 (P-089)
Chavan, T., S97 (P-244)
Chen, F.-Y., S33 (P-005)
Chen, L.-K., S78 (P-175), S163 (S-08)
Chen, L.L., S38 (P-026)
Chen, X.J., S74 (P-158)
Cherubini, A., S5 (O-003), S21 (O-055), S93 (P-232)

Chipepo, Á., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Chisciotti, V.M., S73 (P-155)
Choi, H.R., S92 (P-227)
Choi, H.S., S79 (P-177)
Chong, Y.M., S67 (P-130)
Choo, H.J., S79 (P-177)
Chou, M.-Y., S33 (P-005, P-006), S78 (P-175)
Chou, S.-L., S33 (P-005, P-006)
Christensen, K., S1 (KL-01), S44 (P-049)
Christiaens, A.B., S124 (P-349), S125 (P-350, P-351)
Christiansen, P., S98 (P-249)
Chu, C.-L., S78 (P-175)
Chu, J.J., S74 (P-158)
Chua, W.M., S32 (P-003)
Cipriani, C., S154 (P-453)
Civelek, R., S181 (P-467)
Claes, V., S24 (O-067), S66 (P-128)
Clancy, U., S105 (P-275)
Clarijs, F., S45 (P-050)
Claudot, F., S81 (P-189)
Clemens, R., S18 (O-047)
Clemente, H., S34 (P-011), S60 (P-106), S66 (P-129), S122 (P-341)
Cloppet-Fontaine, A., S125 (P-352), S126 (P-353)
Coary, R., S77 (P-171)
Cobo, J., S155 (P-459), S156 (P-460)
Cockbain, B., S88 (P-211)
Cohen, J., S29 (O-084)
Cohen, J.H., S15 (O-038)
Cohen, Q., S76 (P-165)
Colakoglu, B.D., S74 (P-159), S112 (P-303)
Colas, S., S15 (O-038)
Coleman, R., S39 (P-030)
Collamati, A., S18 (O-048)
Collas, V., S67 (P-130)
Collins, R., S12 (O-024)
Colpart, E., S46 (P-055)
Concu, D., S53 (P-079)
Condorhuaman, P., S8 (O-012), S65 (P-126)
Conroy, S., S4 (KL-20), S40 (P-031), S55 (P-088), S173 (S-19)
Cooper, C., S6 (O-006)
Cooper, R., S6 (O-006)
Coopers, A., S112 (P-302)
Corbett, B., S37 (P-023)
Corica, F., S16 (O-039), S88 (P-214), S93 (P-232)
Cornelis, E., S47 (P-058), S105 (P-276), S106 (P-278, P-279)
Correia, J., S66 (P-129)
Correll, C., S9 (O-014)
Costa, F., S60 (P-106)
Coughlan, T., S12 (O-024)
Cox, C.A., S140 (P-405)
Cramer, J., S90 (P-219)
Cremer, G., S64 (P-120)
Cristini, C., S47 (P-059)
Croisier, J.-L., S84 (P-200), S85 (P-201)
Cromwell, D., S148 (P-434)
Cronin, T., S79 (P-178)
Cronin-Fenton, D.P., S98 (P-249)
Crook, J., S82 (P-191)
Crowther, G., S48 (P-060)
Cruz-Jentoft, A.J., S4 (KL-19), S5 (O-003), S13 (O-030), S21 (O-055), S34 (P-009), S79 (P-179), S80 (P-180), S90 (P-219), S137 (P-394, P-395), S177 (O-091)
Cuesta, F., S177 (O-091)
Cunnington, A.L., S36 (P-016)
Curto Prieto, D., S48 (P-061, P-062), S132 (P-377)
Custureri, R., S5 (O-002)
Cylkowska-Nowak, M., S136 (P-390)
Cynober, L., S125 (P-352), S127 (P-358)

da Cruz, D., S117 (P-322)
Dahl, C., S7 (O-007)
Dahl Knudsen, J., S116 (P-317)
Dahle, B., S29 (O-083)
Dalgård, C., S44 (P-049)
Dalleur, O., S138 (P-396), S152 (P-449)
Daly, T., S61 (P-110), S133 (P-379)
Damen-Thissen, J., S118 (P-327)
Damsgaard, E.M., S17 (O-043), S35 (P-015), S76 (P-166), S77 (P-170), S98 (P-248), S108 (P-286), S128 (P-360)
D'Angelo, E., S154 (P-453)
Dao, S., S46 (P-055)
Daragjati, J., S20 (O-053), S139 (P-400)
Darcis, S., S39 (P-028)
Dardenne, C., S139 (P-399)
Dardenne, N., S84 (P-197), S119 (P-331), S120 (P-332)
Darweish, A., S28 (O-080)
Das, S., S40 (P-032)
Davila Barboza, Y.R., S33 (P-007), S96 (P-242, P-243), S137 (P-392), S139 (P-401)
Day, J., S82 (P-190)
D'Costa, D., S97 (P-244)
de Almeida Marques, B., S49 (P-067)
De Bandt, J.-P., S125 (P-352)
de Boissieu, P., S119 (P-328)
De Buyser, S., S8 (O-011), S85 (P-204)
de Campo, A., S105 (P-277)
de Castro, M., S48 (P-061)
De Cock, A.-M., S86 (P-205)
De Coninck, L., S134 (P-384)
De Cuyper, E., S95 (P-237)
de Gelder, J., S12 (O-026), S13 (O-029), S34 (P-008), S45 (P-050)
de Groot, B., S12 (O-026), S13 (O-029), S34 (P-008), S45 (P-050)
De Groot, L., S179 (O-097)
De Groot, M., S68 (P-138)
De Jaime, E., S75 (P-162), S137 (P-394, P-395)
De Jonghe, A., S24 (O-068)
De Rooij, S., S24 (O-068), S25 (O-069), S79 (P-176)
De Saint Hubert, M., S43 (P-044), S147 (P-429)
De Saint-Hubert, M., S64 (P-120)
De Smet, V., S105 (P-276), S106 (P-278, P-279)
De Vita, F., S16 (O-039), S88 (P-214), S129 (P-366)
De Vriendt, P., S47 (P-058), S106 (P-278, P-279)
De Vries, O., S179 (O-097)
Deeg, D., S178 (O-094), S179 (O-097), S187 (P-487)
Defillo, J., S96 (P-240)
Degen, A., S45 (P-052)
Degli Agosti, I., S16 (O-040), S127 (P-357)
Degli Esposti, L., S139 (P-402)
Deininger, A., S140 (P-406)
Dejaeger, E., S122 (P-339), S134 (P-384)
Dekker, P., S118 (P-327)
Dekoninck, J., S113 (P-306)
Del Campo, N., S20 (O-052)
Delabriere, I., S181 (P-469)
Delamarre Damier, F., S113 (P-309), S133 (P-381), S140 (P-406), S141 (P-407)
Delannoy, L., S181 (P-469)
Deliens, L., S29 (O-084)
Dell'Aquila, G., S5 (O-003), S21 (O-055)
Delpierre, S., S126 (P-353)
Delrio, A., S5 (O-002)
Demeester, R., S114 (P-310)
Demonceau, M., S119 (P-331), S120 (P-332)
Demuth, I., S45 (P-051)
Denewet, N., S114 (P-310), S153 (P-451)
Depierreux, F., S120 (P-332)
Deschodt, M., S24 (O-067), S42 (P-039), S66 (P-128)
Dessain, T., S82 (P-190)
Dettmer-Flügge, A., S35 (P-012)
Deza Perez, C., S58 (P-097), S86 (P-207)
Dhakam, Z., S149 (P-438)
Dhesi, J., S3 (KL-14)
Dhonukshe-Rutten, R., S179 (O-097)
Di Bari, M., S73 (P-157)
Di Tella, S., S47 (P-057)
Diaz, E., S117 (P-322)
Dib, F., S126 (P-353)
Diez, A.I., S89 (P-216)
Díez-Sebastián, J., S65 (P-126)
Díez-Suárez, L.A., S182 (P-470, P-472)
Dionigi Rossi, P., S9 (O-016)
Djender, A., S183 (P-473)
Dodds, N., S28 (O-080)
Dodds, R., S6 (O-006)
Dogan, H., S10 (O-020), S68 (P-134)
Doi, T., S121 (P-338)
Donaire, D., S34 (P-010), S114 (P-311)
D'Onofrio, G., S134 (P-382)
Donvito, B., S15 (O-038)
Doridant, F., S75 (P-163)
Dorota, R., S11 (O-021)
Dossetor, N., S82 (P-190)
Dostalova, K., S57 (P-094), S58 (P-099)
Douadi, Y., S46 (P-055)
Doutel Haghighi, E., S117 (P-322), S135 (P-386)
Dramé, M., S15 (O-038), S43 (P-045), S44 (P-047), S119 (P-328)
Drevet, S., S27 (O-077), S87 (P-208)
Dröes, R.-M., S51 (P-073), S52 (P-074)
Dronkers, J., S27 (O-078)
Drunat, O., S126 (P-353)

Duarte, J., S98 (P-250)
Duco, L., S183 (P-473)
Duflot, A., S87 (P-208)
Duggan, J., S61 (P-110), S133 (P-379)
Duman, S., S131 (P-372)
Dunlop, H., S39 (P-028)
Dupourque, V., S134 (P-382)
Duque, S., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Duret, V., S15 (O-038)
Durmazoğlu, Ş., S68 (P-135)
Dyer, A., S12 (O-024)
Dyhr Hansen, P., S103 (P-267, P-268)
Dzerovych, N., S73 (P-154), S91 (P-223, P-224)

Egberts, T., S156 (P-461)
Eguale, T., S15 (O-037)
Ehsanullah, J., S56 (P-089)
Eide, L., S77 (P-172)
Eide, L.L.S.P., S172 (S-18)
Ejlertsen, B., S98 (P-249)
Ekdahl, A.W., S179 (O-098)
Elbi, H., S106 (P-280)
Ellidokuz, H., S155 (P-458)
Elosegi, S., S126 (P-354)
Elseviers, M., S137 (P-393)
Enemark, M., S58 (P-096)
Engedal, K., S185 (P-480), S186 (P-485)
Engstad, T., S42 (P-040), S185 (P-482)
Engvig, A., S179 (P-462)
Engvik, A., S42 (P-040)
Enneman, A., S179 (O-097)
Enoki, H., S74 (P-161), S126 (P-355)
Enriquez, M., S126 (P-354)
Enzinger, C., S105 (P-277)
Eriksdotter, M., S11 (O-021)
Erning, F., S83 (P-195)
Errigo, A., S53 (P-079)
Erten, N., S68 (P-134, P-135)
Esbrí, M., S86 (P-206)
Escalada Recto, F., S111 (P-301)
Espensen, N., S15 (O-035), S61 (P-109)
Esperto, H., S34 (P-011), S66 (P-129)
Espírito Santo, J., S34 (P-010)
Estellat, C., S126 (P-353)

Fabio, G., S16 (O-040), S49 (P-064)
Faes, M.C., S49 (P-065)
Falemara, M., S101 (P-262)
Faliva, M.A., S127 (P-356, P-357)
Fallon, A., S12 (O-024), S77 (P-171)
Famere, D., S114 (P-310)
Fantin, B., S120 (P-333)
Farre, A., S26 (O-074)
Fastbom, J., S11 (O-021), S144 (P-419)
Fatyga, P., S92 (P-226)
Fazekas, F., S105 (P-277)
Federspiel, C., S24 (O-066), S153 (P-452)
Fedyk-Lukasik, M., S92 (P-226)
Feilding, E., S146 (P-428), S147 (P-430, P-431), S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Feinard, G., S143 (P-416)
Feldwieser, F., S185 (P-483)
Feletti, L.C., S6 (O-005)
Fernandez, N., S104 (P-270)
Fernández-Montalbán, P., S34 (P-009), S79 (P-179), S137 (P-394)
Fernández-Villaseca, S., S34 (P-009), S79 (P-179)
Fernet, C., S126 (P-353)
Ferrando Lacarte, I., S58 (P-097), S86 (P-207)
Ferreira, A., S131 (P-373)
Ferreira, B., S117 (P-322)
Ferreira, D., S34 (P-011), S60 (P-106), S66 (P-129), S122 (P-341)
Ferreira, É., S34 (P-011)
Ferreira, R., S34 (P-011), S66 (P-129)
Ferrer, M.D., S155 (P-459), S156 (P-460)
Ferring, D., S24 (O-066)
Feys, P., S112 (P-304)
Fielding, R., S178 (O-096)
Figueiredo Gomes, J.P., S34 (P-010), S114 (P-311)
Fiksesaunet, A., S180 (P-463)
Fink, D., S88 (P-211)
Finne-Soveri, H., S141 (P-408)
Finnes, T.E., S17 (O-042)
Fiore, F., S47 (P-057)
Fiorini, A., S101 (P-261)
Fisher, J., S166 (S-11)
Fisher, M., S30 (O-088)
Fisichella, A., S16 (O-039), S88 (P-214)
Fita, I.G., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Flamaing, J., S24 (O-067), S42 (P-039), S66 (P-128), S116 (P-318), S134 (P-384), S173 (S-20)
Fleming, T., S180 (P-466)
Florescu, N., S103 (P-267, P-268)
Fogteloo, A.J., S12 (O-026), S13 (O-029), S34 (P-008), S45 (P-050)
Folesani, G., S12 (O-027)
Folta, S., S178 (O-096)
Fonseca, I., S41 (P-037), S122 (P-341)
Fonseca, J., S34 (P-011), S60 (P-106), S66 (P-129), S122 (P-341)
Fontana, A., S23 (O-062)
Forcina, S., S70 (P-146)
Forestier, E., S18 (O-046)
Forman, D.E., S3 (KL-13), S28 (O-081), S172 (S-18)
Formiga, F., S177 (O-091)
Forsmo, S., S16 (O-041)
Foschini, A., S40 (P-034)
Foster, P., S40 (P-032)
Fournaise, A., S15 (O-035)
Fourrier-Reglat, A., S26 (O-074)
Fox, J., S42 (P-041), S136 (P-388), S146 (P-428), S147 (P-430, P-431), S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Fraisse, T., S18 (O-046)
Francisco Júnior, J., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Frank, K., S18 (O-047)
Frantzen, L., S153 (P-452)
Franzon, K., S119 (P-329)
Fraser, P., S36 (P-016)
Fratiglioni, L., S1 (KL-02)
Freiberger, E., S165 (S-10)
Fridlund, B., S77 (P-172)
Frihagen, F., S3 (KL-15)
Frisch, P., S153 (P-452)
Frohnhofen, H., S146 (P-426)
Fuentes, P., S46 (P-054)
Fukutani, N., S9 (O-015)
Fumagalli, S., S40 (P-034)
Fure, B., S185 (P-482)
Fusco, D., S26 (O-073), S154 (P-453)

Gabin, J., S177 (O-092)
Gaboreau, Y., S87 (P-208)
Gabriel, L., S147 (P-429)
Gaillat, J., S18 (O-046), S173 (S-20)
Gaillemin, O., S42 (P-041), S136 (P-388)
Galan, P., S125 (P-352)
Galindo-Garre, F., S50 (P-070)
Gamboa Huarte, B., S58 (P-097), S86 (P-207)
Gamwell Dawids, M., S116 (P-317)
Gantzoulas, S., S97 (P-247)
Garcia, G., S132 (P-377)
Garcia, I., S155 (P-459)
Garcia, R., S34 (P-010), S100 (P-257)
García Baztán, A., S144 (P-420)
García Cabrera, L., S13 (O-030), S79 (P-179), S80 (P-180), S96 (P-240)
Garcia-Cerrada, C., S187 (P-488)
Garcia Garcia, B., S155 (P-459), S156 (P-460)
Garcia Lopez, M., S11 (O-022)
Garcia Pares, G., S156 (P-460)
Garcia-Ptacek, S., S11 (O-021)
García Vázquez, M.Á., S109 (P-290)
Gardiner, F., S106 (P-281)
Garfinkel, D., S68 (P-134)
Garraux, G., S119 (P-331), S120 (P-332)
Gattoni, M.L., S9 (O-016)
Gattringer, T., S105 (P-277)
Gautry, J., S127 (P-358)
Gavazzi, G., S18 (O-046), S27 (O-077), S80 (P-181), S87 (P-208), S119 (P-330), S173 (S-20)
Gazzotti, C., S84 (P-198)
Gebauer, S., S101 (P-259)
Genc, A., S35 (P-014), S67 (P-132), S74 (P-159, P-160), S107 (P-282), S112 (P-303)
Gentile, G., S138 (P-397)
Geoffray-Emereau, J., S143 (P-416)
Germain, C., S44 (P-046)
Gerritsen, D., S54 (P-081)
Gervásio, H., S100 (P-257)
Ghrissi, M., S136 (P-390)
Giacomini, V., S16 (O-039), S88 (P-214)
Gielen, E., S122 (P-339)
Giger, A.-K., S43 (P-043)
Gil, E., S80 (P-182)
Gillain, S., S7 (O-010), S84 (P-197), S119 (P-331), S120 (P-332)
Giordano, A., S5 (O-001), S102 (P-263)
Giorgianni, F., S23 (O-062)
Gislason, G., S140 (P-403)
Gisselbrecht, M., S183 (P-473)

Giuliani, F., S134 (P-382)
Giusti, A., S49 (P-066)
Gjerum, L., S67 (P-131)
Gjesdal, C., S7 (O-009), S16 (O-041), S17 (O-042)
Gkeli, M., S97 (P-246)
Gladman, J., S55 (P-088), S56 (P-090), S78 (P-174)
Gleize, F., S46 (P-055)
Glud Christensen, M., S103 (P-269)
Goemaere, S., S8 (O-011), S85 (P-204), S122 (P-339)
Gogol, M., S35 (P-012, P-013)
Goh, K.S., S152 (P-447)
Gomes, J., S34 (P-011), S66 (P-129)
Gomes, J.P., S41 (P-037)
Gomez Busto, F., S127 (P-359)
Gomez Cerezo, J.F., S90 (P-220)
Gómez Mosquera, A.M., S87 (P-209, P-210), S184 (P-476, P-477)
Gonzalez, C., S132 (P-377)
Gonzalez, E., S155 (P-459), S156 (P-460)
Gonzalez Eizaguirre, M.M., S58 (P-097), S86 (P-207)
González-Montalvo, J.I., S65 (P-126), S142 (P-413), S150 (P-440)
González Ramírez, A., S154 (P-454), S155 (P-457)
Gordon, A., S56 (P-090), S96 (P-241), S166 (S-11)
Gori Sacco, F.C., S102 (P-263)
Gorjao Clara, J., S143 (P-414)
Gorus, E., S47 (P-058), S105 (P-276), S106 (P-278, P-279)
Gotor, P., S142 (P-413)
Gourdin, M., S147 (P-429)
Gourdon, M., S120 (P-333)
Goz, E., S35 (P-014), S67 (P-132), S74 (P-160), S107 (P-282)
Graça, C., S117 (P-322)
Greco, A., S134 (P-382)
Gregersen, M., S35 (P-015), S77 (P-170), S108 (P-286), S128 (P-360)
Grimnes, G., S16 (O-041), S17 (O-042)
Grodzicki, T., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221), S92 (P-226)
Grossberg, G.T., S155 (P-458)
Grossin, N., S17 (O-044)
Grouls, R.J.E., S140 (P-405)
Grov, E.K., S129 (P-365)
Grüneberg, C., S112 (P-302)
Gruner, H.K., S49 (P-067), S97 (P-245)
Gual, A., S107 (P-283)
Gual, N., S25 (O-072), S78 (P-173), S107 (P-283)
Gudmundsson, A., S180 (P-464)
Guerreiro Castro, S., S49 (P-067)
Guerrero Gómez, M.C., S109 (P-289)
Guerriero, F., S16 (O-040), S49 (P-064), S127 (P-356, P-357)
Gugliucci, M., S14 (O-031), S80 (P-183)
Guida, L., S12 (O-027), S17 (O-045), S131 (P-371)
Guido, D., S49 (P-064)
Guillem, P., S80 (P-181)
Gulsah Ulusoy, M., S131 (P-372)
Guner, G., S180 (P-465)
Gunnarsson, P., S180 (P-464)
Gurreiro Castro, S., S97 (P-245)
Gustafsson, T., S178 (O-096)
Guzman Gutierrez, G., S155 (P-459), S156 (P-460)
Gyselinck, I., S46 (P-055)

Haapasalmi, S., S13 (O-028)
Haaverstad, R., S77 (P-172)
Hadi, M., S65 (P-123)
Haeusler, I., S54 (P-082), S140 (P-404)
Haguenauer, D., S126 (P-353)
Haigh, A.-M., S25 (O-071)
Halfens, R., S129 (P-364)
Halil, M., S180 (P-465)
Hallikainen, I., S50 (P-068), S51 (P-072)
Ham, A., S179 (O-097)
Hamoir, B., S43 (P-044)
Hamzaoui, A., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Han, E.S., S50 (P-069)
Hanesse, B., S75 (P-163)
Hänninen, T., S50 (P-068)
Harada, Kazuhiro, S121 (P-338)
Harada, Kenji, S121 (P-338)
Harjola, V.-P., S41 (P-038)
Harris, D., S98 (P-251)
Harrison, J., S55 (P-088)
Hartikainen, S., S19 (O-050), S51 (P-072)
Harwood, R., S55 (P-087), S104 (P-272), S175 (S-22)
Hasegawa, J., S74 (P-161)
Hasegawa, K., S52 (P-075)
Hasegawa, R., S54 (P-084), S67 (P-133)
Hayashi, T., S121 (P-336)
He, T., S74 (P-158)
Helbostad, J., S178 (O-095)
Heldal, K., S27 (O-076)
Hellström, K., S112 (P-305)
Heltne, M., S23 (O-063)
Hemsworth, J., S92 (P-229)
Henckaerts, L., S116 (P-318)
Hendriks, S., S50 (P-070)
Hendry, K., S36 (P-016)
Henni, S., S133 (P-381), S143 (P-416)
Hercberg, S., S125 (P-352)
Herghelegiu, A.M., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Heringhaus, C., S12 (O-026), S13 (O-029), S45 (P-050)
Hermans, M.P., S124 (P-349), S125 (P-350, P-351)
Hernandez, M., S51 (P-071), S114 (P-312)
Hernández Pascual, C., S154 (P-454), S155 (P-457)
Hernes, S.S., S186 (P-484)
Hertogh, C., S50 (P-070), S52 (P-074)
Hickson, M., S90 (P-219)
Hidehiko, S., S9 (O-015)
Hiesmayr, M., S130 (P-369), S131 (P-370)
Higuet, S., S114 (P-310), S153 (P-451)
Hill, A., S106 (P-281)
Hill, T., S92 (P-229)
Hirata, H., S9 (O-015)
Hirose, T., S74 (P-161), S145 (P-423)
Hirsch, A., S80 (P-182)
Hisdal, J., S133 (P-378)
Hnidei, R., S100 (P-258)
Hodgkinson, R., S148 (P-432)
Hofman, A., S179 (O-097)
Højmann, A., S140 (P-403)
Hollington, A., S88 (P-211)
Hollis-Smith, S., S81 (P-187)
Holm, E., S140 (P-403)
Holmen, J., S177 (O-092), S180 (P-463)
Holst Pedersen, L., S36 (P-017)
Holvik, K., S7 (O-007), S16 (O-041), S17 (O-042)
Hong, H.P., S79 (P-177)
Hong, S.H., S154 (P-455)
Hong, X.F., S74 (P-158)
Hongisto, K., S51 (P-072)
Hood, V., S55 (P-087), S104 (P-272)
Hopanci Bicakli, D., S181 (P-468)
Horasan, Z., S68 (P-134)
Hotta, R., S121 (P-338)
Hotta, T., S9 (O-015)
Houghton, D., S148 (P-433)
Houman, M.H., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Houterman, S., S140 (P-405)
Hsu, C.J., S78 (P-175)
Hsueh, K.-C., S33 (P-006)
Huang Wan Wei, A., S152 (P-447)
Huedo, I., S86 (P-206)
Hufthammer, K.O., S77 (P-172)
Hugenholtz, G., S156 (P-461)
Hughes, H., S94 (P-236)
Huhtala, H., S23 (O-065), S149 (P-436)
Huijsman, R., S21 (O-057)
Huisman, M., S52 (P-074)
Hustead, D., S90 (P-219)
Huvent-Grelle, D., S181 (P-469)
Hvidsten, L., S186 (P-485)
Hwang, A.-C., S88 (P-212)

Iacomelli, I., S5 (O-001)
Idoate Gil Gil, F.J., S69 (P-140)
Iglesias-Lepine, M.L., S155 (P-459)
Iglseder, B., S134 (P-383), S135 (P-385)
Ignat, I.A., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Ihle-Hansen, H., S185 (P-482)
Ilhan, B., S10 (O-020), S68 (P-134, P-135)
Ilvemark, J., S29 (O-083)
Imam, T., S81 (P-184)
Impson, R., S88 (P-213)
Ina, K., S121 (P-336)
Inácio, C., S131 (P-373)
Indredavik, B., S185 (P-482)
Infantino, V., S16 (O-040), S127 (P-357)
Ingebrigtsen, J.E., S29 (O-086), S30 (O-087)
Inmaculada, G., S156 (P-460)
Inzitari, M., S25 (O-072), S78 (P-173), S107 (P-283)
Ishihara, S., S36 (P-018, P-019), S37 (P-020, P-021, P-022)
Isik, A.T., S54 (P-083), S145 (P-422), S155 (P-458)
Islam, M.M., S67 (P-133)

Isu, A., S127 (P-356, P-357)
Italiano, P., S84 (P-197)
Ivaldi, M., S6 (O-005)
Izawa, S., S74 (P-161)
Izumi, H., S36 (P-018, P-019), S37 (P-020, P-021, P-022)

Jacinto, P., S100 (P-257)
Jackson, C., S99 (P-255), S100 (P-256)
Jackson, T., S78 (P-174)
Jacolot, P., S17 (O-044)
Jacquemain, M., S84 (P-197)
Jäger, M., S101 (P-259)
Jahnen, A., S111 (P-300)
Jakobsen, S., S15 (O-035)
Jakupaj, A., S65 (P-125), S95 (P-238)
Jämsen, E., S13 (O-028), S23 (O-065), S149 (P-436, P-437)
Janet, S., S23 (O-062)
Jäntti, P., S23 (O-065)
Jayakumar, C., S99 (P-255), S100 (P-256)
Jensen, K., S76 (P-166)
Jensen, M.E.J., S128 (P-360)
Jessani, S., S82 (P-191)
Jimenez Mola, S., S69 (P-140)
Jimenez Solem, E., S116 (P-317)
Jiménez Viseu-Piñeiro, J.F., S154 (P-454), S155 (P-457)
Johansen, A., S28 (O-082), S148 (P-434, P-435), S159 (S-04)
Joling, K., S51 (P-073), S52 (P-074)
Jolliet, P., S140 (P-406), S141 (P-407)
Jolly, D., S15 (O-038), S119 (P-328)
Jones, L., S99 (P-255), S100 (P-256)
Jones, R., S81 (P-187)
Jones, T., S81 (P-184)
Jonsson, J.E., S180 (P-464)
Joosten, E., S42 (P-039)
Jørgensen, B., S108 (P-286)
Jorgensen, M.G., S107 (P-284), S108 (P-285)
Jose, L., S27 (O-077)
Jourin, E., S80 (P-181)
Jouve, E., S66 (P-127)
Joyau, C., S140 (P-406), S141 (P-407)
Julián Enríquez, J.M., S154 (P-454), S155 (P-457)
Junyent, J., S51 (P-071)
Juola, A.-L., S141 (P-408)
Justo, D., S141 (P-409)
Jyvakorpi, S., S133 (P-380)

Kahrman, T., S35 (P-014), S74 (P-160)
Kaistinen, S.-L., S13 (O-028)
Kallenberg, M., S34 (P-008)
Kampman, E., S27 (O-078)
Kanagaratnam, L., S43 (P-045)
Kaplan, A., S106 (P-280)
Kara, O., S180 (P-465), S181 (P-467)
Karaban', I., S62 (P-114)
Karaitianos, I.G., S97 (P-246, P-247)
Karakus, M.S., S184 (P-478)
Karan, M.A., S10 (O-020), S68 (P-134, P-135)
Karasevych, N., S62 (P-114)
Karışık, E., S10 (O-020)
Kark, J.D., S44 (P-049)
Kasiukiewicz, A., S142 (P-410)
Katsoulis, I., S97 (P-246, P-247)
Kaufman, J.-M., S8 (O-011), S85 (P-204)
Kautiainen, H., S123 (P-343), S141 (P-408)
Kawsar, A., S82 (P-190)
Kaya, D., S155 (P-458)
Kayani, A., S82 (P-191)
Kazuhiko, N., S36 (P-018, P-019), S37 (P-020, P-021, P-022)
Kearney, F., S32 (P-003), S121 (P-337), S175 (S-22)
Kearney-Schwartz, A., S46 (P-053), S142 (P-411)
Kee, F., S22 (O-060)
Keelan, R., S22 (O-061)
Keiding, H., S124 (P-346)
Keijsers, K., S58 (P-098)
Keklik, F., S131 (P-372)
Kenchaiah, M., S33 (P-004)
Kengni Tameze, J., S114 (P-310), S153 (P-451)
Kennelly, S.P., S12 (O-024), S77 (P-171)
Kenny, R.A., S22 (O-060)
Kerminen, H., S23 (O-065)
Kersten, H., S186 (P-485)
Keskinoglu, P., S74 (P-159), S112 (P-303)
Kesse-Guyot, E., S125 (P-352)
Khaltourina, D., S186 (P-486)
Khan, Y., S79 (P-178)
Khanfir, M., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Khow, K., S94 (P-234)
Kilander, L., S119 (P-329)
Kilavuz, A., S64 (P-119), S91 (P-225)
Kılavuz, A., S181 (P-468)
Kılıc, C., S10 (O-020), S68 (P-134, P-135)
Kilic, M.K., S180 (P-465), S181 (P-467)
Kim, B.S., S92 (P-227)
Kim, J.H., S50 (P-069)
Kim, S.Y., S92 (P-227, P-228), S154 (P-455)
Kimura, M., S44 (P-049)
Kinugawa-Bourron, K., S61 (P-107, P-108), S89 (P-218)
Kirby, M., S19 (O-049)
Kirchhoff, M., S103 (P-267, P-268)
Kirn, D., S178 (O-096)
Kisserli, A., S15 (O-038)
Kitajo, K., S52 (P-075)
Kivipelto, M., S21 (O-056)
Kizilarslanoglu, M.C., S180 (P-465), S181 (P-467)
Klapper, J., S40 (P-033)
Klaus, S., S20 (O-054)
Klimiuk, K., S142 (P-410)
Ko, S.K., S79 (P-177)
Ko, S.W., S79 (P-177)
Ko, Y.G., S79 (P-177)
Koivisto, A., S50 (P-068), S51 (P-072)
Komatsu, T., S52 (P-075)
Kondakci, D., S91 (P-225)
Kondova, D., S40 (P-031)
Koochek, A., S178 (O-096)
Koopmans, R., S54 (P-081)
Koot, S., S49 (P-065)
Koponen, M., S19 (O-050)
Korc-Grodzicki, B., S76 (P-167)
Kosak, S., S130 (P-369), S131 (P-370)
Kourou, C., S134 (P-382)
Kowalzik, F., S18 (O-047)
Krabbe, N., S98 (P-248)
Krämer, H., S112 (P-302)
Krasuski, M., S150 (P-439)
Krepple, S., S148 (P-433)
Kressig, R.W., S8 (O-013)
Kristina, J., S11 (O-021)
Kristoffersen, M., S7 (O-009)
Kropinska, S., S136 (P-390)
Krulder, M., S58 (P-098)
Kuck, E., S156 (P-461)
Kuh, D., S6 (O-006)
Kuhn-Thiel, A., S146 (P-426)
Kuiper, K.J., S77 (P-172)
Kukuckova, L., S57 (P-094), S58 (P-099)
Kuraishi, Y., S36 (P-018, P-019), S37 (P-020, P-021, P-022)
Kurucova, J., S99 (P-252)
Kutluk, M.K., S35 (P-014)
Kuyumcu, M.E., S180 (P-465)
Kuzuya, M., S74 (P-161), S121 (P-336), S126 (P-355), S145 (P-423)
Kwan, J., S104 (P-273), S105 (P-274)
Kyne, L., S61 (P-110), S133 (P-379)
Kyvik, K.O., S44 (P-049)

La Carpia, D., S154 (P-453)
Laatikainen, T., S21 (O-056)
Labat, C., S44 (P-049), S46 (P-053)
Lacolley, P., S46 (P-053)
Lafargue, S., S113 (P-309)
Laitinen, M., S149 (P-436)
Laitinen-Parkkonen, P., S122 (P-340)
Lakomy, C., S46 (P-053)
Lam, H.-C., S33 (P-006), S78 (P-175)
Lamloum, M., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Lamoth, C., S68 (P-138), S108 (P-287)
Lampela, P., S122 (P-340)
Landi, F., S16 (O-039), S18 (O-048), S88 (P-214), S90 (P-219), S93 (P-232)
Landsmann, B., S105 (P-277)
Langballe, E., S185 (P-480)
Langenfeld, S., S116 (P-319)
Langton, B., S146 (P-427)
Lanseros, R., S78 (P-173)
Lapauw, B., S8 (O-011), S85 (P-204)
Lappegård, K.T., S108 (P-288)
Lash, T.L., S98 (P-249)
Lassen, A.T., S41 (P-036)
Latief, Y., S142 (P-412)
Lau, M.L., S56 (P-092)
Laudisio, A., S9 (O-017), S26 (O-073), S65 (P-122), S93 (P-231)
Lauretani, F., S12 (O-027), S16 (O-039), S88 (P-214), S129 (P-366), S131 (P-371)
Lauretta, R., S66 (P-127)
Lawlor, B., S22 (O-060)
Lázaro del Nogal, M., S13 (O-030)
Lazimi, J., S126 (P-353)
Lee, C.-L., S184 (P-479)
Lee, H.Y., S92 (P-228)
Lee, J.S., S79 (P-177)

Lee, S.C., S121 (P-338)
Lee, S.Y., S79 (P-177), S121 (P-338)
Lee, Y.H., S50 (P-069)
Leimer, S., S112 (P-302)
Leiva, N., S111 (P-299)
Lemaire, E., S89 (P-215)
Lenzen-Grossimlinghaus, R., S101 (P-259)
Léon, A., S43 (P-045)
Lera, L., S46 (P-054)
Lescuyer, S., S44 (P-048)
Leth-Møller, K.B., S140 (P-403)
Lew, E., S37 (P-023)
Lewis, S., S28 (O-080)
Leysens, G., S122 (P-339)
Liang, C.-K., S33 (P-006), S78 (P-175)
Liao, M.-C., S33 (P-006)
Lietzen, L.W., S98 (P-249)
Liimatta, H., S122 (P-340)
Lilamand, M., S20 (O-052)
Lillevang-Johannsen, M., S116 (P-317)
Lin, C.-S., S128 (P-363)
Lin, H.-C., S184 (P-479)
Lin, Y.-T., S33 (P-006), S78 (P-175)
Lind, L., S129 (P-366)
Lindegaard-Pedersen, J., S17 (O-043)
Lindmark, B., S112 (P-305)
Lindström, J., S21 (O-056)
Linnerud, S., S133 (P-378)
Liperoti, R., S154 (P-453)
Lips, P., S179 (O-097), S187 (P-487)
Lisk, C., S38 (P-024, P-025), S39 (P-027, P-030), S142 (P-412)
Lisk, R., S69 (P-139), S146 (P-427), S149 (P-438), S150 (P-439)
Liu, C., S178 (O-096)
Liu, Z.X., S74 (P-158)
Llagostera, B., S114 (P-312)
Lo Monaco, M.R., S9 (O-017), S26 (O-073), S65 (P-122), S93 (P-231), S154 (P-453)
Locquet, M., S7 (O-010)
Loeza, D., S129 (P-364)
Lofthus, C.M., S17 (O-042)
Logan, P., S55 (P-087, P-088), S104 (P-272)
Lønning, K., S27 (O-076)
Lopes, P., S34 (P-011), S60 (P-106), S66 (P-129), S98 (P-250), S122 (P-341)
Lopetegui, P., S89 (P-216)
Lopéz, K., S69 (P-140)
López, M., S86 (P-206)
Lopez Doriga, P., S90 (P-220)
López-Fando, L., S80 (P-180)
Lopez-Liria, R., S60 (P-105), S108 (P-288)
López Soto, A., S177 (O-091)
Lopez-Villegas, A., S60 (P-105), S108 (P-288)
Lopez Viñas, M., S69 (P-140)
Lord, J.M., S78 (P-174)
Lorenzi, C., S102 (P-263)
Louro, C., S117 (P-322)
Louro, J., S117 (P-322)
Lu, T., S78 (P-175)
Lucke, J., S12 (O-026), S13 (O-029), S34 (P-008), S45 (P-050)
Luengo, B., S132 (P-377)
Luha, J., S57 (P-094), S58 (P-099)
Lund, L., S11 (O-021)
Lusilla, P., S107 (P-283)
Luthra, A.S., S69 (P-141, P-142), S70 (P-143, P-144, P-145)
Lutss, C., S64 (P-120)
Luukkaala, T., S27 (O-079), S150 (P-441)
Lv, J., S74 (P-158)
Lydersen, S., S178 (O-095)
Lyngroth, A.L., S129 (P-365)

Maas, H., S83 (P-195)
Macaret, A.-S., S46 (P-055)
Macarro Rodríguez, J.C., S109 (P-289)
MacDonald, H., S180 (P-466)
Maclullich, A.M.J., S78 (P-174)
MacNeil Vroomen, J., S51 (P-073)
Madden, K., S31 (O-090), S98 (P-251), S122 (P-342)
Madsen, B.-O., S129 (P-365)
Maes, C., S123 (P-345)
Magalhães, F.G., S49 (P-067), S97 (P-245)
Maggi, S., S9 (O-014), S20 (O-053), S173 (S-20)
Maggio, M., S12 (O-027), S16 (O-039), S88 (P-214), S93 (P-232), S129 (P-366), S131 (P-371), S164 (S-09)
Magistro, D., S6 (O-005)
Magnano, I., S53 (P-079)
Magni, L., S9 (O-016)
Mahdi, R., S102 (P-264)
Mahmoudi, R., S15 (O-038), S119 (P-328)
Makizako, H., S121 (P-338)
Malafarina, V., S104 (P-270)
Maley, K., S183 (P-473)
Mammarella, F., S139 (P-402)
Mamun, K., S38 (P-026)
Man, F., S25 (O-072)
Mancabelli, L., S17 (O-045)
Manciaux, M.-A., S75 (P-163)
Manechez, M., S181 (P-469)
Mangeot, M., S75 (P-163)
Mani, S., S38 (P-025)
Manig, A., S116 (P-320)
Manjón Navarro, H., S144 (P-420)
Mannarino, G., S99 (P-252)
Mantovani, M., S16 (O-039), S88 (P-214)
Manzano Lista, F.J., S85 (P-202)
Manzato, E., S9 (O-014)
Marchionni, N., S5 (O-001), S40 (P-034), S73 (P-155, P-156), S99 (P-252), S102 (P-263)
Marco, B., S48 (P-062)
Marengoni, A., S139 (P-402)
Mari, D., S9 (O-016)
Marie, N., S144 (P-421)
Marien, S., S138 (P-396)
Marinthe, B., S43 (P-045)
Marques, B., S97 (P-245)
Marques, L., S11 (O-023)
Marques, M., S100 (P-257)
Marquez, C., S46 (P-054)
Marsh, D., S159 (S-04)
Marshall, L., S32 (P-003)
Martikainen, J., S51 (P-072)
Martin, F., S148 (P-435)
Martin, J., S25 (O-072)
Martín, M., S111 (P-299)
Martin-Kleisch, A., S44 (P-046), S52 (P-076), S89 (P-215), S99 (P-253, P-254), S102 (P-265), S115 (P-313), S117 (P-323)
Martín-Lesende, I., S89 (P-216)
Martín-Maestre, I., S142 (P-413), S150 (P-440)
Martín Montagut, M., S109 (P-289, P-290), S144 (P-420)
Martin Perez, E., S69 (P-140)
Martin-Vega, A., S8 (O-012)
Martínez, M., S86 (P-206)
Martínez-Fernández, M.I., S111 (P-299), S144 (P-420)
Martinez-Fuerte, R., S41 (P-035), S60 (P-104), S63 (P-118), S120 (P-334, P-335), S128 (P-362), S182 (P-470, P-471, P-472)
Martinez Prieto, M., S187 (P-488)
Martinsen, M.I., S109 (P-291)
Marzetti, E., S70 (P-146)
Masanés, F., S177 (O-091)
Mascia, D., S47 (P-057)
Mashtaler, R., S72 (P-153)
Mashtaler, T., S72 (P-153)
Masoni, S., S16 (O-039)
Massetti, M., S70 (P-146)
Masud, T., S32 (P-003), S55 (P-087), S104 (P-272), S107 (P-284), S108 (P-285), S121 (P-337)
Matějovská Kubešová, H., S94 (P-233)
Mateos-Nozal, J., S13 (O-030), S34 (P-009), S80 (P-180), S96 (P-240)
Mateus, J., S60 (P-106), S122 (P-341)
Mathiesen, I., S133 (P-378)
Matlhare, P., S61 (P-110)
Matsui, Y., S89 (P-217)
Mattila, J., S41 (P-038)
Matzen, L.-E., S29 (O-083)
Mauleon, C., S8 (O-012)
Mautone, A., S154 (P-453)
Mayan, H., S141 (P-409)
Mazière, S., S87 (P-208)
McClintock-Tiongco, M.A., S39 (P-027)
McCrea, D., S56 (P-089)
McHugh, J., S22 (O-060)
McNamara, R., S39 (P-028)
McPhee, J., S92 (P-229)
Mehta, Z., S20 (O-054), S25 (O-071)
Meiland, F., S51 (P-073)
Melbye Langballe, E., S180 (P-463)
Melchionda, V., S82 (P-191, P-192)
Meldgaard, P., S76 (P-166)
Melero González, R.B., S87 (P-209, P-210)
Mello, A.M., S5 (O-002)
Meluzinova, H., S94 (P-233)
Mendes, P., S34 (P-011), S66 (P-129), S122 (P-341)
Meneilly, G., S98 (P-251)
Menéndez, R., S65 (P-126), S142 (P-413), S150 (P-440)
Mensen, L., S42 (P-040)
Mercadal Brotons, M., S48 (P-061)
Mercaider, E., S183 (P-473)
Merriman, C., S95 (P-239)
Meschi, T., S12 (O-027), S17 (O-045), S129 (P-366), S131 (P-371)

Meseri, R., S181 (P-468)
Messervey, T., S134 (P-382)
Mestres, C., S51 (P-071), S114 (P-312)
Metcalfe, K., S94 (P-236), S95 (P-239), S109 (P-292)
Meucci, F., S40 (P-034)
Meyer, A., S45 (P-051)
Meyer, H.E., S7 (O-007), S11 (O-022), S16 (O-041), S17 (O-042)
Meyrignac, L., S119 (P-330)
Micallef, J., S138 (P-397)
Miccono, A., S49 (P-064), S127 (P-356, P-357)
Michael, A., S39 (P-029), S52 (P-077), S99 (P-255), S100 (P-256)
Michaux, I., S147 (P-429)
Michel, J.-P., S99 (P-252), S170 (S-14)
Midttun, M., S58 (P-096), S67 (P-131), S113 (P-308), S151 (P-443)
Midtvedt, K., S27 (O-076)
Mieiro, L., S12 (O-025)
Mielimaka, M., S10 (O-019), S72 (P-150)
Mielimąka, M., S71 (P-149), S90 (P-221)
Milani, C., S17 (O-045)
Milisen, K., S24 (O-067), S66 (P-128), S122 (P-339), S134 (P-384)
Miller, B., S82 (P-190)
Miller, H., S36 (P-016)
Mills, C., S53 (P-078)
Milova, E., S186 (P-486)
Miralles, R., S75 (P-162), S111 (P-299), S137 (P-394, P-395), S144 (P-420)
Mirams, J., S81 (P-188)
Mitani, T., S52 (P-075)
Mitha, N., S80 (P-181)
Mitnitski, A., S6 (O-004)
Mitsaka, D., S97 (P-247)
Mitsui, Y., S36 (P-018, P-019), S37 (P-020, P-021, P-022)
Miyoshi, K., S67 (P-133)
Mjørud, M., S183 (P-475)
Moço, S., S131 (P-373)
Modreker, M.K., S101 (P-259)
Mohanan, C., S82 (P-191)
Mojtaba, M., S14 (O-032)
Molden, E., S2 (KL-12)
Molina Tierraseca, A., S109 (P-290)
Molka, T., S59 (P-103)
Mols, F., S83 (P-195)
Monacelli, F., S71 (P-147)
Moncaglieri, F., S16 (O-040)
Moniz-Cook, E., S51 (P-073)
Monteferraio, F., S16 (O-040)
Montero-Errasquín, B., S13 (O-030), S34 (P-009), S137 (P-395)
Monti, A., S61 (P-107, P-108), S89 (P-218)
Mooijaart, S., S12 (O-026), S13 (O-029), S34 (P-008), S45 (P-050)
Moorthy, K., S148 (P-432)
Moraes, M., S143 (P-414)
Morelli, I., S12 (O-027), S17 (O-045), S131 (P-371)
Moricova, S., S57 (P-094), S58 (P-099)
Morino, S., S9 (O-015)
Morosanu, B., S100 (P-258)
Mossakowska, M., S143 (P-415)
Mossello, E., S73 (P-157)
Mota, D., S34 (P-010)
Mottino, G., S73 (P-157)
Mouhieddine, M., S130 (P-369), S131 (P-370)
Mountford, D., S147 (P-430)
Munroe-Birt, J., S39 (P-030)
Muratli, S., S10 (O-020), S68 (P-134, P-135)
Musacchio, C., S5 (O-002)
Musiienko, A., S73 (P-154)
Mustad, V., S90 (P-219)
Muurinen, S., S143 (P-417)
Myrstad, M., S2 (KL-09)
Myskja, A., S14 (O-034), S110 (P-293, P-294)

Nabeel, S., S12 (O-024)
Nacu, R.M., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Nadukkandiyil, N., S115 (P-314)
Nafstad, P., S180 (P-463)
Nagase, D., S36 (P-018, P-019), S37 (P-020, P-021, P-022)
Naidoo, A., S130 (P-367)
Nakakubo, S., S121 (P-338)
Nani, C., S9 (O-016)
Narynx, I., S123 (P-345)
Naseer, N., S99 (P-255), S100 (P-256)
Nasikas, D., S97 (P-247)
Naso, M., S16 (O-040), S127 (P-356)
Nathwani, S., S82 (P-190)
Nau, R., S116 (P-320)
Naughton, A., S110 (P-295)
Navaridas, I., S126 (P-354)
Nazik, F., S106 (P-280)
Neerland, B.E., S160 (S-05)
Neira, M., S90 (P-220)
Neiva, J., S117 (P-322)
Nelson, M., S178 (O-096)
Neumann-Podczaska, A., S143 (P-415)
Neveux, N., S125 (P-352)
Nevière, R., S17 (O-044)
Ngandu, T., S21 (O-056)
Nguyen, V.H., S61 (P-107), S89 (P-218)
Ngyuen, M.H., S38 (P-026)
Nielsen, J.P., S61 (P-109)
Niemier, J.-Y., S81 (P-189)
Nieminen, J., S149 (P-436)
Nieto López-Guerrero, J., S187 (P-488)
Nieuwboer, A., S134 (P-384)
Nightingale, P., S52 (P-077)
Niki, V., S82 (P-192)
Niquet-Leridon, C., S17 (O-044)
Nishiguchi, S., S9 (O-015)
Nogueira, A., S34 (P-011), S66 (P-129), S100 (P-257), S122 (P-341)
Nogueira, A.R., S60 (P-106)
Noguerado Asensio, A., S187 (P-488)
Noguerón, A., S86 (P-206)
Noize, P., S26 (O-074)
Nolfi, S., S134 (P-382)
Nordahl, H.M., S118 (P-324)
Nordrehaug, J.E., S28 (O-081), S77 (P-172)
Norekvål, T.M., S77 (P-172), S172 (S-18)
Norman, K., S45 (P-051)
North, F., S132 (P-376)
Norton, J., S26 (O-074)
Nouvenne, A., S12 (O-027), S17 (O-045), S129 (P-366), S131 (P-371)
Novella, J.-L., S15 (O-038), S43 (P-045), S44 (P-046, P-047), S52 (P-076), S76 (P-165), S99 (P-253, P-254), S102 (P-264, P-265), S115 (P-313), S117 (P-323), S119 (P-328)
Nozaki, Y., S9 (O-015)
Næss, H., S185 (P-482)
Nuñez, J., S89 (P-216)
Nuotio, M., S27 (O-079), S150 (P-441)
Nydahl, M., S178 (O-096)

Obiechina, N., S99 (P-255), S100 (P-256)
O'Byrne, C., S110 (P-295)
Ocetkiewicz, T., S115 (P-315), S117 (P-321)
O'Connor, K., S105 (P-275)
Ødum, L., S140 (P-403)
Oelke, M., S19 (O-049)
O'Kelly, K., S40 (P-031)
Oldfield, M., S99 (P-255), S100 (P-256)
Oliva, J.C., S156 (P-460)
Oliver, D., S52 (P-077)
O'Mahony, D., S5 (O-003), S21 (O-055)
Omsland, T.K., S7 (O-007), S11 (O-022)
Onder, G., S9 (O-017), S18 (O-048), S26 (O-073), S47 (P-057), S65 (P-122), S93 (P-231), S139 (P-402)
O'Neill, D., S2 (KL-11), S12 (O-024), S110 (P-295)
Orlyk, T., S72 (P-152)
Orso, F., S40 (P-034), S102 (P-263)
Ortolani, E., S70 (P-146)
Ortuno, N., S155 (P-459), S156 (P-460)
Ørum, M., S76 (P-166)
Os, K., S133 (P-378)
Osterbrink, J., S134 (P-383), S135 (P-385)
Osuafor, C., S61 (P-110), S133 (P-379)
Otero, A., S150 (P-440)
Ousset, P.-J., S20 (O-052)
Oviedo Briones, M., S8 (O-012), S65 (P-126)
Owusu Ajei, J., S82 (P-192)
Ozkaya, H., S10 (O-020), S68 (P-134), S110 (P-296)
Özmen, E., S106 (P-280)
Ozturk, G.B., S10 (O-020), S68 (P-134)
Ozturk, V., S35 (P-014), S67 (P-132), S74 (P-160), S107 (P-282)

Pablos Hernández, C., S154 (P-454), S155 (P-457)
Paccalin, M., S18 (O-046), S62 (P-111), S71 (P-148)
Paelinck, B., S67 (P-130)
Pagani, L., S18 (O-046)
Pajala, S., S21 (O-056)
Pajulammi, H., S150 (P-441)
Palumbo, C., S55 (P-086)
Palummeri, E., S5 (O-002), S49 (P-066)
Panek, P., S102 (P-265), S117 (P-323)
Panesar, R., S106 (P-281)
Panza, F., S20 (O-053)
Paoli, M., S102 (P-263)

Paquot, N., S124 (P-348)
Parajes Vázquez, T., S87 (P-209, P-210), S184 (P-476, P-477)
Paramanathan, S., S108 (P-285)
Parekh, N., S29 (O-085)
Parente, F., S41 (P-037)
Park, H.T., S121 (P-338)
Park, J.W., S79 (P-177)
Park, M.S., S92 (P-227)
Parnicka, A., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221)
Parsons, C., S150 (P-439)
Pascual Pareja, J.F., S187 (P-488)
Pasquier, A., S141 (P-407)
Pattinson, J., S166 (S-11)
Pattison, T., S42 (P-041)
Pautas, E., S61 (P-107, P-108), S89 (P-218)
Pautex, S., S174 (S-21)
Pavone, N., S70 (P-146)
Payoux, P., S20 (O-052)
Pazan, F., S19 (O-049), S146 (P-425, P-426)
Peacock, K., S40 (P-033)
Pearl, A., S136 (P-388)
Pecorelli, S., S139 (P-402)
Pedersen, C.T., S140 (P-403)
Pedersen, E., S62 (P-112)
Pedersen, P.U., S17 (O-043)
Pedraz Gonzalez-Tablas, T., S69 (P-140)
Peeroo, M.K., S146 (P-428), S147 (P-430, P-431), S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Peetermans, W., S116 (P-318)
Peeters, C., S123 (P-345)
Pegman, G., S134 (P-382)
Pekesen Kurtca, M., S104 (P-271)
Pelly, M., S79 (P-178)
Pendlebury, S., S20 (O-054), S25 (O-071), S53 (P-078), S54 (P-082)
Pendleton, N., S146 (P-428)
Pennaforte, J.-L., S43 (P-045), S102 (P-264)
Pereira, S., S90 (P-219)
Pereira de Moura, J., S34 (P-010)
Pereira Gorjão Clara, J.P., S183 (P-474)
Perera, I., S101 (P-262)
Peres, K., S26 (O-074)
Perkisas, S., S91 (P-222)
Perna, S., S16 (O-040), S49 (P-064), S127 (P-356, P-357)
Peroni, G., S49 (P-064)
Perret-Guillaume, C., S75 (P-163), S81 (P-189), S132 (P-375), S142 (P-411)
Pes, G., S53 (P-079)
Pestana Araújo, F., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Petermans, J., S7 (O-010), S84 (P-197, P-200), S85 (P-201), S119 (P-331), S120 (P-332), S123 (P-345), S124 (P-348), S139 (P-399)
Petidier, R., S55 (P-086)
Petidier Torregrossa, R., S85 (P-202), S118 (P-325)
Petrova, M., S114 (P-311)
Petrovic, M., S8 (O-011), S85 (P-204)
Pettersen, R., S157 (S-02)
Phelps, A., S53 (P-078), S109 (P-292)
Philipsen, T., S67 (P-130)
Phillips, E., S178 (O-096)
Picard, M., S142 (P-411)
Piccioli, L., S99 (P-252)
Pichler, G., S105 (P-277)
Pienimäki, T., S130 (P-368)
Pierini, V., S5 (O-003), S21 (O-055)
Piers, R., S29 (O-084)
Piessard, S., S133 (P-381), S143 (P-416)
Piette, A., S113 (P-306)
Pihlajamäki, H., S150 (P-441)
Pilotto, A., S5 (O-002), S20 (O-053), S23 (O-062), S49 (P-066), S139 (P-400)
Pimenta da Graça, J., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Pinter, D., S105 (P-277)
Pioli, G., S159 (S-04)
Piotrowicz, K., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221)
Piras, M.R., S53 (P-079)
Pircalabu, R., S100 (P-258)
Pirker, E., S105 (P-277)
Pirot, J.L., S113 (P-309)
Pisciotta, M.S., S9 (O-017), S26 (O-073), S65 (P-122), S93 (P-231)
Pitkälä, K., S123 (P-343), S130 (P-368), S133 (P-380), S141 (P-408), S143 (P-417), S175 (S-22)
Pitzer, S., S134 (P-383), S135 (P-385)
Plana, C., S114 (P-312)
Planet, N., S156 (P-460)
Pletinckx, K., S95 (P-237)
Poinoosawmy, V., S38 (P-024)
Polcarová, V., S94 (P-233)
Poli, S., S5 (O-002)
Polian, I., S134 (P-382)
Polidori, M.C., S20 (O-053), S26 (O-075), S101 (P-259)
Pommer, W., S26 (O-075)
Ponnambath, S., S40 (P-032, P-033), S115 (P-316), S144 (P-418)
Poon, K.B., S152 (P-447)
Popescu, M.B., S63 (P-115)
Porto, J., S60 (P-106), S98 (P-250), S122 (P-341)
Poscia, A., S18 (O-048)
Postema, K., S108 (P-287)
Poulain, M., S53 (P-079)
Povoroznyuk, R., S91 (P-223)
Povoroznyuk, V., S62 (P-113, P-114), S72 (P-151, P-152, P-153), S73 (P-154), S91 (P-223, P-224)
Powell, A., S94 (P-234)
Poynter, L., S104 (P-273), S105 (P-274)
Pozzi, R., S16 (O-040)
Prada, A.G., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Prada, G.-I., S53 (P-080), S63 (P-115, P-116), S101 (P-260)
Pradhan, S., S42 (P-041)
Pratesi, A., S40 (P-034)
Prati, B., S12 (O-027), S17 (O-045), S131 (P-371)
Presland, A., S39 (P-027)
Pressel, E., S32 (P-002), S43 (P-043), S116 (P-317)
Prestmo, A., S23 (O-063), S178 (O-095)
Prete, C., S5 (O-002), S20 (O-053), S49 (P-066)
Priez, J., S141 (P-407)
Prokop, A., S115 (P-315), S117 (P-321)
Prudius, D., S94 (P-233)
Pryimych, U., S72 (P-151)
Puerta, L., S114 (P-312)
Puisieux, F., S181 (P-469)
Puntoni, M., S5 (O-002)
Puolakka, T., S149 (P-436, P-437)
Pyke, M., S28 (O-080)
Pylkkanen, S., S141 (P-408)

Qadiri, M., S115 (P-316)
Quabron, A., S7 (O-010)
Queipo, R., S150 (P-440)
Quera, D., S51 (P-071)
Quinn, T., S36 (P-016)
Qureshi, A., S82 (P-191, P-192)

Rabelink, A.J., S34 (P-008)
Rafanelli, M., S73 (P-155, P-156), S102 (P-263)
Rahman, S., S106 (P-280)
Raimbault, H., S113 (P-309)
Rainoldi, A., S6 (O-005)
Raivio, M., S123 (P-343)
Raiza, A., S155 (P-459)
Raje, S., S81 (P-184)
Rajkumar, C., S30 (O-088)
Ramjee, M., S77 (P-171)
Ranhoff, A.H., S7 (O-009), S28 (O-081), S42 (P-040), S65 (P-123), S77 (P-172), S109 (P-291), S161 (S-06)
Rantanen, T., S2 (KL-07)
Rascher, K., S26 (O-075)
Rat, P., S66 (P-127)
Raymond, M., S146 (P-427)
Raynaud-Simon, A., S120 (P-333), S125 (P-352), S126 (P-353), S127 (P-358)
Read, N., S110 (P-297)
Reed, E.-K., S144 (P-418)
Reed, H., S144 (P-418)
Reginster, J.-Y., S7 (O-010), S84 (P-197, P-200), S85 (P-201), S124 (P-348), S139 (P-399)
Reid, K., S178 (O-096)
Reimers, M., S144 (P-419)
Reinke, J., S112 (P-302)
Rexach-Cano, L., S79 (P-179), S80 (P-180)
Reynish, E., S177 (O-093)
Reynolds, J., S140 (P-404)
Ribeiro, J., S100 (P-257)
Ribera Casado, J.M., S13 (O-030)
Ribes, S., S116 (P-320)
Richard, M., S44 (P-046)
Ricour, C., S139 (P-399)
Rieckmann, A., S112 (P-302)
Riera Cañadell, M., S109 (P-289, P-290)
Riera-Montes, M., S18 (O-047)
Rietkerk, W., S23 (O-064)
Rijkin, G., S101 (P-260)
Rimland, J., S5 (O-003), S21 (O-055)

Riso, N., S49 (P-067), S97 (P-245)
Ritchie, A., S38 (P-025)
Ritson, J., S39 (P-028)
Rivasi, G., S73 (P-155, P-156)
Rizzoli, R., S84 (P-197)
Roberts, A.T., S5 (O-001), S73 (P-157)
Rochefort, C., S15 (O-037)
Rockwood, K., S6 (O-004)
Rodriguez, M.L., S75 (P-162)
Rodriguez, N., S132 (P-377)
Rodríguez López, M., S87 (P-209, P-210)
Rodriguez-Mañas, L., S55 (P-086)
Rodríguez Rodríguez, P., S109 (P-289)
Rodrigus, I., S67 (P-130)
Roehrig, G., S26 (O-075), S101 (P-259)
Roh, Y.K., S63 (P-117)
Rojano, X., S177 (O-091)
Rolland, Y., S84 (P-197)
Roller, R.E., S130 (P-369), S131 (P-370)
Roller-Wirnsberger, R., S164 (S-09)
Romani, J., S5 (O-001)
Romeo Brualla, A., S111 (P-301)
Romild, U., S118 (P-324)
Rondanelli, M., S16 (O-040), S49 (P-064), S127 (P-356, P-357)
Rønhof, K., S15 (O-035)
Roqueta Guillén, C., S109 (P-289, P-290), S111 (P-299), S144 (P-420)
Rosado, S., S30 (O-089)
Roselli, D., S138 (P-398)
Rosenstrauch, A., S45 (P-052)
Rosholm, J.-U., S41 (P-036)
Rosness, T.A., S185 (P-480)
Rossignol, P., S46 (P-053)
Rosso, R., S136 (P-390)
Rostoft, S., S158 (S-03)
Røsvik, J., S183 (P-475)
Rothwell, P., S20 (O-054), S25 (O-071)
Roubaud Baudron, C., S18 (O-046)
Rouhani, M., S82 (P-190)
Rouwenhorst, A., S54 (P-081)
Rovida, S., S39 (P-028)
Rücker, Y., S101 (P-259)
Rudek, M., S111 (P-300)
Rudnay, J., S54 (P-082)
Ruggiero, C., S129 (P-366)
Ruíz, D., S177 (O-091)
Russo, P., S139 (P-402)
Ruth, P., S6 (O-004)
Rutkowski, K., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221)
Ryckaert, J., S113 (P-306)
Rydwik, E., S14 (O-032), S165 (S-10)
Ryg, J., S41 (P-036), S107 (P-284), S108 (P-285), S175 (S-22)

Saarelainen, L., S19 (O-050)
Saber, S., S81 (P-188), S82 (P-191, P-192)
Sacchetto, D., S6 (O-005)
Sacheck, J., S178 (O-096)
Saez Lopez, P., S150 (P-442)
Sahin, S., S131 (P-372), S181 (P-468)
Sahota, O., S32 (P-003)
Said, F., S59 (P-100, P-101, P-102, P-103), S128 (P-361), S154 (P-456)
Saint Jean, O., S183 (P-473)
Sakai, A., S36 (P-018, P-019), S37 (P-020, P-021, P-022)
Sakakibara, M., S145 (P-423)
Sakorafas, G., S97 (P-247)
Salaberria, A., S126 (P-354)
Salatino, C., S136 (P-390)
Salewsky, B., S45 (P-051)
Salgado, T., S8 (O-012), S65 (P-126)
Salonen, H., S149 (P-436)
Saltvedt, I., S23 (O-063), S159 (S-04), S177 (O-092), S178 (O-095), S180 (P-463), S185 (P-482)
Salvà, A., S177 (O-091)
Sampert-Ternet, R., S84 (P-199), S138 (P-398)
Samuelsen, S.O., S16 (O-041), S17 (O-042)
Samuelsson, O., S180 (P-464)
San Juan, O., S104 (P-270)
Sancarlo, D., S134 (P-382)
Sanchez, G., S86 (P-206)
Sanchez, H., S46 (P-054)
Sánchez, I., S89 (P-216)
Sánchez Castellano, C., S137 (P-394)
Sánchez-García, E.M., S34 (P-009)
Sanchez Hernandez, N., S150 (P-442)
Sánchez Marugán, J.R., S154 (P-454), S155 (P-457)
Sánchez Mohedano, P., S109 (P-290)
Sánchez Rodríguez, D., S111 (P-301)
Santoro, G., S99 (P-252)
Sanz-González, N., S41 (P-035), S60 (P-104), S63 (P-118), S120 (P-334, P-335), S128 (P-362), S182 (P-470, P-471, P-472)
Sarabando, D., S131 (P-373)
Sarac, F., S64 (P-119), S91 (P-225), S181 (P-468)
Saraiva, N., S100 (P-257)
Sassot, E., S113 (P-309)
Savas, S., S64 (P-119), S91 (P-225), S181 (P-468)
Savikko, N., S143 (P-417)
Sayer, A.A., S6 (O-006)
Schaap, L., S178 (O-094)
Schalck, N., S116 (P-318)
Schaller, M., S26 (O-075)
Schaufel, M.A., S28 (O-081)
Schei, B., S7 (O-007), S16 (O-041), S17 (O-042)
Schindler, K., S130 (P-369), S131 (P-370)
Schipper, M., S50 (P-070)
Schippinger, W.M., S105 (P-277)
Schmidt, A.M., S17 (O-044)
Schmitz, X., S119 (P-331), S120 (P-332)
Schoenenberger, A., S99 (P-252), S172 (S-18)
Schoevaerdts, D., S43 (P-044), S64 (P-120)
Schols, J., S129 (P-364), S168 (S-12), S169 (S-13)
Scholten, H., S49 (P-065)
Scholtens, R., S24 (O-068), S25 (O-069), S79 (P-176)
Schrauf, J., S24 (O-066)
Schreier, M., S134 (P-383), S135 (P-385)
Schultz, M., S64 (P-121)
Schulz, R.-J., S101 (P-259), S112 (P-302), S116 (P-319)
Schütze, S., S116 (P-320)
Schwartz, C., S119 (P-331), S120 (P-332)
Sciortino, V., S138 (P-397)
Scortichini, V., S9 (O-016)
Scotichini, V., S36 (P-016)
Seal, C., S92 (P-229)
Sebaux, A., S44 (P-047), S76 (P-165)
Selbaek, G., S180 (P-463)
Selbæk, G., S186 (P-485)
Senden, C., S122 (P-339)
Senesi, B., S49 (P-066)
Sequeira, M., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095)
Sergi, G., S9 (O-014)
Sérot, J.-M., S46 (P-055)
Serpa, M.J., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Serra-Rexach, J.A., S177 (O-091)
Sgarlata, C., S16 (O-040), S49 (P-064), S127 (P-356, P-357)
Shahrokni, A., S76 (P-167)
Shalatt, M.E., S145 (P-424)
Sharma, A., S65 (P-125), S95 (P-238)
Sharma, J., S104 (P-273), S105 (P-274)
Shawis, T., S88 (P-213)
Sheehan, B., S78 (P-174)
Shehla, S., S130 (P-367)
Shen, S.S., S74 (P-158)
Shimada, H., S121 (P-338)
Shipway, D., S148 (P-432)
Shpak-Deschamps, N., S144 (P-421)
Sieber, C.C., S82 (P-193), S93 (P-230), S130 (P-369), S131 (P-370)
Sierra-Martinez, I., S60 (P-104), S120 (P-334, P-335), S182 (P-470, P-472)
Sierra-Martinez, L., S41 (P-035), S60 (P-104), S63 (P-118), S120 (P-334, P-335), S128 (P-362), S182 (P-470, P-471, P-472)
Silliman, R.A., S98 (P-249)
Silva, L., S117 (P-322)
Silva, R., S131 (P-373)
Simões, J., S117 (P-322)
Simonenko, I., S144 (P-421)
Simsek, H., S181 (P-468)
Sinclair, L., S94 (P-236)
Singh, S., S148 (P-432)
Sırrı Çam, F., S106 (P-280)
Sivertsen, E., S109 (P-291)
Skaar, E., S28 (O-081), S172 (S-18)
Skalska, A., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221), S92 (P-226)
Sletvold, O., S23 (O-063), S159 (S-04), S178 (O-095)
Slokenberga, A., S75 (P-164)
Slomian, J., S7 (O-010)
Smalbrugge, M., S50 (P-070), S54 (P-081)
Smets, T., S29 (O-084)
Smith, A., S69 (P-139)
Smith, T.L., S151 (P-443)
Snaedal, J., S4 (KL-17)
Soares, M.A., S143 (P-414)
Soares, Z., S117 (P-322)

Söderhamn, U., S129 (P-365)
Søgaard, A.J., S7 (O-007), S11 (O-022), S17 (O-042)
Soini, H., S141 (P-408), S143 (P-417)
Soininen, H., S21 (O-056)
Soiza, R., S5 (O-003), S19 (O-051), S21 (O-055)
Soke, F., S74 (P-159, P-160), S112 (P-303)
Solanki, T., S180 (P-466)
Sole Serrano, C., S48 (P-061)
Soler, I., S86 (P-206)
Solmi, M., S9 (O-014)
Son, J.H., S92 (P-227)
Sonnen, M., S156 (P-461)
Sørensen, S.M.H., S129 (P-365)
Soto, M., S20 (O-052)
Soysal, P., S54 (P-083), S145 (P-422), S155 (P-458)
Speetjens, I., S112 (P-304)
Speybroeck, N., S152 (P-449)
Spigset, O., S23 (O-063)
Spildooren, J., S112 (P-304), S134 (P-384)
Spinewine, A., S138 (P-396)
Stanley, R., S148 (P-435)
Stegenga, J., S108 (P-287)
Steihaug, O.M., S7 (O-009)
Steinhagen-Thiessen, E., S45 (P-051), S185 (P-483)
Steinmetz, J.-P., S24 (O-066), S111 (P-300), S153 (P-452)
Stensvold, D., S29 (O-086), S30 (O-087)
Stercu, G.A., S53 (P-080)
Stering, U., S134 (P-383), S135 (P-385)
Stolarova, A., S75 (P-164)
Stolcova, M., S99 (P-252)
Stordal, E., S118 (P-324), S180 (P-463)
Storm Piper, K., S103 (P-267, P-268, P-269)
Stott, D., S36 (P-016)
Strand, B.H., S185 (P-480)
Strandberg, A., S130 (P-368)
Strandberg, T., S21 (O-056), S23 (O-065), S41 (P-038), S130 (P-368), S133 (P-380)
Streicher, M., S130 (P-369), S131 (P-370)
Stubhaug, T., S179 (P-462)
Sturkenboom, M., S23 (O-062)
Sturm, A., S82 (P-193)
Suarez Linares, M., S155 (P-459), S156 (P-460)
Sucha, V., S58 (P-099)
Sugiyama, M., S126 (P-355)
Suhonen, J., S51 (P-072)
Sumer, F., S180 (P-465), S181 (P-467)
Sund, E., S177 (O-092)
Sunwoo, D., S63 (P-117)
Suominen, M., S143 (P-417)
Suwalska, A., S136 (P-390)
Suzuki, T., S121 (P-338)
Suzuki, Y., S74 (P-161), S145 (P-423)
Svendsen, T., S42 (P-040)
Swart, K., S179 (O-097), S187 (P-487)
Swine, C., S43 (P-044)
Syddall, H., S6 (O-006)
Szczerbinska, K., S115 (P-315), S117 (P-321)
Szekely, C., S126 (P-353)
Taes, Y., S8 (O-011), S85 (P-204)
Taggar, J., S55 (P-088)
Taipale, H., S19 (O-050)
Tak, E., S165 (S-10)
Talbot-Mahmoudi, C., S15 (O-038)
Tam, Y.Y., S56 (P-092)
Tambs, K., S177 (O-092), S180 (P-463)
Tampubolon, G., S22 (O-059)
Tanderup, A., S41 (P-036)
Tanskanen, A., S19 (O-050)
Tapus, A., S136 (P-390)
Taraldsen, K., S178 (O-095)
Tashiro, Y., S9 (O-015)
Taukojärvi, A., S149 (P-436)
Tavella, E., S5 (O-002)
Tay, H.S., S19 (O-051)
Taylor, J.K., S136 (P-388)
Taylor, R., S104 (P-272), S121 (P-337)
Tchernichovsky, M., S141 (P-409)
Teixeira, V., S131 (P-373)
Teixeira Veríssimo, M., S114 (P-311)
Tejero Sanchez, M., S111 (P-301)
Tell, G.S., S7 (O-007), S16 (O-041), S17 (O-042)
Temido, H., S41 (P-037), S114 (P-311)
Tesi, F., S73 (P-155, P-156)
Tessier, F.J., S17 (O-044)
Thain, J., S32 (P-003)
Theill, N., S83 (P-194)
Theisen-Flies, C., S153 (P-452)
Themessl-Huber, M., S130 (P-369), S131 (P-370)
Thiel, C., S112 (P-302)
Thijs, L., S6 (O-004)
Thingstad, P., S178 (O-095)
Thissen, F., S118 (P-327)
Thoenes, M., S99 (P-252)
Thompson, S., S94 (P-236), S95 (P-239), S109 (P-292)
Thomson, R., S25 (O-071)
Thorpe, T., S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Throm, C., S146 (P-426)
Ticinesi, A., S12 (O-027), S17 (O-045), S129 (P-366), S131 (P-371)
Tiihonen, J., S19 (O-050)
Tilvis, R., S130 (P-368)
Timmermans, A., S112 (P-304)
Tobis, S., S136 (P-390)
Tofaute, L., S112 (P-302)
Toffanello, G., S73 (P-155, P-156), S102 (P-263)
Toft Sørensen, H., S98 (P-249)
Togo, F., S52 (P-075)
Tolchard, S., S28 (O-080)
Tolonen, J., S41 (P-038)
Tolonen, K., S41 (P-038)
Tolppanen, A.-M., S19 (O-050)
Tomas, J.F., S48 (P-062)
Tomas, W., S55 (P-088)
Tomczak Silva, I., S183 (P-474)
Tomiyama, N., S54 (P-084), S67 (P-133)
Tonetti, J., S27 (O-077)
Topcuoglu, E., S58 (P-098)
Topinkova, E., S18 (O-048)
Torrini, M., S102 (P-263)
Torstensson, M.B., S140 (P-403)
Tortosa Rodriguez, A., S111 (P-301)
Tosun Tasar, P., S131 (P-372)
Toupance, S., S44 (P-049), S46 (P-053)
Tourais Martins, R., S117 (P-322), S135 (P-386)
Toye, K., S8 (O-011), S85 (P-204)
Traustason, H.T., S180 (P-464)
Travison, T., S178 (O-096)
Trifiro', G., S23 (O-062)
Triquet, L., S140 (P-406)
Trochidis, I., S134 (P-382)
Trotta, F., S5 (O-003), S21 (O-055)
Truchon, F., S44 (P-046)
Truillet, R., S66 (P-127)
Trushkova, N., S55 (P-085), S123 (P-344)
Tsang, C., S148 (P-434)
Tsartsara, S.I., S135 (P-387)
Tsutsumimoto, K., S121 (P-338)
Tufan, A., S10 (O-020), S68 (P-134, P-135)
Tufan, F., S10 (O-020), S68 (P-134, P-135)
Tümena, L., S57 (P-093)
Tuomilehto, J., S21 (O-056)
Tuominen, P., S27 (O-079)
Turin, C., S80 (P-181)
Turini, G., S96 (P-240)
Turkoglu, M., S181 (P-467)
Turner, J., S136 (P-388)
Turroni, F., S17 (O-045)
Turunç, G., S68 (P-135)

Ubero, S., S111 (P-299)
Udina Argilaga, C., S75 (P-162), S144 (P-420)
Ugartemendia Yerobi, M., S85 (P-203)
Uitterlinden, A., S179 (O-097)
Ulger, Z., S181 (P-467)
Umminiyattle, F., S145 (P-424)
Ungar, A., S5 (O-001), S40 (P-034), S73 (P-155, P-156), S99 (P-252), S102 (P-263), S172 (S-18)
Urner, C., S112 (P-302)
Usarel, C., S155 (P-458)
Usinger, L., S62 (P-112), S64 (P-121)
Uyar, M., S181 (P-468)
Uysal, A., S131 (P-372)

Väätäinen, S., S51 (P-072)
Vahlberg, B., S112 (P-305)
Valdés-Aragonés, M., S55 (P-086), S85 (P-202), S118 (P-325)
Valera, R., S104 (P-270)
Välimäki, T., S51 (P-072)
Valoti, P., S40 (P-034)
Valvanne, J., S13 (O-028), S23 (O-065)
Valverde García, J.A., S150 (P-442)
Van Asselt, D., S124 (P-347)
Van Beveren, J., S84 (P-197)
van Buren, M., S34 (P-008)
Van Campen, J., S68 (P-138)
Van Cleynenbreugel, E., S134 (P-384)
van de Poll-Franse, L., S83 (P-195)
Van De Velde, D., S105 (P-276)
Van de Velde, D., S106 (P-278, P-279)
van de Ven, P., S51 (P-073)

Van den Heede, K., S24 (O-067), S66 (P-128)
van den Huevel, H., S136 (P-390)
van den Hurk, M., S21 (O-057)
Van Den Noortgate, N., S29 (O-084)
van der Jagt, H., S68 (P-138)
van der Linden, C.M.J., S140 (P-405)
van der Putten, G.-J., S129 (P-364)
van der Sluis, G., S14 (O-033), S152 (P-446)
Van der Steen, J., S50 (P-070)
van der Stegen, J.C.G.H., S140 (P-405)
Van der Velde, N., S179 (O-097)
Van Der Wardt, V., S104 (P-272)
van der Wardt, V., S55 (P-087, P-088)
van der Ziel, C., S21 (O-057)
van der Zwaluw, N., S179 (O-097)
van Diest, M., S108 (P-287)
van Dijk, S., S179 (O-097)
van Gageldonk-Lafeber, A., S50 (P-070)
van Gelder, T., S179 (O-097)
van Gorp, F., S156 (P-461)
Van Grootven, B., S24 (O-067), S66 (P-128)
Van Hout, H., S51 (P-073)
van Jaarsveld, H., S140 (P-405)
Van Kempen, M., S25 (O-069)
Van Malderen, L., S105 (P-276), S106 (P-278, P-279)
Van Meeteren, N., S165 (S-10)
Van Munster, B., S24 (O-068), S25 (O-069), S79 (P-176)
Van Ouytsel, V., S42 (P-039)
Van Schoor, N., S178 (O-094), S179 (O-097), S187 (P-487)
van Wijngaarden, J., S179 (O-097)
van Zutphen, M., S27 (O-078)
Vanaken, D., S122 (P-339)
Vanbosseghem, R., S105 (P-276), S106 (P-278, P-279)
Vandamme, S., S122 (P-339)
Vandeput, O., S122 (P-339)
Vander Stichele, R., S137 (P-393)
Vandewoude, M., S67 (P-130), S86 (P-205), S91 (P-222)
Varan, H.D., S180 (P-465), S181 (P-467)
Varman, S.D., S152 (P-447)
Vassallo, M., S104 (P-273), S105 (P-274)
Vázquez Ibar, O., S75 (P-162)
Veale, N., S82 (P-191)
Vega Ramirez, F.A., S60 (P-105)
Vekama, L., S149 (P-437)
Velasco, R., S150 (P-440)
Velho, S., S10 (O-018), S30 (O-089), S48 (P-063), S57 (P-095), S131 (P-373)
Vellas, B., S20 (O-052)
Vellekoop, A., S79 (P-176)
Vello, N., S5 (O-002)
Ventura, M., S17 (O-045)
Vergara, I., S89 (P-216)
Verhaar, S., S83 (P-195)
Verhaegen, J., S116 (P-318)
Verhelst, L., S95 (P-237)
Verhofstede, R., S29 (O-084)
Verhulst, S., S44 (P-049)
Veríssimo, M., S34 (P-011), S60 (P-106), S66 (P-129), S98 (P-250), S122 (P-341)
Verkerke, B., S108 (P-287)
Verlaan, S., S92 (P-229), S93 (P-230)
Verma, A., S15 (O-037)
Veronese, N., S9 (O-014)
Verschueren, S., S134 (P-384)
Verstraeten, T., S18 (O-047)
Vetrano, D.L., S9 (O-017), S26 (O-073), S47 (P-057), S65 (P-122), S93 (P-231)
Vevatne, V., S42 (P-040)
Veyrac, G., S140 (P-406), S141 (P-407)
Vihuong, N., S61 (P-108)
Viken, H., S29 (O-086), S30 (O-087)
Viktil, K.K., S65 (P-123)
Vilches-Moraga, A., S42 (P-041), S136 (P-388), S146 (P-428), S147 (P-430, P-431), S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Villerusa, A., S75 (P-164)
Visavadia, R., S56 (P-089)
Visser, M., S187 (P-487)
Vissers, P., S83 (P-195)
Visvanathan, R., S94 (P-234)
Vlaeyen, E., S122 (P-339)
Vognar, L., S96 (P-240)
Volkert, D., S130 (P-369), S131 (P-370), S164 (S-09)
Volpato, S., S16 (O-039), S93 (P-232)
von Berens, A., S178 (O-096)
von Gersdorff, G., S26 (O-075)
Vrints, C., S67 (P-130)
Vrotsou, K., S89 (P-216)
Vrouenraets, B., S79 (P-176)

Wagg, A., S19 (O-049)
Wagner, B., S185 (P-483)
Wakeman, R., S28 (O-082), S148 (P-434, P-435)
Walczewska, J., S10 (O-019), S71 (P-149), S72 (P-150), S90 (P-221)
Wallace, J., S42 (P-041)
Wardle, K., S146 (P-428), S147 (P-430, P-431), S148 (P-433), S151 (P-444, P-445), S152 (P-448)
Warwick, J., S6 (O-004)
Wasylewicz, A.T.M., S140 (P-405)
Watfa, G., S46 (P-053), S75 (P-163)
Watson, A., S43 (P-042)
Watters, H., S146 (P-427), S150 (P-439)
Wearing, P., S110 (P-297)
Webber, A., S38 (P-025)
Weber, F., S112 (P-302)
Weber, P., S94 (P-233)
Weerasuriya, N., S32 (P-003)
Wehling, M., S19 (O-049), S146 (P-425, P-426)
Weiss, C., S146 (P-426)
Wejse, M.R., S43 (P-043)
Welsh, T., S56 (P-090), S96 (P-241)
Wendel, J., S116 (P-319)
Wentworth, L., S22 (O-061), S106 (P-281)
Wetzels, R., S54 (P-081)
Wibert, M., S43 (P-044)
Wieczorowska-Tobis, K., S136 (P-389, P-390), S143 (P-415)
Wiese, L., S113 (P-308)
Wijers, S., S92 (P-229), S93 (P-230)
Wileman, L., S22 (O-061)
Williams, A., S148 (P-435)
Williams, J., S22 (O-061)
Willscherei, H.P., S101 (P-259)
Wilting, I., S156 (P-461)
Winblad, B., S11 (O-021)
Windle, G., S51 (P-073), S52 (P-074)
Winge, K., S58 (P-096)
Winkels, R., S27 (O-078)
Winkler, C., S35 (P-012)
Wirehn, A.-B., S179 (O-098)
Wirth, R., S101 (P-259)
Wisløff, U., S29 (O-086), S30 (O-087)
Witkamp, R., S179 (O-097)
Wizner, B., S143 (P-415)
Wojskowicz, A., S142 (P-410)
Wojszel, Z.B., S142 (P-410)
Wojtasik, V., S119 (P-331), S120 (P-332)
Wolmark, Y., S126 (P-353)
Won, C.W., S7 (O-008), S92 (P-227, P-228), S154 (P-455)
Woods, B., S51 (P-073), S52 (P-074)
Wright, L., S95 (P-239)
Wu, X.S., S74 (P-158)
Wyart, M., S26 (O-074)
Wyller, T.B., S186 (P-485)

Xu, L.Y., S74 (P-158)

Yagci, N., S56 (P-091), S104 (P-271)
Yamaguchi, M., S9 (O-015)
Yap, M.Y., S83 (P-196)
Yap, X.Y., S83 (P-196)
Yavuz, B.B., S180 (P-465)
Yazici, S., S184 (P-478)
Yeong, K., S69 (P-139), S149 (P-438), S150 (P-439)
Yesil, Y., S180 (P-465)
Yeung, C.S.J., S39 (P-027)
Yoon, J.L., S63 (P-117)
Yu, S., S94 (P-234)
Yuan, B.-C., S33 (P-005)
Yung, C.Y., S56 (P-092)
Yuste, A., S78 (P-173)

Zafindravelo, E., S61 (P-107, P-108), S89 (P-218)
Zamboni, M., S90 (P-219), S93 (P-232)
Zammit, P., S101 (P-261, P-262)
Zani, M.D., S12 (O-027)
Zannad, F., S46 (P-053)
Zannoni, S., S102 (P-263)
Zarrouk, V., S120 (P-333)
Zelano, G., S55 (P-085), S123 (P-344)
Zeng, X.K., S74 (P-158)
Zepa, D., S75 (P-164)
Zepp, F., S18 (O-047)
Zerhouni, N., S80 (P-181)
Zethelius, B., S119 (P-329)
Zetterberg, L., S112 (P-305)
Zhu, H., S178 (O-096)
Zia, G., S6 (O-005)
Ziere, G., S179 (O-097)
Zigoura, E., S5 (O-002)
Zillikens, M.C., S179 (O-097)
Zinkunegi Zubizarreta, N., S85 (P-203)

Zipper, A.-C., S119 (P-330)
Zisko, N., S29 (O-086)
Zöller, D., S18 (O-047)
Zubeldia Etxeberria, J., S85 (P-203)
Zuccala, G., S9 (O-017), S26 (O-073), S65 (P-122), S93 (P-231)
Zucchelli, R., S16 (O-039), S88 (P-214)
Zuidema, S., S23 (O-064), S54 (P-081)
Zulfiqar, A.-A., S43 (P-045), S44 (P-046, P-047, P-048), S52 (P-076), S76 (P-165), S89 (P-215), S99 (P-253, P-254), S102 (P-264, P-265), S115 (P-313), S117 (P-323)

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