

## SYMPOSIA

### S1- PHYSICAL ACTIVITY IN LONG-TERM CARE FACILITIES FOR OLDER ADULTS. I. Bautmans (Gerontology Department, Vrije Universiteit Brussel, Brussels, Belgium)

**Communication 1: How much exercise is necessary for older residents of long-term care facilities?** B. Weening-Dijksterhuis (Research Center Healthy Aging, Allied Health Care and Nursing, Department of Physiotherapy, Hanze University of Applied Science, Groningen, the Netherlands)

**Backgrounds:** Frail older persons, living in long-term care facilities (LTCF) want to stay as independent as possible. The quality of life in older adults depends for a great deal on whether they are dependent from care or not, and to what extent they are dependent. Optimization of physical fitness characteristics like muscle strength, flexibility, aerobic endurance, coordination, and balance is the tool which may improve performance of activities of daily living (ADL). **Methods:** The objective of this study was to perform a systematic review on training outcomes influencing physical fitness, activity of daily living performance, and quality of life in institutionalized older people. 27 studies on older, non-demented, people (age,  $\geq 70$  yrs), in LTCF were reviewed. Our ultimate goal was to propose criteria for an evidence-based exercise protocol aimed at improving physical fitness, activity of daily living performance, and quality-of-life (QoL) of frail institutionalized older people. The interventions, described in the reviewed studies that showed strong or very strong effect sizes were used to form an exercise prescription. **Results:** There is firm evidence for training effects on physical fitness, functional performance, activity of daily living performance, and QoL. The training should contain a combination of progressive resistance training, balance training, and functional training. The proposed intensity is moderate to high, assessed on a 0-10 scale for muscle strengthening activities. The training frequency was 3 times a week, and the total duration was at least 10 weeks. **Conclusion:** This systematic review shows that physical training, including progressive resistance training, balance training, and functional training, has significant positive effects on physical fitness outcomes in frail older people in LTCF.

**Communication 2: How much do nursing home residents exercise?** P. de Souto Barreto (Gérontopôle of Toulouse, Institute of Aging, Toulouse University Hospital (CHU Toulouse), Toulouse, France)

**Backgrounds:** Information on the amount of exercise practiced by Long-Term Care Facility (LTCF) residents is scarce. This study aimed at describing LTCF-residents' participation in exercise classes, as well as to examine whether the presence of a professional exercise instructor in LTCF is associated with residents' exercise habits. **Methods:** The cross-sectional data of 5402 residents (median age = 88 years; mostly women (75.2%)) from 163 French LTCFs were analyzed. Adjusted logistic and linear regressions were performed to examine whether the presence of a professional exercise instructor in LTCF was associated with exercise habits: exercise participation, frequency, duration, and levels. **Results:** From the 5402 participants, 1914 were participating in exercise classes provided in LTCF. Most of them had an exercise frequency of 1x/week or less. Median duration of exercise sessions was 45 min. Exercise levels were rated as: highly active (n = 487), intermediately active (n = 1096), and poorly active (n = 331). The presence of a professional exercise instructor working in the facility was significantly associated with exercise participation and with higher exercise frequencies and levels, and session duration. **Conclusion:** The presence of professional exercise instructors is associated with better exercise habits in LTCF-residents. Improved exercise habits may potentially be translated into better health in this population.

**Communication 3: What are the barriers and motivators to organize physical activity in the nursing home?** V. Baert (Msc, Gerontology Department, Vrije Universiteit Brussel, Brussels, Belgium)

**Backgrounds:** The positive influence of physical activity (PA) on health, even at old age, are well documented. Even at old age PA remains useful but participation in PA decreases with age. In long-term care facilities (LTCF) PA appears to be reduced to a bare minimum. According to Forster et al. PA is feasible for older adults in LTCF and it leads to improvements in mobility and physical function. Since LTCF staff have a key role in organizing PA in LTCF, it is important to examine their motivators and barriers for the organization of PA in LTCF. **Methods:** The main goal of this study was to identify motivators and barriers that administrators (Admin), occupational (OT) and physiotherapists (PT) of Flemish LTCF are experiencing in organizing PA. Secondary their knowledge regarding the PA guidelines of the World Health Organization (WHO) was examined. An online structured questionnaire addressed to administrators, PT and OT of Flemish LTCF, was based upon the results of earlier qualitative studies on this topic. As a frame the social-ecological model (McLeroy) was used. In this model, a distinction is made on the intrapersonal, interpersonal and community level. **Results:** PTs (N=24) revealed 41 motivators and 35 barriers for PA in a qualitative component. The strongest motivators on the intrapersonal level were maintaining the independence of the residents (98%), reducing the risk of falling (98%) and improving the physical (93%) and psychological (90%) wellbeing of LTCF-residents. Social interaction among LTCF-residents (91%) during PA was the strongest motivator on the interpersonal level. Motivators on the community level are the agreement that PA is the basis of their physiotherapeutic work (89%) and offering varied activities avoids PA becoming monotonous (71%). Barriers on

the intra- and interpersonal level were of less influence. On the community level they felt hindered to organize PA due to lack of time (38%) and the overload of paperwork (33%). OTs (N=23) revealed 45 motivators and 34 barriers for organizing PA in the LTCF in the qualitative part of the study. Key motivators on the intrapersonal level were enhancing the physical (97%) and psychological (94%) wellbeing of the LTCF-residents. OTs (98%) are convinced that PA is a useful way to spend time for the older adults in LTCF. Social interaction between residents and the interaction between the OT (91%) and among the residents (88%) are important motivators on the interpersonal level. They (84%) agree that PA needs to be embedded in daily LTCF routine. Barriers were in general of less influence. In the qualitative part the administrators (N=24) reported 31 motivators and 24 barriers for PA. For administrators key motivators to the intrapersonal level are promoting the psychological (91%) and physical (93%) wellbeing of LTCF-residents and maintaining or improving physical functions (98%). Encouraging social contact (94%), the involvement of the family (72%) and countering isolation (86%) are the main motivators cited at the interpersonal level. At the community level, the infrastructure of the facility (91%), adequate material (88%) and sufficient financial resources (68%) are the main motivators. **Conclusion:** The strongest motivators on the intrapersonal level were improving the physical and psychological wellbeing of LTCF-residents. The social interaction was the key motivator on the interpersonal level. Barriers were mainly rejected. This research shows that PA deserves attention in LTCF and that the staff members can fulfil an important role in the implementation of the WHO-guidelines regarding PA in LTCF. Although LTCF staff is convinced of the usefulness of PA in LTCF, they are not familiar with the WHO-guidelines. Most of the participants believe that the WHO-guidelines are not feasible for older adults in LTCF.

### S2- INTERNATIONAL PREVALENCE MEASUREMENT OF CARE PROBLEMS IN NURSING HOMES. J.M.G.A. Schols (Department of Health Services Research and Department of Family Medicine, Caphri, Maastricht University, Maastricht, the Netherlands)

**Introduction on symposium:** In many western 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 nursing homes. The measurement was originally developed and only performed in the Netherlands, but currently also in other countries. This uniform way of measuring internationally is a significant step forward in gaining insight into the quality of basic care in nursing homes in different countries. In this symposium 4 presentations will be given, using data from LPZ-International.

**Communication 1: Pressure ulcer prevalence rates over the years measured with the (international prevalence measurement of care problems –LPZ-international.** R.J.G. Halfens<sup>1</sup>, E. Meesterberends<sup>1</sup>, C. Lohrmann<sup>2</sup>, J.M.G.A. Schols<sup>1</sup> ((1) Department of Health Services Research, Maastricht University, Maastricht, the Netherlands; (2) Department of Nursing Science, Medical University of Graz, Graz, Austria)

**Background:** Since 1998 the prevalence of pressure ulcers has been annually measured as one of the care problems with the national prevalence measurement of care problems (LPZ). Since 2009 Austria and since 2011 Switzerland also participate in the LPZ, making international comparisons possible. **Method:** LPZ –international is an annual cross-sectional multi-centre point prevalence survey of several relevant care problems in hospitals, nursing homes and home care. For each care problem (pressure ulcers, incontinence, malnutrition, falls and restraints) at patient level, next to patient characteristics, data are gathered about the prevalence, prevention and treatment of each care problem. In addition, at ward and institutional level, specific quality indicators are measured related to these care problems. **Results:** In 1998 the prevalence rate of pressure ulcers excluding stage 1 was high in the Netherlands, namely 14.5 in hospitals and 12.6 in nursing homes. Since then it declined until 5.7 versus 3.4 in 2014. Results of Austria and Switzerland show also a decline during the years. Comparing the three countries, it shows that the prevalence in the Netherlands is still the highest. **Conclusion:** Measuring care problems is an important first step in improving the quality of care. However thereafter adequate next steps have to be taken to improve care performance. Comparison between countries and institutions may offer strategies for that.

**Communication 2: Pressure ulcer care in Dutch and German nursing homes.** E. Meesterberends<sup>1</sup>, R.J.G. Halfens<sup>1</sup>, C. Lohrmann<sup>2</sup>, J.M.G.A. Schols<sup>2</sup> ((1) Department of Health Services Research, Maastricht University, Maastricht, the Netherlands; (2) Department of Nursing Science, Medical University of Graz, Graz, Austria)

**Background:** In the Netherlands and Germany annual pressure ulcer prevalence surveys have been conducted since 1998 (NL) and 2001 (GER) using the same standardized definitions, instruments and methodology. Results of these surveys reveal large differences in prevalence rates between both countries over the ten past years in nursing homes. This study was set up to investigate the differences in pressure ulcer care between nursing homes in the Netherlands and Germany by measuring the incidence of pressure ulcers and possible related factors with respect to the nursing home residents, the nursing care provided and attributes of the care setting. **Methods:** A prospective multicenter cohort study. The study population consisted of newly admitted nursing home

residents in 10 Dutch and 11 German nursing homes which were followed for a period of 12 weeks. Data were collected by independent research assistants by means of weekly observations using questionnaires both on resident, nursing staff, ward and nursing home level. **Results:** A total of 547 newly admitted nursing home residents participated in this study, of which 240 were Dutch and 307 were German. A significantly higher pressure ulcer incidence rate was found for the Dutch nursing homes (33.3%) compared with the German nursing homes (14.3%). Six factors that explain the difference in pressure ulcer incidence rates were identified: dementia, analgesics use, the use of transfer aids, repositioning the residents, the availability of a tissue viability nurse on the ward, and regular internal quality controls in the nursing home. **Conclusion:** The pressure ulcer incidence was significantly higher in Dutch nursing homes than in German nursing homes. Both factors related to residents, nursing care and structure explain this difference in incidence rates. Continuous attention to pressure ulcer care is important for all health care settings and countries, but Dutch nursing homes especially should pay more attention to the correct use of transfer aids, the tasks of the tissue viability nurse, and the performance of regular internal quality controls.

**Communication 3: Malnutrition in Dutch and Austrian hospitals and nursing homes.** C. Lohrmann, J.M.G.A. Schols, R.J.G. Halfens (Department of Health Services Research, Maastricht University, Maastricht, the Netherlands)

**Background:** The impact of malnutrition on hospital patients and nursing home residents is significant regarding quality of life, high risk for further complications, health care expenditures and even mortality. Internationally reported prevalence rates of (risk for) malnutrition are difficult to compare due to different definitions and measurement instruments. **Method:** A cross-sectional multi-centre study was conducted in the Netherlands and Austria using standardised questionnaires to collect data on institutional, ward and patient level from 2009 to 2014. **Results:** In total 109 (47/62) hospitals and 56 nursing homes (48/8) participated e.g. in 2012 with 10143 patients and residents. Prevalence rates in Dutch and Austrian hospitals for malnutrition were 18,7 and 16,9% respectively and in nursing homes 14 and 23,1 %. Comparing the prevalence for malnutrition over the years 2009-2014 there is a substantial decline in both countries for the hospital setting from 25,8 % to 14,5 % in the Netherlands and from 27,7 % to 13,3% in Austria. The rates for the Dutch and Austrian nursing homes decreased from 22,5 % to 18,2 % and from 24,7 % to 18 %. Regarding the prevalence of patients at risk for malnutrition, the rates decreased continuously as well besides the Dutch nursing homes, where the prevalence increased from 26,3 % to 30,8 % in 2014. In general more patients in nursing homes are at risk for malnutrition. Preventive measures were more conducted in Austrian nursing homes than in Austrian hospitals. Consulting a dietician is the most reported measure in both countries and settings in 2014. Dutch nursing homes take more measures overall for patients with (a risk of) malnutrition than in Austrian nursing homes. The number of malnutrition-related structural quality indicators at institutional (N= 7) and ward level (N=1) differs in both countries and settings. In general Dutch institutions had more structural indicators than the Austrian ones. **Conclusion:** This study allows comparing the results of a prevalence measurement in the Netherlands and Austria in respectively nursing homes and hospitals, by using the same data collection procedure and questionnaires. For the participating institutions, the measurement offers cues for quality improvement of nutritional care; especially in Austria implementation of structural quality indicators like clinical guidelines seems necessary.

**Communication 4: Malnutrition in care home residents with dementia.** J.M.G.A. Schols, J. Meijers, R. Halfens (Department of Health Services Research, CAPHRI, Maastricht University, Maastricht, the Netherlands)

**Background:** Nursing home residents with dementia often suffer from malnutrition. The objectives of this study were to investigate the malnutrition prevalence in Dutch care home residents with dementia over the years and to examine the relationship between malnutrition and dementia and the role of care dependency and co-morbidity within this relationship. The study was a secondary analysis of data from the annual independent Dutch National Prevalence Measurement of Care Problems. The design involved a cross-sectional, multicentre point prevalence measurement. A standardized questionnaire was used to register amongst others data of weight, height, nutritional intake, undesired weight loss, comorbidity, dementia, and care dependency. **Results:** 75.399 residents older than 65 years participated over a period of 5 years. 24.580 of these residents suffered from dementia. Sixty organizations measured 4 times, 31 organizations 3 times, 68 organizations 2 times, 511 organizations 1 time. The study showed that there is a significant decline in malnutrition prevalence in the group of non-demented residents over the years (Non-demented group  $p < 0.001$ ). The prevalence of malnutrition in the demented group showed no significant reduction over the years. GEE analysis showed that malnutrition and dementia are related and that care dependency and age are important influencing factors in this relation. **Conclusion:** The results show that compared to the non-demented residents, the prevalence of malnutrition does not decline in demented care home residents over the years. This suggests that it is more difficult to improve the nutritional status of demented residents. In future studies the reasons for this should be explored.

**S3- NURSES ON THE MOVE: TOWARDS HIGH QUALITY CARE IN NURSING HOMES.** J.P.H. Hamers (Department of Health Services Research, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands)

**Background:** Care in nursing homes is complex since residents are vulnerable to multiple healthcare problems. There is a lack of knowledge about an overall approach for

nurses to manage these problems. Furthermore, research evidence often is not translated to the bedside since nursing staff in general have relatively low levels of education and are not adequately prepared to apply scientific evidence to their daily practice. 'Nurses on the Move' is a research line that aims to improve quality of care in nursing homes. This symposium offers insight into recent findings of this research line. The first presenter will discuss the results from an observation study on the daily activities in which nursing home residents are engaged and on residents' positions during these activities (study 1). The second presenter will report findings from a study on nurses' behaviors that optimize the functional status of nursing home residents and the related perceived barriers and facilitators (study 2). The third presenter will provide insight into a study on the future distinguishing competencies of bachelor-educated registered nurses in nursing homes (study 3). **Methods:** In study 1 a cross-sectional observation study was conducted. Residents from 30 wards (7 nursing homes, housing 723 residents) were randomly observed 5 times between 7 a.m. and 11 p.m. Activities and positions during these activities were scored on a tablet for each resident on the ward, using a self-developed observation list. In study 2 an inventory, the MAINtAIN, was administered, measuring 1) nurses' function optimizing behaviors, and 2) their perceived related barriers. A total of 368 nurses from 44 nursing homes across the Netherlands completed the inventory. In study 3 a total of 41 international experts were invited to participate in a two-round web-based survey and an expert meeting on the future distinguishing competencies of bachelor-educated registered nurses in nursing homes. Experts were identified through literature and the professional network of the research team. **Results :** In study 1, the 3282 observations showed that nursing home residents were mainly engaged in watching TV, sleeping, and "doing nothing" (range: 45-77%). Furthermore, they were engaged in activities of daily living (ADL) (range: 15-38%), mainly consisting of mobility and eating and drinking. Instrumental ADL (IADL) were rarely observed (up to 3%). Nursing home residents were largely observed in a lying or sitting position (range: 89-92%). In study 2, the results of the MAINtAIN indicated that performing IADL (e.g., light household chores, putting away clothes) was less encouraged by nurses compared with performing ADL (e.g., eating, dressing). The 3 most frequently mentioned barriers towards encouraging residents to perform activities were 'staff shortages' (39%), 'the capabilities of residents' (39%), and 'organizational readiness' (36%). In study 3 consensus was reached on 16 future distinguishing competencies of bachelor-educated registered nurses in nursing homes. Half of the competencies (n=8) were related to leadership and coaching e.g. "being a team leader, role model and coach within the nursing team" or "able to create a working relationship and collaborate effectively with nursing home staff from other disciplines". Two of the remaining competencies were related to communication, three to evidence-based practice and three to client assessment and geriatric expertise. **Conclusion:** Findings from study 1 showed that the majority of psychogeriatric and somatic nursing home residents spend their day inactively, in sitting and lying positions, in their wards. The engagement of residents in IADL was particularly rarely observed. This is in line with the results of study 2, which showed that nurses did not always encourage IADL activities among residents and thus, this is an area for improvement. To change practice certain barriers should be addressed. According to nurses, the most important barriers to optimize a resident's function are on the resident and organizational level. This will likely require skilled staff who can support evidence-based practice implementation such as bachelor-educated registered nurses. Study 3 showed that competencies of bachelor-educated nurses other than those traditionally associated with the nurse expert role are considered important. Paying more attention to these competences might lead to improvements in nursing home care. For example, promoting bachelor-educated nurses as role models might help other nursing staff to encourage activity, ADL and IADL among nursing home residents.

**Communication 1: Daily activities of nursing home residents in their wards: results of an observation study.** M. den Ouden<sup>1</sup>, M.H.C. Bleijlevens<sup>1</sup>, J.M.M. Meijers<sup>1</sup>, S.M.G. Zwakhalen<sup>1</sup>, S.M. Braun<sup>1,2</sup>, F.E.S. Tan<sup>3</sup>, J.P.H. Hamers<sup>1</sup> ((1) Department of Health Services Research, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, the Netherlands; (2) Research Centre for Autonomy and Participation of People with a Chronic Illness, Zuyd University of Applied Sciences, Faculty of Health, Heerlen, the Netherlands; (3) Department of Methodology and Statistics, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, the Netherlands)

**Communication 2: Nurses' behaviors and perceived barriers to optimize function among nursing home residents: a cross-sectional study.** N.O. Kuk<sup>1</sup>, G.J.J.W. Bours<sup>1,2</sup>, G.A. Rixt Zijlstra<sup>1</sup>, G.I.J.M. Kempen<sup>1</sup>, J.P.H. Hamers<sup>1</sup> ((1) Department of Health Services Research, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands; (2) Research Centre for Autonomy and Participation of People with a Chronic Illness, Zuyd University of Applied Sciences, Faculty of Health, Heerlen, the Netherlands)

**Communication 3: Future distinguishing competencies of bachelor-educated registered nurses in nursing homes.** R. Backhaus<sup>1</sup>, H. Verbeek<sup>1</sup>, E. van Rossum<sup>1,2</sup>, E. Capezuti<sup>3</sup>, J.P.H. Hamers<sup>1</sup> ((1) Department of Health Services Research, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands; (2) Research Centre for Autonomy and Participation of People with a Chronic Illness, Zuyd University of Applied Sciences, Faculty of Health, Heerlen, the Netherlands; (3) Hunter College, City University of New York, New York, NY)

#### S4- LIVING AND DYING IN LONG TERM CARE FACILITIES: PERSPECTIVES FROM HONG KONG. J. Woo (Institute of Aging, The Chinese University of Hong Kong, Hong Kong)

**Background:** Approximately 7% of older people aged 65 years and over reside in long term care facilities in Hong Kong. Entry to these institutions usually occur in the presence of moderate to severe impairment in physical and cognitive function requiring care from others. Many have end stage dementia, stroke, or other degenerative neurological diseases, which affect the swallowing process. The first communication presents data on managing dysphagia and use of tube feeding in these facilities. Maintaining optimal nutritional status is a challenge and also an indicator of the quality of care. The second communication presents data on nutritional status in residential care homes in Hong Kong, and optimal body mass index values relating to good outcomes. The third communication describes how end of life care is implemented in the long term care setting.

*Communication 1: Dysphagia management.* T. Kwok (Institute of Aging, The Chinese University of Hong Kong, Hong Kong)

**Objective:** To ascertain if angiotensin converting enzyme (ACE) inhibitor reduces the risk of pneumonia in older patients on tube feeding for neurological dysphagia. **Design:** Randomized placebo controlled trial. **Method:** Older hospital patients on long term tube feeding for dysphagia secondary to cerebrovascular diseases were randomized to take lisinopril 2.5mg or placebo once daily for 26 weeks. The subjects were followed up at week 12 and 26. The primary outcome was the incidence rate of pneumonia. The secondary outcomes were mortality rate and swallowing ability defined by the Royal Brisbane Hospital Outcome Measure at week 12. **Results:** 93 older tube fed patients were randomized. The trial groups were comparable in clinical characteristics. On interim analysis, 70 subjects had completed the trial. Among those who had completed the trial, 33 subjects (47%) had developed clinical pneumonia and thirty subjects (43%) had died. Twenty of the deaths (67%) were due to pneumonia. Lower baseline serum albumin was associated with mortality ( $P=0.002$ ) and pneumonia related mortality ( $P=0.011$ ). Greater age was associated with mortality ( $P=0.031$ ). Treatment group subjects had significantly higher rate of mortality (56% versus 32% in placebo group) and rate of pneumonia related mortality (41% versus 18%). After adjustment for age and baseline serum albumin, the increase in mortality rate was significant (HR 3.170 (95% CI 1.036 to 9.703)) and the increase in fatal pneumonia was borderline significant (HR 2.969 (0.942 to 9.361)). The incidence of pneumonia was not significantly different between two groups. As mortality was significantly increased in the treatment group, the trial was stopped prematurely for ethical reason. Twenty-one treatment group subjects and 30 placebo group subjects had repeat swallowing assessment at month three. The median changes in Royal Brisbane Hospital Outcome Measure for Swallowing in treatment and placebo groups were 1 (quartile range 0 to 1) and 0 (0 to 1) respectively. ( $P=0.062$ , Mann Whitney test). **Conclusion:** ACE inhibitors are not unlikely to prevent pneumonia in older patients with tube feeding for neurological dysphagia and may increase their mortality.

*Communication 2: Optimal nutritional status.* J. Lee (Institute of Aging, The Chinese University of Hong Kong, and Department of Medicine, Alice Ho Miu Ling Nethersole Hospital, Tai Po, Hong Kong)

**Method:** Prospective study conducted in nursing home residents in Hong Kong using MDS 2.0 at baseline. Mortality status was assessed at 6 months, 1, 2, 4 and 9 years later. Relationship between mortality and significant weight loss ( $\geq 5\%$  over 30 days or  $\geq 10\%$  over 180 days), and body mass index (BMI), was studied by Cox regression with both variables in the same model, adjusted for age, gender, medical conditions, tube-feeding, 25% food left uneaten, swallowing problem, and activities of daily living. **Results:** 1614 residents with mean age 83.7 years and mean BMI 21.7 $\pm$ 4.8 were studied. Mortality rate were: 6.3%(6-month), 14.3%(1-year), 27.1%(2-year), 47.3%(4-year) and 78.1%(9-year). Significant weight loss was not associated with higher mortality at all follow-up durations, whereas higher BMI was significantly protective. Having  $\geq 25\%$  of food left uneaten (51.2% of participants) had no relationship to survival at all follow-up durations. At 9 years, when compared with those with BMI<18.5kg/m<sup>2</sup>, the normal weight (BMI 18.5–22.9kg/m<sup>2</sup>, Asia-Pacific cut-off), overweight (BMI 23–25kg/m<sup>2</sup>, Asia-Pacific cut-off) and obese (BMI>25 kg/m<sup>2</sup>, Asia-Pacific cut-off) had significantly lower mortality (HR 0.65, 0.62 and 0.47 respectively, all  $p<0.001$ ). **Conclusion:** Significant weight loss was not associated with short- or long-term survival in Chinese nursing home residents. BMI however is predictive of short- and long-term survival irrespective of weight loss in this population. Low body mass index, detectable at a single point of time, may be another readily available alternative trigger point for possible interventions in reducing mortality risk. Obese residents had the lowest mortality in this cohort.

*Communication 3: End of life care.* E. Hui (Hospital Services Management, Institute of Aging, The Chinese University of Hong Kong and Department of Medicine and Geriatrics, Shatin Hospital, Hong Kong)

**Introduction:** With population ageing, hospitals are caring for an increasing number of fail older people with multiple morbidities and dependency, on a declining trajectory towards death. According to Hong Kong laws, death outside hospitals automatically triggers referral to the Coroner. Moreover, nursing homes are poorly supported by primary care physicians. Instead, the Hong Kong Hospital Authority which runs all public hospitals, established community outreach teams of doctors and nurses who support these institutions, targeting residents who exhibit the revolving door syndrome. **Objectives:**

This session will describe the evolution of EOL care led by Geriatricians in Hong Kong, in particular, an EOL care model for nursing home residents. **Discussion:** Since 2008, a continuous quality improvement initiative (CQI) aimed at enhancing EOL care for non-cancer geriatric patients was introduced. The CQI consisted of cultural change in an extended-care hospital and development of guidelines and care protocols through knowledge transfer, monitoring and feedback<sup>1,2</sup>. Subsequently, the EOL programme was extended to nursing homes and involved stakeholders at different settings, including the Emergency Room (ER), the medical wards in an acute hospital and ambulance staff. A new patient journey with direct clinical admission to the extended-care facility and establishment of advance care plan (ACP) began in 2012.<sup>3</sup> After two years, 70% of EOL cases from nursing homes requiring hospitalization could be managed in an extended-care hospital without compromising their survival. The number of hospitalization episodes and length of stay were reduced and more attention was paid to symptom control and promotion of patient autonomy. **Conclusion:** The authors demonstrated that quality EOL care in healthcare and institutional settings is feasible in Hong Kong. It is expected that a greater number of EOL patients can benefit from this approach by extending the model throughout the territory. Moreover, it is worth collaborating with other sectors, such as the legal profession and academics, to increase public awareness of this very important issue in older persons. **References:** 1. Woo J, Lo RSK, Lee J et al. Improving end-of-life care for non-cancer patients in hospitals: description of a continuous quality improvement initiative. *Journal of Nursing and Healthcare of Chronic Illness* 2009;1:237-244. 2. Woo J, Cheng JOY, Lee J et al. Evaluation of a continuous quality improvement initiative for end-of-life care for older noncancer patients. *J Am Med Dir Assoc* 2011;12:105-113. 3. Hui E, Ma HM, Tang WH et al. A new model for end-of-life care in nursing homes. *J Am Med Dir Assoc* 2014;15:287-289.

#### S5- THE OPTIMAL STUDY ON EFFECTIVE HEALTH CARE FOR OLDER PEOPLE RESIDENT IN CARE HOMES. F. Martin (Consultant Geriatrician, Guy's and St Thomas' NHS Foundation Trust and Professor of Medical Gerontology, King's College London, UK)

**Objectives:** To present findings from a National Institute of Health Research (NIHR) funded study on delivering health care to care homes. **Discussion:** The symposium will provide an overview of what is known about the enablers and barriers to undertaking research in care homes. It will discuss how theory driven approaches to evidence review and evaluation can inform an understanding of effective health care provision to care homes. **Conclusion:** Care homes are heterogeneous and health care provision is always context dependent. It is unlikely that one model of service delivery will suit all care homes. The OPTIMAL study provides an account of what works when in what circumstances with what outcomes.

*Communication 1: Effective health care for older people resident in care homes: a realist review.* C. Goodman<sup>1</sup>, S.L. Davies<sup>1</sup>, M. Zubair<sup>3</sup>, M. Handley<sup>1</sup>, A.L. Gordon<sup>2</sup>, T. Denning<sup>2</sup>, J. Schneider<sup>2</sup>, J. Gladman<sup>2</sup>, C. Bowman<sup>3</sup>, J. Meyer<sup>4</sup>, C. Victor<sup>5</sup>, H. Gage<sup>5</sup>, F. Martin<sup>6</sup> ((1) University of Hertfordshire, UK; (2) University of Nottingham, UK; (3) City University London, UK; (4) Brunel University, UK; (5) University of Surrey, UK; (6) Kings College London, UK)

**Background:** Care homes in the UK rely on general practice for access to specialist medical and nursing care as well as referral to therapists and secondary care. There is minimal information about the impact of different approaches to health care delivery on organisation and resident-level outcomes. The review aimed to identify factors which may explain the perceived or demonstrated effectiveness of programmes to improve health-related outcomes in older people living in care homes. **Methods:** We conceptualised models of health care provision to care homes as complex social interventions. Realist review is a theory-driven approach that makes explicit how the mechanisms or key elements within an intervention are thought to work and what contextual factors need to be in place to achieve the desired outcomes. In the Optimal review this involved an iterative stakeholder-driven three-stage approach. Elements of service models that were identified in stage one as likely to improve resident health were those that focused on: • Systematic assessment and management of residents' health led by visiting clinicians. • Strategies to encourage closer working between visiting health care providers and care home staff. • System-wide incentives and sanctions to improve older people's access to assessment and treatment. We reviewed the evidence to determine what within these different models of care might determine success and failure in various care home settings in relation to five key outcomes: residents' medication use, use of out of hours' services, hospital admissions (including use of Accident and Emergency) and length of hospital stay, costs and user satisfaction. **Results :** 54 papers met our inclusion criteria and a broad range of evidence was used to develop a theory-driven understanding of how different elements of service delivery models to care homes achieve particular outcomes for residents and staff. Theories of what supports integrated working and relational working explained observed differences in how health care interventions were implemented. Key enablers were processes that encouraged visiting health care professionals and care home staff to jointly identify, plan and implement protocols for care that fitted with the priorities and work patterns of the care home. The use of targeted funding and financial incentives and sanctions could support these processes but were not sufficient to achieve change. Externally imposed and time-limited interventions that did not take account of how care homes were organised were less likely to achieve of the outcomes of interest. **Conclusion:** This realist review identified the possible enablers and barriers to appropriate health care delivery to the sector and highlighted the importance of mechanisms within interventions that focus on the involvement of care home staff and consider the fit with the priorities and working

practices of the care home. The second phase of Optimal is now testing in three sites how these processes are enacted within different service models (see presentation 3).

**Communication 2: Recruitment of older care home residents for Optimal: Understanding recruitment and consultee processes as situated within the dynamic context of care home populations in flux.** M. Zubair<sup>2</sup>, C. Goodman<sup>1</sup>, S.L. Davies<sup>1</sup>, M. Handley<sup>1</sup>, A.L. Gordon<sup>2</sup>, T. Denning<sup>2</sup>, J. Schneider<sup>1</sup>, J. Gladman<sup>2</sup>, C. Bowman<sup>3</sup>, J. Meyer<sup>3</sup>, C. Victor<sup>4</sup>, H. Gage<sup>5</sup>, F. Martin<sup>6</sup> ((1) University of Hertfordshire, UK; (2) University of Nottingham, UK; (3) City University London, UK; (4) Brunel University, UK; (5) University of Surrey, UK; (6) Kings College London, UK)

**Background:** Physical dependency and cognitive impairment are prevalent in care home populations. Recruitment of residents into research studies is, therefore, often complicated by the ethical need to assess mental capacity and identify appropriate consultees where appropriate. In England, the Mental Capacity Act 2005 provides guidance on recruitment of people to research and does not allow proxy consent by staff paid to provide care for residents. We outline here some of the lesser articulated grey areas in our current understandings of ethical practice – contextualising these within the context of highly dynamic care home populations. We discuss the resultant challenges researchers are likely to experience and suggest ways these may be addressed. **Methods:** The Optimal study involved recruitment of older people living in 12 care homes across three geographically discrete sites in England. Apart from those in the last few days of life or on short-term respite care, all residents were given the opportunity to take part in the study either directly or through a consultee. Consent was required for review of residents' care home notes, accessing GP records and for a qualitative interview, where appropriate. The expected recruitment target was 60%. **Results:** We recruited 242 out of a total of 503 residents. 169 of these lacked the mental capacity to consent and were recruited through consultees. Particular challenges experienced included: (1) Varied understandings of 'capacity to consent' between study researchers, care home staff and family members of residents, often complicated further by both the researchers' and care home staff's lack of familiarity with individual residents; (2) Difficulties in identifying the 'right' personal consultees and the most appropriate channels of communication; (3) Divergent interpretations among those involved, of the study consent/decline procedures and the requirements of the personal consultee's role. The dynamic nature of the care homes' populations – with both resident and staff movements and fluctuating cognitive status in many of the residents, contributed to the need to iteratively and continually (re) define ethical approaches to the individual residents involved in the study. **Conclusion:** These recruitment experiences highlight some grey areas of understanding in relation to the most appropriate ethical practices when involving older care home residents in research, particularly related to mental capacity to provide consent. Future research may benefit from more widespread recognition of the messiness of fieldwork processes. A greater level of engagement between academic researchers and care homes, beyond the time-constrained nature of research projects, may be useful to develop shared, common, understandings of ethical challenges.

**Communication 3: Using case-studies to understand what makes health care to care homes effective: A realist evaluation.** A.L. Gordon<sup>2</sup>, T. Denning<sup>2</sup>, C. Goodman<sup>1</sup>, S.L. Davies<sup>1</sup>, M. Handley<sup>1</sup>, M. Zubair<sup>2</sup>, J. Schneider<sup>2</sup>, J. Gladman<sup>2</sup>, C. Bowman<sup>3</sup>, J. Meyer<sup>3</sup>, C. Victor<sup>4</sup>, H. Gage<sup>5</sup>, F. Martin<sup>6</sup> ((1) University of Hertfordshire, UK; (2) University of Nottingham, UK; (3) City University London, UK; (4) Brunel University, UK; (5) University of Surrey, UK; (6) Kings College London UK)

**Background:** Service delivery to care homes is highly variable in both quantity and quality. There is minimal information about the impact of different service delivery approaches on organization- and resident-level outcomes. A realist review and synthesis (see communication 1, above) developed a series of propositions about how key elements within different models of service delivery achieved improved health-related outcomes. We set out to describe how elements within each of these models impact on outcomes for individual residents, care homes and the health service. **Methods:** Three regions of England were recruited, each delivering care driven predominantly by one of: incentivisation, relational working and attachment of expertise. Twelve care homes were recruited. Homes were matched across sites for resident population, staffing ratios, and proximity to secondary care. All participants had a modified version of the interRAI-LTC (International Resident Assessment Instrument Long-Term Care) completed at baseline. Residents were followed for 12 months, with monthly data collected on medications, admissions to hospital (number and duration), emergency department attendances, and out-of-hours GP and ambulance calls. Up to 5 residents from each care home were interviewed. Additional interviews were undertaken with key stakeholders including care home staff, commissioners, GPs and other visiting health care professionals. Interviews were iterative, driven by principles of theoretical sampling and data saturation. Data were analysed with attention to describing the interventions undertaken, the mechanisms by which they were perceived to have effect, the outcomes witnessed and the contextual factors which enabled or inhibited the mechanisms. **Results:** As of June 2015, 242 residents had been recruited. The average age of participants was 86.4 years and 76.1% of the cohort was female, indicating a broadly representative cohort. Residents from each region showed similar prevalence of functional dependency, cognitive impairment and behavioural disturbance. Monthly service use data collection is due to complete by the end of September 2015. Final descriptive statistics and early qualitative findings will be available for presentation by December 2015. Over the 12 months of data collection the service models described in preparatory work have been modified and changed by local healthcare providers. This challenges research models dependent upon measuring

outcomes related to a consistent approach over time and reinforces the value of an approach that by focusing on the processes of care, aims to make explicit the triggers or mechanisms within an intervention and the requisite contextual factors that support or inhibit the achievement of improved outcomes. **Conclusions:** This mixed method realist synthesis has recruited a representative sample of care homes over three UK sites. Data collection is at an advanced stage and early outputs will be available for dissemination and discussion at the meeting of the Nursing Home Research International Working Group in December.

**S6- ACADEMIC NETWORKS IN LONG-TERM CARE: A POWERFUL INFRASTRUCTURE FOR MULTICENTER RESEARCH.** R. Koopmans (Department of Primary and Community Care, Radboud University Medical Center, Joachim en Anna, center for specialized geriatric care, Nijmegen, Netherlands, Radboud Alzheimer Center, Nijmegen, The Netherlands)

**Introduction:** The Dutch universities of Nijmegen, Leiden and Amsterdam have established academic networks in long-term care. The Nijmegen network exists from 2003 and the Leiden and Amsterdam networks started in 2005 and 2006 respectively. Basically the networks are a close cooperation between long-term care organizations and a University Medical Centre. The goals of the networks are: (1) the development of an infrastructure for teaching in medical school and the postgraduate specialist training program, (2) the development of an infrastructure for research projects in long-term care, and (3) the development of best-practices in long-term care. This symposium will focus on research. Three examples of multicenter studies will be presented. One study about the use of antibiotics, one study about geriatric rehabilitation and one study about residents who express severe or extreme neuropsychiatric symptoms. The symposium will start with a short outline of the organizational structure of the networks.

**Communication 1: How to improve antibiotic prescribing in long-term care facilities?** L. van Buul<sup>1</sup>, R.B. Veenhuizen<sup>1,2,3</sup>, J.T. van der Steen<sup>1,2,3</sup>, F.G. Schellevis<sup>1,2,3</sup>, C.M.P.M. Hertogh<sup>1,2,3</sup> ((1) University Network of Organizations for Care for the elderly of VU University Medical Center (UNO-Vumc), Amsterdam, the Netherlands; (2) Department of General Practice and Elderly Care Medicine, VU University Medical Center, Amsterdam, the Netherlands; (3) EMGO Institute for Health and Care Research, Amsterdam, the Netherlands; (4) The Netherlands Institute for Health Services Research, Utrecht, The Netherlands)

**Background:** Antibiotic stewardship programmes aim at promoting the appropriate use of antibiotics. The implementation of these programmes has been recommended in long-term care facilities, as a response to the increasing threat posed by antimicrobial resistance in this setting. Insight into the degree and nature of inappropriate antibiotic prescribing is crucial for the development of effective antibiotic stewardship programmes. We therefore conducted two studies that aimed at exploring antibiotic prescribing in long-term care facilities in the Netherlands. **Methods and results:** In the first study, appropriateness of 598 treatment decisions was evaluated using a guideline-based algorithm. It was found that 76% of the prescribing decisions were appropriate, with less appropriate prescribing decisions for urinary tract infections (68%) compared with respiratory tract infections (87%) and skin infections (94%) (p=.003). In the second study, qualitative interviews with physicians and nursing staff resulted in the identification of a variety of factors that influence antibiotic prescribing decisions, some of which may lead to inappropriate use. **Conclusion:** The combined results of the above-mentioned studies suggest room for improvement in antibiotic prescribing behaviour. Elaborating on the findings of both studies, this session provides the participants with practical recommendations for promoting appropriate antibiotic prescribing in long-term care.

**Communication 2: Back home: an intervention aimed at earlier discharge to home after geriatric rehabilitation as an example for successful cooperation in an academic nursing home network.** W. Achterberg, M. Holstege, M. Caljouw, E. Bakkers, R. van Balen (Department of public health and primary care, Leiden University Medical Center, Leiden, The Netherlands)

**Background:** A physiotherapist of a nursing home within the University Network for the Care sector South-Holland (UNC-ZH) developed an instrument that makes it possible to determine if geriatric rehabilitation patients can be earlier discharged to home. The aim of this study was to evaluate if the use of this structured scoring of supporting nursing tasks in the evening and night in geriatric rehabilitation patients will lead to earlier discharge home. **Methods:** A pre- and post-implementation cohort design was followed in 3 network nursing homes. One cohort (n=200) was assessed before and the other (n=283) after the implementation of the scorecard. The implementation consisted of weekly filling out a validated structured scorecard for identifying the supporting nursing tasks during evenings and nights and discussing them in the multidisciplinary team-meeting, in order to establish if discharge home (with or without home care) was possible. **Results:** Both cohorts were comparable in age, gender and reasons for admission (mean age 80 years (SD:10); 69% females). Reason for admission were stroke (23%), joint replacement (13%), traumatic injuries (32%), and other (32%). Participants from the post-implementation cohort were discharged home earlier, within 48 days (SD:26) compared with 56 days (SD:31) in the pre-implementation cohort; P=0.044. 28% of the participants that were able to be discharged home according to the supporting nursing tasks, were discharged within 2 weeks. Reasons for discharge delay were: no realized home adjustments (47%), diminished cognition participant (29%) and low physical functioning participant or informal caregiver (65%). **Conclusion:** The use of a scorecard for discharge planning may lead to earlier

discharge home. Bottom-up research, initiated by care professionals and supported by scientists, within a nursing home research network is possible and quickly to perform. Results are easy to implement in practice and improves directly patient care.

**Communication 3: Characteristics of nursing home residents with extreme agitation: The WAALBED III study.** R. Koopmans<sup>1</sup>, A. Rouwenhorst<sup>1,5</sup>, D. Gerritsen<sup>1,5</sup>, M. Smalbrugge<sup>2</sup>, R. Wetzel<sup>1,5</sup>, H. Bor<sup>2</sup>, S. Zuidema<sup>3</sup> ((1) Department of Primary and Community Care, Radboud University Medical Center, The Netherlands; (2) Department of General Practice and Elderly Care Medicine/EMGO+ Institute, VU University medical center, Amsterdam, The Netherlands; (3) Department of General Practice, University of Groningen, University Medical Center, Groningen, The Netherlands; (4) Joachim en Anna, center for specialized geriatric care, Nijmegen, The Netherlands; (5) Radboud Alzheimer Center, Nijmegen, The Netherlands)

**Objectives:** Agitation is a key feature in people with dementia and an important reason for admission to a nursing home (NH). Although many NH residents with dementia show agitation to some extent, there is a group with very severe or even extreme agitation. There is hardly any literature about the prevalence and characteristics of these residents who may pose a large burden on (in)formal caregivers. The Waalbed III study focuses on the prevalence, characteristics and quality of life of this group. The current presentation regards the characteristics of a group of residents with extreme agitation as compared to those without agitation. **Methods:** Data of 4 studies in NH residents with dementia from the academic networks of Nijmegen and Amsterdam was combined into one dataset of 2076 residents: the Waalbed-I study (N=1332), the Waalbed-II study (N=290), the Dementia Care Mapping study (N=318), and the GRIP on challenging behavior study (N=659). Residents with severe/extreme agitation were defined as those scoring in the upper 10 percent of the Cohen Mansfield Agitation Inventory total score, or having a score of 6 (several times a day) or 7 (several times an hour) on at least 5 CMAI-items. This resulted in a group of 348 residents. 216 residents had no agitation, i.e. had a CMAI total score of 29. **Results:** In the severe agitation group, mean age was lower (81.6 years vs. 83.0,  $p=0.03$ ), duration of stay was shorter (25.1 months vs. 35.5,  $p=0.00$ ), severity of dementia was different ( $p=0.0$ ), with more residents in Global Deterioration Scale (GDS) stage 6 and less in GDS 5 and 7. Sex and marital status were not statistically different between the groups. The prevalence of psychotropic drug use was higher in the severe agitation group (78.1% vs. 41.1%,  $p=0.0$ ), more specifically antipsychotics (52.3% vs. 13.1%,  $p=0.0$ ); antidepressants (36.0% vs. 19.6%,  $p=0.0$ ) and hypnotic/anxiolytic drugs (33.9% vs. 13.6%,  $p=0.0$ ). No differences were found for antiepileptic drugs and cholinesterase inhibitors. **Conclusion:** When comparing a group of nursing home residents with dementia having severe/extreme agitation to a group without agitation, several important differences emerged in these preliminary analyses. At the conference, multivariate logistic regression analyses will be presented that include behavioral aspects which are distinct from agitation – e.g. apathy – as covariates. These will provide further insight into the specific characteristics of these generally highly burdened residents whose behavior is highly challenging for their care providers

**S7- REDUCING UNNECESSARY HOSPITALIZATIONS FROM NURSING HOMES: LESSONS LEARNED AND FUTURE DIRECTIONS.** J. Morley (St. Louis University, St. Louis, MO, USA)

**Communication 1: Research on reducing unnecessary hospitalizations from nursing homes: Challenges and opportunities in implementation science.** R. Kane<sup>1</sup>, J. Ouslander<sup>1</sup>, R. Tappen<sup>1</sup>, G. Engstrom<sup>1</sup>, M. Rojido<sup>1</sup>, D. Newman<sup>1</sup>, J. Shutes<sup>1</sup>, D. Wolf<sup>1</sup>, I. Naharci<sup>1</sup>, M. Woodhouse<sup>1</sup>, P. Huckfeldt<sup>1</sup> ((1) University of Minnesota, Minneapolis, MN, USA ; (2) Atlantic University, Boca Raton, FL, USA)

Unnecessary hospitalizations and emergency department visits in the nursing home (NH) population are an international problem. They predispose vulnerable patients to hospital-acquired conditions and adverse events, and they are costly. Developing the evidence-base for interventions designed to reduce unnecessary hospitalizations from NHs poses numerous challenges. Reductions can result from better primary prevention, proactive identification and management of acute conditions when they arise, better communication between NHs and hospitals, and/or by avoiding futile care. This presentation will review the challenges faced in a randomized implementation trial of the Interventions to Reduce Acute Care Transfers (INTERACT) Quality Improvement (QI) Program in 264 U.S. NHs, how measures were used to isolate salient components and pathways, how design challenges were managed, and the lessons learned for NH care and future research. The INTERACT QI program is designed to improve the management of acute changes in condition and prevent unnecessary hospital transfers whenever safe and feasible. It consists of QI, clinical documentation, decision support, and advance care planning tools and strategies to implement them. The INTERACT tools and resources are available at <https://interact.fau.edu>. INTERACT is based on 5 strategies: 1) using program tools for QI, including tracking hospitalization rates and performing root cause analyses on hospital transfers; 2) early detection and evaluation of acute changes in condition before they become severe enough to warrant hospital transfer; 3) management of some acute changes in condition in the NH when clinically appropriate; 4) improved communication and documentation, both within the NH and between the NH and hospital; 5) improved advance care planning and use of palliative care as an alternative to hospitalization when consistent with patient and family preferences. Data from non-randomized studies suggest that INTERACT implementation is associated with substantial reductions in hospitalization rates in some NHs. In the current trial, 264 NHs were randomized into 3 groups: 1) immediate intervention over a 12-month period; 2) delayed intervention with no contact

(control); and 3) delayed intervention with periodic contact to discuss interventions being implemented (included to address a potential Hawthorne effect). During the 12-month intervention period, implementation of INTERACT in the immediate intervention group was variable, and the 2 delayed intervention groups increased their INTERACT use, due in part to increasing fiscal and regulatory pressure to reduce hospitalizations. Variable INTERACT implementation in the intervention group and substantial diffusion of INTERACT into the comparison groups poses unique and complex challenges in analyzing and interpreting the results of this trial. Strategies used to deal with these challenges will be discussed in this presentation to better prepare NH researchers for similar implementation trials in the future. Supported by a grant from the National Institutes of Health (1R01NR012936)

**Communication 2: Hospital transfers from the nursing home and hospital perspectives: Lessons learned from cross-setting root-cause analyses.** J. Ouslander<sup>1</sup>, R. Tappen<sup>1</sup>, G. Engstrom<sup>1</sup>, M. Rojido<sup>1</sup>, J. Shutes<sup>1</sup>, D. Wolf<sup>1</sup>, D. Newman<sup>1</sup>, I. Naharci<sup>1</sup>, J. Schnelle<sup>2</sup>, E. Vasilevskis<sup>2</sup>, S. Kripalani<sup>2</sup>, D. Markley<sup>2</sup>, K. Sponsler<sup>2</sup>, E. Tarvin<sup>2</sup>, D. Keriwala<sup>2</sup>, A. Salanitro<sup>2</sup>, S. Bell<sup>2</sup>, S. Simmons<sup>2</sup>, J.M.L. Jacobsen<sup>2</sup>, A.A. Saraf<sup>2</sup> ((1) Florida Atlantic University, Boca Raton, FL, USA; (2) Vanderbilt University Medical Center, Nashville, TN, USA)

Root-cause analyses (RCA) are fundamental to quality improvement (QI) in order to continuously learn and improve care processes and related education. This presentation will summarize data from two federally funded projects in which RCA of hospital transfers from nursing homes (NHs) were performed by both NH and acute hospital staff. Differing as well as complementary perspectives on the preventability of these transfers provide many lessons for programs designed to reduce unnecessary hospitalization of NH patients. During a 12-month period of implementing the Interventions to Reduce Acute Care Transfers (INTERACT) Quality Improvement Program, 67 NHs in the immediate intervention group submitted a total of 4,858 RCA of hospital transfers using the INTERACT QI tool (see <http://interact.fau.edu>). These analyses provide key insights into further improving care in order to reduce potentially preventable hospitalizations. For example: 19% of the transfers involved evaluation in the emergency department, but did not result in hospital admission – suggesting that many of the transfers might have been preventable; 11% occurred within 2 days of NH admission from the hospital, and another 11% occurred 3-6 days after admission from the hospital – suggesting that preventable care transition problems may have contributed to these transfers; and NH staff rated 23% of the transfers as potentially preventable in retrospect after completing the RCA, and recognized several improvements in care that might have prevented the transfer. During the entire 24 months of the project, 170 NHs also submitted data via an online tool on the management and outcomes of 7,689 acute changes in condition that did not result in hospital transfer for a minimum of 3 days after the change. Only 10% of these acute changes in condition resulted in hospital transfer 4-7 days after the change, and only 1% resulted in death. Almost all the deaths were expected, and none were considered by NH staff to be related to INTERACT implementation. The nature of the changes in condition that were initially managed in the NH, how they were managed, and the nature of the conditions that resulted in transfer to the hospital among those who were transferred provide important insights into improving care in NHs. In a second project that combines an enhanced discharge planning intervention in the acute hospital with INTERACT in 23 NHs, RCA on 154 readmissions to the hospital within 30 days were performed by NH staff and separately by hospital staff. Among these transfers, 13% and 31% were rated as potentially preventable by the NH staff and hospital staff respectively. NH staff and hospital staff agreed on their ratings of preventability for 109 (71%) of the transfers. Even when there was agreement, the reasons for rating the transfers as preventable or not preventable differed between the NH and hospital staff. A substantial proportion of the transfers rated as preventable by hospital staff related to care before hospital discharge, highlighting the need for improved hospital discharge procedures. These data clearly illustrate the value of cross-setting RCA for gaining a fuller perspective on hospital transfers and identifying multiple areas for care process improvements and education. The findings will be helpful in future projects designed to improve care and reduce unnecessary hospital transfers. Supported by grants from the National Institutes of Health (1R01NR012936) and the Centers for Medicare and Medicaid Services Innovation Center (1C1CMS331006-01-00)

**Communication 3: The interventions to reduce acute care transfers (INTERACT) Quality improvement program: Future.** J. Ouslander<sup>1</sup>, J. Shutes<sup>1</sup>, S. Handler<sup>2</sup> ((1) Florida Atlantic University, Boca Raton, FL, USA ; (2) University of Pittsburgh Medical Center, USA)

While the paper-based version of the Interventions to Reduce Acute Care Transfers (INTERACT) Quality Improvement (QI) Program has been associated with substantial reductions in hospitalizations from some nursing homes (NHs), implementation has been variable and challenging to evaluate. In addition, medical care providers have not been optimally engaged in NH efforts to reduce unnecessary hospitalizations. This presentation will describe how the INTERACT QI Program is being incorporated into an electronic health record used by over 6,000 NHs in the U.S. and Canada, as well as several other electronic health records in the U.S. Incorporation of INTERACT into these electronic health records facilitates: 1) efficient implementation of the program as well monitoring of care processes so they can be continually improved; 2) the use of evidence-based and expert-consensus developed standardized physician order sets that address 10 of the most common causes of potentially avoidable hospitalizations from NHs and the capability to monitor adherence to the recommended order sets; and 3) the use of INTERACT in combination with telemedicine. Future research will focus on demonstrating the

effectiveness of these innovations and disseminating them worldwide. Supported by Westcom, Inc. (PointClickCare), Think Research, and the Centers for Medicare and Medicaid Services Innovation Center.

**S8- KEYS TO SUCCESSFUL EMBEDDING SCIENTIFIC RESEARCH IN NURSING HOMES: A WIN-WIN PERSPECTIVE.** J.M.G.A. Schols (Department of Family Medicine and Department of Health Services Research, CAPRHI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands)

**Background:** Evidence-based innovations to increase quality of care and quality of life of residents are implemented only sparsely in nursing homes. As a result, health care professionals, policy makers, residents and their families do not benefit sufficiently from new advancements and best evidence. Especially in long-term care, new care models and person-centered care philosophies are being developed, focusing on increasing patient's autonomy, meaningful activities, and enabling patients to remain their own lifestyle for as long as possible. There is, however, still a gap between this knowledge and current practice and as a result health care professionals, policy makers, patients and their families do not benefit sufficiently from new advancements and best evidence. Structural multidisciplinary collaboration between research, policy, education and practice is essential to improve quality of long-term care in nursing homes. This symposium presents a model to achieve this goal: the "Living Lab Long-term Care and Aging" in the southern part of the Netherlands. The first presenter explains the origin and organization of the living lab. The second and third presentation shall illustrate the approach of the living lab by showing results of two projects aimed at improving quality of life and quality of care of residents with dementia in nursing homes. The second presenter shows insights into effects of innovative nursing homes for people with dementia in the Netherlands, providing care in small-scale homelike settings such as a care farm. The third presentation focuses on international collaboration and presents results on a European study into quality of care and quality of life in dementia. **Methods:** The first presentation reports on the working mechanisms, key components and financing structures to set up interdisciplinary collaboration between research, practice, policy and education, based on the model of the "Living Lab Long-term Care and Aging" in the southern part of the Netherlands. The second presentation shows first findings from an observational study, in which 115 residents participated. Residents lived in various settings: care farms, stand-alone small-scale homelike settings, clustering of small-scale homelike settings and traditional nursing homes. Outcome measures included cognition (MMSE), activities of daily living (ADL), neuropsychiatric symptoms (NPI-NH) and quality of life (QoL-AD). Furthermore, repeated real time observations (n=9.660) were conducted to assess various aspects of daily life. Finally, semi-structured interviews were conducted with a subset of the residents' family members on their opinions about e.g. quality of life and quality of care for the residents. The third presenter discusses findings from a prospective cohort study, conducted in eight European countries. In total, 2014 dyads of people with dementia were included, 791 lived in nursing homes and 1123 lived at home and were at risk for nursing home placement. Quality of care was assessed using the following indicators: presence of pain, malnutrition, pressure ulcers, physical restraints, falls, psychotropic drugs and depressive symptoms. Quality of life was measured with the QoL-AD. **Results :** Two characteristics of the "Living Lab Long-term Care and Aging" have proven vital for successful collaboration. First, the interdisciplinary partnership, with nursing-home administrators, clinical and nursing staff, researchers and teaching staff as collaborating partners; nursing science, old age medicine, physiotherapy, psychology and gerontology being the core disciplines. Second, joint appointments of senior researchers working at both the university and a long-term care organization. In the nursing homes, they help to identify relevant issues for practice and policy, translate these into scientific research projects and bring evidence-based knowledge in daily practice. In addition, nursing home staff participate in research projects and may be posted (on average two days weekly for about a 4-year period) to the university to conduct PhD projects. First results from the study on effects of green care farms for people with dementia indicate positive experiences with green care farms as alternative for traditional nursing homes. Green care farms provided more opportunity for meaningful activities for residents, as these are integrated in the physical environment. Overall, family members were positive about the activities done at the green care farm and the personal approach of care being provided. At regular nursing homes medical and physical care were appreciated. Family in all small-scale, homelike care environments enjoyed the atmosphere of the locations. Results from the European study indicated that the quality of life of people with dementia was similar for nursing homes compared with home care. Quality of life was rated highest in Sweden and England and lowest in Estonia and Spain. For the quality of care indicators, no consistent patterns were visible in such a way that certain countries or settings scored «higher» or «lower.» The presence of depressive symptoms was most consistently associated with lower quality of life. **Conclusion:** Structural interdisciplinary collaboration will help to equip nursing homes in delivering sustainable long-term care for the future against the background of an increasing demand for care and scarcity of resources. The "Living Lab on Long-Term Care and Aging", an interdisciplinary collaboration between research, practice, policy and education has proven to be a successful approach over the past ten years. It has not only led to relevant research, focusing on important clinical (e.g. malnutrition, pressure ulcers, pain in dementia, falls, heart failure) and administrative topics (e.g. work environment, employee health and well-being, redesign of nursing home care), but also to the fruitful implementation of results and evidence-based innovations. The living lab provides an excellent infrastructure, which guarantees optimal assistance from staff in carrying out the research in every-day care practice and participating in advisory boards. There is no fixed scheme to set up collaboration between academia and long-term care organizations as one size does not fit all. Both within and between countries organizational culture,

structure and financing of health care and research may differ. However, in our opinion the interdisciplinary character and joint appointments of staff working in our ACC-COP are responsible for its success over the past years.

**Communication 1: Living lab in long-term care and ageing.** J.P.H. Hamers<sup>1</sup>, H. Verbeek<sup>1</sup>, S.M.G. Zwakhalen<sup>1</sup>, J.M.G.A. Schols<sup>1,2</sup> ((1) Department of Health Services Research, CAPRHI School for Public Health and Primary Care, Maastricht University, Maastricht, the Netherlands; (2) Department of Family Medicine, CAPRHI School for Public Health and Primary Care, Maastricht University, Maastricht, the Netherlands)

**Communication 2: Innovative nursing home environments for people with dementia.** H. Verbeek, B. de Boer, H. Beerens, J.P.H. Hamers (Department of Health Services Research, CAPRHI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands)

**Communication 3: A European perspective on quality of care and quality of life in nursing homes.** S.M.G. Zwakhalen, M. Bleijlevens, H. Beerens, B. Afram, D. Ruwaard, H. Verbeek, J.P.H. Hamers (Department of Health Services Research, CAPRHI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands)

**S9- CHALLENGING BEHAVIOUR AND DIFFERING PROFILES OF DIMINISHED AWARENESS OF SYMPTOMS IN 3 NEURODEGENERATIVE DISEASES: DEMENTIA, KORSAKOFF SYNDROME AND HUNTINGTON'S DISEASE.** C.M.P.M. Hertogh (Department of General Practice & Elderly Care Medicine, VU University Medical Center, Amsterdam, The Netherlands)

**Introduction:** Challenging behaviour in different types and stadia of dementia is still highly prevalent and poorly understood. Next, there are specific types of dementia as Korsakoff syndrome and Huntington's disease in which impaired awareness is well-known. Although the manifestations differ, impaired awareness is a specific clinical problem in these patient groups. **Objectives:** Different speakers will address the topic of challenging behaviour and awareness. The first speaker will present her view on the current explanatory models for challenging behaviour. In this presentation the speaker will elaborate on the possibility of a knowledge gap on how neuropsychological functioning of people with moderate to severe dementia influences perception and awareness. The second speaker will present her work on awareness deficits in Huntington's disease. Specifically, the relation between awareness deficits and challenging behaviour will be explored. The last speaker will present her early work on patients with Korsakoff syndrome. In this presentation, the results of a systematic review on the occurrence of behavioural symptoms in patients with KS will be presented. Also, care needs for these patients will be explained from the perspective of behavioural symptoms and impaired awareness. **Discussion:** The focus in the last decades has predominantly been on developing psychosocial theories and interventions for challenging behaviour. Although from a psychosocial viewpoint, knowledge on awareness and on how people with dementia experience the world is essential, research on the effects of neurological damage on these abilities is lacking. **Conclusion:** Awareness deficits occur in different types of dementia. More research is needed to explore this topic and the relation between awareness deficits and challenging behaviour in dementia and other, specific types of dementia.

**Communication 1: Challenging behaviour and the biopsychosocial model. Is there something missing?** S. Zwijsen (Department of General Practice & Elderly Care Medicine, VU University Medical Center, Amsterdam, The Netherlands)

**Introduction:** In recent years, the focus in caregiving for people with dementia has shifted from a disease-oriented point of view to a more person-oriented view in which individuality and quality of life are the cornerstones. Many interventions have been developed that aim at either improving quality of life or diminishing challenging behaviour of people with dementia. **Objectives:** In this presentation the possible knowledge gap on how neuropsychological functioning influences perception, awareness and the way people with dementia experience the world will be further examined. **Discussion:** The idea behind most interventions for is to pay more attention for the way people with dementia experience the world and themselves. It is often proposed that better adjustment to the biopsychosocial needs of the person with dementia will result in the person being more comfortable, less anxious and consequently less prone to exhibit challenging behaviour. Although there are many theories and interventions that address the psychosocial side of experience and awareness in dementia, not much is known about the influence of biological factors like inflammation, cardiovascular diseases or neurological damage. What is more, although many interventions claim to take the experience of the person into account, knowledge on how neurodegeneration influences how people with dementia experience the world is mostly lacking. Neuropsychological research into perception and behaviour of people with dementia is limited to early stage Alzheimer's disease, but nevertheless implies the deteriorated cognitive functioning might directly influence behaviour, awareness and the way people with dementia experience the world. Up until now, behaviour is often seen as one of the few ways to get an insight into the experiences of people with dementia. **Conclusion:** Without knowledge on how perception, interpretation and the ability for response control are altered in dementia, behaviour of people with dementia can easily be misinterpreted.

**Communication 2: Challenging behaviour and diminished awareness in Huntington's disease.** R.B. Veenhuizen (Care physician, Department of General Practice & Elderly Care Medicine, VU University Medical Center, Amsterdam, The Netherlands)

**Introduction:** Huntington's disease (HD) is a dominantly inherited neurodegenerative disease starting generally between ages 30-50 with an insidious onset. Motor, cognitive and behavioural changes lead to complete dependency and finally death in about 17 years (3-30). Cognitive deficits especially in executive functioning are detectable on MRI and cognitive tests years before the neurological diagnosis is confirmed. Until now disease specific clinimetrics for awareness deficits are not available. Despite extensive knowledge on nature and course of the disease in affected families, patients seem to lack adequate awareness of symptoms and functional decline. Over the last 4 decades knowledge on awareness deficits in HD has emerged but is only slowly growing. A relation between awareness deficits and challenging behaviour has not been under investigation even though challenging behaviour is regularly the reason for pharmacotherapy, caregiver burden and admission to a nursing home. In the existing literature on awareness deficits in HD debate on the origin of awareness deficits is still going on and ranges from coping style to a disease specific neurological deficit. **Objectives:** An overview of the existing literature on awareness deficits in HD and the comparison to Korsakoff syndrome and Alzheimer's dementia will be presented. Results of patient and caregiver rating on the 'patient competency rating scale' in an outpatient population with different stages of HD will be given and a possible relation between awareness deficits and challenging behaviour will be explored. **Discussion:** Challenging behaviour, which is frequently a problem in HD families, may be seen as a consequence of awareness deficits. Diminished awareness of disease symptoms is often explained as a typical coping mechanism because of the devastating nature of the disease. This is not in concordance with the fact that patients sometimes panic on seeing themselves on videotape or in the mirror. Knowing that this problem exists may lead to better understanding and less frustration for patient and relatives. **Conclusion:** Awareness deficits occur in HD patients and may lead to serious problems and suffering in their families. More research is needed to explore the nature and width of the problem.

**Communication 3: Challenging behaviour and impaired awareness in patients with Korsakoff syndrome living in long-term care facilities.** I.J. Gerritzen (*Elderly care physician, Department of General Practice & Elderly Care Medicine, VU University Medical Center, Amsterdam, The Netherlands*)

**Introduction:** Korsakoff syndrome (KS) is a chronic neuropsychiatric condition resulting from an acute Wernicke's encephalopathy mostly secondary to chronic alcohol abuse and concomitant thiamine deficiency. KS is characterized by severe memory deficits and is often associated with confabulation and executive deficits. Up to 25% of patients will require long-term institutionalization. Institutionalized patients with KS usually show challenging behavioural symptoms like aggression, sexual disinhibition, and apathy. Combined with impaired awareness of the illness behavioural symptoms disable patient, family members, and caregivers. A previous study showed that the use of psychotropic drugs in patients with KS residing in Dutch special care units is extensive. It is suggested that psychotropics are often given to manage challenging behavioural symptoms. However, very limited literature exists on the care and course of patients with KS living in long-term care facilities. Prevalence rates for behavioural symptoms in patients with KS are scarce. Even less literature can be found regarding impaired awareness in patients with KS. **Objectives:** In this presentation, the results of a systematic review on the occurrence of behavioural symptoms in patients with KS will be presented. Also, the care needs for this group of patients will be explained from the perspective of behavioural symptoms and impaired awareness. **Discussion:** Confronted with their cognitive dysfunctions and combined with impaired awareness patients with KS often feel uncertain. In the case of an inadequate response of the caregiver patients can react with behavioural symptoms like aggression or anxiety. Caregivers often experience behavioural symptoms of patients with KS as challenging. Providing optimal management in which respect for the patient's dignity is maintained requires expertise and knowledge. **Conclusion:** More knowledge regarding challenging behavioural symptoms and impaired awareness in patients with KS is necessary in order to develop specific guidelines for managing these symptoms.

**S10- HEALTH PROMOTING NURSING HOMES. CARE QUALITY AND WORKING ENVIRONMENT IN NORWEGIAN NURSING HOMES.** B. André, G. Haugan (*Sør-Trøndelag University College, Faculty of Nursing, Trondheim, Norway. Center for Health Promotion, Norwegian University of Science and Technology (NTNU), Trondheim, Norway*)

**Introduction:** The life expectancy of people is increasing worldwide. In the next 30 years, the number of people in the world over age 65 will almost double to 1.3 billion. The most rapidly growing segment is people over 80. For many of those 80+, issues such as physical illness and approaching mortality decimate their ability to function and subsequently lead to the need for nursing home (NH) care. Health is a dynamic state of complete physical, mental, spiritual and social well-being, and not merely the absence of disease and infirmity. The Ottawa-charter underlines among other things that the health services should be reoriented to be more health promoting – thus, our focus is on "Health Promoting NHs". **Objectives:** The main objective is to identify which factors that can lead to a health promoting approach in NHs. **Discussion:** In NHs, the environment, work culture, high quality of care and patient's satisfaction, hope, meaning-in-life and self-transcendence are important factors. Empowerment to the health care personnel working in NHs can lead to engagement and high quality care for residents. Nurse-patient interaction and meaningful activities can have an effect on patients' sense of hope, meaning-in-life, self-transcendence, anxiety and depression. **Conclusion:** One important focus is health care personnel's job satisfaction, empowerment and autonomy. A balanced individual approach to medical, physical and psychosocial care leads to high quality

care. The increased life expectancy for people and NH patients' symptoms burden is high indicating a great need for highly competent staff nurses.

**Communication 1: The impact of work culture on quality of care in nursing homes.** B. André (*Sør-Trøndelag University College, Faculty of Nursing, Center for Health Promotion, Norwegian University of Science and Technology (NTNU), Trondheim, Norway*)

**Background:** One of the key factors to influence on the performance is work culture, which contains of both organizational culture and organizational climate. Therefore, understanding essential elements that underpin both NH performance and working conditions and culture will be of importance. The relationship between nursing leadership and patient outcomes have been described as essential to the development organizations in health care. The main aim of this review study was to identify which factors that characterize the relationship between work culture and quality of care in NHs. **Methods:** A literature search was structured to identify studies that describe the work culture in nursing homes and related to quality of care. Only articles that in particular described these factors were included in this study. **Results:** In achieving improvements in NHs the important value of best care possible must be appreciated and used as a positive incentive to increase care quality. In developing a supportive NH work culture, several studies highlighted that the leadership style is important. Nine out of ten included articles in this review emphasized the importance of leadership style and supportive management. Autocratic or custodial management styles have shown to be significantly associated with lower work effectiveness scores and lower autonomy experiences among the staff. Conversely, supportive management care, increased empowerment, participation and influence have been related to care quality. Relationship, teamwork and strong group relations were related to work culture in five of the included articles in this review study. How these different working groups were organized differed in the articles, from self-organizational groups to more formal organized groups. It seems to be no doubt about the importance of having some kind of working groups, only the structure of these groups may differ. Increased empowerment, good communication, participation and influence were related to quality of care in eight articles. This is important to consider in organization of NHs. Changes concerning these factors might be introduced with little extra costs. Empowering the health care personnel working in NHs is both an organizational and an interpersonal issue. **Conclusion:** Work culture is crucial for improving care quality in NHs. This study can be used in order to obtain an increased attention on work culture among NH health care personnel. Changes are necessary to increase health care personnel's job satisfaction, empowerment, autonomy and influence in NHs. Nursing management and leaders are key-personal in achieving such necessary developments.

**Communication 2: Quality of care in nursing homes from the nursing home residents' perspectives.** S. Nakrem (*Sør-Trøndelag University College, Faculty of Nursing, Center for Health Promotion Research, Norwegian University of Science and Technology (NTNU), Trondheim, Norway*)

**Background:** Defining care quality for long-term residents has several challenges. Institute of Medicine's definition of quality of care is: "Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge." Further, six domains of care quality are outlined: Safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity. The health care services rely on the best available information; both about the patient and about the effectiveness of a particular kind of treatment for patients with similar health problems. However, patients may do well despite poor quality because humans are resilient and tend to adapt to the situation. Determining what is good or bad care quality requires knowledge of the values that individuals place on various health outcomes and how these may differ among individuals. This study contributes to the development of care quality in NHs. The aim of the study was to explore how quality of care in NHs could be understood from the perspective of NH residents. **Methods:** In-depth interviews of fifteen mentally lucid residents aged 65 and over were performed. Analyses were done by meaning condensation and coding. By comparing and contrasting the content, meaning categorization was achieved. **Results:** Two main categories of what residents viewed as important for high quality of care and considered as having met their needs and expectations emerged: "The nursing home as my home" and "Interpersonal care quality". The category "The nursing home as my home" encompassed four subcategories of quality of care experience: 'Being at home in a nursing home', 'Paying the price for 24-hour care', 'Personal habits and institutional routines', and 'Meaningful activities for a meaningful day'. The main category "Interpersonal care quality" comprised three subcategories: 'Care for and alleviation of medical, physical and psychological needs', 'Protecting the resident's integrity', and 'Psychosocial well-being'. **Conclusion:** Ambiguities concerning the NH as a home and place to live, a social environment in which the residents experience most of their social life and the institution where professional health service is provided were uncovered. Furthermore, care quality in NHs implies a balanced, individual approach to medical, physical and psychosocial care, including interpersonal aspects of care. The findings added together, suggest, from the residents' perspective, that nurses are in a key position to optimize value in NH care by enhancing factors associated with quality.

**Communication 3: Nurse-patient interaction, meaning-in-life and intra-personal self-transcendence: powerful assets for quality in life in cognitively intact nursing home patients.** G. Haugan (*Sør-Trøndelag University College, Faculty of Nursing, Center for Health Promotion Research, Norwegian University of Science and Technology*)

(NTNU), Trondheim, Norway)

**Background:** Moving to a NH result from numerous losses. In particular, loneliness and depression are identified as risks to the well-being of older people. In general, NH patients suffer chronic illnesses and several impairments; therefore, they experience dependency on the NH staff. NH patients report feelings of fear and desperation over the actions of staff and express a lack of negotiation about how best to meet an elderly person's needs and desires. This is threatening to their dignity and sense of self. However, in cognitively intact NH patients their mind and spirit might be a resource to well-being. It is surprising that the study of aging as a spiritual process has been given only a limited attention, whereas aging as a biological process has been extensively studied. Hope and meaning are central spiritual aspects, along with self-transcendence involving both spiritual and non-spiritual facets; these have been seen to be mediating variables in psychological and physical health, supporting quality-of-life (QoL) in old age. These spiritual resources are derived through relationships and connectedness; by communication with others, self-reflection on responsibilities, inner dialogue, completing unfinished business and from the nurse-patient interaction. The main aims of this study were to examine: 1. The level of symptom severity and multidimensional well-being; 2. The impact of meaning-in-life and self-transcendence (inter-personal and intra-personal) on physical, emotional, social, functional and spiritual well-being; 3. The possible impact of nurse-patient interaction on cognitively intact NH patients' perceived hope, meaning-in-life, self-transcendence, anxiety and depression. **Methods:** In a cross-sectional design, 202 cognitively intact NH patients, aged 64-104, in 44 different Norwegian NHs responded to: Herth Hope Index, Purpose-in-Life test, Self-Transcendence Scale, Hospital Anxiety and Depression Scale, Nurse-Patient Interaction Scale, FACT-G, FACIT-SP-12 and QLQ-C15-PAL QoL questionnaires. **Results:** 146 women (72.3%) and 56 men (27.7%) participated, the mean age was 87.3 years for women and 82 years for men. Duration of time of NH residence was at mean 2.53 years (SD 2.25) (range 0.5-13 years). The symptom burden was high (56% fatigue, 49% pain, 43% constipation, 41% dyspnea, 38% sleep disturbance, 25% appetite loss, 18% nausea/vomiting, 30% depression, 12% anxiety). Self-transcendence and meaning-in-life showed significant effects on all dimensions of well-being. Perceived nurse-patient interaction revealed significant effects on patients' sense of hope, meaning-in-life, self-transcendence, anxiety and depression. Meaning and intra-personal self-transcendence exposed substantial influence on functional, emotional and physical well-being. Inter-personal self-transcendence exposed a weighty impact on social and emotional well-being, with the latter demonstrating a vital effect on physical well-being. The nurse-patient interaction might influence all the QoL-domains by affecting meaning, hope and self-transcendence. **Conclusion:** Cognitively intact NH patients' symptom burden indicates great need for highly competent staff nurses. Nurse-patient interaction, meaning-in-life and intrapersonal self-transcendence are powerful health-promoting resources, influencing NH patients well-being.

**S11- NUTRITIONDAY IN NURSING HOMES.** D. Volkert (Institute for Biomedicine of Aging, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg, Germany)

**Objectives of the symposium:** After participating in this symposium, participants are aware of the problem of malnutrition in institutionalised older persons and of 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 in the nursing home setting. They know about the opportunity to participate and make nutritional care a subject of discussion in their own institutions. They 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. The symposium will also inform about recent results of the data analysis regarding the prevalence of malnutrition, determinants of malnutrition and the relation between nutritional status and outcome. A specific focus will be put on the quality of care in nursing homes in different countries and the question how specific quality indicators, which are assessed in the nutritionDay project, are related to the nutritional status of the residents.

**Communication 1: The nutritionDay project – an overview.** K. Schindler<sup>1</sup>, S. Kosak<sup>2</sup>, D. Volkert<sup>3</sup>, C. Sieber<sup>3</sup>, M. Hiesmayr<sup>1</sup> ((1) Medical University Vienna, Vienna, Austria; (2) nutritionDay Office, Vienna, Austria; (3) Institute for Biomedicine of Aging, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg, Germany)

Malnutrition is widespread in nursing homes and is related to many unfavourable health outcomes and associated with considerably increased healthcare costs. Currently, the significance of the problem is not very well perceived. Prevention and treatment do not receive appropriate attention in many healthcare institutions, although effective measures for nutritional therapy are available. In order to use the full potential of nutritional therapy, deterioration of food intake and nutritional status need to be detected as early as possible. 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. The nursing home setting is addressed since 2007. Up to now the project has developed to worldwide operating project ([www.nutritionDay.org](http://www.nutritionDay.org)). On a specific day every year ("nutritionDay") hospital wards and nursing homes units around the world have the opportunity to participate and thus to monitor and benchmark their institutions' nutritional care in comparison to the international and the national dataset. Simultaneously, a continuously growing database develops containing information about structure, process and outcome indicators related to quality of care in both settings. Interested health care professionals

may become part of the project as a country representative. The database is available to scientists and country representatives who contribute to the project. Analysing these data provides the opportunity for a better understanding of differences between institutions within one country as well as cultural differences between countries. The vision of the nutritionDay organizers is: • that the data collected at nutritionDay will foster a better understanding of individual determinants of malnutrition and the impact of structural and procedural indicators on outcome and quality of nutritional care; • to further develop nutritionDay questionnaires according to emerging issues; • that nutritionDay will be adopted as a surveillance tool for monitoring malnutrition; • that nutritionDay data will facilitate a better understanding and discussion with policy makers and other stakeholders to the benefit of aged people taken care in nursing homes.

**Communication 2: NutritionDay in nursing homes – an overview and update of findings.** D. Volkert<sup>1</sup>, M. Streicher<sup>1</sup>, K. Schindler<sup>2</sup>, M. Mouhieddine<sup>2</sup>, S. Kosak<sup>3</sup>, M. Hiesmayr<sup>2</sup>, R. Roller-Wirnsberger<sup>4</sup>, C. Sieber<sup>1</sup> ((1) Institute for Biomedicine of Aging, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg, Germany; (2) Medical University Vienna, Vienna, Austria; (3) nutritionDay Office, Vienna, Austria; (4) Medical University of Graz, Graz, Austria)

**Introduction:** In 2007 nutritionDay was performed for the first time in nursing homes with the overall aim to increase the awareness of malnutrition in this setting and evaluate the current state of the nutritional status of nursing home residents using simple questionnaires. Meanwhile the project is well established in nursing homes around the world. Up to now 956 nursing home units with 29,635 residents from 21 countries have participated. Analysing these data provides the opportunity to better understand differences between institutions within one country as well as cultural differences between countries regarding nutritional care in nursing homes. **Objectives:** This presentation will give an overview of the group of participants up to now and will report latest results regarding the prevalence of malnutrition, determinants of malnutrition and the relation between nutritional status and outcome. **Discussion:** 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. Prevalence and poor outcome of malnutrition underline the importance of paying attention to nutritional problems and providing adequate nutritional care. **Conclusion:** The reasons for variation in the prevalence of malnutrition are presently not completely understood. Future analysis of the nutritionDay data will focus on the identification of main predictors of malnutrition in nursing home residents, taking all available influencing factors into account.

**Communication 3: Quality indicators of nutritional care in nursing homes – what does the nutritionDay contribute?** M. Streicher<sup>1</sup>, K. Schindler<sup>1,2</sup>, M. Mouhieddine<sup>2</sup>, S. Kosak<sup>3</sup>, M. Hiesmayr<sup>2</sup>, R. Roller-Wirnsberger<sup>4</sup>, C. Sieber<sup>1</sup>, D. Volkert<sup>1</sup> ((1) Institute for Biomedicine of Aging, Friedrich-Alexander-Universität Erlangen-Nürnberg, Nuremberg, Germany; (2) Medical University Vienna, Vienna, Austria; (3) nutritionDay Office, Vienna, Austria; (4) Medical University of Graz, Graz, Austria)

**Introduction:** The prevalence of malnutrition varies widely in nursing homes at national and international level, and differences in the quality of nutritional care are thought to contribute to this variation. Presently little is known about the role of specific quality indicators of nutritional care for the prevalence of malnutrition in nursing homes. **Objectives:** The aim is to present current knowledge about quality indicators of nutritional care and their relation to nutritional status and malnutrition, with focus on recent results from the nutritionDay project. **Discussion:** In the literature, different indicators are used to describe the quality of nutritional care. Quality indicators are assessed at institutional or ward level and differ substantially. Most commonly used quality indicators are "availability of dietician", "having a weighing policy" and "having a malnutrition screening policy". A significant relation to malnutrition is reported for "having a weighing policy", "having a care file that includes nutritional intake of each resident" and "having a chair or platform scale to weigh residents". In the worldwide nutritionDay in nursing home project, four quality indicators of nutritional care are assessed with standardized questionnaires: availability of a dietician, availability of a person responsible for nutritional care, weighing 1x/month and screening for malnutrition 1x/month. Of all participating nursing home units (n=863), 43% reported to have a dietician available and 50% a person responsible for nutritional care. Weighing 1x/month and screening for malnutrition 1x/month are reported by 72% and 49%, respectively. Univariate logistic regression analyses shows a significant correlation between the presence of a dietician, a person responsible for nutritional care, and weighing 1x/month and the prevalence of malnutrition in participating nursing home residents. The prevalence of malnutrition is, however, not significantly different between nursing home units having both, a nutritional expert (dietician or a person responsible for nutritional care) and a nutritional assessment policy (weighing or screening 1x/month) compared to those having either a nutritional expert or nutritional assessment policy and those having no nutritional expert and no nutritional assessment policy. **Conclusion:** Available information indicators of nutritional care and their relation to the prevalence of malnutrition is inconclusive. Future research is necessary to identify relevant indicators for the quality of nutritional care taking nutritional care characteristics as well as residents characteristics into account. Financial support: The nutritionDay project in general is supported by ESPEN (European Society for Clinical Nutrition and Metabolism). The nursing home part of the nutritionDay project is presently supported by a research grant

from Medical Nutrition International Industries (MNI)

## S12- DEVELOPING APPRECIATIVE RELATIONSHIP CENTRED PRACTICE IN CARE HOMES. B. Dewar (University of the West of Scotland, Lanarkshire, Scotland)

**Introduction:** A key aspect of international development in care homes focuses on the quality of life and care for residents and supporting the workforce to flourish in increasingly complex and changing environments (Tolson et al 2014). Care homes need support to respond to the pressures of this changing and challenging context. A crucial aspect in the success of meeting these pressures will be supporting leaders in care homes to develop visions and strategies that recognise the relational, complex and multidimensional nature of living and working in care homes (Tolson et al. 2014). This symposium shares how the conceptual underpinnings of appreciative inquiry and relationship centred care (My Home Life programme) have been used to support leadership development and practice development in care homes. **Objectives:** To provide an overview of the unique underpinning philosophy of The My Home Life (MHL) programme which is based on appreciative inquiry and relationship centred care. To describe the impact of this approach to the leadership practice of care home managers. To illustrate how the philosophy of appreciative inquiry and relationship centred practice have been used to develop research that is meaningful to practice in care homes. To address the relevance of the underpinning philosophy to future practice development and research in nursing homes. **Discussion:** This symposium of three papers will draw upon the expertise of work developed in the My Home Life Programme in Scotland. The My Home Life Programme (MHL) is a social movement in the UK which supports care homes to enhance the experiences of living, dying, visiting and working in care homes. The underpinning MHL vision ([www.myhomelife.org.uk](http://www.myhomelife.org.uk)) was developed from an extensive literature review about what older people 'want' and 'what works' in care homes for older people (NCHR&D, 2007). It comprises 8 themes that integrate evidence from both health and social care and has at its heart the concept of Relationship-Centred Care (RCC) (Nolan et al, 2006). RCC focuses on creating positive relationships for older people, relatives and staff. MHL has at its heart a unique philosophy for developing practice – appreciation, relationship centred and caring conversations. This symposium will present an overview and evaluation of the innovative leadership programme and will present 2 further research projects that have used this unique philosophy to enhance practice in care home environments. A thread running through all the presentations is the importance of an appreciative and relationship centred approach achieved through caring conversations to develop practice in care homes. **Conclusion:** Key questions will include the relevance, opportunities and challenges of using these approaches in the future development of care home research and practice.

**Communication 1: Overview and evaluation of the my home life leadership programme in nursing homes.** B. Dewar<sup>1</sup>, K. Barrie<sup>2</sup>, C. Sharp<sup>3</sup> ((1) University of the West of Scotland, Lanarkshire, Scotland; (2) University of Edinburgh, Scotland; (3) Research for Real, Edinburgh, Scotland)

**Background:** The philosophy underpinning the My Home Life Leadership support programme is unique and comprises an evidence base, appreciative inquiry and relationship centred care. Care home managers are helped to enhance their relational working practices by engaging in Caring Conversations (Dewar and Nolan 2013). Caring Conversations change the way people talk and helps to deliver more compassionate and dignified care. These underpinning philosophies will be described in this presentation together with the evaluation of the leadership support programme which enabled these philosophies to be brought to life in care homes. **Methods:** The Leadership Support Programme as an intervention is grounded in a firm appreciation of the crucial role of care home managers and the issues that they face. It aims to support and empower managers to create a positive relationship-centred culture in their care home where the quality of life of residents, relatives and staff can flourish. 117 care home managers in Scotland have participated in this 12 month leadership support programme. A multi-method approach to evaluation was adopted. The evaluation spans the period from January 2013-April 2015. Data were collected prospectively at the start, during and end of the programme. Raw programme data for each cohort took the form of: • Demographic data; • Two sets of questionnaire data, at the start and on completion of the programme to give an indication of the prevalence and distribution of specific perceptions of change; • Focus group discussions. **Results:** Quantitative and qualitative data will be presented. The baseline and post-programme questionnaire responses consider different aspects of the workplace environment including the managers' workload and feelings, managers' leadership and communication capabilities, staffing considerations, communication and relationships with staff, and finally the implications for residents and relatives. Qualitative data relate to themes of knowing more about me, knowing more about others and real changes in the way we do things around here. **Conclusions:** The progress made towards outcomes presented suggest that the programme resulted in new knowledge rather than just new processes, changed background assumptions on which all actions were based and stimulated numerous diverse ideas for change pursued by a range of people in the care home environment. All of the participants reported a range of relationship focused initiatives aimed at enhancing the quality of lives of those who work, live and visit care homes and that move closer to implementing the evidence base of My Home Life.

**Communication 2: Developing new care homes for the future through a relational and appreciative approach to understanding perspectives of residents, relative and staff.** K. Barrie<sup>1</sup>, F. Cook<sup>2</sup> (1) University of Edinburgh, Scotland; (2) Counselling and Psychotherapy. Practice Development Freelance Consultant, Scotland)

**Background:** This study sought to explore residents, families and staffs perspectives about care home life to inform the development of two new local authority care homes. This exploration was grounded in the extensive My Home Life evidence base, methodologies, tools and techniques. The study also sought to embed a focus on personal outcomes for care home residents, both to inform the replacement care home design and as a basis for identifying and improving outcomes going forward. **Methods:** Three Care Homes that had been part of the MHL leadership programme were selected to participate. The data collection drew upon principles of Appreciative Inquiry, which gives permission first to take the time to discover what's working well and is valued, and then to dream about what might be. Alongside observation, creative methods including emotional touchpoint stories, photo elicitation and collage were used with 11 residents, 14 staff and 15 relatives. These methods were chosen to extend opportunities for meaningful individual and group participation, helping participants articulate what mattered to them, triggering their imaginations and offsetting the risk of eliciting adapted preferences. Analysis drew upon the Senses framework (Nolan, 2004) which underpins relationship centred care and the Talking Points framework of outcomes important to older people living in care homes (Cook & Miller, 2012), whilst also allowing for a more open, inductive approach. **Results:** Using a variety of methods provided rich, contextualised and nuanced accounts of residents, staff and relatives current experiences of and aspirations for future care home lives highlighting similarities and differences in aspirations and the level of importance different stakeholders attach to specific issues. The study affirmed the salience of the Talking Points framework and demonstrated its alignment with the Senses, whilst emphasising the diversity encountered in people living in care home and the need to attend to personal outcomes. It also uncovered additional outcomes more akin to relational and collective understandings of wellbeing, and underscored interconnections between the physical and interpersonal environment. **Conclusions:** Consistent with recent calls to make the marriage between individual and communal dimensions of care home life more explicit (Becker, 2014), the study reinforces the importance and offers fresh ways of identifying personal, relational and collective elements from multiple perspectives.

**Communication 3: Using appreciative inquiry to develop caring conversations in the care home context.** T. MacBride<sup>1</sup>, B. Dewar<sup>2</sup> ((1) Lecturer, University of the West of Scotland ; (2) Professor of Practice Improvement, University of the West of Scotland, Lanarkshire, Scotland)

**Background:** Caring conversations are at the heart of the My Home Life Programme. A framework for caring conversations that promote compassionate and dignified care for all was developed in a hospital setting for older people by Dewar in 2011. This study sought to test out the relevance of this framework to care home settings and to develop an intervention that would help support ongoing learning and development about the way in which we talk. **Methods:** Using an appreciative inquiry approach the study worked with 37 staff, 20 relatives and 18 residents in one care home. Specific data generation methods included; observation of interactions between staff, families and residents to identify when interactions worked well and enhanced the relationship; and interviews with staff, residents and families about their experiences of interactions in the home. **Results:** The appreciative inquiry enabled the project team to explore the experiences of caring conversations within the care home from a range of different perspectives. There were many examples of positive interactions that mapped well to the caring conversations framework. Building on the knowledge of what works well staff developed local small 'tests of change' that enabled these good practices to happen more of the time. For example they implemented strategies to help them to notice and reflect on conversations, and developed their skills in finding out more about the resident as a person. **Conclusions:** A number of methods were used to promote exploration of caring conversations, for example reflecting on conversations in the workplace at the end of a shift. These methods in turn enabled staff to develop and use caring conversations more within the care home. The approach of appreciative inquiry proved not just a valuable approach to exploring good caring conversations and developing practice but formed the framework for an educational intervention that has been developed and could potentially be rolled out across other care homes. **References:** Cook, A. and Miller, E. (2012) Talking Points Personal Outcomes Approach: A Practical Guide, Joint Improvement Team, Edinburgh. Dewar B (2011) Caring about caring; an appreciative inquiry about compassionate relationship centred care, PhD, Edinburgh Napier University, Edinburgh accessed from <http://researchrepository.napier.ac.uk/id/eprint/4845>. Dewar B and Nolan M (2013) Caring about caring: Developing a model to implement compassionate relationship centred care in an older people care setting, International Journal of Nursing Studies, 50, 9, 1247-1258 DOI: 10.1016/j.ijnurstu.2013.01.008. NCHR&D Forum (2007) My Home Life: Quality of life in care homes – Literature review, London: Help the Aged (available at: [www.myhomelife.org.uk](http://www.myhomelife.org.uk)). Nolan, M., Brown, J., Davies, S., Nolan, J. and J. Keady. (2006). The Senses Framework: Improving care for older people through a relationship-centred approach. University of Sheffield. ISBN 1-902411-44-7. Nolan, M.R., Davies, S., Brown, J., Keady, J. and Nolan, J. (2004) Beyond person-centred care. International Journal of Older People Nursing in association with Journal of Clinical Nursing Vol. 13 (3a) 45-53. van Marrewijk, M. and Becker, H.M. (2004), 'The hidden hand of cultural governance: the transformation process of Humanitas, a community-driven organization providing cure, care, housing and well-being to elderly people' Journal of Business Ethics, 55(2) 205-214. Tolson D Dewar B and Jackson G (2014) Quality of Life and Care in the nursing home, Journal of the American Directors Association 03/14 15, 3, 154-7

**S13- SYNERGISTIC INTERPLAY OF PLACE, PROGRAM, AND PHILOSOPHY TO PROMOTE QUALITY OF LIFE (QOL) FOR NURSING HOME RESIDENTS: IMPLICATIONS FROM THE U.S. SMALL HOUSE MOVEMENT.** R.A. Kane (Health Policy and Management, University of Minnesota, USA)

**Overview:** Meaningful and lasting change in quality of Life (QOL) for Nursing Home (NH) residents is arguably a product of the environment and how it is used (Place), staff deployment, roles and capability (Program) and an emphasis on individual preference and life stories of each resident (Philosophy). Developing each component and creating the synergy requires attention over many years. Evaluation of achievements of both the desired resident-centered structure and process and the QOL goals is challenging and requires additional measurement. Paper 1 specifies these challenges further RA Kane and Cutler's research on the small-house NH the US as the example. The SH is a radical transformation including purpose-built small-scale residential physical environments, dramatic changes in staff hierarchy and roles, and a determined philosophy of individualized care as a process and QOL as a goal were implemented simultaneously. Hyer draws on her current and past development and evaluation of training in NHs to suggest approaches to developing the staff competencies needed for the SH-and other individualized models to flourish. RL Kane identifies practical strategies to maintain and improve QOC in individual NHs and within a system of quality management that gives equal weight to QOL and quality of care (QOC)—and without compromising individual resident autonomy and QOL goals. Time is reserved for active audience discussion of their experiences with these issues.

**Communication 1: Learning from Small-House (SH) Nursing Homes (NHS).** R.A. Kane<sup>1</sup>, L.J. Cutler<sup>2</sup> ((1) Professor, School of Public Health University of Minnesota, USA; (2) Research Associate Emeritus, University of Minnesota, LTC consultant, Stillwater, MN, USA)

**Introduction:** NHs in the US are typically large (median about 100 beds), hierarchical, and task-oriented. Environments are too large and constricted for residents to negotiate. Structured routines are the norm for meals, showers, medication administration, and activities. Early in the 21st century, Thomas proposed a Green House (GH)<sup>TM</sup> model of NHs, comprised of self-contained houses of 10 or fewer residents, each with a private room and bathroom; a new staff model centered around the certified nursing assistant (CNA) with advanced training and broadened roles; meals prepared and consumed in residential kitchens in each house; and an emphasis on QOL. The authors did a longitudinal, quasi-experimental evaluation of the first GH-project, 4-GHs on Mississippi retirement campus, finding strong benefits to resident QOL without decrement in Quality of Care (QOC). The Robert Wood Johnson Foundation supported technical assistance in a National GH-project and by 2013, more than 20 NH firms had adopted the trademarked GH-NHs, and a somewhat larger uncounted number of homes were operating SH-NHs without the trademark. In another study, the authors examined the effectiveness of the model for persons with dementia in three 5-house, 50-resident-projects situated in residential neighborhoods, compared to dementia residents in 3 traditional nursing homes on campuses of the same firm. The SH-model had benefits in maintaining function longer and minimized behavior challenges, and integration of residents with dementia worked in those environments. In a 2-year multifaceted study in 2012-1013, we identified all SH-projects in the US (47 projects including GH project, ranging from 1 to 22 houses) and described them according to vision, development and business case; regulatory obstacles; physical design; targeted clientele; staff roles for professionals; staff roles for CNAs; food management; safety issues; incorporation of rehabilitation; dementia care; cross-house variations; obstacles and facilitators of development; costs and revenues; and future development. We conducted 10 case studies of SH projects in 8 states, and at each prepared a photographic essay. **Discussion:** SH-NH projects, including those with the GH trademark, varied greatly. Most were challenged to instill and maintain the vision of an empowered direct care staff with broadened roles, and to recruit nursing and other professional staff who must support those roles and model and coach the CNAs. Implementation of the SH-model as envisaged was positively related to the scale of the project (i.e. number of houses) and negatively related to being part of a campus with an existing NH. SH-NHs failed to collect cost data in a way that permits breaking down costs and outcomes by house. Persistent issues in SH development, corroborated by the recent site-visits and 10 case studies, include: hesitation of licensed nurses and therapists to accept risk-taking among residents or to share knowledge or charts with CNAs; difficulty in truly individualizing care routines or activities; managing meal preparation without consuming too much CAN time; developing in-service training suited to the new model; supporting individualize resident activities outside the individual house and the broader community; and avoiding "institution creep" as projects mature. The CNA role may have become too comprehensive and new specialized roles may need to be created. **Conclusions:** Physical environments (including design, furnishings, and fixtures) shape behavior of staff, residents and visitors in desired ways. The importance of environment, including privacy, should no longer be discounted. Promoting resident QOL also requires identifying and encouraging the desired staff competencies for managers, clinicians and direct caregivers like CNAs. g systems that more fully promote the QOL goals. SH-NH's challenge every role and practice established in the highly regulated US system.

**Communication 2: Preparing staff for contemporary nursing home care.** K. Hyer (Health Policy & Director, Florida Policy Exchange Center on Aging, University of South Florida, USA)

**Introduction:** Leaders and front line workers need to acquire new skills to operate competently in a model similar to SH-NHs. Some states have mandated particular training

for various kinds of personnel on various subjects (e.g. dementia care). Research on basic and continuing education offers some guidance for how to proceed, but little is known about preparing a labor force to lead in a transformed NH, or how such educational effects persist in practice situations. **Objectives:** Review of practice and research on developing staff capacity for NHs, including state-mandated efforts in the US (especially in Florida) and application of those lessons to the challenges of creating a contemporary NH dedicated to individualized care dedicated to resident QOL and normalized living. **Discussion:** Progress has been made in developing evidence-based curriculum both in-person and on-line for NH staff at all levels. Trainees have been shown to retain knowledge and skills months after well-prepared training. Attitudinal change is harder to achieve via training. Job analysis is needed. It appears that leaders will need to learn coaching and modeling skills to facilitate CNAs. Unlicensed staff will need a wider range of communication, assessment and problem-solving skills to advance QOL while also developing firmer clinical skills to make appropriate observations in change in condition. State-mandated curriculum may play an important role and train-trainer models may be needed to permit core training to occur within the actual work teams. **Conclusions:** Traditional training must be re-enforced with job redesign and structure, including tools that guide and support desired staff behavior.

**Communication 3: The LTC Dyad: Quality of Life (QOL) and Quality of Care (COC).** R.L. Kane (University of Minnesota School of Public Health, USA)

**Introduction:** For decades, policy-makers have measured and tried to improve QOC in NHs. More recent efforts have given prominence to QOL, and some direct QOL measures are now part of the federal NH Data set. Insufficient attention has been given to the relationship between QOL and QOC across the LTC spectrum of LTC and how QOC might be essential to achieving QOL in NHs. **Objectives:** Discuss the relationship between QOC and QOL. **Discussion:** QOL and QOC are both essential to effective LTC. Achieving them requires shared goals and expectations. Older people's need for LTC arises from frailty, which implies suboptimal levels of QOL and special challenges for QOC. The general goal of LTC should be to delay the decline in both areas, which is difficult to achieve because the trajectory in the absence of good care is never assessed. Measurement is necessary to support good practice; areas unassessed are often unattended. Measurement of QOC has received far more attention than that of QOL. However, reliable QOL information can be obtained from the large majority of LTC users. QOC should include active attention to changes in client status; LTC personnel should attend to early signs of status change and primary care clinicians should respect these often vague recognitions of status change and investigate them. The goals of QOC and QOL may appear in conflict, especially around issues of safety and autonomy, but if the desires of the client are used as the basis for judgment, this conflict usually disappears; most people want the right to take recognized risks; and, while no one advocates neglect, much of LTC assumes a level of physiological control that may be in conflict with a good life. Think of dietary control. These principles should apply across the spectrum of LTC. **Conclusion:** The goal for LTC quality should be parity for both essential attributes: QOL and QOC.

**S14- IMPROVING QUALITY IN NURSING HOMES USING THE INTERRAI ASSESSMENT SYSTEM.** J.P. Hirdes (School of Public Health and Health Systems, University of Waterloo, Canada)

**Communications 1: Evaluating the resident experience in nursing homes using the interRAI self-reported quality of life survey.** A. DeClercq (Faculty of Social Sciences, KU Leuven, Belgium)

**Background:** In Flanders (Dutch speaking part of Belgium), the interRAI Self-reported Quality of Life (SQOL) survey is the mandatory instrument to measure quality of life in nursing homes. **Methods:** Every year, one third of nursing homes are visited by an independent interviewer, who interviews cognitively competent residents with the interRAI SQOL instrument. In 2014, 6,949 residents were interviewed in 250 nursing homes. **Results:** Residents are very satisfied as to 'privacy', 'safety/security' and 'respect', with average scores of 4.64, 4.53 and 4.28 (5 is the maximum score). 'Making daily decision/autonomy', 'food/meal', 'comfort', 'responsive staff' and 'information about the nursing home' on average score between 3.59 and 4.20. 'Personal relationships' (2.66), 'activity options' (2.99) and 'staff-resident bonding' (2.98) score lower. **Conclusion:** Residents indicate they have a high quality of life. They are very happy as to privacy, safety and respect. The environment and the care received also are evaluated positively. There is room for improvement as to personal relationships with other residents and with staff, and involvement in activities, there is room for improvement.

**Communication 2: Using interRAI Clinical Assessment Protocols (CAPs) to Inform Care Planning in Nursing Home Settings.** G. Heckman (School of Public Health and Health Systems, University of Waterloo, Canada)

**Background:** Nursing homes in several countries have adopted interRAI assessment as the standard comprehensive assessment system for several sectors of health care, including nursing home settings. For example, over 3.5 million interRAI assessments have been completed on over 500,000 Canadians in nursing homes and complex continuing care hospitals. These assessments can be used to inform various aspects of clinical decision making related to care planning, outcome measures and quality improvement. **Methods:** Data from 847,664 interRAI assessments completed in nursing homes, home care, and complex continuing care hospitals were used to examine the CAP triggering rates for persons with 11 different neurological conditions (e.g., Alzheimer's and related

dementias, Parkinson's disease, Multiple Sclerosis) in the continuum of care. In addition, a panel of neurologists, geriatricians and health services researchers examine the care planning guidelines associated with these CAPs for their applicability to persons with neurological conditions. **Results:** There are substantial variations in care planning needs within and between groups of persons with different neurological diagnoses. For example, the CAP related to behaviour disturbance is triggered most often for persons with ADRD and Huntington's Disease and least often in persons with Multiple Sclerosis or no neurological conditions in nursing homes. However, the rates for triggering this CAP for persons with ADRD alone are lowest in home care and more than double that rate in complex continuing care hospitals and nursing homes. While the review of CAPs by the panel of experts suggested some minor revisions to the interRAI CAPs, the overall consensus was that these protocols provided useful clinical guidelines to supporting care planning development for persons with neurological conditions across the continuum of care. **Conclusions:** interRAI's CAPs are useful tools to inform clinical decision-making in diverse care sections for persons with neurological conditions. Discussion of CAP results should be a standard part of case conferences conducted by multidisciplinary teams. In addition, training to introduce and sustain on-going use of interRAI assessments should include education regarding the interpretation and application of CAPs in clinical practice. Finally, the specifications for software used to gather interRAI assessment data should include the capacity to output CAP related information in a user-friendly manner.

**Communication 3: Use of interRAI quality indicators to improve quality of care in nursing homes: The seniors quality leap initiative.** J.P. Hirdes<sup>1</sup>, J.N. Morris<sup>2</sup> ((1) Professor, School of Public Health and Health Systems, University of Waterloo, Canada; (2) Hebrew Senior Life, Boston, MA, USA)

**Background:** The widespread use of interRAI assessments in nursing homes has usually been undertaken as a means to improve the quality of care in those settings by enhancing approaches to identifying needs and developing person-centred care plans. However, these assessment data may also be aggregated in order to benchmark the quality of care using risk-adjusted quality indicators of diverse outcomes of care. interRAI Quality Indicators are used by the Canadian Institute for Health Information to provide nationwide information about the quality of long term care at the facility level: for 9 different indicators (e.g., restraint use, falls, worsening pressure ulcers). **Methods:** The Seniors Quality Leap Initiative (SQLI) is a network of 9 nursing home providers in Canada and the United States that was established in order to collaboratively improve quality of care through joint initiatives targeted at specific interRAI quality indicators. SQLI homes meet by teleconference and in person to obtain quarterly reported performance with respect to 10 risk adjusted quality indicators. Benchmark comparisons were made within and between homes over time and against US state distributions. In addition, SQLI homes developed and implemented joint interventions aimed at improving care in specific domain areas. **Results:** Patterns of change in adjusted QI rates varied between SQLI homes and rates of improvement also varied by quality indicators. While most homes improved in one or more indicators, decline in performance also occurred in some cases. No single organization performed best or worst in all indicators. Potentially inappropriate use of anti-psychotic medications was identified as a priority issue and it was an indicator where improvement in quality was pervasive across SQLI homes. **Conclusion:** Public reporting on quality indicators has begun to be an important component of efforts to improve quality, accountability, and transparency in the nursing home sector. The SQLI experience provides a model for how homes can participate in cross-national collaborative efforts to improve quality using standardized interRAI assessment data and risk adjusted quality indicators.

## ORAL COMMUNICATIONS

**OC1- A NATIONAL STUDY OF QUALITY OUTCOMES IN NURSING HOMES WITH INCREASING REHABILITATION SERVICES.** M.J. Lepore<sup>1</sup>, N.E. Leland<sup>2</sup>, T.H. Chan<sup>3</sup> ((1) Senior Health Policy & Health Services Researcher RTI International Aging, Disability & Long-Term Care Program, Adjunct Assistant Professor Brown University Department of Health Services, Policy, & Practice, USA; (2) Assistant Professor, University of Southern California, USA; (3) Division of Occupational Science and Occupational Therapy Herman Ostrow School of Dentistry & Davis School of Gerontology, Los Angeles, CA, USA)

**Introduction:** Nursing homes in the United States are increasingly serving short-stay rehabilitation patients for whom payment is substantially more generous than that for long-stay residents. Previous research shows increasing the number of short-stay rehabilitation patients enhances a nursing home's financial performance, which may have beneficial spillover effects for long-stay residents because facilities have more resources. However, studies have also shown increased attention to the needs of short-stay rehabilitation patients among nursing home providers, which may have negative effects for long-stay residents as nursing homes may be distracted from providing care to long-stay residents. Little is known about the impact of the shift toward more rehabilitation services within a nursing home on the quality of care for long-stay residents. Thus, this study examines the effects of nursing homes increasing their rehabilitation services on long-stay resident outcomes. **Objectives:** This retrospective observational cohort study employed panel multivariate regression analyses using facility fixed-effects models (2007 to 2010) to examine the relationship between increasing the proportion of rehabilitation days in nursing homes and changes in publicly-reported quality measures for long-stay residents, including the proportions of residents with daily pain, worsening pressure ulcers, and functional decline. Publicly available data on 15,788 nursing homes certified

by the Centers for Medicare & Medicaid Services were used to conduct this study. Of these nursing homes, facilities had to be present in the dataset all four years and report on the primary outcomes in at least two of those years, for a final sample of 12,178 nursing homes. **Discussion:** Among the 12,178 nursing homes in the cohort, increasing the proportion of rehabilitation days in a nursing home is significantly associated with improved quality outcomes for long-stay residents. Specifically, increases in the proportion of rehabilitation days is significantly associated with decreases in the proportion of long-stay residents with daily pain ( $p < .01$ ), decreases in the proportion of long-stay residents experiencing a decline in performing ADLs ( $p < .05$ ), and decreases in the proportion of long-stay residents with pressure ulcers ( $p < .05$ ). **Conclusion:** Quality outcomes for long-stay residents appear to improve in nursing homes that increase rehabilitation days. These findings help dispel concerns that heightened nursing home attention to short-stay rehabilitation patients may result in reduced quality for long-stay residents, while also reinforcing prior research indicating that quality tends to be superior in nursing homes with greater financial resources. Results suggest that policies which enhance nursing home payments will foster better quality outcomes. Findings also can help nursing home providers gauge how to successfully balance diverse service offerings for optimal value (i.e., good quality outcomes and strong financial performance), and can help inform future research on nursing home reimbursement policies. Findings of this study also motivate research on how different payment policies and reimbursement rates may influence nursing homes to increase rehabilitation services, and on how different balances of long-stay residents and short-stay residents relate to nursing home performance on different measures, including measures of long-stay and short-stay resident outcomes.

**OC2- PREVALENCE OF CHRONIC WOUNDS AND STRUCTURAL QUALITY INDICATORS OF CHRONIC WOUND CARE IN DUTCH NURSING HOMES.** A.A.L.M. Rondas<sup>1,3</sup>, J.M.G.A.A. Schols<sup>2,3</sup>, E.E. Stobbering<sup>4</sup>, R.J.G. Halfens<sup>3</sup> ((1) De Zorggroep, Venlo, The Netherlands; (2) Maastricht University, CAPHRI, Department of General Practice, The Netherlands; (3) Maastricht University, CAPHRI, Department of Health Services Research, The Netherlands; (4) Maastricht University, CAPHRI, Department of Medical Microbiology, the Netherlands)

**Introduction:** It was the aim to measure the prevalence of (infected) chronic wounds in Dutch nursing homes and to explore which signs and symptoms are used to diagnose infected chronic wounds. Moreover, it was to determine which structural quality indicators related to chronic wound care at ward and institutional level were fulfilled. **Method:** In April 2012, as part of the annual National Prevalence Measurement of Care Problems of Maastricht University (LPZ), a multi-center cross-sectional point-prevalence measurement was carried out together with an assessment of relevant care quality indicators. **Results:** The prevalence was 4.2%. 16 out of 72 (22%) chronic wounds were considered to be infected. Increase of exudate (81.3%; n=13), erythema (68.8% ; n=11), pain (56.3%; n=9) and wound recalcitrance (56.3%; n=9) were considered to be diagnostic signs and symptoms of a chronic wound infection. Although at institutional level most quality indicators were fulfilled, at ward level this was not the case. **Discussion:** Despite the relatively low number of residents, we consider our population as representative for the nursing home population. It may be an advantage to appoint specific ward nurses and to teach them specifically on knowledge and skills concerning chronic wounds.

**OC3- ADVANCE DIRECTIVES, DEMENTIA AND END OF LIFE IN NURSING HOMES.** M. Droz Mendelzweig<sup>1</sup>, N. Long<sup>2</sup> ((1) anthropologist PhD - Research & Development Centre on Health & Aging, Institut et Haute Ecole de la Santé La Source, Lausanne, Switzerland; (2) psychologist clinician, Etablissements Hospitaliers de la Côte, Réseau Santé de la Côte, Morges-Aubonne, Switzerland)

**Background:** In 2013, Switzerland implemented a revised article in the law governing the protection of vulnerable adults. One direct implication this act has on nursing homes' working procedures is the enforcement of a formal healthcare plan for every resident entering the institution. Advance directives (AD) and informed decision about end-of-life care stand at the core of the concern. Focusing on residents deprived of their capacity to offer an opinion, our study investigated how nursing homes' healthcare professionals scrupulously observe the residents' wills, while knowing that AD are not commonplace use among elders. **Methods:** A questionnaire has been submitted to every professional in charge of palliative care in each of the Canton of Vaud's nursing homes (N=121, number of replies=69). The questions aimed to gather details on the most frequently mentioned intentions put forward by residents, and on the institutional measures taken by the staff during their end-of-life care. Collaboration procedures among the staff and between staff and healthcare proxy aiming to determine a decision making process including the residents and their relatives was a second important aspect taken into consideration in the study. Qualitative interviews (N=10) completed the data on the institutions' specific guidelines for end-of-life care, on the principles governing these guidelines and on concrete aspects of healthcare professional collaboration with the relatives and with the physician in the midst of accompanying the elder in his end-of-life. **Results:** Replies show that procedures for end-of-life care do exist and are implemented in nursing homes. Appointment of a staff member specifically in charge of palliative care on one hand, and elaboration of "homemade" forms aimed to collect indications about the residents and their family wishes on the other, are the main steps taken by nursing homes following the rise in public concern for end-of-life conditions, in particular in situations of dementia. Healthcare professionals' capacity to adapt the end-of-life healthcare planning to each specific situation, through an ongoing dialogue with the residents and their relatives, is the major characteristic of nursing home settings. Different types of relatives' investment in this stage of the life impacts on the decision making process as much as the residents'

cognitive impairments. **Conclusion:** Data show that healthcare professionals' feeling of confidence in the accordance of their interventions with the demented residents' wills is largely dominating their perceptions. The spirit of the law is being respected, although evidence points to frequent gaps between its application and some legal requirements. An inherent contradiction stems from the intersection of the law with the ethic of end-of-life care in situations of dementia: encouragement to establish AD requires precise, formalized and written data, while nursing home professionals' experience in end-of-life care calls for a capacity to reconsider the residents' wills, by keeping an open dialogue with the patient and with his relatives, till the very last moment of life. One important finding raised by some palliative care nurses during the qualitative interviews is their observation of an evolution in some residents' attitudes towards their will to die between the moment of entrance in the institution and their state of health's decline. The closer they get to death, the more they show a willingness to be cared for and kept alive. Facing this tension, two major types of nursing homes emerge: one encouraging a narrative approach in relation to the demented resident, building on a collaborative and rather informal involvement of all staff members in the collection of information worth considering for his care. Another approach follows the conviction that introducing systematic procedures will progressively improve the nursing home ability to behave in accordance with the legal requirements.

#### OC4- INCREASE OF INCONTINENCE AND CARE DEPENDENCY IN NURSING HOME RESIDENTS WITH DEMENTIA: A 2-YEAR PANEL STUDY. S. Schüssler, C. Lohrmann (Institute of Nursing Science, Medical University of Graz, Austria)

**Background:** Dementia is a risk factor to develop care dependency and incontinence, often necessitating nursing home admission when care at home is no longer possible. Internationally, more than 50% of nursing home residents have dementia at different stages. Research examining changes in incontinence and care dependency in nursing home residents with dementia over time are lacking but would be critical to identify the extent of such changes. The objective of this 2-year panel study (2012-2014 with 5 measurements in 6-month intervals) was to explore changes in incontinence (urinary-, fecal- and double incontinence) and care dependency in nursing home residents with dementia. **Methods:** 9 Austrian nursing homes took part in the study. In total, 178 dementia residents completed all 5 measurements. Trained nursing professionals collected data at each measurement point with the International Prevalence Measurement of Care Problems questionnaire, the Care Dependency Scale and the Mini-Mental State Examination 2. **Results:** Over 2 years, the results demonstrated that care dependency of residents with dementia increased significantly in all 15 items of the Care Dependency Scale, with the highest increase in residents' day-/night pattern. Residents in the severe stage of dementia experienced the highest increase of care dependency. Regarding incontinence, residents with dementia showed a significant increase in urinary incontinence from 73.1% to 85.4%, fecal incontinence from 34.8% to 52.2% and double incontinence from 32.7% to 49.4%. Residents in the moderate stage of dementia showed the highest increase in continence (urinary: from 67.0% to 86.5%; fecal: from 20.0% to 43.6%; double: from 17.3% to 42.3%). **Conclusion:** The results of this study highlight that nursing home residents with severe dementia have the highest increase of care dependency. The highest increase of incontinence was shown by residents with moderate dementia. It is therefore suggested to improve continence care, particular in residents at the moderate stage, and to stabilize care dependency in all stages of dementia to avoid a too rapid progression of care dependency.

#### OC5- PEOPLE WITH DEMENTIA IN NURSING HOME RESEARCH: A METHODOLOGICAL REVIEW OF THE IDENTIFICATION OF THE STUDY POPULATION. R. Palm<sup>1,2</sup>, S. Jünger<sup>3</sup>, S. Reuther<sup>1,2</sup>, C.G.G. Schwab<sup>1,2</sup>, M.N. Dichter<sup>1,2</sup>, B. Holle<sup>1,2</sup>, M. Halek<sup>1,2</sup> ((1) German Centre for Neurodegenerative Diseases, Witten, Germany; (2) Witten/Herdecke University (UWH), Faculty of Health, School of Nursing Science, Witten, Germany; (3) Hannover Medical School, Institute of General Medicine, Hannover, Germany)

**Background:** There are various definitions and diagnostic criteria for dementia, leading to discrepancies in case ascertainment in both clinical practice and research. The quality of a dementia diagnosis in nursing homes is reported to be suboptimal: Studies from Germany show that between 30% and 40% of people with dementia living in nursing homes are not accurately diagnosed; for these residents, either an etiological differentiation is missing or there is an inappropriate diagnosis [1-3]. Therefore, researchers must develop a sampling strategy that precludes inconsistencies while remaining both reliable and practicable. **Objectives:** In this study, we reviewed the different definitions, approaches and measurements used to operationalize dementia in health care studies in German nursing homes. **Methods:** We conducted a systematic search of the MEDLINE and CINAHL databases to identify pre-2014 studies conducted in German nursing homes that focused on residents with dementia or cognitive impairment. In- or exclusion of studies were consented by all authors; data extraction was independently carried out by two authors (RP, SJ). The studies' sampling methods were compared with respect to their inclusion criteria, assessment tools and methods used to identify the study population. **Results:** Forty-five out of 484 articles met our inclusion criteria. Four ways of defining study participants were identified: a diagnosis that was evaluated during the study; a recorded medical dementia diagnosis; a recorded medical diagnosis with additional cognitive screenings; or using screening test exclusively. The descriptions of the diagnostics to assess dementia were not fully transparent in most of the studies with respect to either a clear reference definition of dementia or applied diagnostic criteria. If reported, various neuropsychological tests were used, mostly without a clear rationale for their selection. The Mini-Mental-State-Examination was used most often, but different cutoff values for the inclusion and staging of dementia were applied. The persons who

administered the test had various levels of education and qualification. **Conclusions:** Pragmatic considerations often determine the sampling strategy; they also may explain the variances we detected in the different studies. If a recorded dementia diagnosis is used as an inclusion criterion, a selection bias caused by false positives or negatives cannot be ruled out and must be considered when study results are discussed. Cognitive or other screening tests cannot substitute for a criteria-based diagnosis. However, in health services research studies it may not always be possible to evaluate a diagnosis because of either resource constraints or ethical issues related to the vulnerable population of nursing home residents. The need for a criteria-based diagnosis must be carefully considered during study planning. If a diagnosis cannot be evaluated based on either ICD or DSM criteria, the study population may not be reported as having dementia. If the study explicitly targets dementia, especially a specific type of dementia, efforts should be undertaken to assure the conformity of the diagnosis criteria. [1] Brune-Cohrs U, Juckel G, Schröder SG (2007) Qualität der Demenzdiagnostik im Seniorenheim. *Z Arztl Fortbild Qualitatssich* 101, 611-615. [2] Seidl U, Lueken U, Volker L, Re S, Becker S, Kruse A, Schröder J (2007) Nicht-kognitive Symptome und psychopharmakologische Behandlung bei demenzkranken Heimbewohnern. *Fortschr Neurol Psychiatr* 75, 720-727. [3] Schäufele M, Köhler L, Hendlmeier I, Hoell A, Weyerer S (2013) Prävalenz von Demenzen und ärztliche Versorgung in deutschen Pflegeheimen: eine bundesweite repräsentative Studie. *Psychiatrische Praxis* 40, 200-206.

#### OC6- A VALIDATION OF THE NURSE-PATIENT-INTERACTION SCALE (NPIS). G. Haugan (Associate Professor, Sør-Trøndelag University College/Norwegian University of Science and Technology, Norway)

**Aims:** The aim of the present study was to test the psychometric properties of the Nurse-Patient-Interaction Scale among cognitively intact nursing home (NH) patients. **Background:** NH patients' relations to the staff nurses has been found to be a powerful influence on patient's thriving and well-being. The Nurse Patient Interaction Scale (NPIS) was developed to identify important characteristics of NH patients' experiences of communicating and interacting with the staff nurses. The NPIS covers domains that identify essential relational qualities stressed in the nursing care literature. The NPIS comprises 14 items; examples of items include having confidence in the staff nurses, experiences of being respected and recognized as a person, being listened to and taken seriously, influencing feelings of well-being, satisfaction, meaningfulness, feeling cared for and included in decisions, as well as thriving. The NPIS is a 10-points scale ranging from 1 (not at all) to 10 (very much); higher numbers indicate better nurse-patient interaction. **Methods:** In a cross-sectional design, a sample of 202 cognitively intact NH patients in 44 different Norwegian NHs responded to the NPIS. The statistical analyses were carried out using LISREL 8.8 and Structural Equation Modeling (SEM). Exploratory factor analysis and correlational analyses were applied by means of SPSS version 21 (IBM). **Results:** Explorative and Confirmative Factor Analysis (CFA) supported a one-dimensional structure. Reliability was strong, examined by intern consistency (Cronbach's alpha 0.91), and composite reliability ( $\alpha_c=0.82$ ). CFA revealed factor loadings from 0.40-0.79, and a good fit to the data;  $\chi^2$  (92.32,  $df=77$ ;  $p$ -value=0.11236), RMSEA (0.032), NFI (0.97), NNFI (0.99), CFI (1.00), GFI (0.90), AGFI (0.86) and SRMR (0.045). However, item NPIS10: "I often get hurt or sad from how the nurses interact with me" ( $\lambda=0.43$ ;  $R^2=0.19$ ; the item is reversed) and item NPIS14: "Interaction with nurses is the most important to my thriving" ( $\lambda=0.40$ ;  $R^2=0.17$ ) displayed somewhat poor loadings and multiple squared correlations ( $R^2$ ) indicating these items to be less relevant. This might be because these items are too obvious. Item NPIS10 displayed a mean=8.29, indicating that to some extent the nurses hurt patients' feelings, while item NPIS14 (mean 8.86) revealed the highest mean-score displaying that patients' interaction and relationships to staff nurses are extremely important for the NH patients' thriving. **Conclusion:** The Nurse-Patient-Interaction Scale demonstrated sound psychometric properties. NH patients' experiences of the nurse-patient interaction is vital to patients' thriving and well-being. Therefore, access to a reliable questionnaire measuring NH patients' experience of the nurse-patient interaction is fundamental for patients' well-being and care quality. Perceived nurse-patient interaction has shown significant influence on NH patients' experience of hope, meaning-in-life, self-transcendence, anxiety and depression – all of which found to be crucial for well-being.

#### OC7- A STAFF DEVELOPED INTERVENTION FOR REDUCING AGITATION IN RESIDENTS LIVING WITH DEMENTIA. N. Douglas-Smith<sup>1</sup>, E. Edgerton<sup>1</sup>, D. Tolson<sup>2</sup>, B. Dewar<sup>3</sup> ((1) School of Media, Culture and Society, University of the West of Scotland, Paisley, Scotland; (2) Alzheimer Scotland Centre for Policy and Practice, University of the West of Scotland, Hamilton, Scotland; (3) School of Health, Nursing and Midwifery, University of the West of Scotland, Hamilton, Scotland)

**Background:** 62-82% of residents living with dementia experience feelings and behaviours related to agitation (Joosse 2012). Due to the nature of dementia it can become increasingly difficult for those living with the condition to communicate feelings of agitation and this can negatively affect quality of life. Therefore any intervention that reduces agitation in residents is likely to improve the quality of life of many residents. Pharmaceutical therapies are frequently used to treat agitation however these are often expensive, have limited success and are often associated with negative side effects (Corbett 2014). There is a need for alternative, cost-effective interventions for managing agitation. For example environmental interventions in which the physical environment is adapted or modified. An additional area of concern in dementia care home environments is that staff working in these settings are at a higher risk of burnout (Duffy, Oyebo, & Allen 2009) and high staff turnover rates are associated with poorer quality of care outcomes

(Manthorpe 2014). Staff also have a key role in maintaining environmental interventions within care homes and research has shown that barriers such as low staffing levels, high workloads and lack of faith in an intervention impact on an interventions success (Lawrence, Fossey, Ballard, Moniz-Cook, & Murray, 2012). Involving staff in developing and designing an intervention could prove beneficial for an interventions success in reducing agitation in residents living with dementia. This is an emergent study and consists of two main objectives: • To develop an environmental intervention with staff members to reduce agitation in residents using three different methods; focus groups, questionnaires and volitional help sheets. • To examine the effect of staff involvement on an interventions success by delivering the intervention in two modes; as a collaborative intervention and as an imposed intervention across two separate care homes. This paper will focus solely on the first objective around the process of developing an environmental intervention with staff members which will be completed by August 2015. **Methods:** This study employs three methods sequentially to develop an environmental intervention with care home staff. Firstly, 18 focus groups have been conducted with 31 members of staff with various roles from both day and night shifts. These focus groups utilised a photo elicitation technique to produce initial ideas around staff perspective of the physical environment within a particular dementia care unit. The themes are being developed for the second method, the questionnaire, where staff will be asked to complete a questionnaire ranking the interventions based loosely on the Theory of Planned Behaviour (Ajzen 1991). This will produce a staff consensus for the final intervention chosen for the dementia unit. The third method being employed in the development of the intervention is a volitional help sheet. The volitional help sheet will allow staff members to consider potential difficulties with the intervention and solutions regarding how to overcome these difficulties before it is implemented. This method will be used as an educational tool to inform all staff members of the final intervention and to ensure all staff are aware of how to carry out the intervention. **Results:** The data has been analysed using Thematic Analysis (Braun and Clark 2006). The initial themes emerging from the focus groups include nature, senses, structure of the unit, reminiscence, decoration and corridors. These themes are currently being utilised to develop the questionnaire as described in the methods section. The results from the questionnaire and volitional help sheet will be available from August 2015. **Conclusion:** These methods are being utilised to allow staff to contribute to the development of a new intervention within a dementia unit and will allow them to generate and select ideas as well as preparing staff for implementing the intervention. The methods used here are appropriate for conducting research within real world settings such as care homes. The focus groups lasted only 15 minutes to ensure minimal disruption to staff working hours and both the questionnaire and volitional help sheet are expected to last no longer than 15 minutes. This is an important consideration when working with care home staff during working hours. The results from this stage of the study will then be employed to examine the second objective of the overall study outlined above. **References:** Ajzen I. (1991). 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**OC8- PNEUMONIA AND INTAKE PROBLEMS: INHERENT TO ADVANCED DEMENTIA?** S.A. Hendriks<sup>1</sup>, M. Smalbrugge<sup>1</sup>, A.B. van Gageldonk-Lafeber<sup>2</sup>, F. Galindo-Garre<sup>3</sup>, M. Schipper<sup>4</sup>, C.M.P.M. Hertogh<sup>1</sup>, J.T. van der Steen<sup>1</sup> ((1) *Department of General Practice & Elderly Care Medicine and EMGO+ Institute for Health and Care Research, VU University Medical Center, Amsterdam, The Netherlands*; (2) *Infectious diseases, Epidemiology and Surveillance, Centre for Infectious Disease Controls, National Institute for Public Health and the Environment (RIVM), Bilthoven, The Netherlands*; (3) *Department of Epidemiology and Biostatistics, VU University Medical Center, Amsterdam, The Netherlands*; (4) *Department of Statistics, Mathematical Modelling and Data Logistics (SMG), National Institute for Public Health and the Environment (RIVM), Bilthoven, The Netherlands*)

**Backgrounds:** Understanding the clinical course of dementia is important, underpinning prognostication, advance care planning and palliative care interventions. However, knowledge about the clinical course of dementia is limited. Therefore, 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:** The median BANS-S score at baseline was 13 (range 7 to 28) and residents in all stages of dementia (range of BANS-S scores was 7 to 24) developed pneumonia and intake problems. 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). **Conclusion:** Risk of pneumonia and risk of intake problems is not limited to advanced dementia. Moreover, mortality risk depends more on the development of pneumonia and intake problems than on dementia severity. Therefore, timely and ongoing discussion and providing accurate information about the course of dementia and related health problems is important to help patients and families prepare for the future. An active focus on palliative care needs and advance care planning may benefit patients in all stages of dementia.

**OC9- PROMOTING INFORMED DECISION MAKING ON GOALS OF CARE AT THE END OF LIFE: A STUDY UPDATE.** K. Brazil<sup>1</sup>, G. Carter<sup>1</sup>, M. Clarke<sup>1</sup>, K. Froggatt<sup>2</sup>, P. Hudson<sup>1</sup>, G. Kemohan<sup>3</sup>, D. McLaughlin<sup>1</sup>, P. Passmore<sup>1</sup> ((1) *Queen's University of Belfast, Ireland*; (2) *International Observatory on End of Life Care, Lancaster University, United Kingdom*; (3) *University of Ulster, United Kingdom*)

**Background:** The patient's right to self-determination has become a key ethical principle in dementia care. Advance Care Planning (ACP) is in line with the principle of self-determination where an ACP document is a written or verbal record of a person's choices about their future medical care. Regrettably, given the relative importance of ACP for people living with dementia, the available research demonstrates that the provision of ACP for persons living with dementia is poor. The purpose of this presentation is to provide a status report on a study to evaluate the application of a best-practice ACP model for individuals living with dementia in a sample of nursing homes in Northern Ireland, United Kingdom. **Method:** This multiple method study includes quantitative and qualitative components. In the quantitative component, we performed a cluster randomized trial where 26 nursing homes were randomly assigned (13 facilities per treatment) to ACP with usual care (intervention group) versus usual care alone (control group). In the qualitative component of the study, we evaluated two elements; staff perceptions on the considerations on implementing ACP in nursing homes; and understanding the experience of being a substitute decision maker for a family carer. **Results:** At the time of the presentation for the Nursing Home Research International Working Group. All 26 Nursing Homes will have completed their participation in the data collection phase of the project. We will be in a position to report on overall study activities. This will include; facility engagement; family recruitment strategies; identified outcome measures; elements that comprised the ACP intervention (a trained nurse facilitator, family education material, family conference, documentation of ACP decisions, and orientation directed towards General Practitioners and nurse home staff); and the identification of challenges and resulting solutions associated with running a large complex study intervention in the nursing home environment. **Conclusion:** This event will represent the first public presentation of this study. It is hoped that this presentation will facilitate linkages and partnership building with interested individuals and organizations.

**OC10- ECONOMIC EVALUATION OF AN INNOVATIVE STROKE CARE MODEL WITH REHABILITATION ASSESSMENT IN A NURSING HOME.** R. Heijnen<sup>2</sup>, S. Evers<sup>1</sup>, T.van der Weijden<sup>2</sup>, M. Limburg<sup>3</sup>, B. Winkens<sup>4</sup>, J. Schols<sup>5</sup> ((1) *Department of Health Services Research, Maastricht University, Maastricht, The Netherlands*; (2) *Department of Family Medicine, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands*; (3) *Department of Neurology, Flevo Hospital, Almere, The Netherlands*; (4) *Department of Methodology and Statistics, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands*; (5) *Department of Family Medicine and Department Health Services Research, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands*)

**Background:** As the incidence of stroke has increased, its impact on society has increased accordingly, while it continues to have a major impact on the individual. Earlier, stroke services have been found to be cost-effective. Innovative organisation of these services may even be more cost-effective. The aim of this study was to assess cost-utility and cost-effectiveness of a new stroke care model aiming at early hospital discharge of stroke patients to a nursing home for systematic assessment and rehabilitation planning. **Methods:** The economic evaluation was embedded in a non-randomised comparative trial for which 239 acute stroke patients were recruited from two stroke services in the regions of Maastricht and Eindhoven. The intervention consisted of hospital discharge within 5 days to a nursing home, followed by systematic multidisciplinary assessment in a specialised nursing home assessment unit to determine the optimal rehabilitation track. Usual care consisted of an average 10 days hospital care, followed by a less extensive assessment. Self-reported costs and quality of life were assessed during a 6-month follow up period. The economic evaluation was conducted from a societal perspective. Uncertainty was accounted for by bootstrapping and sensitivity analyses. **Results:** Significant differences were found between the groups in baseline characteristics related to age, educational level, activities of daily living and visual scores. After correcting for these differences, the cost-utility analyses, using generic quality of life as the outcome

measure, showed that the new stroke care model was the most efficient. With regard to the cost-effectiveness analyses, using disease specific quality of life as an outcome measure, the new stroke care model was less effective but also less expensive compared to care as usual. **Conclusion:** To our knowledge this is the first study to determine the cost-utility and cost-effectiveness of a stroke service aimed at early hospital discharge with subsequent assessment and rehabilitation planning in a nursing home. With a willingness to pay 35,000 euros for a Quality of life year gained, the new stroke care model would probably (ie, 62%) be the most efficient stroke service.

**OC11- TRANSLATION OF EVIDENCE INTO PRACTICE: A REPORT ON A PROMPTED VOIDING PROGRAM DELIVERED BY STAFF IN NURSING HOMES.** C.K.Y. Lai<sup>1</sup>, H. Chan<sup>2</sup>, L. Ho<sup>1</sup> ((1) *Centre for Gerontological Nursing, School of Nursing, The Hong Kong Polytechnic University, Hong Kong;* (2) *Lecturer, Vocational Training Council, Hong Kong*)

**Background:** Prompted voiding (PV) has been shown to be useful for managing urinary incontinence (UI). However, all except one study in the literature reported that the PV intervention was performed by staff. This paper will report how the PV intervention was translated into routine practice in nursing homes by care staff. **Methods:** Prior to the implementation of the PV intervention, all staff members of the participating homes (Homes) were trained in the use of the PV protocol. The training consisted of interactive lectures, demonstrations and return demonstrations, and supervised hands-on practice until the techniques were mastered. A continuous quality monitoring and surveillance system was put in place, which included regular site visits to observe the skills of the staff. An approach of regularly checking the PV record, establishing close contact with the responsible nurses in the Homes, and holding regular meetings with the staff of the Homes was developed to ensure proper adoption of the intervention. Our study had an intervention period of 24 weeks, much longer than the 8 to 13 weeks typical of other intervention studies. **Results:** The study showed that prompted voiding programs delivered by nursing home staff can be sustained over a 6-month period with statistically significant outcomes in the management of UI in the Homes. Of the five study sites, three confirmed that they would integrate the intervention protocol into their routine practice. One home was under renovation and stated that they would try to adopt the intervention protocol after renovation. The nurse-in-charge in the fifth home had left to work elsewhere and no one in that home seemed interested in taking the lead to maintain the practice. The staff in the Homes gave positive feedback on the PV intervention. They thought that it was effective, feasible, and could be sustained in nursing homes with sufficient resources and support. **Conclusion:** Studies conducted overseas have only examined the short-term effectiveness of PV and many used research staff to deliver the intervention. The sustainability of the intervention outcomes is therefore questionable. Our findings provided evidence that the PV intervention protocol can be translated into practice through careful planning and implementation.

**OC12- CHALLENGES IN TRANSLATING EVIDENCE INTO PRACTICE: TOPICAL TEA TREE OIL FOR TREATING MRSA COLONIZED CHRONIC WOUNDS IN NURSING HOME RESIDENTS.** R.L.P. Lee<sup>1</sup>, P.H.M. Leung<sup>2</sup>, T.K.S. Wong<sup>3</sup> ((1) *Centre for Gerontological Nursing, School of Nursing, The Hong Kong Polytechnic University, Hong Kong;* (2) *Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong;* (3) *President, Ginger Knowledge Transfer and Consultancy Limited, Hong Kong*)

**Background:** Wound chronicity is a serious health problem for older people, particularly residents of nursing homes. Recently, we conducted a randomized controlled trial to evaluate the efficacy of a 10% solution of topical tea tree oil to treat Methicillin-resistant *Staphylococcus aureus* (MRSA) chronic wounds. The results indicated that our formulated preparation of 10% topical tea tree oil was successful in promoting healing of the MRSA chronic wounds of nursing home residents, which had shown a delay in healing. No adverse reactions were observed. In order to achieve a high level of intervention fidelity, the care staff of the nursing homes were not involved in implementing the intervention. Through conducting our trial, we learned of some important challenges that must be overcome if we are to translate evidence into practice. **Objective:** The aim of this paper is to report the challenges that need to be addressed in order to translate the latest evidence on wound care into routine practice in nursing homes. **Methods:** After completing this study, we reviewed the planning, implementation, and results of this treatment. We also reviewed the literature in this area, so as to identify strategies that can be used to overcome challenges affecting the uptake of evidence into practice by home staff with regard to wound care. **Discussion:** The challenges include: (1) deficits in the knowledge and skills of the care staff with regard to the latest guidelines on practices for the healing of chronic wounds; (2) resistance to change on the part of the care staff; (4) the indiscriminate use of topical antibiotics in wound care; and (4) the extra costs involved in training staff on how to carry out the treatment and purchase the materials for the treatment. This paper will also report the strategies that were identified to deal with these challenges. **Conclusion:** It is crucial to develop strategies to address these challenges if evidence is to be successfully translated into clinical practice in the context of chronic wound management to improve the quality of care in nursing homes.

**OC13- EVOLUTION OF PHYSICAL HEALTH OF A COHORT OF NEWLY ADMITTED NURSING HOME RESIDENTS (AGEING@NH): REPORT OF THE FIRST FOLLOW-UP OBSERVATIONS.** M.M. Elseviers<sup>1,2</sup>, J. De Wolf<sup>1,3</sup>, M. Diebels<sup>1</sup>, D. Frencken<sup>1</sup>, V. Lensink<sup>1</sup>, T. Dilles<sup>1</sup>, B. Van Rompaey<sup>1</sup>, R.Vander Stichele<sup>2</sup> ((1) *Centre for Research and Innovation in Care (CRIC), Department of Nursing Science, University*

*of Antwerp, Antwerp, Belgium;* (2) *Heymans Institute of Clinical Pharmacology, Ghent University, Ghent, Belgium;* (3) *Department of Intensive Care, Antwerp University Hospital, Antwerp, Belgium*)

**Backgrounds:** Long term studies, following residents from their entry in a nursing home (NH) till death, are limited. Due to the exponential growth of the very old with their specific health problems of frailty and multi-morbidity on the one hand, and the limitation in public health resources needed to offer qualitative care to this population on the other hand, better insight in the health evolution of the NH population is needed. The Ageing@NH study aims to investigate the evolution of physical and mental health and the quality of life of a cohort of nursing home residents recruited at their entry in the nursing home and followed for three years. This abstract reports the results of the one-year follow-up of the physical health compared to baseline observations. **Methods:** NHs in the northern part of Belgium (Flanders) with a mixed population (accepting all care profiles) with at least 60 beds were asked for inclusion of their new residents in the Ageing@NH study. Residents were eligible for inclusion if they were aged over 65, Dutch speaking and entering the NH for permanent stay between September 2013 and January 2014. After giving informed consent, residents were investigated with a structured questionnaire and standard tests for activities of daily living (Katz-ADL), mental health (MMSE), depression (GDS-8), behavioral problems (NPI), and quality of life (NHP). Residents received their baseline investigation two months after entry. One year later they were revisited for their first follow-up investigation including a follow-up questionnaire and the same standard tests completed with administrative and nursing care data. In case of mortality, only administrative data were collected (hospitalizations, date of death). In case of dementia or palliative care, only the responsible nurse was questioned. **Results:** A total of 1066 residents entering the nursing home within a period of 4 months were recruited in 67 participating nursing homes. Their mean age was 84.2 (range 65-105) and 65% were female. Of the 1066 eligible residents, 304 did not give informed consent and 62 died before the first investigation. At baseline, 389 residents could be interviewed, decreasing to 227 in year2. During their NH stay of 14 months, 33% of residents had at least one hospitalization (mean length of stay: 7.3 days) and 24% died. At baseline, only 22% of residents had a written advanced care planning increasing to 42% one year later. Chronic medication use increased from a mean of 8.6 to 9.1 (range 0-23) resulting in 91% of residents with polypharmacy ( $\geq 5$ ) in year2. Main therapeutic classes were neurological (91%), alimentary (89%) and cardiovascular (81%) medication. At year2 most prevalent care problems were incontinence (55%), high fall risk (39%) and chronic pain (36%). Compared to baseline, a significant increase was noticed in weight (from mean 66.3 to 68.2kg), care dependency (from mean ADL 14.7 to 15.3), pain (from mean NHP pain score 22.2 to 25.1), sight problems (from 86% to 96%) and mobility problems (from 79% to 88%). **Conclusion:** While most residents had already a serious health burden at entry of the NH, their physical health still decreased significantly and one quart died during the first year of residency. Polypharmacy was commonly noticed, worthy to reconsider the quality of pharmacotherapeutic care in this frail population.

**OC14- CARE PROCESS BREAKDOWNS IN THE TRANSITION OF NURSING FACILITY RESIDENTS TO AND FROM HOSPITALS.** G. Arling<sup>1</sup>, A. Nazir<sup>2</sup>, K.T. Unroe<sup>2</sup>, B. Buente<sup>3</sup>, G. Sachs<sup>2</sup> ((1) *School of Nursing, Purdue University, West Lafayette IN, USA;* (2) *Indiana University School of Medicine, Indianapolis IN, USA;* (3) *Regenstrief Institute, Indianapolis IN, USA*)

**Background:** Nursing facility (NF) residents who transition to and from hospitals are at high risk for deleterious outcomes resulting from care process breakdowns such as medication errors, inappropriate care, inadequate monitoring of conditions and omission of needed treatment. A recent government study in the US concluded that 33% of residents transferred to NF from hospitals faced harm due to "poor" and "dangerous" care. We report findings from the OPTIMISTIC (Optimizing Patient Transfers, Impacting Medical Quality, and Improving Symptoms: Transforming Institutional Care) project, which is part of a national demonstration funded by the US Centers for Medicare and Medicaid Services (CMS) to reduce avoidable hospital transfers among long-stay NF residents. The project's advanced practice nurses (NPs) and registered nurses promote proactive chronic care management, urgent care and robust transitional care services for 1800 residents in 19 partnering NFs in central Indiana. A core element of the project is a transitional care intervention by project NPs that focuses on high-risk aspects of hospital to facility transitions, such as accurate discharge summaries, medication reconciliation and resident and family education, follow-up on appointments and tests and advance care planning. The NPs utilize a structured process to collect information on the resident transfer and to guide their interventions. Our objective is to describe the types of care problems encountered by NF residents transitioning to and from acute hospitals, the origin of these problems (nursing facility, hospital, primary care team), and associated risk factors. We also describe resulting interventions and draw implications from our findings. **Methods:** Findings are based on a sample of 373 acute care transfers in January to July 2015. Data were collected and evaluated by project NPs upon the resident's return to the NF nursing facility. They recorded care problems requiring an intervention according to medication-related or non-medication related, and whether the problem could be attributed to the discharging hospital, facility primary care team or facility staff. **Results:** Discharge summaries were available for only 70% of residents returning to the facility; however, NPs were able to obtain summaries for an additional 21% of residents from hospital staff or an EMR system. A total of 279 residents (54.2%) experienced a care process problem requiring an intervention. A medication-related problem was discovered for 37% of transitioned residents. Thirty-one percent of transitioned residents had inappropriate care; 27% had inadequate monitoring; and 23% had omitted care.

Care problems were attributed evenly across settings: 29% to the hospital, 33% to the facility staff, and 32% to the facility primary medical provider. The NPs carried out 621 interventions or a mean of 2.21 interventions per transition. A majority of the medication-related interventions (65%) addressed inappropriate treatment, 15% addressed inadequate monitoring and 20% addressed omitted care. The most frequent medication-related interventions were for pain medications (24%), antiplatelet/anticoagulation medications (13%), psychotropic medications (10%) and anti-hypertensive (9%). Care problems requiring interventions were significantly ( $p<.05$ ) more likely for transitions with hospital admissions (63%) versus an ED visit only (39%). Among transfers admitted to the hospital, a problem was significantly more likely when: a discharge summary was initially unavailable (80%); the point of medical provider contact was a call center (76%) compared to the medical provider seeing the patient before ordering the transfer (56%); the resident had a transfer in the prior 30 days (71%); and the resident had a history of COPD (72%). Surprisingly, residents with a history of dementia or behavior problems were significantly less likely to have a care problem leading to an intervention. This finding, which requires further study, may be due to the medical rather than behavioral focus of the interventions. Other components of the project are addressing cognitive and behavioral risk factors. **Conclusions:** Our findings point to the complex and multifaceted care problems experienced by nursing home residents transitioning from the hospital. Problems were related to medications, follow up care, and monitoring, and they involved process breakdowns by hospital staff, nursing facility staff, and the facility primary care team. These findings highlight the need to develop interventions that focus on key care processes at all stages of care – primary prevention to avoid the transition in the first place, care received in the acute care setting, and upon return to the facility. It underlines the need for better collaboration among health settings. We are evaluating the impact of the intervention on hospitalization and re-hospitalization rates. We plan to estimate cost-savings from the interventions in order to establish a business case for the broad dissemination of this approach. Note: This project was supported by Funding Opportunity Number CMS1K23AG048323 CMS from the Centers for Medicare & Medicaid Services. The contents provided are solely the responsibility of the authors and do not necessarily represent the official views of HHS or any of its agencies.

#### **OC15- LIVING LAB : FEEDBACK FROM EXPERIMENTATIONS WITH NEW COMMUNICATION AND INFORMATION TECHNOLOGIES FOR ELDERLY IN NURSING HOMES.** S. Smidtas, G. Scialom (*Silverinmov, Paris, France*)

New CIT solutions are developed for elders needing social contacts and entertainment. Nursing homes need transparency to reassure families and need tools to be in close contact with elders living at home to extend retirement homes to homes and develop their day care activity. To fill the gap between elder's need and innovation projects, we developed a living lab where elders can test solutions in their daily activities along the days. We present here our feedback from our experiments in a real use of new communication and information technologies and innovative services for elders comparatively in homes, hospital and nursing home; and we come back on an interactive Living Lab session made during the last Active Assisted Living (AAL) Forum in Ghent in September 2015 confronting projects and elders with their carers.

#### **OC16- REFLECTIVE DEBRIEFING GROUPS FOR STAFF IN CARE HOMES FOLLOWING A DEATH.** J. Hockley (*University of Edinburgh, Edinburgh EH8 9AG, Scotland, UK*)

**Introduction:** People being admitted to nursing homes in the UK are increasingly frail with multi-morbidities. Research has shown that 57% residents admitted to nursing homes die within the first year (Kinley et al 2014). However, many staff in nursing homes continue to work from a 'striving to keep alive' culture rather than acknowledging the importance of seeing death and dying as a substantial part of their work. Staff caring in nursing homes have little training in relation to death and dying - not helped by the fact that such training is not part of statutory requirements for UK nursing homes. The work undertaken by staff in nursing homes is not only physically heavy with poor remuneration but also carries considerable emotional burdens. Recent retention figures in the UK show that it is not only difficult to recruit staff to nursing homes but also that a third of staff on average leave each year. Reflective practice has long been a tool to help individuals increase self-awareness and confidence and help reduce anxiety in first-year student nurses. In other areas of research it has been seen to help group cohesiveness. An open culture towards death and dying in nursing homes is necessary if good end of life care is to be provided. **Aim and objectives:** The overall aim of the wider study was to develop knowledge and practice in relation to end-of-life care in two independent nursing homes through a critical action research strategy. This presentation reports one of the actions inductively derived with nursing home staff, namely: the introduction of reflective debriefing groups following a death in the care home with the following objectives:  To use the experience of caring for a resident who had died as a basis for learning about end of life care;  To be a place where death and dying could be safely and openly discussed;  To construct knowledge about end of life care of frail older people dying in nursing homes. **Design:** An action research methodology in two nursing homes enabled a collaborative working relationship with the managers and staff. The study was designed with three overarching phases: an exploratory phase to understand how end-of-life care was carried out in the nursing homes; a second phase where findings were fed back to staff with an opportunity to plan actions together; and, a final summative evaluation. Both quantitative and qualitative data were used before, during and at the end of the time in each nursing home. Ethical approval for the study was granted. Two main actions were inductively derived with staff. One of the actions, reflective debriefing groups following a resident's

death, is presented. Any member of staff involved with the resident who had died was welcome to attend. The groups met between 7-10 days following the death and lasted for 45 minutes being attended by 4-7 staff members. Ten of the group discussions were tape-recorded and subsequently transcribed using thematic analysis. Groups were led by the researcher – an experienced specialist palliative care nurse. **Results and discussion:** There were three core outcomes of the reflective debriefing groups. The first was an educative/experienced-based learning that had three levels: individual learning & gaining knowledge; mutual understanding of end of life care; and critical knowing and adding to a theory of end of life care in nursing homes. The second was supportive – giving an opportunity to share together some of the difficulties surrounding death and dying. The third was communicative – where staff communicated across the different personnel involved in the care of the very old at the end of life. **Conclusion:** The use of reflective debriefing groups for all staff in nursing homes is a useful mechanism to create a greater openness about death and dying in this setting as well as to support experience-based learning and encourage greater confidence in caring for frail older people dying in care homes.

#### **OC17- BPSD IMPROVEMENT OF ELDERLY DEMENTIA PATIENTS AND BURNOUT REDUCTION OF THEIR CAREGIVERS BY A MULTIMODAL COMPREHENSIVE CARE METHODOLOGY.** M. Ito<sup>1</sup>, Y. Gineste<sup>2</sup>, R. Marescotti<sup>2</sup>, M. Honda<sup>3</sup> ((1) *Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan;* (2) *Institute Gineste-Marescotti, Perpignan, France;* (3) *National Hospital Organization Tokyo Medical Center, Tokyo, Japan*)

**Background:** Most of developed countries are facing to rapid growing aging society. As people getting older, the population with dementia increases. In France, Allocation Personnalisee d' Autonomie provides home care for the elderly, of which over 70% of application is related to dementia care, and it accounts for 76.3% in Japanese geriatric care system. Despite of high quality care for dementia is crucial, many challenges for caregivers exist to provide the care. Typical difficulties are the refusal of care by person with moderate to severe dementia, especially who is in Behavioral Psychological Symptoms with Dementia (BPSD). Approach to dementia people has been taught as one of the fundamental components in the education of nursing. However, healthcare professionals are still struggling in care and it is directly related to resign of caregivers due to job-related burnout. Humanitude is a French-origin methodology of care for vulnerable elderly focusing on their perception, emotion and oral communication. Based on its 36 years of experience, this multimodal care methodology is considered as one of the solutions to solve this critical situation we face. **Objectives:** To evaluate effectiveness of the methodology Humanitude in a nursing home in Japan. **Study design:** Prospective, two-arm, clinical pilot study in two wards of a single clinical site. **Method:** The study was conducted at a long-term care facility in a rural town in Japan. Forty one caregivers were enrolled and divided into two arms. Nineteen caregivers were assigned to the intervention arm and twenty two were assigned to the control. The intervention arm had the lecture of the multimodal comprehensive care methodology; Humanitude. The training was consisted of 4 key structures with verbal and non-verbal communication, which contains the techniques of 1) to gaze, 2) to touch, 3) to talk and 4) to assist to erect position. Every care was to perform in one sequence constructed by 5 steps using the 4 key structures above comprehensively. The control arm continued their conventional care to their clients. Each arm worked for each ward. In the intervention ward, there were 13 clients with age over 75 years old and MMSE less than 20, while in the control ward 11 clients in the same characteristics. Both the clients and the caregivers were followed up at month 0, 1, 3. For the clients, BPSD was evaluated by the behavioral pathology in Alzheimer's Disease Scale; BEHAVE-AD. For the caregivers, their burnout level was evaluated by Maslach Burnout Inventory which is validated in Japanese including three subscales; emotional exhaustion, depersonalization, and personal accomplishment. This study was approved by the institutional review board of Tokyo Metropolitan Institute of Gerontology, and Tokyo Medical Center. **Result:** In the intervention arm, average BEHAVE-AD score of the client at month 1 and 3 was -1.0 and -1.0 from the base line, while in the control arm was +2.9 and +3.1 respectively. There was significant improvement of BPSD in the intervention arm (two-way ANOVA,  $p<0.05$ ). About the burnout score change of the caregivers from the base line, the intervention arm showed 0 and -1.2 in the month 1 and 3, and in the control arm was +5.8 and +3.6 respectively. Burnout of caregivers in the intervention arm was significantly lower than control (two-way ANOVA,  $p<0.05$ ). Sub-analysis of the burnout scale showed significant improvement of the intention to resign in intervention arm ( $\chi^2$ test, 1 month ;  $p<0.05$ , 3 months;  $p<0.001$ ). Also loss of enthusiasm in the intervention arm was significantly improved in month 3 ( $\chi^2$ test,  $p<0.01$ ). **Conclusion:** Simple, basic and comprehensive multimodal care methodology focusing on the perception, emotion and oral communication is significantly effective for BPSD improvement of persons with dementia and burnout reduction of their caregivers.

#### **OC18- THE UMDEX STUDY; EFFECTS OF A HIGH-INTENSITY FUNCTIONAL EXERCISE PROGRAM IN OLDER PEOPLE WITH DEMENTIA LIVING IN RESIDENTIAL CARE FACILITIES.** A. Toots<sup>1,2</sup>, M. Conradsson<sup>2</sup>, H. Littbrand<sup>1,2</sup>, G. Boström<sup>2</sup>, N. Lindelöf<sup>1,2</sup>, R. Wiklund<sup>2</sup>, C. Hörnsten<sup>2</sup>, E. Nordin<sup>1</sup>, H. Holmberg<sup>3</sup>, P. Nordström<sup>2</sup>, L. Lundin-Olsson<sup>1</sup>, Y. Gustafson<sup>2</sup>, E. Rosendahl<sup>1,2</sup> ((1) *Department of Community Medicine and Rehabilitation, Physiotherapy, Umeå University, Umeå, Sweden;* (2) *Geriatric Medicine, Umeå University, Umeå, Sweden;* (3) *Department of Public Health and Clinical Medicine, Umeå University, Umeå, Sweden*)

**Background:** According to the World Health Organization, dementia is the leading cause of dependency in activities of daily living (ADLs) in older people, which impacts on quality of life and burden of care. Symptoms of dementia comprise not only a

decline in cognitive function but also in balance, which may differ according to the type and severity of dementia. The ability to maintain balance in a variety of positions is associated with falls, physical activity, and the ability to independently carry out ADLs. In addition, depression is common among older people with dementia. Antidepressant drug treatment seems to have limited effect among people with dementia, thus evaluation of non-pharmacological treatment is of importance. Exercise to improve muscle strength, balance, and mobility may be a strategy to deter deterioration of ADL dependency, and also influence falls, depression and well-being. Although promising evidence suggests that exercise benefits ADL independence in people with dementia, the majority of previous studies are of people with Alzheimer's disease and to date no study has compared exercise effects between dementia types. Furthermore, there is a need for further studies of methodologically high quality in this group. The main objective of this study was to investigate effects of a high-intensity functional exercise program on ADLs in people with dementia. Secondary outcomes included balance, gait, falls, depressive symptoms, and well-being, as well as, whether exercise effects differed between dementia types. Further aims included evaluating the applicability of the exercise program. **Methods:** The Umeå Dementia and Exercise (UMDEX) study is a cluster-randomised controlled trial set in 16 residential care facilities. One-hundred-and-eighty-six participants, all with dementia diagnosis, dependent in ADLs, and Mini-Mental State Examination (MMSE) score of at least 10, were randomised to either exercise-, or control activity. The structured physical exercises were based on the High-Intensity Functional Exercise (HIFE) program, which aims to improve lower limb strength, balance, and mobility. The HIFE program comprises 39 exercises performed in functional, weight-bearing positions; similar to those used in everyday situations, such as rising from a chair, stepping up, trunk rotation while standing, and walking. The load was progressively increased by, for example, stepping higher, rising from a lower chair, or adding weights to a belt worn around the waist. The control activity included activities while in a sitting position, such as, reading, singing and conversing. Physiotherapists and occupational therapists led each activity; 45-minute sessions, 2-3 times per week, for 4 months. Outcomes were measured at baseline, 4 months (directly after intervention) and 7 months by testers blind to allocation. The main outcome ADL was assessed using Functional Independence Measure (FIM) and Barthel ADL Index (BI). Falls were followed-up for 12 months after end of intervention. Participants and exercise leaders were interviewed about their experiences of the exercise program. **Results:** Among data analysed to date, linear mixed models showed significant between-group effect in favour of exercise on balance at 4 months (Berg Balance Scale (BBS) 4.20 points, 95% confidence interval 1.79-6.61), while not on ADLs, either at 4 or 7 months. In interaction analyses for balance and ADLs, effects differed significantly between dementia types. Between-group analyses showed positive exercise effects in FIM at 7 months and in BI and BBS at 4 and 7 months among participants with non-Alzheimer's dementia. Concerning effects on depressive symptoms and well-being, no significant effects between exercise and control were found. In interaction analyses for well-being, effects differed significantly between dementia types at 7 months. Between-group analyses showed positive exercise effects among participants with non-Alzheimer's dementia. Participants with higher levels of depressive symptoms had significantly reduced depression scores in both exercise and control group at the 4 and 7 months follow up. Likewise, those with low well-being in both groups had increased scores at 4 months. **Conclusions:** In older people with dementia living in residential care facilities, a high-intensity functional exercise program for 4 months appears to defer decline in ADL independence and improve balance, albeit only in participants with non-Alzheimer's dementia. Compared with the control activity, the exercise program had no superior effect on depressive symptoms and well-being. However, it appears that both activities may have positive effects on depressive symptoms and well-being, but further studies are needed to confirm these findings.

**OC19- FRAILTY INDEX AND QUALITY OF LIFE IN NURSING HOME RESIDENTS: RESULTS FROM INCUR STUDY.** B. Fougère<sup>1</sup>, E. Kelaiditi<sup>1</sup>, E.O. Hoogendijk<sup>1</sup>, L. Demougot<sup>1</sup>, M. Duboué<sup>1</sup>, B. Vellas<sup>1,2</sup>, M. Cesari<sup>1,2</sup> (1) *Gérontopôle, Centre Hospitalier Universitaire de Toulouse, Toulouse, France;* (2) *Inserm UMR1027, Université de Toulouse III Paul Sabatier, Toulouse, France*)

**Introduction:** Age-related frailty is an increasing challenge for societies worldwide, with growing emphasis on identifying its underlying pathophysiology and prospects for intervention. It is generally agreed that frailty is characterized by increased vulnerability to stress due to decline in homeostatic reserve secondary to dysregulation in multiple inter-related systems. This vulnerability results in an increased risk of adverse health outcomes including disability, hospitalization, institutionalization and death. At the same time, Quality of Life (QoL) is generally accepted to encompass the whole of life, including health; satisfaction; happiness; and financial, social, and environmental concerns. QoL is multidimensional (including physical, psychological, social, and functional domains). **Objectives:** In nursing homes, older people have often multiple comorbidities, especially those of advanced age and it is normal for many residents to suffer from frailty. In order to provide quality care to older patients with frailty in nursing home, we have probably to focus on improving their QoL in addition to increasing their longevity. This study aimed to explore the association between frailty and quality of life in older residents in the nursing home. **Methods:** The data used in this study were collected from the "Incidence of pneumonia and related consequences in nursing home Residents" (INCUR) study. The study sample consisted of 590 patients 65 years or older. QoL was measured with the Visual Analogue Scale (VAS). Frailty was assessed using the Frailty Index (FI) as proposed by Rockwood et al. Linear regression analyses were used to estimate the association between the FI and QoL at baseline assessment. Analyses were also stratified by gender, cognitive function, depressive symptoms, and median years of education. Results from the unadjusted and age-adjusted models are provided. **Results:** Mean age of the participants

was 85.9 (standard deviation [SD] 7.6) years, with 73.6% being female. The mean FI was 0.40 (SD 0.07) and the mean value of QoL was 67.4 out of 100 (SD 25.9). Before and after adjusting for age, and stratification for sociodemographic and health-related variables, no significant associations between frailty and QoL were reported. **Conclusion:** In our study, the FI was not associated with QoL in nursing home residents. The type of population (i.e. very old and complex) and the used instrument (FI and QoL with visual analogue scale) may explain our results. Another explanation may be that other aspects (e.g., quality of care) are more important for the residents' quality of life than frailty. **Key words:** Older adults - Nursing home - Frailty - Quality of Life - Health care

**OC20- THE IMPACT OF WORK CULTURE ON QUALITY OF CARE IN NURSING HOMES – A REVIEW STUDY.** B. André<sup>1</sup>, E. Sjøvold<sup>3</sup>, T. Rannestad<sup>1,2</sup>, G. I. Ringdal<sup>4</sup> (1) *Faculty of Nursing, Sør-Trøndelag University College, Trondheim, Norway;* (2) *Research Centre for Health Promotion and Resource, Sør-Trøndelag University College (HIST) and Norwegian University of Science and Technology (NTNU), Trondheim, Norway;* (3) *Department of Industrial Economics and Technology Management, Faculty of Social Sciences and Technology Management, NTNU, Trondheim, Norway;* (4) *Department of Psychology, Faculty of Social Sciences and Technology Management, NTNU, Trondheim, Norway*)

**Background:** The rapidly growing number of elderly persons is expected to continue and accelerate in the next decades. This can lead to an increasing demand for nursing home services, and the quality of care and performance related to nursing homes will be more focused on. One of the key factors to influence on the performance is work culture which contains of both organizational culture and organizational climate. Therefore, understanding essential elements that underpin both nursing home performance and working conditions and culture will be of importance. The relationship between nursing leadership and patient outcomes has been described as essential to the development organizations in health care. Significant associations between positive leadership behaviors, styles and increased patient satisfaction and reduced adverse events have been found. The main aim of this review study was to identify which factors that characterize the relationship between work culture and quality of care in nursing homes. **Method:** This review study was structured through systematic search methods to identify articles that describe the relationship between work culture and quality of care in nursing homes. The database search yielded 14510 hits. Closer examination showed that 10401 of these hits were duplicates. Of the remaining 4109 articles, only 10 were related to our aim for the study. A qualitative method was used to explain and understand phenomena of work culture and quality of care in nursing homes. **Results:** In an earlier study, there has been identified four major dimensions addressed to measurements assessing work culture in health care presented by Gershon et al. (2004). These dimensions represent a thematic abstraction related to description of work culture in health care, and we found these dimensions suitable for our study. These measurements were leadership, group behavior, communication and structural attributes of quality of work life in nursing homes and we wanted to see how these factors relate to quality of care. Our findings related to leadership reveal that management style or hierarchy is mostly connected to autocratic behavior with lack of autonomy on the one hand or supportive behavior from the leadership on the other hand. Findings in the dimension of group behavior and relationship differed among the articles. However, relationship, teamwork and strong group relation were related to work culture and performance in five articles. Opportunity structures, encouragement of problem-solving, working conditions and employee empowerment were different factors that were indicators to improve work culture in the other five articles. Participation, good communication, conflict resolution and empowerment were found in eight of the articles, and all these factors were related to resident outcomes in the communication dimension. In the dimension, structural attributes of quality of work life, staff reported that feeling valued for their contribution or satisfaction with their work, or improvement in nursing environment and encouraging of new ideas and creativity were all related to quality of care and work culture. In the quality of care dimension, we identified the major factors concerning work culture that were related to quality of care outcome in each of the articles included in the sample. **Conclusion:** Ten articles addressing important and characteristic factors of the work culture and quality of care in nursing homes were identified. Work culture, which includes both organizational culture and organizational climate, was found in several of the included articles related to quality of care improvement. Concern about patients' needs and an obligation to give the best care as possible seem to be a norm or a value that healthcare workers have a strong opinion of. In achieving improvements in nursing homes, the important value of best care possible must be appreciated and used as a positive incentive to increase quality of care. In several of the articles, leadership style was described as important to develop a supportive work culture in nursing homes. Nine out of 10 articles in this review emphasize the importance of leadership style and supportive management. Management style reported to be autocratic or custodial has significant lower work effectiveness scores and staff experience lack of autonomy, whereas supportive management is related to quality of care. Increased empowerment, participation and influence were also related to quality of care. Nursing management and leaders must take in consideration that work culture is crucial for improving quality of care in nursing homes, and this study can be used to increase the focus on the work culture among healthcare personnel in nursing homes. Changes are necessary to increase healthcare personnel's, job satisfaction, empowerment, autonomy and influence in nursing homes. Giving empowerment to the healthcare personnel working in nursing homes is both an organizational and an interpersonal issue. Being given empowerment and influence over their own work situation, the healthcare workers can be more committed and involved in the goal of obtaining best possible care to the residents.

**OC21- THE DEVELOPMENT OF CARE STANDARD AND SERVICE GUIDELINE FOR DEPENDENT OLDER PERSONS IN LONG-TERM CARE INSTITUTION IN THAILAND.** S. Sasat<sup>1</sup>, W. Wisersith<sup>1</sup>, T. Sakunphanit<sup>2</sup>, R. Soonthornchaiya<sup>1</sup> ((1) Faculty of Nursing, Chulalongkorn University, Bangkok, Thailand; (2) Health Insurance System Research Office, Health System Research Institute, Thailand)

**Introduction:** Thailand has recently entered into the ageing society with the increasing number of older people who are suffering from chronic illnesses and needed a higher level of care. Thus, the increasing demand for long-term care facilities is inevitable; the lack of national long-term care standards has brought the concerning of quality of care provided that is a key factor led to the quality of life of residents. **Methods:** The descriptive research using mixed method with systematic literature reviewed from 10 countries and 6 focus groups of stakeholders throughout Thailand had been carried out. The aims of this research were: 1. To assess current situation and need for standard of care for dependent older persons in long-term care facilities. 2. To assess the current situation of the regulatory system for long-term care facilities. 3. To develop care standards and guidelines for dependent older persons in long-term care facilities in the Thai context and the possibility of bringing standards into practice. **Results and discussions:** 1. Regulation and control for long-term care are urgently needed. Although Older People Act 2003, 2009 has indicated that the quality of care for older persons needs to be encouraged, the national long-term care standard has yet developed. There is no public nursing home available, public residential home for indigent older people have unintentionally turned to be long-term care facilities without adequate facilities and staffs. Private long term care facilities don't have to be authorized, accredited or certified. Care practices and price vary among facilities. 2. The role of central government agencies and local governments on establishment of the regulatory system is needed to be clear. Central government has to prepare stances and strategies. The local authority is considered to be a regulator at local level. All residents must be protected for their own rights and dignity with the same standard. 3. The first step of mandatory care standard and guideline should be in the process of licensing for long term care facilities, Thailand has a voluntary hospital accreditation system, which has got high reputation in public and among hospitals. Therefore, it is possible to develop a mechanism to extend the voluntary long term care accreditation from this hospital accreditation setting. 4. The appropriated care standard in the Thai context should be classified by structure, process and outcomes of care into 7 domains and 70 standards. The structure of care consisted of 3 domains: physical environment, staff and management with 28 standards; the process of care consisted of 3 domains: care service, safety of care and participation with 32 standards; and the outcomes of care consisted of 1 domains, satisfaction and quality of care with 10 standards. 5. Regarding the financial sustainability of long-term care system in Thailand, long term care at home must be the first choice. Institutionalized care should be an option for those who cannot care at home. General taxes are the main source of finance for public long-term care especially for indigent people similar to almost every country. Long-term care insurance, which is found in some countries, needs more studies for applications in the Thai context. **Conclusion:** Thailand is in an urgent need for establishing regulatory mechanism together with care Standard and service guideline for dependent older persons in Long-term Care Institutions. Focus groups of stakeholders from both public and private facilities, representative of local governments and central governments include experts agreed upon the first draft of the care standard, and regulation mechanism.

**OC22- UNDERSTANDING THE REGISTERED NURSING WORKFORCE IN CARE HOMES.** K. Spilsbury<sup>1</sup>, B. Hanratty<sup>2</sup> ((1) School of Healthcare, University of Leeds, UK; (2) Institute for Ageing, Newcastle University, UK)

**Background:** Internationally, care homes play an essential role in providing care for an older population with increasingly complex health care needs. As well as being an important source of long term care, care homes also offer a solution for 'admission avoidance' of older people to acute hospitals, as well as providing intermediate care to support discharge processes from hospital. Ensuring older people can access 'good' nursing care in care homes is crucial. There is considerable overlap in dependency levels and care needs amongst residents in UK care homes with and without nursing. However, there are important differences in the ways in which nursing care is provided. There is limited understanding of the role of registered nurses (RNs) employed by UK care homes. More specifically, little is known about the characteristics of this workforce, the scope of their roles, their education and training, as well as opportunities for career development. This study addresses the gaps in this understanding, identifying key issues in relation to the care and professional development needs of care home RNs. **Methods:** We used multiple methods, with four linked strands of work: a rapid review of published literature on care and professional development needs of RNs in UK care homes (116 papers included); mapping secondary UK data sources on nursing workforce characteristics; a modified Delphi survey to establish as objectively as possible a consensus on the care and professional development needs of registered nursing staff in care homes using a 'panel' (total 352 respondents) representing three separate stakeholder groups: care home nurses and managers; nurse educators in higher education; and community healthcare professionals; and telephones interviews (n=16) with care home managers and nurses, general practitioners, specialist nurses (NHS) with a role in care homes, and leaders in care home work (national and international) to provide depth of understanding. **Results:** Currently, there are only estimates of numbers of RNs employed by UK care homes. Of those employed, only around half (53%) are thought to work full time. Annual turnover is high (29%), with more than half the nursing staff employed in their current roles for fewer than three years. There is increasing reliance on agency nurses in the sector. There will

be considerable variation in staffing levels and turnover between care home organisations or individual homes, but little is known about what factors may influence this variation. There is a lack of information and understanding about patterns of employment or career trajectories for these nurses. What is known is that the RN role in care homes is broad and multifaceted to meet the health and social care needs of residents. The RN has a pivotal role in supporting, supervising and leading the assistant workforce in care homes: a workforce that constitutes the main care and support role for care home residents. There are also a range of administrative, regulatory and managerial functions that the RN must fulfil. RNs employed in the sector therefore require a range of knowledge, skills and understanding for command of this broad role remit. There are concerns that current undergraduate pre-registration programmes are not adequately preparing the future care home nursing workforce to meet the demands of this important role. There is also recognition that care homes are not always providing supportive learning opportunities for pre-registration nurses. These areas require urgent attention. To attract, recruit and retain the future nursing workforce, the care home sector needs to consider ways of providing challenging and rewarding career pathways for RNs. Continuing professional development opportunities for care home nurses are essential, and desired by nurses in the sector, but currently difficult to access. Overseas RNs constitute an important proportion of the workforce in the UK care home sector. This creates a 'unique' set of challenges related to induction, support, supervision, mentorship, ongoing CPD and retention. Looking to the future, a post-registration specialist qualification for care of older people (which includes care home nursing) would constitute an important step in raising the profile of the sector to attract and retain nurses, support them towards clinical leadership in the sector, as well as increase the value and visibility of the role in society. **Conclusion:** Ensuring a nursing workforce 'fit for purpose' in the care home sector raises important questions about who should take responsibility for, and financially support, the preparation and continuing professional development of nurses in this sector. As the care home sector continues to grow, there is a need for a whole-system approach to promote partnership working between providers, and to understand the full patient journey. The role of the care home nurse is firmly on political, practice, education and research agendas.

**OC23- STUDY OF MUTUAL EVALUATION SYSTEMS FOR GROUP-LIVING CARE OF NURSING HOMES.** Y. Okubo<sup>1,2</sup>, K. Adachi<sup>1</sup>, N.A Okubo<sup>2</sup>, H. Gyotoku<sup>3</sup> ((1) Graduate School of Systems Engineering, Wakayama Univ., Wakayama, Japan; (2) Social Welfare corporation KOSEIKAI, Hokkaido, Japan; (3) Nursing Home KOHOEN, Hokkaido, Japan)

**Backgrounds:** In JAPAN, the care method called "unit-care" of group-living has been developed to respect one's personality and the daily rhythm and it became mandatory in 2001. Nursing homes for the elderly applying "unit-care" have been rapidly increased from 1.5% (2003) to 42.9% (2012) of all nursing homes for elderly for the last decade. However, those nursing homes have not correctly utilized the method such as "unit-care" and "person centered care". Therefore, it is necessary to develop supportive systems for realization of the "unit-care". The aim of this study is trying to develop as one of the mutual evaluation systems in order to realize the correct "unit-care" and to improve the quality of group-living care in nursing homes. **Methods:** We have practically applied the following three steps of evaluation systems to seven nursing homes, in order to verify the usefulness of the mutual evaluation systems ( 1st step : self-evaluation, 2nd step: third-party evaluation, 3rd step : mutual evaluation), and additionally the evaluation training for human resource development. We used the quality evaluation tools of Ministry of Health, Labour and Welfare (MHLW), which consist of five categories (category A: consideration for interior and exterior of nursing home building, category B: promotion system of "unit-care", category C: practice of care for personality, category D: educational facilities for "unit-care" training, category E: positiveness for "unit-care" training) and 296 items. In this study, we also defined the level of 70 percent or more out of total scores in the performance, as "qualified teaching nursing homes", based on the same "unit-care" standard of MHLW. **Results:** As a result of this study, the average score in the 3rd step of mutual evaluation was significantly higher than that in the 2nd step of third party evaluation in all nursing homes surveyed. The average is 54.6 points in the 1st step of self-evaluation, and 50.4 points in the 2nd step of third party evaluation, then 70.5 points in the 3rd step of mutual evaluation, which meets the standard level of the MHLW "unit-care". The score has increased especially in category B and C in the 3rd step of mutual evaluation. **Conclusion:** Although self-evaluation and third party evaluation conventionally existed, only those have not been sufficient enough to realize the "unit-care". The study results suggest that this mutual evaluation systems of step by step be effective to improve the quality of "unit-care". During the study process of the 1st step, the 2nd step, and the 3rd step including the evaluation training for human resource development, care providers have been able to find and share various care issues, then it made them easier to solve them. Confirmation function by the system of mutual evaluation and evaluation training caused a culture change of the consciousness of the staff in all surveyed nursing homes. Therefore, the mutual evaluation systems of three gradual step by step as well as evaluation training for human resource development had contributed to improve the quality of "unit-care" of group-living in a short period. The usefulness of the system has been verified on the study, although the surveyed facilities were limited. For our future research for more case studies, the mutual evaluation system has been currently practicing in other public institutions of associations, such as the Hokkaido Dementia Group Home Association and the Hokkaido Council of Senior Citizens Welfare Service.

**OC24- PILOT STUDY ON PSYCHOLOGICAL NEEDS AT COMMUNITY-BASED CARE FACILITIES - BASIC DATA FOR PSYCHOLOGICAL TRAINING -.** K. Hori (Human Welfare Dept., Seigakuin University, Ageo, Japan)

**Backgrounds:** Care for the elderly is an important issue in Japan, which has a rapidly aging population. Socialization of care is being implemented by the introduction of the Long-Term Care Insurance Act in the year of 2000. In 2006, "community-based services" were institutionalized to provide care for those requiring it in order to continue living in their familiar community. The use of community-based services is increasing, but issues such as inadequate information-sharing and learning opportunities for the care staff particularly for psychological understanding of nursing situations have been reported. Despite the knowledge psychological support is urgently needed to improve the quality and mental health of care facilities, little schooling or training has been examined for this purpose. **Objectives:** Thus, this study explored psychological needs to provide effective training for care staff. **Methods:** Staff responded to an 8-item questionnaire that inquired about fulfillment and difficulties at their current job on a 5-point scale, and also gave free descriptions on issues such as work relationships, intention to continue, enjoyment, and areas for improvement. Respondents were 173 people at 13 facilities. **Results & Discussion:** Positive items such as "rewarding" and "enjoyable" ranked high without individual differences, whereas negative items varied widely among individuals. Factor analysis extracted two factors: positive (A sense of fulfillment) and negative (hardship). Correspondence analysis of fulfillment and pain indicated: High fulfillment (ffm)/high hardship (26%), High ffm /low hardship (28%), low ffm/high hardship (19%) and low ffm/low hardship (26%). It also showed: Low ffm/high hardship for men and moderate ffm/low hardship for women, high ffm/high hardship for the managers/leaders, moderate ffm and hardship for the care staff, among others. By age, moderate ffm/low hardship was indicated for people in their 60s, and despite some differences, moderate ffm and hardship was shown for those in their 50s, 30s, and 20s. High ffm and hardship was found for those in their 40s. **Conclusion:** The content of Hardship in the "high fulfillment . high hardship" group was analyzed, based on the perspective of psychological well-being in positive psychology. Results indicated that training managers and leaders as making up a significant part of the high fulfillment . high hardship group would be effective for improving the quality of facility care services and mental health of staff at community-based facilities. **Key words:** Community-Based Care Service, Basic data for staff training, Psychological support for caregiving staff, Positive psychology, Psychological well-being

#### OC25- BELRAI AND THE INTERRAI-INSTRUMENTS IN BELGIAN NURSING HOMES: A SWOT-ANALYSIS. A. Declercq (LUCAS, KU Leuven, Belgium)

**Background:** In Belgian nursing homes, the complexity of care increases since older people stay at home longer, and are (very) frail when they enter the nursing home. As a consequence, the need for a comprehensive and integrated assessment system increases, and a high quality transfer of data between home care, nursing homes and hospitals becomes all the more important. **Method:** The BelRAI web application has been developed to support the use of the interRAI assessment instruments in a multidisciplinary way and to exchange client-centered information across care settings. The Belgian government is planning the nationwide implementation of these instruments for older people in need of complex care. A SWOT-analysis was made of how the instruments are used in nursing homes at the moment. Data was gathered through interviews, focus groups and observations. **Results:** Strengths: In nursing homes, bringing together knowledge of the different care professionals helps to avoid blind spots. Outcomes generated from the assessments provide guidance during interdisciplinary meetings and help transform the care process and (the evaluation of) care planning. Communication with home care and hospitals is easier and more structured. Weaknesses: The system is very secure as to privacy, but in a way that makes the system less user friendly. The organization can only fully profit of the benefits of the system, if all other organizations it is connected with, also fully implement BelRAI and the interRAI-instruments. Opportunities: Experiences from nursing homes who built BelRAI into their daily activities, show that the quality of care and quality of life of the residents increases. Care planning, monitoring of quality of care and financing can be interlinked, with the use of data that has to be entered only once. New tablet-based software is more in line with the mobile nature of the tasks performed by the caregiver. Threats: Workload, lack of time and staff shortages are an important barrier. Immature inter-organizational relationships between care sectors sometimes interfere with good communication strategies. **Conclusion:** The interRAI suite of instruments and BelRAI provide great opportunities for coordinating interdisciplinary activity, shared client-centered data within a nursing home and between the nursing home and a hospital or home care. As a result, quality and continuity of care improve. However, the development of information technology and the full implementation of such a system take time and (financial) effort, especially in a sector with high working pressure.

**OC26- PHYSICAL EXERCISE AND BEHAVIORAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS.** P. de Souto Barreto<sup>1,2</sup>, L. Demougeot<sup>1</sup>, F. Pillard<sup>3</sup>, M. Lapeyre-Mestre<sup>2,4</sup>, Y. Rolland<sup>1,2</sup> ((1) Gerontopole of Toulouse, Toulouse University Hospital (CHU Toulouse), Toulouse, France; (2) UMR INSERM 1027, University of Toulouse III, Toulouse, France; (3) Department of Respiratory Function Exploration and Sports Medicine, Larrey Hospital, Toulouse, France; (4) Department of Clinical Pharmacology, Toulouse University Hospital, Toulouse, France)

**Background:** There is no consistent evidence to date supporting the effectiveness of exercise in reducing global levels of behavioral and psychological symptoms of dementia (BPSD). Although exercise appears to be beneficial in reducing some BPSD such as depression, the results of original investigations remain mixed. Furthermore, the role of exercise on other BPSD such as anxiety and apathy is still unknown. Therefore, the objective of the present work was to assess the effects of exercise on global BPSD levels

in people with dementia (PWD). Secondary outcomes relate to the effects of exercise on each single BPSD separately (eg, depression, apathy, wandering), mortality and antipsychotic use. **Methods:** This is a systematic review with pre-planned meta-analysis. Electronic searches were lastly performed in March 2015 in PubMed, the Cochrane Central Register of Controlled Trials, SportDiscus, PEDro, Web of Science, PsychInfo, and Scielo. Search terms included a combination of terms related to participants, intervention, and study design. No language or publication date restrictions were applied. All randomized controlled trials (RCT) examining the effects of exercise on BPSD, mortality, or antipsychotic use in PWD were eligible. Exclusion criteria were: study population composed of less than 50% of PWD and RCT using a co-intervention design making it impossible to disentangle the individual effect of exercise. Regarding data extraction, two authors extracted the data independently using a standard data collection form. Risk of bias was assessed using the Cochrane Collaboration's tool. The main outcome measure was global BPSD levels. Secondary outcome measures were mortality and antipsychotic use. The main hypothesis was that exercise would reduce global BPSD levels; this hypothesis was defined before data collection starts. **Results:** Twenty studies were included in this review (qualitative approach); among them, 18 studies had usable data for the meta-analysis (quantitative approach). Exercise tended to reduce, although not significantly, global levels of BPSD (four studies entered into this analysis;  $p = 0.13$ ). We found, however, that exercise significantly reduced depression levels in PWD (seven studies entered into this analysis;  $p = 0.024$ ). Exploratory analysis in each single BPSD separately found that exercise had positive effects only on aberrant motor behavior ( $p = 0.05$ ); exercise showed no significant effects on the other BPSD, although promising results were obtained for ( $p=0.058$ ), agitation ( $p=0.066$ ), and eating disorders ( $p=0.075$ ). Exercise had no effect on mortality (15 studies entered into this analysis;  $p = 0.80$ ). Data on antipsychotic use were scarce, impeding us to examine if exercise has any effect on the consumption of these drugs. **Conclusions:** Exercise reduces depression levels without increasing the risk of death in PWD. Future studies should examine whether exercise reduces the use (and doses) of antipsychotics and other drugs often used to manage BPSD.

#### OC27- FOOD FIRST: THE NUTRICARE PROJECT TO REDUCE MALNUTRITION IN DYSPHAGIC OLDER PEOPLE WITH AN APPROPRIATE FOOD TEXTURE. M. Zanini, A. Bagnasco, L. Sasso (Department of Health Sciences, University of Genoa, Italy)

**Introduction:** Malnutrition in older people has a negative effect on mortality, days of hospitalization, infection, wound healing, and risk of bedsores. Dysphagia in the institutionalized older patients is numerically significant, and people with swallowing problems are more easily exposed to malnutrition. The evaluation of nutritional status with integrated tools is a key element for the prevention of malnutrition in older people. **Objectives:** To prevent malnutrition in dysphagic older people by improving nutritional intake preparing food with an appropriate texture. **Discussion:** A multicentre crossover study was started in April 2014. All patients were fed according to the NUTRICARE program, offering a personalised food texture for 6 months. Serologic, anthropometric and nutritional performance measures were compared with the clinical data of the previous six months. Data were analysed with SPSS vers.21. The NUTRICARE program includes foods without nutritional supplementation for ready or semi-finished meals. Food technology is applied to achieve levels of density, viscosity, texture and particle sizes requested, and it consists of a first and second course with garnish, exactly like a normal meal, replicating the normal diet, but with a modified texture. Our sample included 401 patients, enrolled from 25 nursing homes in Northern Italy. BMI in malnourished people on average passed from 59.35% to 46.67%; lymphocytes became normal in 98.23% of the patients compared with the previous 64.59%. According to the Mini Nutritional Assessment Short Form, people with a high risk of malnutrition decreased from 83.79% to 65.51%. Many patients initially classified as 'dysphagic' even regained confidence with food and resumed to eat on their own. We also found a positive correlation between weight improvement, and the Barthel and the EdFed scales. Malnutrition in institutionalised older patients has revealed to be much more widespread than expected, and would deserve more priority considering the impact malnutrition has on patient outcomes. We also found that most healthcare professionals do not recognize malnourishment as a problem. **Conclusion:** Dysphagia can affect eating habits by reducing appetite and causing anxiety and malnutrition and it is also a major cause for ab ingestis pneumonia, hospitalization and choking; 15% to 45% of the older population in nursing homes are affected by dysphagia. Moreover malnutrition is a widespread problem in nursing homes (1). Inadequate nutrition is associated with negative outcomes, such as infections, pressure ulcers, and functional decline (2, 3). Few studies propose interventions to ensure that dysphagic patients are adequately fed. In nursing homes, little priority is given to the nutrition of patients, who are often hastily classified as dysphagic, resorting to artificial feeding methods. Patients responded to the increased energy and protein intake Program with improvement in weight, and using serologic and parametric scales. We had a significant correlation between weight and Barthel index and also between weight and participation to social activities for patients. The provision of a modified texture food with the right amount of energy and protein could improve the well-being indicator for patients with dysphagia. Clinicians and nurses can play an important role in ensuring that feeding difficulties are appropriately met, reduce negative outcomes and improve patients' quality of life.

**OC28- COMPETENCE TRAINING FOR STAFF AS A KEY COMPONENT OF A PHYSICAL ACTIVITY INTERVENTION IN THE NURSING HOME ECOLOGY: A FEASIBLE APPROACH?** E.L. Schnabel<sup>1</sup>, K. Claßen<sup>1</sup>, H.W. Wahl<sup>1</sup>, C.P. Jansen<sup>1,2</sup>, M. Diegelmann<sup>1</sup>, K. Hauer<sup>1,2</sup> ((1) Long-term Care in Motion (EU-Project INNOVAGE), Department of Psychological Aging Research, Heidelberg University, Germany;

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**Background:** Individuals living in nursing homes (NH) are characterized by a high prevalence of multimorbidity in terms of significant functional and cognitive impairment as well as depressive symptoms. These conditions are often associated with a sedentary lifestyle and low levels of physical activity (PA) with the risk of ongoing deteriorations in functional, cognitive and psychosocial status. In the light of such characteristics of residents as a day-to-day experience, NH staff can hardly imagine that a considerable increase in residents' PA is possible and feasible in principal terms and without taking too many risks. As a typical consequence, a dependency-supportive interaction style with the residents that again strengthens residents' sedentary behaviour has been reported in the previous NH related literature. Due to the key role of NH staff to trigger or hinder activity-related behaviour, the aim of the project "Long-Term Care in Motion" (LTCMo; subproject of the EU-project "INNOVAGE") was to develop, empirically evaluate, and disseminate a multi-component PA-enhancing intervention programme with staff as a major intervention component. As part of LTCMo, the feasibility of this intervention approach was examined in one NH setting in Heidelberg (Germany) with 107 beds. **Methods:** The competence training (CT) for nursing assistants, care supervisors, and activity coordinators was based on a theoretical framework which draws from well-established health psychology, self-regulation and life-span developmental models. The primary aim of the CT was to implement and enhance activity-encouraging staff behaviour. The CT consisted of 12 weekly (each session offered twice a week) in-house-training sessions with two major parts: (1) Eight introducing sessions of 60 minutes containing especially theoretical aspects about the project's mission (session 1), the importance of PA among NH residents (session 2), potential barriers and facilitating factors regarding PA promotion (session 3 & 4) and the role of communication strategies (session 5-8). The latter were also trained based on practical exercises. (2) The second part comprised four intervention sessions of 30 minutes including case-oriented discussions. Participation in CT was encouraged by compensatory time off or financial reward. 2 Immediately after each session, a formale evaluation was conducted by use of a short fully structured questionnaire. The participants were asked to assess a range of statements (e.g., about the relevance and comprehensibility of the respective session) on a five-point scale. At the end of the CT, an overall evaluation was obtained. **Results:** Sixty-three percent of the staff members (52/83) participated in at least one of the twelve training sessions. However, regular attendance was quite low. Only 13% of NH staff visited more than half of the sessions. Within each session, the number of participants varied between 11 and 21. The immediate feedback on the single sessions (overall response rate: 98%) was consistently very positive, suggesting that the contents were interesting, informative, well structured, comprehensible, relevant and useful. Furthermore, 79% of the participants rated the practical exercise component as largely or very helpful. The overall feedback (response rate: 40%) also revealed as largely positive. Overall, the majority of participants rated the sessions as very good (25%) or good (60%). **Conclusion:** The training concept of LTCMo seems to be rather promising. However, implementation into the daily care work was only partially feasible. In particular, regular participation in the CT was more the exception than the rule, thus undermining the full potential of the CT. Despite these challenges, we regard the CT as a very important component of a PA-enhancing intervention programme.

**OC29- RELATIONSHIP BETWEEN AMBULATORY PHYSICAL ACTIVITY ASSESSED BY ACTIVITY TRACKERS AND PHYSICAL FRAILTY AMONG NURSING HOME RESIDENTS.** O. Bruyère<sup>1,2,3</sup>, J.Y. Reginster<sup>1,2</sup>, N. Dardenne<sup>1,2</sup>, J. Nelis<sup>3</sup>, E. Lambert<sup>3</sup>, G. Appelboom<sup>4</sup>, F. Buckinx<sup>1,2</sup> ((1) Department of Public health, Epidemiology and health Economics, University of Liège, Liège, Belgium; (2) Support Unit in Epidemiology and Biostatistics, University of Liège, Liège, Belgium; (3) Department of Motricity Sciences, University of Liège, Liège, Belgium; (4) Neuro-digital Initiative, Columbia University, New York, USA)

**Backgrounds:** The aim of this study was to assess the relationship between the level of ambulatory physical activity, measured using a physical activity tracker, and the clinical components of physical frailty, among nursing home residents. **Methods:** we proceeded in 3 steps: The first step was the validation of the physical activity tracker (i.e. the Pebble): volunteer adults walked 3 times 15 minutes on a treadmill at three different speeds (2.5 km/h, 4 km/h and 5.5 km/h). The number of steps was recorded by 2 Pebble devices placed on the subjects (one at the foot level and the other one at the hip level). The number of steps registered by the Pebble was then compared, with the real number of steps counted by two investigators. Intra-class correlation coefficients (ICC) were then calculated. The second step was the measurement of ambulatory physical activity, using the Pebble trackers, over a 7-day period, among nursing home residents: volunteer nursing home residents wore the activity tracker on their shoes for seven consecutive days. The third step consisted in studying the relationship between the results obtained with the Pebble trackers (in step 2) and clinical characteristics, linked to physical frailty, of the subjects: a large number of clinical data had been collected for the subjects who wore a Pebble during step 2: body mass index (BMI), energy expenditure (Minnesota questionnaire), cognitive status (MMSE), nutritional status (MNA), quality of life (SF-36), level of autonomy (Katz), functional and motors skills (Timed Up and Go test, Tinetti test, Short Physical Performance Battery (SPPB)), fear of falling (FES-1), peak flow, grip strength, isometric strength of 8 different muscle groups (MicroFET2), frailty status (Fried), and body composition (Bioelectrical Impedance Analyzer, the InBody S10). These data were compared according to the level of ambulatory physical activity of the patient. **Results:** For the first step, the validation of the Pebble devices, 24 subjects were included (12 young

students aged between 21 and 30 years and 12 adults aged over 65 years). ICC data showed that the reliability of the Pebble, whatever the tested speed, is better when placed on the foot level. Under this condition, the ICC of the Pebble tracker assessing its reliability varied from 0.60 to 0.93 depending of the tested speed. For the second step, 27 nursing home subjects aged  $86.7 \pm 7.81$  years were included in the study in order to measure the ambulatory physical activity, over a 7-day period. On average, residents walked  $1678.4 \pm 1621$  (median = 1300) steps per day. The last step aimed to assess the relationship between the results obtained with the Pebble trackers and clinical characteristics, linked to physical frailty, of the subjects. As it could be expected, the energy expenditure, estimated by the Minnesota questionnaire, was significantly higher ( $p=0.0003$ ) among people who walked more than 1300 steps per day than in those who walked less than 1300 steps a day. These subjects had also a significantly higher MMSE score ( $p=0.005$ ), Katz level ( $p=0.04$ ), Tinetti score (0.0003), SPBB score ( $p=0.002$ ), peak flow ( $p=0.001$ ), isometric strength of the 8 muscle groups tested ( $p$ -value ranged from 0.0003 to 0.01) and grip strength ( $p=0.003$ ) as well as a significantly lower time required to perform the Timed up and Go test (0.0004) than subjects who walked less than 1300 steps per day. Moreover, subjects more active (i.e. >1300 steps/day) were significantly less frail (i.e. Fried score) than less active subjects ( $p=0.0005$ ). No other significant difference was observed between the two groups. **Conclusion:** This study showed that ambulatory physical activity of nursing home residents, assessed using a physical activity tracker, is lower than currently recommended in the elderly. Lower ambulatory physical activity is associated with poorer muscular and physical performances.

**OC30- RETURNING TO THE COMMUNITY FROM NURSING HOMES (NHS): BARRIERS AND FACILITATORS.** R.A. Kane<sup>1</sup>, H. Davila<sup>1</sup>, T. Shippee<sup>1</sup>, K. Abrahamson<sup>2</sup> ((1) School of Public Health, University of Minnesota, USA; (2) School of Nursing, Purdue University, Lafayette, Indiana, USA)

**Background:** In the US, most NH admissions are from hospitals, and usually start with a period of physical rehabilitation. Many residents go home or to a supported community residential setting within a few months of NH admission, whereas others move to a long-stay NH status. Many enter the NH with payment through Medicare, pay privately for long-stay units, and after exhausting their resources are subsidized by the state's medical assistance program. In 2010, the Minnesota Department of Human Services initiated a statewide Return to the Community Initiative (RTCI), in which social workers or nurses served as Community Living Specialists (CLSs) who worked with consenting privately-paying NH residents remaining in NHs for 60 days to facilitate a return to their own homes or other community living arrangements (with relatives or in group residential settings). The program was implemented through the 6 Area Agencies on Aging (AAAs) in Minnesota and in conjunction with Minnesota's Senior LinkAge Line, which maintains resource lists and provides telephone assistance to Minnesota seniors on insurance issues and locating resources. With funding from AHRQ, RTCI is being evaluated quantitatively and qualitatively to shed light on effects of the RTCI over time and the facilitators and obstacles to community discharge. This presentation presents the qualitative results. **Methods:** Qualitative methods had three foci: a) in-depth interviews with program personnel, i.e. the CLS's and the senior Linkage Line personnel in each AAA; b) in-depth interviews with NH discharge personnel with whom CLS must forge working partnerships; and c) case studies of persons discharged to the community with CLS assistance, in which we interviewed the elderly NH consumer, one or more family members, the CLS, and sometimes the NH discharge social worker and/or other community providers. Interviews were semi-structured with topics and probes for detail and examples; they were transcribed and analyzed for themes by multiple raters. Data for the presentation are derived from interviews with all CLSs twice (9 in 2012 and 28 2015); 60 LinkAge Line interviews in 2015; a round of 49 NH interviews in 2013 and 30 additional NH interviews in 2014; and 24 detailed case studies (each with 2-5 informant interviews plus review of program documents). **Results:** CLSs worked within protocol (standardized assessment, a 3-day post-discharge visit to the consumer in the community, and check-ins by phone 14, 30, 60, and 90 days after the discharge, but were also inventing details of a new practice. Some conducted most visits in person and all did in-person check-ins with those who had communication difficulties. We identified multiple CLS roles: decision advisor, resource expert, counselor, advocate, and educator. Minnesota NHs are well-staffed with social workers who work on discharge planning and initially NH staff often resented another person involved in "their work." CLS's spent time orienting NHs and demonstrating added value. By the last series of interviews, NHs were largely acknowledging the value of the follow-up that CLS's could do. In specific cases, with congruence among respondents, CLS were seen as being instrumental in sustaining an individual consumer in the community. The greatest obstacles to community return were attitudes among NH personnel, community physicians, CLS's themselves and sometimes family members that community-care would be unsafe. The catch-phrase "need for 24-hour care, was used by all respondents without much specificity. Assisted living settings sometimes refused to take people back when admitted to hospitals followed by NH rehabilitation, with their own catch-phrase, "not safe behind closed doors." RTCI has two ways to achieve its goals: a) move people from NHs who otherwise would not leave; or b) assist people with maintaining workable plans after they leave NHs so they are not re-hospitalized and sent back to a NHs. The first result, literally effecting a transition that would not have otherwise occurred, happened only occasionally, though the presence of CLS's in NHs and their attendance at care conferences, may have changed the climate towards greater acceptance that persons with unstable health conditions, high ADL needs, and/or cognitive impairment could make a choice to leave NHs. The second result, helping keep discharged NH residents in the community occurred more often, with several dramatic examples of a CLS rescuing a consumer at the 3-day visit when no services had

been instituted and medications were not being taken. **Implications:** Transitions may be increased by better targeting for RTCL, stronger working partnerships between NH and CLSs, and less sharp divisions in NHs between rehabilitation units and long-stay units. Sustaining community care could be improved by more use of flexible non-agency resources, especially in rural area, and more in-person assistance from CLS's and LinkAge Line specialists or their community collaborators. Much greater attention is needed to what is meant by safety in operational terms. NHs in Minnesota communities might become positioned as a community resource, down-sizing their long-stay capacity and delivering forms of community care.

**OC31- EVOLUTION OF MENTAL HEALTH AND QUALITY OF LIFE IN A COHORT OF NEWLY ADMITTED NURSING HOME RESIDENTS (AGEING@NH): REPORT OF THE FIRST FOLLOW-UP OBSERVATIONST.** M.M. Elseviers<sup>1,2</sup>, J. De Wolf<sup>1,3</sup>, M. Diebels<sup>1</sup>, D. Frencken<sup>1</sup>, V. Lensink<sup>1</sup>, T. Dilles<sup>1</sup>, B. Van Rompaey<sup>1</sup>, R. Vander Stichele<sup>2</sup> (1) *Centre for Research and Innovation in Care (CRIC), Department of Nursing Science, University of Antwerp, Antwerp, Belgium;* (2) *Heymans Institute of Clinical Pharmacology, Ghent University, Ghent, Belgium;* (3) *Department of Intensive Care, Antwerp University Hospital, Antwerp, Belgium*

**Backgrounds:** Long term studies, following residents from their entry in a nursing home (NH) till death, are limited. In recent years, the health profile of new NH residents changed into subjects with a higher degree of multimorbidity and mental deterioration. In order to offer qualitative care to this changing population in the future, better insight in the health evolution of the NH population is needed. The Ageing@NH study aims to investigate the evolution of physical and mental health and the quality of life of a cohort of nursing home residents recruited at their entry in the nursing home and followed for three years. This abstract reports the one-year follow-up results of mental health and quality of life compared to baseline observations. **Methods:** NHs in the northern part of Belgium (Flanders) with a mixed population (accepting all care profiles) with at least 60 beds were asked for inclusion of their new residents in the Ageing@NH study. Residents were eligible for inclusion if they were aged over 65, Dutch speaking and entering the NH for permanent stay between September 2013 and January 2014. After giving informed consent, residents were investigated with a structured questionnaire and standard tests for activities of daily living (Katz-ADL), disorientation in time and place (Katz), mental health (MMSE), depression (GDS-8), behavioral problems (NPI), and quality of life (NHP). Residents received their baseline investigation two months after entry. One year later they were revisited for their first follow-up investigation including a follow-up questionnaire and the same standard tests completed with administrative and nursing care data. In case of mortality, only administrative data were collected (hospitalizations, date of death). In case of dementia or palliative care, only the responsible nurse was questioned. **Results:** A total of 1066 residents entering the nursing home within a period of 4 months were recruited in 67 participating nursing homes. Their mean age was 84.2 (range 65-105) and 65% were female. Of the 1066 eligible residents, 304 did not give informed consent and 62 died before the first investigation. At baseline, 389 residents could be questioned, decreasing to 227 in year2. During year 1, mortality amounted to 24%. Chronic medication use increased from a mean of 8.6 to 9.1 (range 0-23). Psychotropic drugs were prescribed for chronic use in 77% of residents with 49% using benzodiazepines, 36% antidepressants and 27% antipsychotics. At baseline, 57% of residents received the diagnosis of dementia by their GP. During year1, MMSE scores (n=333) significantly decreased from a mean of 22.4 to 21.1 with 27% of residents showing a relevant decrease of  $\geq 4$ . Behavioral problems of dementia (NPI $\geq 14$ ) were observed in 32% of residents with severe agitation (15%), depression (13%), anxiety (11%), apathy and lability (10%) most commonly noticed (occurring at least weekly as a serious problem). At baseline and follow-up, depressive symptoms (GDS-8) were observed in 28% and 27% of residents respectively. During their first year of NH residency, residents' quality of life decreased significantly (NHP score) with highest decrease in the domains of emotional reactions and social isolation. **Conclusion:** In this cohort of new NH residents, mental deterioration and associated behavioral problems were commonly observed. The one year follow-up showed a further decrease in mental health as well as in quality of life. Changing care goals for NHs have to be defined to tackle all behavioral and other problems associated with dementia aiming to improve quality of care for this growing NH population.

**OC32- CLINICAL RESEARCH IN EHPAD: WHICH STRATEGY TO ADOPT ?** P. Denormandie<sup>1</sup>, A. Letty<sup>1</sup>, S. Sanchez<sup>2</sup>, T. Deslespierre<sup>1</sup>, D. Armaingaud<sup>1</sup> (1) *Institut du bien vieillir Institut du bien vieillir Korian, Paris, France;* (2) *Assistant des hôpitaux, Pôle IMER, Hospices civils de Lyon, Lyon, France*

**Introduction:** Elderly people's needs change very quickly as well as treatments and environment. In this context the question is how to stay European leader in this area and we think it's led to permanent innovation in elderly people services. The development of applied clinical research seems to be a good way to answer those needs' evolution. **Methods:** A specific institution was created three years ago: Korian's wellness institute for elderly people. /Korian's institution participate and coordinate eighty research programs with twenty one university and industrial partners. 2200 professionals and 88 nursing home (senior's citizen's home ?) are involved in those research. We described successively methodology for identification and validation of projects, establishment's choice based on call for projects, team's support during researches, family and residents' involvement, funding plan as well as restitution communication and processing of data. **Discussion:** The issue for long-term care sector (EHPAD) is either to be a simple experiment place or to be actor and promoter of applied research programs. However, rigorous research on this area can't be set up without academic support and database development in terms of validity

and sharing. **Conclusion:** The results of our studies confirm the interest of applied research in nursing home for the creation of new departments, the valuation of the staff as well as the establishments' attractiveness and its relation with institution. Those results prompt us to develop a professional division dedicated to research and to value this kind of research in medico social sector in complementary with sanitary sector.

**OC33- REFLECTIONS ON NUTRITION-RELATED QUALITY OF CARE CONSIDERATIONS FOR NURSING HOME: OPPORTUNITIES AND CHALLENGES.** C.S. Johnson<sup>1</sup>, K. Hyer<sup>2</sup> (1) *University of Regina, Canada;* (2) *University of South Florida, USA*

**Introduction:** Today's nursing home (NH) population includes an increased number of frail elders with a higher proportion of those with complex care needs. Malnutrition and other dietary problems are widespread, with rates increasing over time in NHs, and these issues have been associated with poor health outcomes, morbidity, and mortality. The purpose of this paper is to highlight the challenges and opportunities associated with nutrition-related quality of care considerations for nursing homes. **Methods:** Through an analysis of nutrition and nursing home publications in various research databases, we have highlighted conceptual and methodological challenges and opportunities associated with nutrition-related quality of care research among NH residents using the Donabedian's Quality of Care (QoC) Model. This model, which articulates that quality is the result of the complex interaction of structure, process, and outcomes, is appropriate as the nutritional problems commonly seen in NHs are multilevel and multifactorial, reflecting the complex care needs of today's NH residents. **Results:** In the literature, structural components have included facility-level characteristics (size, profit status, physical layout), personnel characteristics (staffing number and skill mix) those internal to the facility (resident care levels and characteristics) or external such as a regulatory standards governing practices. A structural element that has gained the most attention is staffing, particularly the level of direct care nursing staff. While adequate direct nursing staff levels are necessary, studies show that it may not be sufficient for improving nutrition-related QoC in NH. Future research should examine the roles and responsibilities of indirect staff, staffing ratio, and other staffing related aspects on nutritional outcomes as well as the mechanism underlying the relationship between staffing and nutritional outcomes. In addition, the impact of staff education and training on nutrition related quality of care needs further examination. While structure-related building codes for NHs have existed for decades, there has been very limited research on the impact of physical layout of NHs on quality of care. Only recently, the new innovative green house concept and shared-housing arrangements especially for care dependent elderly or special care units which offer flexible structures of care are being tested. Very few studies have examined the role of these facility characteristics (facility size, location (rural vs. urban) and market/economic characteristics such as for profit/not for profit status, occupancy rate, Medicaid reimbursement rates) in nutrition related quality of care outcomes. Process, in the NH literature related to QoC, refers to the deliverance of care or services and/or interactions between the staff and residents (e.g., meal provision) or a mechanistic pathway interfacing the structural and outcomes aspects of the quality of care equation. However, in NH research, the process of care is often the neglected component. A recent study involving experts from eight countries on the barriers to implementation of evidence-base strategies in practice in NHs identified various process elements such as staff shortage, lack of time, and poor implementation of knowledge. Further empirical studies should examine the role of process variables in achieving desired nutrition and health outcomes. The nutrition-related outcomes are the end results of those interactions (e.g., nutritional status generally and specific indicators such as weight gain/loss). Along with the monitoring of weight loss, which is an ultimate outcome and mandated reporting indicator for nutritional health, attention must be paid to poor dietary intake and other factors that precede its onset. Adequate training must also be provided to assessors, and their adherence to assessment protocols must be monitored. Currently, there is discordance between the indicator required for regular monitoring and what might be most beneficial to bring positive nutritional improvements in the residents. The literature highlights specific methodological challenges in studies considering NH residents as a homogenous group, under powered studies with small sample size, and a lack of coherent conceptualization and operationalization of key nutritional constructs. Opportunities exist to address knowledge gaps related to the three main components of nutrition-related quality of care as well as to develop valuable explanatory models to guide promising interventions to improve nutritional health. **Conclusions:** While each of the components of the quality of care model is essential, the integration and alignment of the care process with the structural element to achieve desired nutritional outcomes is critical. As the senior population grows globally, the need to address nutrition-related quality of care will become more pressing. Providing quality care within the reality of this context will continue to be an increasingly important issue for decades to come. Improving nutrition in NHs should be a research, program, and policy priority.

**OC34- THE SMALL HOUSES PROJECT, ADANA-TURKEY.** S. Oglak<sup>1</sup>, N. Avci<sup>2</sup>, A. Canatan<sup>3</sup>, Ç. Arslaner<sup>4</sup> (1) *Adnan Menderes University, Faculty of Economics and Administration, Department of Labor Economics, Aydın-Turkey;* (2) *Adana Residential Care Director, Adana-Turkey;* (3) *Gazi University, Department of Sociology, Ankara-Turkey;* (4) *Akdeniz University, Department of Gerontology, Antalya-Turkey*

**Background:** It is an obvious fact that the elderly prefer to stay as long as possible in their own houses than moving to an institution to get care services. To create familiar environment in the institution for the elderly is one of the most important factor for them not to become detached from life. "The Small Houses Project" is based on the idea of

creating such an environment for the elderly that they can continue their daily habits as if they still live in their previous environment and that they can be provided any services they need like security and care. The small houses are 42 square metres and appropriate for two people to live in, including living room, kitchen and bedroom. Additionally, Two women or two men are allowed to live in those small houses as well as couples are. **Objectives:** The aim of "The Small Houses Project" is not to create the feeling of loneliness and isolation, to reduce their dependency on other people as much as possible, by giving the elderly the feeling as if they still live in their own houses and familiar environment. The Project allows the elderly to continue neighbourhood relations, to protect their privacy, to welcome their guests in the house, and to spend time in their own gardens. **Results:** In the small houses, 9 people live who have Dementia. It has been observed that living in a environment which has home settings lets the elderly cope more effectively with the possible declines which aging process could cause. Also some behaviours and situations like malnutrition, irritability and aggressiveness are observed less in the small houses compared to standard institutions. More importantly, it has been seen significant decrease in the percentage of behavioural disorders and depression, and enhancement in their quality of life. **Conclusion:** It is strongly considered that creating an environment for the elderly which they can live with other people in home and community settings could be a perfect option and solution for individual care, instead of the standard residential care homes.

**OC35- A PILOT SUBACUTE CARE PROGRAM TO REDUCE NURSING HOME HOSPITALIZATIONS: EVALUATION OF TRANSFER DATA AND NURSING STAFF PERCEPTIONS.** B. O'Neill<sup>1</sup>, L. Parkinson<sup>2</sup>, T. Dwyer<sup>1</sup>, K. Reid-Searl<sup>1</sup>, D. Jeffrey<sup>3</sup> ((1) Central Queensland University, School of Nursing and Midwifery, Rockhampton, QLD Australia; (2) Central Queensland University, School of Biomedical Science, Rockhampton, QLD Australia; (3) PresCare, Inc., Toowong, QLD Australia)

**Backgrounds:** Emergency hospitalizations from the nursing home setting are associated with significant health, emotional and economic burden for residents and the community. Early recognition of the deteriorating resident and delivering sustainable subacute care at the nursing home has the potential to avoid unnecessary transfers and to facilitate early discharge if hospitalization is required. In response, PresCare, Inc., a nursing home provider in Australia, developed and implemented the Sub Acute Care pilot program in a nursing home in regional Queensland. The program included decision-support tools, clinical skills training for staff, new diagnostic equipment and support from selected nursing staff, referred to as Champions. Researchers from Central Queensland University were invited to evaluate the program to determine if the pilot program succeeded in reducing hospitalizations. A review of the literature found limited references to nursing staff response to hospital avoidance efforts; thus, it was determined their response should also be considered given their pivotal role. Thus, the aims were to evaluate the impact the program had on hospital admissions and nursing staff perceptions. **Methods:** A mixed-methods study was undertaken. Data was collected from pre and post-program implementation transfer data and focus group discussions. Transfer data included information on hospital admissions and length of hospital stay. Client diagnosis for subacute events in relation to transfers was also collected during the post-program period. Focus groups were undertaken prior to the introduction of the program and repeated within the first year after implementation. The questions asked in the sessions aimed to determine attitudes and perceptions regarding management of the deteriorating resident, as well as possible barriers to program success. Participants included the 75 nursing staff employed at the 94-bed nursing home. A thematic analysis of the pre and post focus group transcripts was undertaken to identify predominant themes. **Results:** Between January 2012 and January 2013 there were 52 hospital admissions; from January 2013 to January 2014 there were 60; and for the year in which the program was in place there were 30 hospital admissions. Average length of stay over each of these years was 8.5 days, 7.1 days and 5.0 days respectively; and total length of stay was 444 days, 427 days and 151 days respectively. Post program analysis of subacute events data indicated more subacute care was being provided at the nursing home; and no hospital transfers were made for urinary tract infections or confusion. The key finding from the focus groups was that there was a generally very positive staff attitude towards the program. Five themes were identified that contribute to this finding: Structure, communication, collaboration, up-skilling and balance. Some of the issues raised before the project commenced, such as lack of equipment, skills and knowledge, were perceived as improving. Workload continued to be perceived as heavy but focused more on providing care at the facility. Staff felt they had the skills, tools and knowledge to better manage the deteriorating resident and provide subacute care. There was an overall negative perception of the Champions that did not improve over time. Staff felt the Champion role was divisive and should be eliminated. **Conclusion:** There were almost half as many hospital admissions, reduced length of hospital stays, and more subacute care provided at the facility during the period under evaluation when compared with data from previous years. The Sub Acute Care pilot program had a positive impact on nursing staff. Staff felt that avoiding resident hospitalization was an important part of their role and that they were now better equipped to manage the deteriorating resident and provide subacute care; however, there were still concerns over how to balance the heavy workload. The Champion role needs to be defined and introduced early to prevent negativity and resistance.

**OC36- NEW METHODS TO EVALUATE PHYSIOTHERAPY CARE IN NURSING HOMES.** T. Deslepierré<sup>1,2</sup>, P. Denormandie<sup>1,3</sup>, F. Guilhem<sup>1,3</sup>, L. Jossereau<sup>2,3</sup> ((1) Institut du Bien Vieillir Korian, Paris, France; (2) University of Paris - Saclay, Versailles, France; (3) Hôpital Raymond-Poincaré, Garches, France)

**Background:** As information technology improves, so do health information systems.

They more and more include detailed health reports filled with the flow, by medical professionals and, right now, only used for medical purposes. These data are usually stored in huge data bases, also called data warehouses DWH. They include direct speeches, acronyms or simply words which are vastly ignored. New methods need to be designed to harness this kind of data. Korian is a private European group specialized in social and medical accommodation and support for elderly and dependent people. Korian manages facilities, including care and rehabilitation. The group has health records with data coming from both the medical and social dimensions, built through a professional DWH, using ORACLETM technology. This DWH contains lots of health unstructured data as described above, but also layered and indexed data which allows us to connect every health report to his or her owner. We choose to farm physiotherapy care, in our DWH, as a meaningful tool preserving motor function in frail, elderly people and preventing them from a long list of physical ailments: falls, accidents, inability to walk, hospitalizations, joint pain, weakness and sarcopenia... If properly followed, physiotherapy reflects how dependent people are taking care of, can be a good efficacy management indicator and, last but not least, significantly improve their health. The objective of this paper is to propose a first use of unstructured data using text mining methods for public health surveillance in a network of retired homes, RH. **Methods:** Data are recorded from 127 RH in France and transmitted weekly via the Internet to the DWH. Items collected include diagnosis, outcomes, as well as socio-demo information. 'Physiotherapy care' data takes the form of big size character fields (of up to 4000 characters), filled with either short sentences or just some words (see annex). Input quality can be precise, erroneous or just dull, depending on the referent nurse filling the data and the establishment data policy. We choose to collect data from four different periods: April 1st to September 30th in 2013 and 2014 and November 1st to March 30th in 2013 and 2014. We further worked on the residents' level and designed different domains by cleaning up data, removing redundancies, gathering logical information, building new files. By doing so, we improved the resident's health visibility: life course (NH entrance, series of hospitalizations and stays until death), dependency, pathologies and comorbidities, risk factors (such as falls, iatrogenic conditions, and undernutrition), prescriptions... Different techniques will be used to extract meaningful information: - coarse word analysis, for example, removing dates or words such as Yes, No; - using ORACLETM queries to detect some keywords such as 'good', 'worse', 'walk' and counting them; - text mining with either the RODM, R-ORACLETM Data Mining module or by exporting the text data to R with RTM packages such as tm or wordcloud. All these techniques can be combined to build residents' physiotherapy profiles. **Results:** While text mining is mainly exploratory and gives quality information, the fact that every health report refers to just one resident, allows us to control the residents' health profiles by using standard statistical analysis. In the case of physiotherapy, we will select, in every NH, residents who have a physiotherapy follow-up and those who don't and check if the NH's health policy is sound and appropriate. As in our example, we found during the four periods listed above, 1125, 1596, 1347 and 1313 different residents, whereas respectively 422 with joint deficit, 527 with articular deficit and 417 needing a walking technical help for the first period. We will carry on with the a physiotherapy typology in the weeks to come. **Conclusion:** While big data is often unstructured, our DWH has several layers of information: the residents' level, the nursing homes' level, the regions (in France) and countries levels (France, Belgium, Italy and Germany). By checking the results found at each step we secure the whole information process and we give new tools to monitor physiotherapy care and its effect on the residents. This method of cross matching data can be applied to other meaningful geriatric research fields such as contagious diseases, falls or hospitalizations. It offers a new possibility to monitor public health in RH and quality of care in real time by extending this approach to other aspects of medical files whiteout extra work for health care workers and, globally, improve the health and wellbeing of every resident.

Annex					
ID	DATE_ENTREE	ETABLISSEMENT	DATE_INFO	INFO_KINE	NB_MOIS_DEPUIS_ENTREE
184613	16/07/12	KORIAN AU FIL DU TEMPS	02/08/13	Renouvellement	13
184613	16/07/12	KORIAN AU FIL DU TEMPS	02/08/13	2 à 3 fois par semaine	13
184613	16/07/12	KORIAN AU FIL DU TEMPS	02/08/13	Maintien de l'autonomie	13
192586	21/09/12	KORIAN AUBIER DE CYBELE	03/06/13	bonne marche entre les barres, obstacles au sol passé, équilibre	

**OC37- TOWARDS THE DEVELOPMENT OF THE 'TIME & TASK-BASED STAFFING' TOOLKIT (TTB-STAFFING). ONE YEAR RESULTS OF A PILOT STUDY IN A CARE HOME.** C. Pliakos (University of Central Lancashire, UK)

**Backgrounds:** Determining what constitutes adequate staffing is a critical issue for care home providers in achieving high quality of care services while controlling the costs of caring provision. According to the Care Quality Commission (CQC), the independent regulator of health and social care in England, all care homes must provide 'sufficient numbers of suitably qualified staff' to meet the relevant regulation on staffing. However, despite that all CQC-registered providers must be certain there is adequate staffing to ensure clients' safety, a minimum standard number of staff is not clearly defined. Furthermore, establishing universal standard guidelines on staffing to apply in all the

cases, can be a daunting prospect. **Aims and methods:** The aim of this pilot study was to develop and test a decision making tool, the Time & Task-based Staffing (TTb-Staffing) toolkit, with the purpose to precisely estimate staffing requirements of a care home setting, while producing a general standardized procedure of staffing adequately in any care home. This pilot study used an Ethnographic approach by applying participant observation. The researcher was employed as a Night Care Assistant to monitor and participate in all tasks undertaken during 12 hours night-shifts in a care home. The toolkit was developed and tested in three stages for a total period of one year. First, a robust literature review conducted to identify key concepts and factors affecting staffing procedure in care homes. Second, a conceptual framework developed considering the determinants of effective staffing and task allocation with time assignment, to guide the construction of the tool. Lastly, the tool was designed in conjunction with the care home's individual needs and nightly performing tasks and tested among rotated staff members applying a participant observation approach. A small software application for the needs of the project was also constructed to analyse the data that were collected during the one-year pilot study, facilitating the decision making process of staffing. **Results and discussion:** A five-step process feature was produced to describe the Time & Task-based Staffing (TTb-Staffing) toolkit: 1. List extensively all tasks expected to be done within a working shift at a care home; 2. Construct a Care Staff Activities plan (CSA) using the above list, allocating tasks to each care assistant and assigning each task a speculated amount of time needed to be completed; 3. Monitor task implementation performed by different staff members and measure the actual amount of time needed per task to be completed; 4. Update CSA plan using the average actual time of all performers of each task, replacing speculated with the actual time as to be the expected time for each task separately; 5. Evaluate current staff situation, assess actual needs and predict number of staff members required to perform adequately the list of tasks in the updated CSA plan within the expected times of a shift. The toolkit turned out to be practical and successful in the context of predicting effective requirements of staff after some modifications. Implementation of the tool revealed functional gaps and waste of resources in the particular case study which led to major interventions by the care home management team, concerning staffing and organization planning. Preliminary results suggest that the tool's major strengths are: consideration of individual differences among the patients' caring needs; strong ability to identify gaps and pitfalls in staff performance and in organization planning; increased practicability by taking into account the average actual performance of currently working staff; considerable flexibility in future modifications and adaptation to emerging needs; inclusion of other factors such as system size, operations complexity and specifications of working environment (physical or technical); accuracy in timing tasks and recording activities and therefore in precise projection of costs; Major weakness that must be reported is demand of considerable time on the initial steps of implementation to measure tasks' actual times and establish the toolkit. Nevertheless, the TTb-Staffing toolkit in the pilot study proved to be realistic and practical in predicting staff requirements, as predictions were based on expected performance deriving from the measurement of the actual performance of the currently working staff. It also presented advanced flexibility on customization processes, while its task and time orientation -exploiting adequately the existed resources- combined sufficiently both managerial and gerontological principles, being resources-effective and well-being promoting. **Conclusion:** The TTb-Staffing toolkit is well based on the scientific literature and a validated conceptual framework while presenting promising results in the pilot study. This novel tool deserves further evaluation, especially by extending its application in day shifts and including different types of care homes with more complicated or advanced caring services. Further research is needed to confirm if the toolkit could be generally integrated in the operating systems of care homes to formulate interventions for safe and effective staffing implementation.

## POSTER

### P1- DRUG ADMINISTRATION IN SELECTED ICELANDIC NURSING HOMES.

Ó. Samúelsson<sup>2,4</sup>, H. Torfi Traustason<sup>1</sup>, P.S. Gunnarsson<sup>1,3</sup>, J. Eyjólfur Jónsson<sup>2,4</sup>, A. Guðmundsson<sup>2,4</sup> ((1) Department of Pharmacology, Medicine Landspítali University Hospital Iceland; (2) Department of Medicine University of Iceland; (3) Department of Science and Development, Medicine Landspítali University Hospital Iceland; (4) Department of Geriatric Medicine Landspítali University Hospital Iceland)

**Background:** Medication use in nursing homes is considerable and the prevalence of dysphagia and other impairments is significant, affecting the administration of medications in their original tablet form. The crushing of medications or mixing them with food can change the quality of a drug or render it unusable. 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. Wards were visited on 4 consecutive days in each nursing home. The study population was sorted by age, sex, and cognitive status. 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. A majority (54%) of drugs administered during the study period were crushed and this was common practice among nurses if the residents had problem swallowing whole tablets. Coated tablets and tablets with extended release were crushed in 61% and 39% of cases respectively. Acid resistant coated tablets and capsules were crushed in 54% and 29% of cases respectively. The most common food item used 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 efficacy was thus compromised. Published recommendations for proper drug handling and suggestions for alternative drug forms for patients with dysphagia proved to be limited. A list was constructed of medications that should not be crushed and cases noted where a more appropriate dosage form was available.

### P2- FORECASTING FUNCTIONAL STATUS FOR NURSING HOME RESIDENTS. C. Levy (Denver Veterans Affairs Medical Center and the University of Colorado Denver, USA)

**Introduction:** Functional status prediction has not traditionally been incorporated into rehabilitation in nursing homes despite its potential importance in goal setting. Tools to aid in the prediction of functional loss and recovery may assist families, residents and clinicians in care planning. **Objectives:** 1. Describe development of a tool to predict functional status recovery for nursing home residents; 2. Present two case studies illustrating the use of this online tool in care planning. **Discussion:** Objective 1: Describe development of a tool to predict functional status. The tool was developed using a sample of 296,051 residents in Veterans Affairs nursing homes from 1-1-2000 through 9-10-12, functional status data were used to assess the sequence of functional decline and recovery. Using a semi-Markov mathematical model to describe transition from one level of disability to another, residents hold current disability. In this approach, residents hold their current state of disability for  $t_{ij}$  days, called holding time in the state  $i$  before transition to state  $j$ . After this holding time, residents change from state  $i$  to state  $j$  with probability  $p_{ij}$ . The holding times  $t_{ij}$  are random variables each governed by a probability function  $f_{ij}(t)$ , called the holding time probability function. The probability of transition from state  $i$  to  $j$  in period  $t$ ,  $\pi_{ij}(t)$ , is calculated as:

$$\pi_{ij}(t) = p_{ij} f_{ij}(t)$$

Note that after the holding time, the probability of remaining in the same state,  $p_{ii}$ , is zero. Clinicians and patients are interested to know what is likely to occur next. In this formulation,  $p_{ij}$  can be interpreted as the time-invariant probability of changing to the next state. Furthermore, if  $\mu_{ij}$  is the average holding time for going from state  $i$  to state  $j$ , then the average time a resident will stay in state  $i$  is calculated as:

$$\mu_i = \bar{t}_i = \sum_j p_{ij} \int_0^{\infty} t dF_{ij}(t) = \sum_j p_{ij} \mu_{ij}$$

In brief, the average time in current state  $i$  is the weighted average of all expected transition times. Objective 2: Mr. Jones is an 89yo male with multiple myeloma admitted for rehabilitation following a 10day hospitalization for endocarditis. His baseline deficits include bathing, grooming and dressing. He wants to gain enough strength to move into assisted living where he can have assistance with bathing twice a week but he will need to be able to do daily tasks of grooming and dressing. At his care planning meeting, his daughter wants a projection of the time it will take to recover these two activities of daily living. What is the probability he will recover given his baseline functional deficits and how many days on average is it likely to take him to meet his goal? The function forecasting calculator will be applied interactively during the session to demonstrate its use in care planning for Mr. Jones. Mr. Tidwell is entering the nursing home after a prolonged hospital stay for complications related to chemotherapy for metastatic melanoma. He has deficits in bathing, grooming, dressing, transferring, walking, urinary continence and feeding. He wants to have surgery to remove the portion of his colon that was damaged by the chemotherapy so he can have his next round of chemotherapy but has been told he needs to be able to eat and walk before they will consider taking him to surgery. What is the probability he will recover given his baseline functional deficits and how many days on average is it likely to take him to meet his goal? The functional forecasting calculator will be applied interactively during the session to demonstrate its use in care planning for Mr. Tidwell. **Conclusion:** This functional status prediction tool has the potential to add valuable data to care planning in nursing homes.

### P3- HOW ADVANCED PRACTICE NURSES PROMOTE RESIDENT AND FAMILY CENTRED CARE IN LONG-TERM CARE FACILITIES IN SASKATCHEWAN. T. D. Campbell, C. Pohl (College of Nursing, University of Saskatchewan, Canada)

**Background:** There is a growing population of older adults in Canada and this is expected to place an unprecedented strain on the healthcare system as many older adults will require increasingly complex care in Long Term Care facilities (Donald et al., 2013). Concurrently there are smaller numbers of physicians providing services in Long Term Care settings (Frank et al., 2006) and this has prompted an increased interest in the use of Advanced Practice Nurses to meet the resident and family needs. A systematic review which examined the effectiveness of Advanced Practice Nurses in Long Term Care found that APNs have been shown to decrease the rates of depression, urinary incontinence, pressure ulcers, restraint use, and aggressive behaviours amongst residents (Donald et al., 2013). Residents of Long Term Care facilities who employ Advanced Practice Nurses were also able to better meet personal goals and had family members who expressed increased satisfaction with medical care (Donald et al., 2013). **Objectives:** The overall goal of the study was to describe the role of Advanced Practice Nurses in Long Term Care settings in Saskatchewan, Canada. This goal included examining practice settings, roles, and practice patterns of Advanced Practice Nurses to identify the facilitators and barriers to implementation of Advanced Practice Nursing roles. For the purposes of this presentation we describe how Advanced Practice Nurses promote resident and family

centred care in a sample of Long Term Care settings in Saskatchewan. **Methods:** A sequential explanatory mixed methods design was used. In Phase One we surveyed Advanced Practice Nurses working in Long Term Care with a questionnaire. In Phase Two we conducted interviews with those who completed the questionnaire and consented to an interview. **Study Participants:** Advanced Practice Nurses who have worked in Long Term Care facilities in Saskatchewan in the past year. **Recruitment:** Purposive sampling was used. Advertisements were placed in: 1) Saskatchewan Registered Nurses Association Newsbulletin and the 2) Saskatchewan Association of Nurse Practitioners website. The Clinical Nurse Specialist Professional Practice Group was also asked to recruit Clinical Nurse Specialists who worked in Long Term Care. Seven Registered Nurse (Nurse Practitioners) contacted the Primary Investigator to participate in the study. **Data Collection:** A 50 item Questionnaire for Nurse Practitioners developed by Donald and Martin-Misner (2011) was adapted for use in this study and completed by seven study participants. Questionnaire participants were asked to participate in an interview for follow-up explanations. Six 20 to 60 minute interviews were conducted by CP and TDC at the participants' workplace or over the phone. **Data Analysis:** Demographic descriptors of the participants including age range, education, etc. were analyzed. Survey data was analyzed mean, median, 90th percentile using Excel. The interviews were analyzed using Interpretive Description (Thorne, 2008) and involved the following processes: immersion in transcripts, comparison of interview data, questioning, reflective techniques, and critical examination of the data. **Results:** One main theme and four sub-themes were extrapolated. The main theme was Resident and Family Centred Care. The four sub-themes were: 1) Timely access to primary care; 2) Medication reconciliation; 3) Decreased transfers to hospital; and 4) Collaborative inter-professional practice. **Conclusion:** Registered Nurse (Nurse Practitioners) who are employed in Long Term Care homes provide resident and family centred care in a collaborative manner by: • Being available to address resident concerns in a timely manner. • Decreasing the number of medications taken by residents. • Decreasing transfers of residents to hospitals for emergencies or for palliative care. • Working closely with residents, families, and other members of the healthcare team to improve resident and caregiver experience.

**P4- DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF SCALES MEASURING THE DEMANDS AND RESOURCES WITHIN PALLIATIVE NURSING PRACTICE.** K. Penz<sup>2</sup>, D. Goodridge<sup>1</sup>, L. Hellsten-Bzovey<sup>2</sup> ((1) College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; (2) College of Nursing, University of Saskatchewan, Regina Saskatchewan, Canada)

**Background:** Long-term care (LTC) homes have become a major location of death in Canada, with formalized palliative care programs being absent from most care settings. The nurse to patient ratio is low in LTC compared to other settings, with fewer nurses being expected to provide quality care to many clients with multiple chronic and life-limiting conditions. Our concern is that the mental/emotional toll experienced by nurses who are working to meet the complex needs of a growing palliative population has been largely overlooked. **Objectives:** The objectives of this study were to: 1) Develop two new scales measuring the work-related demands and work-related resources of nurses who provide palliative and end of life care in a variety of care settings, 2) pilot test and evaluate the psychometric properties of the Palliative Care Nursing-Job Demands (PCN-JD) Scale and Palliative Care Nursing-Job Resources (PCN-JR) Scale, and 3) reduce each scale for inclusion in a large provincial study. **Method:** Scales were developed based on a qualitative study, an extensive literature review and the expertise of research/advisory team members. Content validity was evaluated by RN experts in the field, with internal consistency reliability evaluated through Cronbach's alpha coefficients. **Results:** A total of 55 nurses from a variety of practice settings (e.g., long term care, acute care, home care) were involved in the pilot testing. Each subscale was reduced to 4-items, resulting in a 36-item PCN-JD Scale and a 32-item PCN-JR Scale, and were included in a province-wide survey of registered nurses. Examples of PCN-JD Scale dimensions included: Perceptions Surrounding Palliation, Environmental Climate, Ethical Issues, Workload/Staffing, Complex Symptom Management, and Organizational Constraints with an overall Cronbach's alpha of 0.95. Examples of PCN-JR Scale dimensions included Role Clarity, Access to Resources/Supplies, Collaboration, Collegial Support, Leadership, Autonomy, and Continuity of Care, with an overall Cronbach's alpha of 0.91. **Conclusions:** The two new scales outlined capture important aspects of palliative and end of life nursing practice applicable to a broad range of care settings, designations, and scopes of practice. Quantifying the measurable demands and resources inherent in this important area has the potential to inform policy supporting this type of care, and future research exploring the professional quality of life of nurses and other health care professionals whose aim it is to provide quality care at the end of life. **Key Words:** Job Resources, Job Demands, Palliative Nursing Practice, Work Life, Scale Development, Work Engagement, Psychometric Evaluation

**P5- HEALTH SERVICE UTILIZATION AND MORTALITY RISKS OF PERSONS WITH DEMENTIA FOLLOWING ADMISSION TO A NURSING HOME: A LONGITUDINAL ANALYSIS LONG-TERM FACILITY AND COMMUNITY RESIDENTS.** F.W. Porell (Gerontology Department, McCormack Graduate School of Policy and Global Studies, University of Massachusetts, Boston, USA)

**Background:** Older persons with dementia who enter nursing homes have higher mortality rates relative to those who continue to live in the community with assistance. Past research suggests that this is attributable more to the selective admission of persons at greater risk of death (social selection), rather than adverse consequences of relocation stress and/or poorer quality of care in nursing homes (social causation). However, very

few studies have examined actual patterns of medical service utilization that accompany nursing home institutionalization and their implications toward social selection versus social causation explanations of the elevated mortality risk. This study examines changes in rates of physician service use, inpatient hospitalization, preventable hospitalizations, and emergency room(ER) visits that follow institutionalization of older persons with dementia. **Methods:** The data source is a unique national U.S. longitudinal dataset (2001-2006) derived from Medicare claims data. The sample consists of 109,373 aged community-resident fee-for-service Medicare beneficiaries who met claims-based diagnostic criteria indicating Alzheimer's Disease or Related Dementia (ADRD) at baseline, in 2001, or earlier. Nursing home admission was measured by the presence of MDS nursing home claims in two or more consecutive years. Time (in years) was defined as zero in the year of nursing home admission. Beneficiaries who were not admitted to a nursing home were randomly assigned a pseudo-admission year, and were retained in the sample if they were alive during year zero. In addition to a random effects discrete time survival model, random effects negative binomial trajectory models were estimated with the annual outcome measures: ER visits, physician contacts, all hospitalizations, and hospitalizations for urinary tract infection (UTI), gastroenteritis, and bacterial pneumonia. Nursing home admission effects were estimated via a set of post-nursing home admission-year dummy variables. **Results:** Nursing home institutionalization was associated with increased mortality risk in the year of admission. Lower, but still elevated, mortality risk continued for several years after admission. Patterns of elevated rates of annual physician contacts mirrored those of mortality risk. Rates of hospitalization (all), UTI hospitalizations (preventable), and ER visits were only elevated in the admission year. In succeeding years, rates for all hospitalizations and ER visits were lower among nursing home residents with dementia relative to community residents with dementia. Institutionalization was not associated with elevated hospitalization rates for gastroenteritis and bacterial pneumonia, conditions believed to be preventable with accessible medical care. **Conclusion:** Findings from this analysis of longitudinal Medicare service data for over 100,000 older persons with dementia suggest that social selection and social causation effects contribute to elevated mortality following nursing home admission. Mirrored patterns of physician contact rates and mortality risk are suggestive of social selection effects. However, sharp admission-year peaks in rates of ER visits, all hospitalizations, and UTI hospitalizations are suggestive of deleterious short-term social causation effects associated with community to facility transition. There was little evidence to suggest that restricted access to care, reflected by higher rates of preventable hospitalizations, is an important contributing factor. Overall, the study findings point to the continued importance of developing a fuller understanding of how caregivers can work with nursing home staff to help ease the transition from home for their loved ones.

**P6- LOW PHYSICAL PERFORMANCE IS ASSOCIATED WITH ADVERSE OUTCOMES REGARDLESS OF FLU VACCINATION STATUS IN INSTITUTIONALIZED OLDER ADULTS.** M.U. Pérez-Zepeda<sup>1</sup>, B. Vellas<sup>2,3</sup>, M. Cesari<sup>2,3</sup> ((1) Geriatric Epidemiology Research Department, Instituto Nacional de Geriatria, Mexico City, Mexico; (2) Institut national de la santé et de la recherche médicale (UMR1027), Université de Toulouse III Paul Sabatier, France; (3) Gérontopôle, Centre Hospitalier Universitaire de Toulouse, Toulouse, France)

**Introduction:** As aging population increases, so does the need of long term care; it is estimated that costs derived from this could double or triple in the next four decades. Despite the new modalities of long term care, institutionalization remains the main category of this kind of care. In addition to dependency of the residents, concomitant diseases are of special importance in nursing homes. Pneumonia due to influenza virus is one of the challenges health professionals are faced with in these subjects. Vaccination has shown to be effective in the majority of the populations, mainly when indications are followed strictly. However, there are some reports that still point to a lack or a lowered effectiveness of vaccination in older adults. This issue is of increasing interest due to the cost of the prevention strategy and in the other hand the search for new or additional strategies to prevent the flu and mainly its adverse outcomes. The aim of this report is to describe the incidence of adverse outcomes in groups divided by physical function and vaccination status. **Methods:** Data are from the "Incidence of pNeumonia and related ConseqUences in nursing home Residents" (INCUR) study, which has been previously described elsewhere. Briefly, INCUR is a prospective observational cohort study in 13 nursing homes that were randomly selected in the Midi-Pyrénées region of France and followed for 12 months. Four groups were integrated according to flu vaccination status and physical performance: very low physical performance and vaccinated, very low physical performance and not vaccinated, fair physical performance and vaccinated and fair physical performance and not vaccinated. Outcomes were compared between each group: mortality, pneumonia, and hospitalization. **Results:** In the bivariate analysis, those older adults who died (n=127, 16.8%), were older (88.24 vs 85.6, p<0.001), more frequently women (62.9%, p=0.001), and significantly lower scores of MNA, ADL, IADL and SPPB scales. There was no difference between groups of physical performance/vaccination. From a total of 659 older adults that had pneumonia on follow-up (87.51%), age was higher (87.13 vs 85.23 years, p=0.006), were more women, had a lower institutionalization time (2.96 vs 3.77 years, p=0.043), and had lower scores in IADL scale (2.17 vs 2.55, p=0.015). From those with an overall visit to ER (n=668), sex and having depression were significantly different. Finally significant variables in those with an overall hospitalization (n=701) event were number of years in the current nursing home and MNA score. Groups of physical performance/vaccination were only significantly different between those with and without pneumonia (table 1 and figure 1 a-d). Also in the bivariate analysis, from those who had pneumonia-related death (n=158) only sex and IADL score were significantly different. Regarding those with a pneumonia-related hospitalization

(n=139) and with a pneumonia-related visit to the ER (n=133) only depression was significant (table 2). In addition, groups of physical performance/vaccination were not significant for any of the pneumonia-related outcomes (table 2 and figure 2 a-c). There was no significant difference between groups of physical performance/vaccination for any model of the overall adverse outcomes (table 3). Regarding pneumonia-related adverse outcomes, only the group that had very low physical performance and was not vaccinated had a higher risk of visiting an emergency department in all the models with hazard ratio of 3.53 (95% CI 1.22-10.19, p=0.02), when compared with the fair physical performance and vaccinated (table 4).

**P7- PERSON CENTRED CARE FOR BLACK AND MINORITY ETHNIC ELDERLY IN CARE HOMES OF ENGLAND: A REVIEW OF LITERATURE.** A. Talpur<sup>1</sup>, Dr P. Ali<sup>2</sup>, S. Bhanbho<sup>3</sup> ((1) PhD student, The University of Sheffield, England UK; (2) Lecturer, The School of Nursing and Midwifery, The University of Sheffield, England, UK; (3) Research Fellow, Sheffield Hallam University, England, UK)

**Background:** Person centred care (PCC) refers to the provision of care tailored to an individual's needs and preferences, underpinned by dignity, compassion, and respect. National service framework for older people (DH, 2001) set out PCC standard to overcome threats to a person's identity associated with living in care homes. PCC specific to older people in care homes is explicitly emphasized in policy doctrines and through equality act 2010 places a duty on public bodies to ensure the health and social service reflect the diversity of the population that they serve. However, disparities in health by ethnicity, particularly in old age are greatest and well documented. Care homes need to recognize the increasing heterogeneity of the older population and offer the services that incorporate people's cultural, religious and lingual difference. **Objective:** The aim of this literature review was to gain insight into how person centred care is designed and delivered for elderly people of BME groups in care homes. **Methods:** A systematic and comprehensive literature search was undertaken of electronic database: Medline, Web of Science, PubMed, CINHAL, Social Science Citation Index (SSCI), PsychInfo, AMED and British Nursing Index. Studies published between 2000 and 2015 in any peer reviewed journal were identified. A search to retrieve grey literature was also conducted of relevant websites: Google scholar, the Royal College of Nursing, National Institute of Clinical Excellence, and Department of Health. Each study was considered against the adapted quality checklists relevant to the study design. **Findings:** Four key areas were identified in the literature reporting PCC for BME elders in a care home. The themes include 'Profile of BME elders in care homes', 'What affects provision of PCC', 'What is the impact of PCC', 'How can we ensure provision of PCC'. 1) Profile of BME elders: This theme describes profile or personal characteristics of BME elders that shapes their expectation of care and affects theory perceptions of care. It highlights factors such as socioeconomic position, long-term impact of migration, personal experiences (e.g. Racial harassment and discrimination), experiences related to access to healthcare (e.g. Referrals), expectations from services, barriers affecting experiences (e.g. communication/lingual barriers), difference in culture, lifestyle and religion, and biological susceptibility). 2) What affects provision of PCC: this theme describes factors (enablers and barriers) that affect provision of PCC in nursing care. These include institutional factors such as cultural and religious insensitivity, trust and mistrust, stereotyped assumptions, demand of care, policy and guidelines, situational characteristics (e.g. Burn out and level of conflict), service provision (e.g. Interpretation and dietary considerations), staff characteristics, and inadequate organizational response to any untoward incidence specific to person centred care. 3) What is the impact of PCC: This theme is associated with impact of PCC that include impact on health and quality of life of BME elders (e.g. morbidity and mortality associated to provision of cultural sensitive care) 4) How can we ensure provision of PCC: This theme relates to strategies that can be used to provide PCC. Strategies such as collaborative decision-making, resident directive care, interpretation services, staff training and empowerment, recruitment and retention of staff from BME groups, and recognition and immersion into another culture. **Conclusion:** This review indicated that ethnic and cultural differences have an impact on all aspect of health of BME elders in care homes. The review also highlights the lack of research around the definition and integration of PCC policies and guidelines specific to BME elder in care homes. **Key words:** Person centred care, Black and minority ethnics, Inequalities in health, Care homes.

**P8- BUILDING ON SOCIAL WORKERS' STRENGTHS TO HELP RESIDENTS, FAMILIES AND STAFF DEAL WITH LOSS & GRIEF.** M. Bern-Klug (University of Iowa School of Social Work, Iowa City, Iowa, USA)

**Introduction:** Any serious approach to enhancing the quality of life in nursing homes must include an effective way to deal with loss and grief. Due in part to the advanced old age and the advanced chronic illness of most residents, nursing homes are settings in which people (residents, families and staff members) experience multiple, profound, and chronic losses. Social workers are mental health specialists who are also trained to be advocates, problem solvers and crisis managers. These skills can be directed toward helping to anticipate, identify, assess, and develop individual and system interventions related to loss. **Objectives:** 1) To review the core responsibilities of nursing home social workers and illustrate the fit with issues related to loss; 2) To present a review of key concepts in the grief and loss literature as they apply to the NH setting; 3) To review tools that can be used in the NH setting to assess for loss, and the extent to which they have been validated for use in multiple cultures; 4) To present examples of individual and systems-level interventions that social workers can bring to the NH setting to help people deal with loss. **Discussion:** Results from a thorough review of the interdisciplinary literature related to grief and loss as experienced by persons in long term care settings will inform this session.

Social work involvement can help enhance the quality of life of residents, families and staff who are repeatedly encountering multiple losses. Participants will be encouraged to engage in dialogue with the presenter about effective ways to assess and address loss in the NH setting. **Conclusion:** Loss is a common and potentially profound experience that many people in the nursing home setting are repeatedly confronted with. This session builds on the skills of social workers to suggest individual and system-wide interventions to help alleviate the pain and suffering associated with loss. We cannot prevent all losses, but we can improve the way we support people in their loss encounters.

**P9- DISCUSSIONS ABOUT CARE GOALS AND TREATMENT ORDERS ANTICIPATING FUTURE SCENARIOS IN DEMENTIA IN LONG-TERM CARE: A PROSPECTIVE STUDY.** S.A. Hendriks, M. Smalbrugge, C.M.P.M. Hertogh, J.T. van der Steen (Department of General Practice & Elderly Care Medicine and EMGO+ Institute for Health and Care Research, VU University Medical Center, Amsterdam, The Netherlands)

**Backgrounds:** The implementation of advance care planning in long-term care settings for patients with dementia has presented significant challenges. Timely and ongoing communication about expected health problems such as pneumonia and intake problems, and treatment options such as hospitalization is useful because these decisions may influence the quality of life. Therefore, we explore the current practice of physicians to initiate a discussion about care goals and treatment orders anticipating future scenarios for patients with dementia in long-term care. **Methods:** In the Dutch End of Life in Dementia study (2007-2011), data were collected prospectively (28 facilities, 372 patients). Semi-annually, physicians completed questionnaires about care goals and treatment orders anticipating future scenarios, and physicians registered any incident pneumonia, intake problems and hospitalizations. We described timing, prevalence, and longitudinal changes of care goals and treatment orders. Finally, we explored changes in care goals and treatment orders around the developing of pneumonia and intake problems, and whether hospitalizations were in line with care goals discussed earlier. **Results:** Care goals and treatment orders anticipating future scenarios were most frequently discussed upon admission (80%) and in the last six months of life (79%), but less frequently semi-annually (27% to 51%) because of a stable condition of the resident or because the care goals had been already discussed and were clear. Most of the residents had a palliative care goal during follow-up (57% to 62%). Resuscitation and hospitalization were most frequently discussed, but overall the treatment orders hardly changed during follow-up (11% to 22% had a do-hospitalize-order, 17 to 30% a do-not-hospitalize-order, and 50% to 75% no order), except for in the last six months of life (5% had a do-hospitalize-order, 59% a do-not-hospitalize-order, and 36% no order). Before developing pneumonia, 72% of the residents had a palliative care goal, and after developing pneumonia 76% of the residents had a palliative care goal; before developing an intake problem, 72% of the residents had a palliative care goal, and after developing an intake problem 93%. During follow-up, 47 residents were hospitalized of whom 40% had a palliative care goal and most had a do-hospitalize-order or no order. The most frequently reported reason for hospitalization was a fracture (in 80% of the patients with a do-not-hospitalize-order). **Conclusion:** Physicians discussed care goals and treatment orders particularly in the first weeks after admission and just before death. Most patients had a palliative care goal and do-not-treat-orders that did not change during follow-up because the majority of the patients already had a palliative care goal and physicians delayed discussion about additional treatment orders until the condition of the patient was actually worsening. Discussions about care goals and treatment orders such as hospitalization may help to establish a framework to anticipate future scenarios in an early phase of dementia. Future qualitative research may examine end-of-life strategies and benefits of a more proactive care process versus a more responsive process responding to the patient's condition.

**P10- DIFFERENCES REGARDING THE PROVISION OF CASE CONFERENCES IN DEMENTIA - SPECIALIZED VERSUS TRADITIONAL CARE UNITS: RESULTS FROM A CROSS-SECTIONAL STUDY.** R. Palm<sup>1,2</sup>, D. Trutschel<sup>1,3</sup>, M. Simon<sup>4,5</sup>, S. Bartholomeyczik<sup>2</sup>, B. Holle<sup>1</sup> ((1) German Center for Neurodegenerative Diseases (DZNE) Site Witten, Witten, Germany; (2) University Witten/Herdecke, Department for Health, School of Nursing Science, Witten, Germany; (3) Martin-Luther University Halle/Wittenberg, Institute of Informatics, Halle/Saale, Germany; (4) University of Basel, Faculty of Medicine, Institute of Nursing Science, Basel, Switzerland; (5) Inselspital Bern University Hospital, Nursing & Midwifery Research Unit, Switzerland)

**Backgrounds:** The aim of dementia-specialized care units (DSCUs) is to provide high quality care for residents with dementia and severe challenging behavior in nursing homes. In Germany, DSCUs receive additional funding to finance higher staffing ratios and implement dementia specific care interventions. One of these interventions are case conferences, a measure to develop a common understanding of the case. They are an important prerequisite for planning, providing and evaluating tailor-made interventions. Main barriers of implementing case conferences are resource constraints in staffing. Because of their better resources, we expect that DSCUs provide case conferences more often than traditional care units (TCU). The aim of the study is to compare the likelihood to receive a case conference of DSCU and TCU residents when adjusted for dementia-related characteristics and cluster effect of the data. **Methods:** Data were derived from the DemenzMonitor study in 2013. DSCUs were defined as care units exclusively for residents with dementia and severe challenging behavior who receive additional funding. They were compared to TCUs without a specialization and additional funding. We matched residents from DSCUs and TCUs with a genetic search algorithm over all potential covariates including the characteristics that serve as admission criteria for DSCUs (care level,

cognitive impairment, diagnosis of dementia, mobility) plus relevant sociodemographic variables (age, sex, place lived before moving into the nursing home). After matching, clustering was accounted for with a generalized mixed model. We calculated the odds ratio to receive a case conference. Data on case conferences were collected with the DemCare-Q, a standardized questionnaire that showed satisfactory reliability. **Results:** 246 residents living in 12 nursing homes on DSCUs were compared with 246 residents from TCUs from 24 NHs. After matching, the residents from the DSCUs and TCUs did not differ significantly with regard to dementia diagnosis, challenging behavior, mobility and care dependency. In the DSCU group, for 94% (n=224) of the residents a case conference was provided; in the non-DSCU group 84% (n=207) received a case conference. After adjusting for clustering no significant difference between DSCUs and non-DSCUs was found. **Conclusion:** In our sample, case conferences appear to be a widespread and frequently used intervention in nursing home residents with severe challenging behavior in DSCUs as well as in TCUs. DSCUs did not provide case conferences more often than TCUs in residents with similar characteristics although they have better staff resources. It may be possible, that other staff characteristics (e.g. number of nurses in part-time, shift schedules) or leadership quality is associated with the provision of a case conference. These characteristics were not investigated and need further attention.

**P11- ANTICIPATING THE EXPERIENCE OF BEING OLD.** S. Duarte<sup>1</sup>, M. Almeida<sup>1</sup>, P. Cordeiro<sup>1</sup>, I. Gil<sup>1</sup>, J. Apostolo<sup>2</sup>, A. Barata<sup>1</sup> ((1) *Department of Gerontological Nursing, Nursing School, Coimbra, Portugal;* (2) *Department of Gerontological Nursing and Research Unit, Nursing School, Coimbra, Portugal*)

**Background:** Increased life expectancy and access to health care, in a timely and appropriate manner, constitute an acquisition of socio-economic development of Western society. This development led to a peculiar situation aging and the prevalence of chronic and degenerative diseases generating situations of dependency in the medium and long term. The change and the decrease of family's social dominance and economic constraints dictate that many seniors realize the nursing homes as the space for the later years of life. Although the professional caregivers seek to recognize the aging process, it is actually difficult to deeper understanding since it is not experienced. From this assessment emerged the project «Anticipating the Experience of Being Old». Anticipating the Experience of Being Old is possible with the use of an equipment that simulates what an old person really feels. This equipment allows to simulate the changes that occur in the human body as it ages, namely, posture, dexterity, balance, touch, vision and hearing. With this initiative it's possible to provide an opportunity for participants to «put on the skin» of the elderly, experience the limitations, and understand what they feel. It can be used in several contexts, as with students, policy makers, formal caregivers, lay people, and family caregivers. So, the project «Anticipating the Experience of Being Elderly», aims to provide an experience of being older through the use of a simulator in specific scenarios. The objectives of the activity are: To sensitize young people to the aging phenomenon. Reflect on the impact of aging effects on daily life of people in the aging process. Identify and describe the difficulties of formal caregivers in providing care for the elderly. Contribute to the understanding (of caregivers) of the difficulties inherent to the aging process. Reflect on the elder care practices by comparing them with the difficulties they experienced with the simulator. Contribute to the improvement of older people's care. **Methods:** Initial assessment with a questionnaire; Presentation and demonstration of the use of the simulator; Organization of the trainees into groups and use of the simulator; Conduct a formative evaluation, in which each group will make a written account of the experience. Application of a questionnaire in the final session. Finally discussion as a group experience with the simulator (with registration by the viewer). **Results:** The first session was attended by twelve professionals, aged between 23 and 63 years; the most have no specific training in gerontology area. Before the session, they identified, as problems related to old age: mobility, sensorial (vision and hearing) and cognitive (especially memory). These terms are retained after the experience with the simulator even with more emphatic references, translated into verbalization of «I do not want to be old.» They continue to point to difficulties in mobility (climb up and down stairs, and get out of bed or chair), the change of vision (the perception of color, depth and side view), in hearing acuity and sensitivity to cold and heat. They indicate, as areas for improvement in the care they provide to seniors: «Enhancing the complaints of the elderly»; «Encourage daily exercises»; «Tailored care»; «Respecting the rhythm of each»; «Careful observation and support on Daily Living Activities»; «Have no sudden movements when dealing with the elderly». «Try to face the old person when caring» and «Have more patience to the difficulties expressed by the elderly.» **Conclusion:** Globally the experience is considered as enriching as it relates to care deliver to the elderly. The proposed project is still at an early stage and will continue to be implemented initially in institutions where students of Nursing Degree Course make clinical education. We will extend the same to other institutions since the results seem to demonstrate the effectiveness of the experience, considering what was verbalized by the participants. Thus, «Anticipating the experience of being old» can be a project with effective contribution in improving the care of the older people through the awareness of the difficulties inherent in the aging process.

**P12- FACTORS AFFECTING COSTS AND THE ORGANIZATION OF NURSING HOMES.** M.Á. Tortosa Chuliá, A. Fuenmayor Fernández, R.Granell Pérez (*Department of Applied Economics, University of Valencia, Valencia, Spain*)

**Background:** At present there is an important debate among suppliers of nursing homes in Valencian region about the public (regional) funding system. During the period of economic crisis there was a reduction and delay of this public funding that put in danger the future of these services. Due to this situation and waiting for a recovery it can

be of help for nursing home sector to approximate their costs and establish the factors that are affecting them. As they would like to maintain their provision on market with same quality, they need this information to improve the organization and functioning of their centres. Therefore, the aim of this study is double. First, to approximate the costs of a group of Valencian nursing homes and day centres during 2015 and second, to find out those factors affecting these costs. **Methods:** As it is not possible to collect the data from all Valencian nursing homes and day care centers we selected a sample of them from the association LARES C.V. The sample will be composed by a set of 45 nursing homes and their day centres located in different villages along Valencian region. These centres offer residential services to around 2.400 users. We developed and implemented a special survey which main characteristic is to depict the financial situation from firm accounts, given real information of costs. **Results:** Costs are estimated in total and also by different sections for the year 2015, and classified in different types. Apart from total costs per year and centre, mainly it is important to estimate the average daily cost per user and to compare it with the price that regional government is using to allocate public financing to nursing homes and day care centers. Our study shows this real cost is under the price given by the regional government. Other data of interest are related with the centre's sections. The ones that generate more burdens are staff costs (mainly from those workers who care directly to users), and secondly those services that can be outsourced, like kitchen, laundry or cleaning. And particularly those related with electric supply. More information is given in terms of internal accounts. We can remark again those related with staff, general buying and depreciation of real states. Furthermore, we studied other characteristics from centres and we demonstrate that most users have high degree of dependency, high number of centres is of medium size, and they are maintaining/exceeding number of staff than regional government requirements. We still show that demand for centres is large, with high occupancy rate, around 90%, due better economic situation of families in Valencian Region. Therefore, those factors that are affecting most the costs are: number of workers who care users directly, number of services that are outsourced, the size of centres, the degree of dependency of users, the old of the buildings. **Conclusion:** We corroborate that this group of Valencian nursing homes that we studied are very dependent of public finance (from subsidies and administrative contracts), around 75% of their financial sources, and these centres can be in financial troubles, due the price given by regional government are not covering the real costs of nursing homes and day care centers. With this general information of costs' centres and the factors that affect them they are more conscious of their financial situation and can apply some recommendations for improving. Unless there is a change in the public funding system these centres must introduce changes and controls in the organization of their services and daily buying (with electricity, food, wages, services to outsource, etc.) if they want to survive. **References:** (1) TORTOSA CHULIÁ, M<sup>a</sup> Ángeles; FUENMAYOR FERNÁNDEZ, Amadeo; GRANELL PÉREZ, Rafael (2011). "Evaluación de costes y financiación de las residencias de mayores. El sector no lucrativo en la Comunidad Valenciana". Madrid, Informes Portal Mayores, n<sup>o</sup> 129. [Fecha de publicación: 20/12/2011]. <http://www.imsersomayores.csic.es/documentos/documentos/tortosa-evaluacion-01.pdf>; (2) FUENMAYOR, A.; GRANELL, R. TORTOSA, A. Caring for older people. An analysis of the small business sector. [Cuidar a las personas mayores. Un análisis de las pequeñas empresas]. The Service Industries Journal. 2012, 32(15): 2347-2363. <http://www.tandfonline.com/doi/pdf/10.1080/02642069.2012.677827>

**P13- BIOPOLYMER SUGAR CANE: AN EXPERIMENTAL STUDY IN RABBITS BRINGS EVIDENCE OF A NEW CARTILAGE SUBSTITUTE IN DEGENERATIVE DISEASE.** P.C. Vidal Carneiro de Albuquerque<sup>1</sup>, S. Monteiro dos Santos<sup>2</sup>, J. Lamartine de Andrade Aguiar<sup>3</sup>, N.Teles de Pontes Filho<sup>4</sup>, R.J. Vieira de Mello<sup>5</sup>, C.M. Carneiro de Albuquerque Olbertz<sup>5</sup>, S.Tavares Paz<sup>6</sup>, P.E.M. Carneiro de Albuquerque<sup>7</sup>, C.Scanoni Maia<sup>8</sup> ((1) *Fellow Masterter degree, Associate Professor, Department of Surgery, UFPE, Recife-PE, Brazil;* (2) *Associate Professor, Department of Surgery, UFPE, Recife-PE, Brazil;* (3) *Associate Professor, Department of Surgery, UFPE, Recife-PE, Brazil;* (4) *Full Professor, Department of Pathology, UFPE, Recife-PE, Brazil;* (5) *Graduate student, School of Medicine, UFPE, Recife-PE, Brazil;* (6) *Laboratory technician, UFPE, Recife-PE, Brazil;* (7) *Graduate student, Pernambuco Health College, FPS, Recife-PE, Brazil;* (8) *Associate Professor, Department of Histology and Embryology, UFPE, Recife-PE, Brazil*)

**Purpose:** To assess the histological response of damaged osteochondral tissue in the femoral condyles of rabbits after repairing the wounds with sugar cane gel biopolymer, compared to the control group. **Methods:** A study was made of 16 New Zealand rabbits, at 90, 120 and 180 days. In all the animals, a lesion of 3.2 mm in diameter and 4 mm deep was induced in each right and left femoral condyle. The animals were divided into two random groups: Study: right knee, medial and lateral condyles, packing with sugar cane biopolymer gel; Control: left knee, medial and lateral condyles, underwent natural healing. The anatomical specimens were removed subjected to histological techniques, morphometric and statistical analysis. **Results:** In all the periods of the group under study, an inflammatory reaction mediated by giant cells and mononuclear cells, in the control group, there was early healing produced by fibroblasts and few mononuclear cells with statistical significance between groups. **Conclusion:** The biopolymer gel, caused an inflammatory reaction mediated by giant cells and mononuclear cells, while at the same unfilled defects, there has been a healing mediated by fibroblasts and low amounts of mononuclear cells. **Keywords:** Osteogenesis. Cartilage. Histology. Biopolymer. Rabbits.

**P14- DRUG-INDUCED TASTE DISORDERS: ANALYSIS OF PRESCRIPTIONS OF PATIENTS LIVING IN TWO NURSING HOME IN FRANCE.** C. Joyau<sup>1</sup>, G. Veyrac<sup>1</sup>, F. Delamarre-Damier<sup>2</sup>, A. Pasquier<sup>1</sup>, J. Priez<sup>1</sup>, P.Joliet<sup>1,3</sup> ((1) *Clinical*

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**Introduction:** Taste disturbances can lead to noncompliance with treatment, to nutritional deficiencies by anorexia as well as exacerbation of diseases or may contribute to depression. Many diseases can be the cause of these disorders. In the polymedicated elderly population, taste disorders are suspected as adverse reactions in 11% of cases. **Objectives:** To make a focus on drugs that may cause taste disorders based on prescriptions from patients residing in nursing homes. **Methods:** We analyzed 104 prescriptions of patients residing in two nursing homes of France. A descriptive analysis of the study population and of treatment of patients was carried out. To determine whether the drugs could be responsible for taste disorder, a search was performed for each of them in reference books, in the literature and in European database of suspected adverse drug reaction reports (Eudravigilance). **Results:** Among the 104 prescriptions, there are 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). Among the 905 drug lines, there are 234 different drugs, including 66 for whom taste disorders are described in reference books (mostly drugs acting on the renin-angiotensin system and antidepressants). **Conclusion:** Taste disorders greatly affect patients quality of life. This 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. Physicians should be aware of these side effects and their clinical consequences on the patients' quality of life.

#### **P15- A SIMPLE MODEL OF CRISIS MANAGEMENT IN THE NURSING HOME.** F. Delamarre-Damier (*Coordinating physician of nursing home, Hospital Practitioner, Cholet Hospital, France*)

Crisis situations in Nursing Homes are quite common because of the increase of the poly-pathological profile of the resident which is also mostly affected by Alzheimer Disease and other dementias. They are difficult to predict but some crisis can be avoided and their impact can be decreased if they are the object of care guidelines. The objective of this study is to propose a simple model of crisis management in the Nursing Home. **Design/Methodology:** To build this model we applied to five french nursing homes in the britany area the tools of crisis management that we usually use in business companies. **Results:** This study allowed us to identify a set of keywords that can be used to elaborate care guidelines. **Conclusion/Discussion:** The tool of management developed was successfully applied in an «acute behavior disorder» and in a sanitary crisis

#### **P16- THE THERAPEUTIC ENVIRONMENT IN NURSING HOMES: THE PROBLEMS OF IMPLEMENTATION.** K. Prashchayeu<sup>1</sup>, A. Ilnitski<sup>1</sup>, O. Startseva<sup>2</sup>, A. Barayev<sup>3</sup> ((1) *Belarusian Association of gerontology and geriatrics, Navapolack, Republic of Belarus;* (2) *Yaroslavl regional gerontology center, Yaroslavl, Russian Federation;* (3) *Yaroslavl state medical University, Yaroslavl, Russian Federation*)

**Introduction:** Nursing homes is a place of long-term staying of elders which have different geriatric syndromes and frailty status. The main clinical tool of evaluation of geriatric syndromes is Comprehensive Geriatric Assessment (CGA) which is the multidisciplinary diagnostic process which allows to determine the medical, functional, psychological, social capabilities of an elderly person in order to develop a coordinated plan of rehabilitation and care. The important part of such plan is the therapeutic environment, which details may be worked out on the base of CGA results. But such direction of activity in nursing homes is not worked out. The aim of study: to define the main principles of therapeutic environment using CGA in nursing homes. **Subject and Methods:** A total number of 437 elderly patients of nursing homes in Minsk and Yaroslavl over 75 years old were subjected to a CGA according original designed computer programme. On the base of functional mobility assessment, mini-nutritional assessment, mini mental state examination, Philadelphia geriatric morale scale and the Barthel index were evaluated the main geriatric syndromes which are typical for nursing houses with the construction of the model of therapeutic environment. **Results:** In nursing homes frailty was detected in 72.6% of the patients. Among them 5 groups of elders were evaluated: in 19.4% there were registered severe limitations of mobility and cognitive decline; 16.5% - moderate limitations of mobility and cognitive decline; 21.1% - severe or moderate limitation of mobility without serious cognitive impairment; 19.0% - severe or moderate cognitive impairment without limitation of mobility; serious cognitive impairment; 24.0% of patients hadn't significant problems with mobility and cognition. Nutrition status of 95.5% of patients was good, in 4.5% it was registered the risk of malnutrition; moral status was without decline in all patients; functional every day activity according to Barthel index was declined in 10.5% of all patient. So, according to this data the main problems of patients in nursing homes are the decreasing of mobility and of the cognitive function. According to the requirement of elders with these geriatric syndromes we had an experience of creation of target therapeutic environment which has the following structure: - the interior component: equipment of comfortable furnishings, clothing and shoes, adapted to the needs of elders, landscaping of the institution and the creation of aesthetically designed environment; - information management: rational placement of information stands, the issue of the monthly newspaper with training of cognitive function; - the socio-health component: supporting by rehabilitation equipment (chairs, toilets, chairs strollers walking or room type, installation of handrails in corridors, wards, equipping institutions of availability, the use of functional beds, grab handles for easy lifting and getting in bed); - the technical component (walking sticks for stability when moving,

crutches, walkers, prosthetic and orthopedic services); - the occupational therapy and physical rehabilitation, physiotherapy, ergo - and kinesitherapy; physical therapy, massage; - the psycho-pedagogical component: creation of favorable psychological climate, conducting individual and group psychological consultation, art therapy techniques; carrying out educational activities with the elderly to teach them skills to self-monitor health status, ability to use modern information technologies (cellular phones, computers, Internet), organization of cultural events (exhibitions, concerts, parties, excursions). In 6 month after such environmental intervention CGA was used. It was observed the improvement of mobility on 21.5% and of the cognitive ability on 12.5%. **Conclusion:** Using of the CGA in nursing homes may allow to create the homogeneous medical and social groups of patients which allows to make a target therapeutic environment. Most common group of elders in nursing house has the severe or moderate disorders of mobility and cognitive impairment. The optimal therapeutic environment for such patients must include such components as modification of interior, psychological-pedagogical and physical rehabilitation measures. **Keywords:** comprehensive geriatric assessment, nursing home, therapeutic environment.

#### **P17- BARRIERS TO TAKING UP SELF-INITIATED PHYSICAL ACTIVITIES BY INMATES OF NURSING CARE HOMES AS FACTORS HINDERING THEIR MARCH TOWARDS INDEPENDENCY IN THEIR HOME ENVIRONMENTS.** B. Gugala, B. Penar -Zadarko, M. Nagórska, D. Gutkowska (*University of Rzeszow, Medical Department, Institute of Nursing and Health Sciences, Chair of Nursing, Poland*)

**Introduction:** Nursing Care Homes, in Poland, exist as part of the long-term care program, which caters for patients not qualified for hospitalization, but requiring fulltime nursing care in continuation of their drug, dietary and rehabilitation therapy. There exists various forms, which only differ in their mode of operation, i.e., number of employed nurses, financing, classification and duration of patient's stay. Achievements are measured through the patient's improved functional capacity, physical and mental condition in preparation for independent life at home. A most popular type of Nursing Care Homes in Poland are the Social Welfare Homes. The inmates of both types of homes are mainly elderly persons, whose families or relatives are unable to provide the prescribed care necessary for their return to improved functional ability. Promoting self-initiated physical activity amongst patients is crucial to attaining improved physical and functional capability. The objective of the study was to investigate factors impeding engagements in self-initiated physical activities by inmates of Nursing Care Homes. **Data and Methods:** The study period spanned from 2013 till 2015. The 170 respondents were patients with somatic illnesses in Nursing Care Homes (35.3%) and with chronically mentally ill in Social Welfare Homes (64.7%). The respondents tipped for the research were selected from amongst 524 inmates of such resorts in Podkarpackie. The direct interview method using the author's designed questionnaire and standardized (Katz ADL, MMSE) tools was applied. The exclusion criteria included lack of intellectual prowess (MMSE), lack of comprehensible and logical answer to questions contained in the questionnaire, lack of functional capacity (Katz scale). Their subjective health evaluation was determined in terms of general health status, self-initiated physical activity, physical fitness and state of mental health. Factors influencing undertaking self-initiated physical activity using the barrier criteria were rated based on such factors as cognitive (lack of knowledge regarding the significance of movement for good health), cultural (lack of habitual attitudes), ideological (preferred passive forms of relaxation), psychological (unwillingness, fear of injuries), economical (poor living conditions, financial difficulties), and physical (medical exclusion, state of health). The survey was conducted using pollsters. The study assumed a statistical significance level of  $p < 0.05$ . The approval of the Bioethics Committee at the University of Rzeszów was obtained. **Results:** The respondents average age was 65.91, ranging between 30 and 95 years. As regards sex distribution, women constituted 56.5% while the male made up 43.5%. All the respondents were, according to the Katz scale, functionally capable. The subjective evaluation of overall health revealed that 41.8% were unsatisfactory, while 34.1% were satisfactory. 43.5% of respondents assessed their level of physical fitness as satisfactory, while 25.9% were unsatisfied. Persons from the group of chronically mentally ill assessed their physical fitness as very good and / or good more often than those with somatic illness ( $p=0.0123$ ). In assessing decisions to undertake self-initiated physical activity 42.9% were satisfied, 25.9% as unsatisfied and another 25.9% as very good or good. There were no significant differences in taking up self-initiated physical activities between both groups. While 46.5% respondents assessed their mental state as satisfactory, 22.4% and 28.3% assessed it to be unsatisfactory and very good and/or good respectively. Majority of respondents, regarding cognitive difficulties, showed lack of knowledge in the effects of participating in physical activity on their healthiness (80.6%). No significant differences in their knowledge was observed between the groups covered by the study. Persons with a satisfactory level of knowledge were very often of the opinion that being physically active is a necessity at every age (62.5%), while those with lack of knowledge asserted that aged persons should definitely not partake in self-initiated physical activities (27.0%) ( $p=0.0109$ ). The most commonly mentioned cultural barrier was lack of habits (21.2%). The most frequently given ideological barrier was paying too much attention to passive ways of spending free time (52.4%). Ideological barriers were less common amongst persons assessing their level of health as satisfactory than amongst those with very good and/or good state of health ( $p=0.0078$ ). This was similar to with satisfactory level of physical activity and with unsatisfactory, very good/ and or good level of fitness, who rarely mentioned ideological barrier ( $p=0.0103$ ). The most commonly mentioned forms of psychological barriers were unwillingness (32.9%) and lack of motivation (13.5%). The most commonly mentioned economic barriers were financial difficulties (15.9%) and poor level of living (14.7%). Young persons with economic difficulties were significantly more common than amongst the elderly ( $p=0.0306$ ). The

most common physical barrier was their state of health (44.7%). **Conclusions:** The most common impediments towards undertaking self-initiated physical activity by inmates of Nursing Care Homes were low level of knowledge regarding the positive impacts of physical activity on health, low subjective assessment of overall level of health, including the lack of habits and motivation. There does exist significant variations between respondents with somatic illnesses and those who are chronically mentally ill.

**P18- A SURVEILLANCE OF PRINCIPAL CHARACTERISTICS IN FIVE LONG TERM CARE INSTITUTIONS FOR THE ELDERLY, IN THE CITY RECIFE-PERNAMBUCO, BRAZIL.** I.F. Peixoto<sup>2</sup>, E.A.P. Figueiredo<sup>1,2</sup>, L.R. Dinniz<sup>1</sup>, M.M. Guedes<sup>1</sup>, D. Gomes<sup>1</sup>, D.G. Silva<sup>3</sup>, M.L.C. Dourado<sup>3</sup> ((1) Supervisor of geriatrics residence program in the Federal Clinical Hospital University of Pernambuco, Brazil; (2) Preceptor of geriatrics residence program in the Federal Clinical Hospital University of Pernambuco, Brazil; (3) Resident of geriatrics program in the Federal Clinical Hospital University of Pernambuco, Brazil)

**Background:** This study aims to examine the organizations and operation of five long term care facilities, for the elderly, in the municipality of Recife-PE, throughout a specific basis dates surveillance instrument, it was assessed how the institutions were organize and whether they meet the National Vigilance Sanitary Agency (ANVISA) regulations, it was not identified a list, or institution, that control the number or that do the surveillance of these institutions. **Methods:** Were analyzed five long-term care institutions (LTCI) in the city of Recife in a total of seven that were contacted, with surveillance instrument with multiple qualitative and quantitative observational variables, the results were analyzed using the Microsoft Excel 2007 program and a statistic software R version 2.14.1. **Results:** Two out of five institutions had private funding, 2 out of five was classified as philanthropic and 1 were fit as a philanthropic / private; Four LTCI worked with own specific features and one receiving public funds; three out five benefited from tax exemptions; when analyzed who funding the medicines all ILPS reported that the family paid all medications; Three out of five had subscribe to the Brazilian Ministry of Health; the profile of elderly patients admitted was as follow: 13.4% in the age group of 60-69, 39.4% between 70-79 and 47% were 80 years or more, 96% of elderly institutionalized were female and 4% were male; four out of five LTCI had made self-classifications as LTCI legal fulfilled requirements and 1 out of five give itself the terminology LTCI gerontology; three out five was fit as Modality I, two out five as Modality 2 and no one were classified as Modality III, by the standards of ANVISA; no LTCI outsourced food, all five in five institutions cooking theirs patients food; two out five working with continuous medical education program ; three out five LTCI had a occupational therapist and speech therapist, two out five had a physical educator, two out five had a social worker, two out five had a psychologist, one out five had a dentist; four out five had recreation and leisure, two out five had rehabilitation programs and three out five had specific area for nutrition and dietary. **Conclusion:** The network in the municipality of Recife isn't yet well regulated an controlled with ideal standards of ANVISA and neither they are officially regulated. **Key words:** Long term care institutions, characteristics, network, ANVISA, elderly.

Association of Impairment (Physical, ADL, IADL) and FNH Cutoff					
		Men (n=2,577)		Women (n=3,033)	
		Unadjusted	Adjusted	Unadjusted	Adjusted
PL	GS	1.47 [1.25:1.72]	1.34 [1.08:1.68]	2.65 [1.98: 3.56]	2.01 [1.36:2.97]
	GS:BMI	2.16 [1.77: 2.63]	2.05 [1.55: 2.71]	4.06 [2.83:5.82]	3.81 [2.32:6.23]
ADL	GS	.99 [.80:1.22]	.98 [.75:1.32]	1.66 [1.30:2.28]	1.83 [1.24:2.70]
	GS:BMI	1.04 [.78:1.38]	.90 [.60:1.35]	1.37 [.96:1.96]	1.19 [.72:1.95]
IADL	GS	1.67 [1.43:1.96]	1.48 [1.18:1.86]	2.85 [2.16:3.76]	2.32 [1.55:3.46]
	GS:BMI	1.66 [1.36:2.04]	1.36 [1.02:1.81]	2.57 [1.88:3.52]	1.53 [.97:2.43]

Models adjusted for age, race, number of years of school, smoking status, comorbidities, physical activity status; ADL – activities of daily living; BMI: Body mass index; GS: Grip Strength; IADL – instrumental activities of daily living; PL – physical limitations; GS cutoffs men<26kg; women <16kg; GS:BMI men <1.0; women <0.56

**P19- TOWARDS A MORE EFFICIENT AND EFFECTIVE USE OF PSYCHOTROPIC DRUGS IN NURSING HOMES: A QUALITY IMPROVEMENT PROJECT IN BELGIUM.** M. Azermai<sup>1</sup>, D. De Meester<sup>2</sup>, L. Renson<sup>2</sup>, D. Pauwels<sup>2</sup>, H. Warie<sup>2</sup>, M. Petrovic<sup>1</sup> ((1) Ghent University, Ghent, East Flanders, Belgium; (2) Leihome, Drogenen, East Flanders, Belgium)

**Introduction:** 'Working towards a more efficient and effective use of psychotropic drugs' was a quality improvement project, funded by the Belgian government. The goal was to reduce the high psychotropic drug use through education and by raising awareness of all actors. **Methods:** This was a pilot project (2013-2014) with a pre-post design in two residential care centers. The intervention group received an educational trilogy given by experts on psychotropic drugs, as well as one-on-one professional support. The control group received education-only without professional support afterwards. Drug use was recorded and coded according to the Anatomical Therapeutic and Chemical classification. Included psychotropics were antipsychotics, antidepressants and benzodiazepines. Measurements were done at 3 time-points: at baseline (pre), after 10 months (post) and

after 1 year (follow-up). **Results:** Residents' (n=119) had a mean age of 82 years, of which 71% were female. The mean drug use was 9 (range 1-21). Most commonly used drugs were central nervous system drugs (88%). At baseline (intervention group), the prevalence of psychotropic drug use was 72.3% (range 1-6). There was a significant reduction (<0.001) after the intervention, with a remaining prevalence of 60.5%. The overall mean drug use decreased to 8 (range 0-20). The comparison of pre versus post-measurements (intervention group) showed a strong decrease for benzodiazepines: 50% vs. 38%, followed by antidepressants 42% vs. 36%. The decrease of antipsychotics was less strong: 21% vs. 17%. In the control group (with education-only), there was a modest reduction of the psychotropic drug use: benzodiazepines 58% vs. 53%, antidepressants 44% vs. 41%, and antipsychotics 30% vs. 28%. **Conclusion:** This improvement project led to a significant decrease in the use of psychotropic drugs, even after 1 year follow-up. Education only had a very limited effect. The person-centered approach offered by the project staff was of a great value.

**P20- RESPIRATORY MUSCLE TRAINING AS A PREVENTIVE INTERVENTION IN INSTITUTIONALIZED ELDERLY WITH SARCOPENIA: A RANDOMIZED CONTROLLED TRIAL.** M.A. Cebria i Iranzo<sup>1</sup>, M<sup>a</sup> Á. Tortosa Chuliá<sup>2</sup>, M<sup>a</sup> J. Ponce. Darós<sup>1</sup>, M. Balaschi Bernat<sup>1</sup>, S. Balasch i Parisi<sup>3</sup> ((1) Department of Physiotherapy, University of Valencia, Spain; (2) Department of Applied Economics, University of Valencia, Valencia, Spain; (3) Department of Applied Statistics and Operational Research, and Quality, Polytechnic University of Valencia, Valencia, Spain)

**Backgrounds:** The most residents in the nursing homes are people with comorbidity that could lead to mobility disorders, impaired ability to perform activities of daily living, loss of independence and increased risk of death (1). This physical disability contributes to age-associated decline of skeletal muscle mass and strength, which is known as sarcopenia (2). In this context, sarcopenia in respiratory muscles (RM) and the reduced physical performance are two of the main causes of the respiratory functioning decline in elderly. Consequently, the inefficiency of the ventilatory pump could derive in respiratory failure, especially in case of disease exacerbations or exercise (3). Since regular exercise is a RM training modality and this is not possible in impaired elderly, it becomes necessary to implement alternative interventions in order to improve or maintain de RM function. The aim of this study was to evaluate the effects of a specific inspiratory training intervention on RM function in impaired elderly with sarcopenia. **Methods:** Fifty-two elderly (mean age: 81.8±1; 67.3% women; mean years of institutionalization: 2.3±0.3) from 4 nursing homes in Spain were recruited in 2014 attending the diagnostic parameters of sarcopenia (2) and those with cognitive impairment (MMSE < 20 points) and/or acute illness during the previous 2 months were excluded. Participants were randomly allocated into a control group (CG, n=26) or respiratory training group (RTG, n=26). The training intervention consisted in 7 cycles of 2-minute work and 1-minute rest, three alternative days per week during 12 weeks. The main outcomes were related to RM strength [maximum static inspiratory pressure (MIP, cmH<sub>2</sub>O) and maximum static expiratory pressure (MEP, cmH<sub>2</sub>O)] and to RM endurance [maximum voluntary ventilation (MVV, L/min)]. These variables were measured at two time points: pre-training (T1) and post-training (T2). **Results:** Baseline characteristics of both groups did not show significant differences (Table 1). An independent samples T-test to compare means of the MIP, MEP and MVV pointed out clear significant differences between both groups: MIP (t=-2.58, p=0.014), MEP (t=-2.56, p=0.014) and MVV (t=-2.42, p=0.020). Mean values of MIP, MEP and MVV showed a significant decrease in the CG while they remained stable in the RTG (Figures 1, 2 and 3). **Conclusion:** The specific inspiratory training was found to be an effective intervention to maintain respiratory muscle function (strength and endurance) in impaired elderly with sarcopenia. The importance of this outcome lies on the tendency observed in the trained group to maintain the respiratory muscle function, indicating that this is an intervention that prevents the decline showed in the control group. **References:** (1) Topinkova E. Aging, disability and frailty. Ann Nutr Metab. 2008; 52 Suppl 1:6– 11; (2) Cruz-Jentoft AJ, Baeyens JP, Bauer JM, Boirie Y, Cederholm T, Landi F, et al. Sarcopenia: European consensus on definition and diagnosis: Report of the European Working Group on Sarcopenia in Older People. Age Ageing. 2010 Jul;39(4):412-23; (3) Rossi A, Ganassini A, Tantucci C, Grassi V. Aging and the respiratory system. Aging Clin Exp Res. 1996; 8:143-161.1996;

**Table 1**  
Baseline characteristics of both studied groups: percentages and mean ± SE.

	Control group (n=26)	Respiratory training group (n=26)	p-value
<i>Anthropometrics</i>			
Gender (% M/F)	30.8/62.2	36.0/64.0	0.692
Age (yr)	81.7 ± 1.4	81.9 ± 1.4	0.908
Weight (Kg)	69.3 ± 2.5	72.9 ± 3.6	0.404
Height (cm)	152.4 ± 2.1	155.6 ± 2.3	0.307
BMI (Kg/m <sup>2</sup> )	30.0 ± 1.1	30.4 ± 1.6	0.838
<i>Diagnosed diseases</i>			
Respiratory (% Yes)	16	20	0.713
Cardiovascular (% Yes)	72	48	0.830

Endocrine (% Yes)	60	28	0.023*
Neurological (% Yes)	64	40	0.089
Musculoskeletal (% Yes)	60	44	0.258
Other diseases (% Yes)	24	32	0.529
<i>Pulmonary function</i>			
FVC (L)	1.71 ± 0.12	1.74 ± 0.13	0.862
FVC (% pred)	75.45 ± 3.72	72.32 ± 5.38	0.634
FEV1 (L)	1.24 ± 0.08	1.26 ± 0.08	0.849
FEV1 (% pred)	76.05 ± 4.89	72.86 ± 5.51	0.668
FEV1 /FVC (%)	75.03 ± 2.47	73.26 ± 2.11	0.588
PIF (L/s)	1.89 ± 0.11	2.06 ± 0.13	0.348
PEF (L/s)	2.62 ± 0.15	2.36 ± 0.17	0.257
<i>Respiratory muscle function</i>			
MIP (cm H2O)	32.8 ± 2.6	40.9 ± 4.4	0.116
MIP (% pred)1	65.5 ± 6.0	78.2 ± 8.1	0.211
MEP (cm H2O)	64.5 ± 4.9	65.9 ± 5.1	0.836
MEP (% pred)1	58.0 ± 4.6	58.8 ± 4.2	0.894
MVV (L/min)	35.1 ± 2.0	37.8 ± 2.6	0.407

Abbreviations: BMI= Body Mass Index; FVC= Forced vital capacity; FEV1= Forced expiratory volume at the 1st second; PIF= Peak inspiratory flow; PEF= Peak expiratory flow; MIP= Maximum static Inspiratory pressure; MEP= Maximum static expiratory pressure; MVV= Maximum voluntary ventilation; % pred= percentage of the reference value. Notes: 1Percentage of the reference value (Enright, et al., 1994); \* p<0.05

Figure 1  
MIP (cmH2O) for each group and time points measured

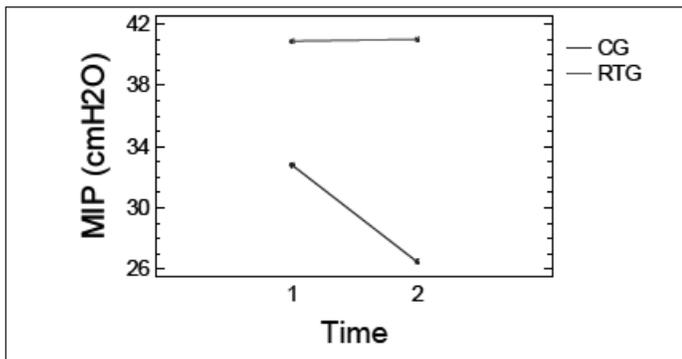


Figure 2  
MEP (cmH2O) for each group and time points measured

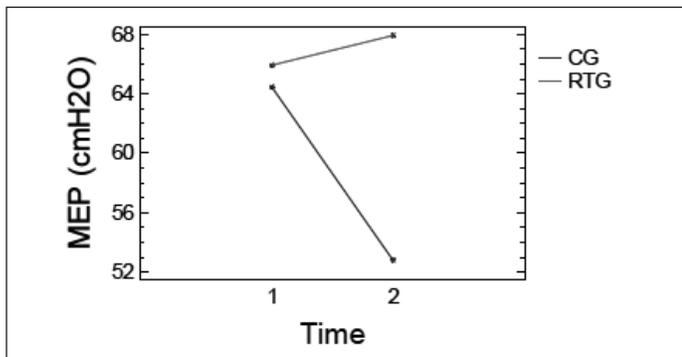
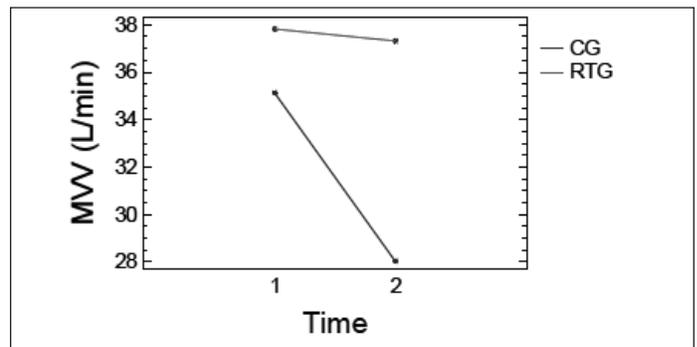


Figure 3  
MVV (L/min) for each group and time points measured



### P21- THE MODEL OF CARE OASIS IN LUXEMBOURG : AN EXTERNAL ACADEMIC EVALUATION PROVING GOOD CARE FOR PERSONS WITH ADVANCED DEMENTIA. J.-C. Leners (Long Term Care Institution ALA, Erpeldange, Luxembourg)

**Background:** In Luxembourg, the nursing home has an annual agreement evaluation by the Ministry of Family Affairs for single or double bedrooms in order to continue the caring. Since more than five years now, 2 institutions have introduced a pilot project for multiple bedrooms comprising between 5 and 8 beds in order to create the so-called nursing oasis (Pflegeoasen in German), where people with advanced dementia can be cared through some specific nursing techniques (aromatherapy, basic stimulation, validation, etc) in order to preserve a good quality of life. **Method:** The aim of the care oasis is to improve or maintain communication, to diminish anxiety, to guarantee comfort, to be present. Both care oasis are imbedded in two larger nursing homes, one for a general dependent elderly population, the other in a specialized institution exclusively devoted to Persons with dementia. The care approach is still well related to Tom Kitwood's work on patient-centered care and the model chosen to evaluate the positive interactions between carers and patients is based on Wessel's model on human ontogenetic. The admission criteria for the oasis are: a patient with advanced stage of dementia, mostly bedridden or wheel-chair bounded and an approval either by the patient's attitude or through relatives. An external academic evaluation was realized by a German university. The interaction between the Person with dementia and the caregiver was evaluated during 14 days and the reports concerning communication between both were split into several aspects in order to understand in details what was improved during the stay in the oasis compared to standard nursing home wards. **Results:** The main outcome from the Patient's point of view: in a global social interaction, the item 'giving' (Geben in German; defined as to act at the same eye level for both) was the highest: 71%; some kind of submission came in second: 17,1% and apathy was third: 5,1%. The interaction 'giving' was further subdivided in: openness to act = 36,7% and showing personal concern in 23,7%. From the caregiver's side the three major social interactions were: guidance (30%), recognition or valuating the Patient (18%) and negotiation (15%). Furthermore the caregiver's activity in direct contact with the Patient was in the care oasis 68% of the total activity, compared to 55% in a regular ward. Finally the burn-out evaluation for the caregivers showed lower values in the care oasis team (2,5) versus regular ward team (2,9) for the emotional exhaustion scale. (Maslach Burn-out Inventory). **Conclusion:** A positive outcome has been validated through an external evaluation team and this gave both institutions a continuous agreement for this type of care oasis at a regular basis in order to guarantee good quality of life even at an end stage of a dementia.

### P22- THE KNEE ARTHROPLASTY AS AN EFFICIENT SOLUTION IN THE KNEE DEGENERATIVE DISEASES IN ELDERLY. P.C. Vidal, C. de Albuquerque<sup>1</sup>, M. Souza<sup>2</sup>, C.M.C. de Albuquerque Olbertz<sup>3</sup>, P.E.M.C. de Albuquerque<sup>4</sup> (1) Professor, Department of Surgery, UFPE, Brazil; (2) Orthopedics Resident, Hospital das Clinicas UFPE, Brazil; (3) Master's Degree Student of the Department of Surgery, UFPE; (4) Medical Student Health of Pernambuco School, Brazil)

Bone and joint degenerative and inflammatory problems affect millions of people worldwide. They account for half of all chronic conditions in people over 50 years of age in developed countries. Due to the increasing world population, it is expected to raise the trauma to the musculoskeletal system. It is hoped that the percentage of people who will suffer bone diseases will double by the year 2020. It would become an important problem in public health, since such diseases cause severe disability in part of the economically active population. The knee is one of the most aided joints, resulting from its application as a load joint. The cartilage's physiological characteristic is low reparative capacity. The bone, in contrast, has a high ability to repair, but limited to large losses. Until today, no definite biological treatment was developed to replace these tissues. The joint prostheses have been alternatives, however with a limited lifetime. **Material and methods:** Between January 2013 and December 2014, there were 107 knee arthroplasties at the Hospital das Clinicas, Federal University of Pernambuco, most secondary to gonarthrosis. 92 patients were female and 15 male, aged from 48 to 85 years old. Patients were assessed initially by objective and subjective criteria, including the degree of personal satisfaction. **Results:**

Most patients showed no clinical complaints. However, there were 06 cases of infection, 03 cases of deep vein thrombosis, 10 claimed low pain with ambulation and 13 moderate pain. **Conclusion:** The performance of knee arthroplasty surgery proves to be a satisfactory alternative to reactivation of independent motor skills for patients with degenerative diseases of the joint. .

**P23- DOCTORS WORKING WITH DYING NURSING HOME PATIENTS MEET THEIR OWN EXISTENTIAL VULNERABILITY.** K. Jansen<sup>1,2</sup>, S. Ruths<sup>1,2</sup>, M.A. Schaufel<sup>1,3</sup> ((1) Research Unit for General Practice, Uni Research Health, Bergen, Norway; (2) Department of Global Public Health and Primary Care, University of Bergen, Norway; (3) Department of Thoracic Medicine, Haukeland University Hospital, Bergen, Norway)

**Background:** Altogether 46% of all deaths in Norway take place in nursing homes, making end-of-life care a central task for these institutions. End-of-life care involves complex issues of symptom management, psychosocial and spiritual distress, communication, and decision-making. Vulnerability is an intrinsic existential aspect of the clinical encounter both on the side of the doctor, patient and family. Doctors' own vulnerability facing life and death has been underestimated. The aim of this study was to explore how nursing home doctors' meetings with dying patients and their families are affected by existential vulnerability. **Methods:** We conducted a qualitative study based on three focus group interviews in Norway in 2012-2014. Participants were a purposive sample of 17 nursing home doctors (age span 33-65). The following question was the starting point for discussion: "Could you please share an episode treating seriously ill or dying nursing home patients that made a profound impression on you?" The interviews were taped and transcribed verbatim. We conducted the analytical process according to Systematic Text Condensation. **Results:** Three themes emerged. Informants described patiently tailoring dialogue with patients and next-of-kin, each varyingly reconciled with death. Powerlessness was described in the face of suffering, sadness, and family expectations. Death of the patient caused ambivalence between relief and grief. **Conclusion:** The way doctors working with dying patients in nursing homes meet their own existential vulnerability has implications for personal coping and patient treatment.

**P24- COMPARISON OF BODY COMPOSITION BETWEEN NURSING HOME RESIDENTS AND COMMUNITY DWELLING OLDER ADULTS.** T.W. Auyeung, S.W.J. Lee, J. Woo (Institute of Ageing, The Chinese University of Hong Kong, Hong Kong, China)

**Background:** Being underweight is a common observation in nursing home residents. The aetiology is complex and multi-factorial, including intrinsic poorer health condition and extrinsic environmental and dietary factors. It is uncertain which component of body composition is being affected most in nursing home resident. Muscle mass, being one of the components, determine physical function and activities of daily living. Therefore it has been studied extensively. However, the other components ,body fat and body water, has been less examined. **Objectives:** To study the difference in body composition between nursing home residents and community-dwelling older adults. **Participants and Settings:** One hundred and eighty three participants were recruited from a Geriatric Day Rehabilitation Centre, among them, 55 were nursing home residents and 128 were community-dwelling. Ninety were men and 93 were women. The mean age of the participants were 80.7 years (SD = 8.3 years; range: 60 to 97 years). Ninety were men and 93 were women. **Methods:** Each participant was subjected to body composition analysis by segmental bio-impedance assay method. Their cognitive function was measured by mini-mental status examination and their activities of daily living by modified Barthel Index (maximum score 100). We also measured their hand grip strength by dynamometer, the maximum of 4 trials, twice on both right and left side, was taken for analysis; and gait speed was measured by 6-meter walk test. **Results:** The nursing home group and the community-dwelling group differed in water, fat and muscle and also physical and cognitive function prior to age adjustment. (Table 1 and 2)

Table 1

Comparison between nursing home and community-dwelling participants in men

	Nursing Home N =32	Community N = 58	p-value
Men	Mean (SD)		
Age (years)	82.2 (8.0)	76.9 (8.2)	0.004*
BMI (kg/m2)	21.9 (3.3)	23.0 (3.7)	0.128
ICW (kg)	17.6 (3.0)	21.2 (3.0)	0.000*
ECW (kg)	12.0 (2.0)	13.8 (2.1)	0.000*
TBW (kg)	29.6 (4.9)	35.0 (5.1)	0.000*
Fat (kg)	16.8 (7.7)	14.9 (7.7)	0.267
Body fat %	28.7 (9.7)	23.1 (9.8)	0.012*
FFM (kg)	40.1 (6.8)	47.5 (6.9)	0.000*

ASM (kg)	16.9 (3.8)	20.8 (3.8)	0.000*
ASM / height <sup>2</sup> (kg/m2)	6.5 (1.2)	7.6 (0.9)	0.000*
Protein (kg)	7.6 (1.3)	9.1 (1.3)	0.000*
Minerals (kg)	2.8 (0.51)	3.2 (0.53)	0.000*
Grip strength (kg)	18.4 (6.0)	25.2 (7.3)	0.000*
Gait speed (m/s)	0.18 (0.17)	0.34 (0.29)	0.002*
MMSE	16.9 (6.9)	19.7 (6.3)	0.068
Modified Barthel Index	63.5 (17.8)	74.4 (16.3)	0.005*

BMI = body mass index; ICW = Intracellular water; ECW = Extracellular water; TBW = Total body water; FFM = Fat-free mass; ASM = Appendicular muscle mass; MMSE = Mini-mental status examination score; \* p < 0.05

Table 2

Comparison between nursing home and community-dwelling participants in women

Women	Nursing Home N = 23	Community N = 70	p-value
	Mean (SD)		
Age (years)	86.6 (6.8)	81.3 (7.5)	0.004*
BMI (kg/m2)	19.0 (3.8)	22.4 (5.1)	0.005*
ICW (kg)	13.1 (3.0)	15.3 (4.8)	0.041*
ECW (kg)	9.1 (1.8)	10.3 (3.2)	0.116
TBW (kg)	22.3 (4.8)	25.6 (8.0)	0.063
Fat (kg)	12.6 (6.8)	17.0 (8.2)	0.024*
Body fat %	28.7 (12.3)	31.9 (10.6)	0.221
FFM (kg)	30.4 (6.5)	34.1 (6.1)	0.017*
ASM (kg)	11.0 (3.6)	13.7 (6.6)	0.063
ASM / height <sup>2</sup> (kg/m2)	4.7 (1.1)	5.9 (2.5)	0.035*
Protein (kg)	5.6 (1.2)	6.6 (2.0)	0.042*
Minerals (kg)	2.4 (0.4)	2.4 (0.5)	0.574
Grip strength (kg)	12.0 (5.9)	14.7 (5.0)	0.034*
Gait speed (m/s)	0.12 (0.14)	0.36 (0.27)	0.000*
MMSE	12.2 (5.1)	18.1 (6.2)	0.000*
Modified Barthel Index	60.3 (16.7)	77.0 (17.6)	0.000*

BMI = body mass index; ICW = Intracellular water; ECW = Extracellular water; TBW = Total body water; FFM = Fat-free mass; ASM = Appendicular muscle mass; MMSE = Mini-mental status examination score; \* p < 0.05

However, after age adjustment, we could still observe a difference in the body water and muscle compartment in men but not in women. (Table 3) In nursing home residents of both genders, fat mass was maintained comparing to the community-dwelling counter-part.

Table 3

Difference between nursing Home and community-dwelling participants after adjustment for age

	Men	Women
	adjusted difference (95% CI)	
BMI (kg/m2)	-1.35 (-3.00, 0.30)	-2.74 (-5.14, -0.35)
ICW (kg)	-2.87 (-4.17, -1.56)	-1.02 (-3.10, 1.05)
ECW (kg)	-1.57 (-2.54, -0.60)	-0.41 (-1.82, 0.99)
TBW (kg)	-4.44 (-6.68, -2.20)	-1.43 (-4.90, 2.03)
Fat (kg)	1.01 (-2.49, 4.52)	-3.69 (-7.65, 0.27)
Body fat %	3.77 (-0.57, 8.11)	-3.78 (-9.35, 1.77)
FFM (kg)	-6.04 (-9.06, -3.02)	-1.52 (-4.28, 1.23)

ASM (kg)	-3.08 (-4.77, -1.38)	-1.39 (-4.47, 1.49)
ASM / height <sup>2</sup> (kg/m <sup>2</sup> )	-0.95 (-1.43, -0.47)	-0.75 (-1.85, 0.35)

CI = Confidence Interval; Bold number means p < 0.05

Since muscle mass is closely related to ICW, we further analyzed body water with adjustment for muscle mass. Men living in nursing home were demonstrated to have higher ECW despite having less TBW, ICW and ECW prior to muscle mass adjustment. (Table 3 ad 4)

**Table 4**

Difference in body water between nursing Home and community-dwelling participants after age and muscle mass adjustment

	Men	Women
	adjusted difference (95% CI)	
ICW (kg)	0.001 (-0.18, 0.20)	0.003 (-0.01, 0.04)
ECW (kg)	0.418 (0.02, 0.81)	0.262 (-0.04, 0.56)
TBW (kg)	0.419 (0.02, 0.81)	0.264 (-0.36, 0.56)

CI = Confidence Interval; Bold number means p < 0.05

Since nursing placement depends on the capacity of basic activity of daily living, we further examined the independent effect of nursing home on muscle mass by adjustment for Barthel Index. We observed that nursing home by itself was an independent risk factor of lower muscle mass in men but not in women. (Table 5)

**Table 5**

Difference in body water between nursing Home and community-dwelling participants after age and Barthel Index adjustment

	Men	Women
	adjusted difference (95% CI)	
Body weight (kg)	-4.477 (-9.22, 0.26)	-5.232 (-10.58, 0.12)
BMI (kg / m <sup>2</sup> )	-1.473 (-3.16, 0.29)	-2.871 (-5.34, -3.09)
ASM / height <sup>2</sup> (kg/m <sup>2</sup> )	-0.878 (-1.37, -0.37)	-0.708 (-1.980, 0.493)
Fat mass (kg)	0.780 (-2.889, 4.448)	-3.075 (-8.173, 0.222)
Body fat percentage (%)	3.202 (-1.73, 1.75)	-4.529 (-10.32, 1.26)

**Conclusion:** Older men living in nursing home were more susceptible to muscle loss despite having a relatively stable fat mass. In women living in nursing home, their body composition was similar to the community-dwelling older women.

**P25- THE VALUE OF A FREQUENCY-VOLUME CHART WITH POST-VOID RESIDUALS IN A POPULATION OF INSTITUTIONALIZED OLDER ADULTS WITHOUT COGNITIVE IMPAIRMENT.** V. Decalf<sup>1</sup>, A. Huion<sup>2</sup>, N.De Witte<sup>2</sup>, C. Kumps<sup>1</sup>, M.-A. Denys<sup>3</sup>, M. Petrovic<sup>4</sup>, K. Everaert<sup>3</sup> ((1) Department of Medical Sciences, Ghent University, Ghent, Belgium; (2) Department Education, Health and Social work, University College Ghent, Ghent, Belgium; (3) Department of Urology, Ghent University Hospital, Ghent, Belgium; (4) Department of Geriatrics, Ghent University Hospital, Ghent, Belgium)

**Background:** Nocturnal polyuria (NP) is a prevalent condition in institutionalized older people (84%). It is associated with nocturia or nocturnal incontinence and has an impact on sleep pattern, quality of life and is related to increased morbidity. An increased post-void residual (PVR) is associated with lower urinary tract symptoms. However, there is no general agreement on a cut-off value that indicates from which point an elevated PVR would contribute to urinary problems. Research on normative PVR during 24-hours in nursing home residents is currently lacking. In this study the use of an extended frequency-volume chart with documentation of the PVR urine volume after each micturition was evaluated in order to explore the prevalence of NP and investigate diuresis rate, voided volumes, urinary incontinence (UI) and PVR in nursing home residents without cognitive impairment. **Methods:** A multicentre prospective study was conducted between April 2014 and February 2015 in 5 nursing homes. Seventy three older residents were recruited by convenience sampling. Cognitive testing was undertaken using the Mini-Cog. Evaluation of lower urinary tract symptoms (LUTS) was made using ICIQ-mLUTS or ICIQ-FLUTS. Health status was evaluated using SF-36. Functional status was assessed using the Katz Index of Independence in Activities of Daily Living. A frequency-volume urine chart with post-void residuals (FVPVR) was assessed for 24 hours: voided volume (VV) (ml), incontinence (g) and post-void residual (ml; BladderScan® BVI 9400). Nocturnal Polyuria index (NPI) >33% was used to define NP. Bladder capacity (BC) was calculated

as the sum of voided volume and PVR. **Results:** Demographics: The median age of the 73 study participants was 84 years [IQR: 82-89] and 69% were women. All of them had a negative screen for dementia (Mini-Cog). The median total score on the Katz Index was 3 [IQR: 2-5]. Median scores on the fLUTS and mLUTS were 10 [IQR: 6-14] and 10 [IQR: 5-12], respectively. **Symptoms:** Data obtained from the FVPVR showed that 59% of the participants was continent, 22% had nocturnal and diurnal incontinence, 18% pure diurnal and 1% pure nocturnal incontinence. The median incontinence volume in the incontinent residents was 72g [IQR: 12-412g]. Nocturia was seen in 60 of the 73 residents (82%) and 31 residents (43%) gets up twice or more at night for voiding. Depending on the definition of PVR, the prevalence was 79% (PVR>50ml), 53% (PVR>100ml), 29% (PVR>150ml) and 15% (PVR>200ml). The median post-void nocturnal residual volume of 45 ml [IQR: 26-80 ml] was significantly higher than the median post-void diurnal residual volume of 35 ml [IQR:18-60 ml] (p=0.04). The prevalence of NP was 64% (median NPI: 54% [IQR: 43-68%]). Significant differences and detailed voiding characteristics of residents with or without NP (median NPI: 26% [IQR: 23-30%]) are described in Table 1. For age, gender, functional status, health status (all items of the SF-36), bothersome LUTS, duration of the night, UI and total urine volume no significant differences between two groups were found.

**Table 1**

Comparison of voiding characteristics between residents without and with NP

Variable	Non-NP (n=26)		NP (n=47)		p-value (Mann-Whitney U) Non-NP vs NP	
	Diurnal	Nocturnal	Diurnal	Nocturnal	Diurnal	Nocturnal
Urine volume (ml)	1080 [711-1389]	339 [208-436]†	660 [401-810]	680 [516-1020]‡	<0.001	<0.001
No. of voids	6 [5-7]	1 [0-1]†	6 [4-7]	2 [1-3]†	ns	0.003
Average VV (ml)	180 [142-225]	161 [100-281]	119 [90-179]	240 [153-340]†	0.001	0.047
Max. VV (ml)	265 [244-364]	213 [160-300]†	200 [150-250]	275 [200-475]†	<0.001	0.024
Average UI (g)	0 [0-2]	0 [0-0]	0 [0-8]	0 [0-4]	ns	ns
Average PVR (ml)	51 [23-75]	39 [22-71]	29 [17-51]	55 [26-87]†	0.041	ns
Max. PVR (ml)	86 [42-200]	58 [32-101]†	52 [32-105]	75 [36-131]‡	ns‡	ns
Average BC* (ml)	238 [179-329]	236 [175-340]	170 [123-207]	324 [210-428]†	<0.001	ns
Max. BC* (ml)	364 [270-461]	265 [214-385]†	242 [184-315]	411 [275-527]†	<0.001	0.022

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**P26- SUFFICIENT CARE SERVICES PROVIDED BY NURSING STAFFS FOR FRAIL ELDERLY IN SPECIAL NURSING HOMES IN JAPAN.** J.N. Kim, (University of Welfare, Iseaki City, Japan)

**Background:** In 2000, Japan implemented a mandatory long term care insurance (LTCI) system. In 2015, there were an estimated 6.01 million frail people (40 years and over) with certified levels of care (prevention) needs, about 0.49 million frail elderly living in special nursing homes (SNH) and approximately 0.90 million frail elderly living institutions (Ministry of Health, Labour and Welfare, 2015). To improve the quality of care in SNH, the LTCI law requires that the ratio of care workers (including nurses) to residents is one to three and of nurses to residents, one to thirty. The ratio of nursing home workers to residents has been used widely in previous studies to examine the quality of nursing home care (Chung, 2012). However, in light of the widespread problems in SNH in Japan, many policymakers and experts have called for high quality levels in SNH so that residents improve their health status. The majority of frail elderly in SNH have a high level of dependence, especially frail elderly with level 3 care needs and higher are eligible for admission to facilities in 2015 under an LTIS reform due to a bed shortage in SNH, even though they have their name on a waiting list, the frail elderly must wait for a bed at a facility to become available rather than being admitted into one of their first choices right away. It is necessary to assess the related factors in order to provide continuous sufficient care services to frail persons in SNH. However, there are only a few studies that directly address the care levels provided by care workers and nurses, even though their activities constitute the core of the care delivery process. The objective of this study was to identify the factors related to sufficient care services provided by care workers and nurses for frail elderly in SNH in Japan. **Methods:** The sample for this study included directors from all SNH in Japan. The study subjects included 1,637 out of 4,678 (35%) directors who had completed the questionnaires and returned them as a postal survey in August 2007. The dependent variables included whether sufficient care provided by care workers and nurses for frail elderly resulted in adequate services. Two categories were used for the evaluation of care workers and nurses: 1=No and 2=Yes, respectively. The independent variables were determined by the social demographic characteristics of facilities (including the number of residents, care workers, and nurses, and number of resident deaths), the

confidence rate among care workers and the nurses, and the placement of SNH. **Statistical methods:** A multivariate logistic analysis was used to examine the sufficiency of care services provided by care workers and nurses associated with the independent variable factors. All the analyses were performed with SPSS software, version 22.0. **Results:** Most subjects of special nursing homes were male (70.9%) and the mean age of subjects was 56.8. Regarding the provision of sufficient care for frail elderly by care workers and medical staff, 344 (23.1%) of care workers and 685 (46.5%) of nurses indicated that they provided sufficient care services. The outcome by logistic regression showed that sufficient care services provided by nurses were significantly associated with the confidence rate of care workers by directors in SNH. That means that the SNH directors with a high confidence rating by care workers were providing adequate care services by nurses. In addition, there was an association between SNH providing adequate care services by nurses and the number of resident deaths. This indicated that SNH with a higher number of residents deaths were providing adequate care services by nurses. In this controlled model, the SNH with adequate care services provided by nurses was associated with the age of the SNH directors. This relationship shows that older directors of SNH provided adequate care services by nurses. However, the provision of adequate care services by care workers did not significantly associate with any factors. **Conclusion:** We found that the confidence of care workers in SNH directors and the number of resident deaths is key to providing good quality care services by nurses for frail elderly in SNH in Japan. This study provides evidence that further discussion is needed on how the best to provide care services for residents in SNH in exchanging information and cooperating with care workers and nurses. **Acknowledgements:** The study was supported financially by the Mitsui Sumitomo Insurance foundation and the Universe Foundation. **References:** Castle, NG. (2008). Nursing home caregivers staffing levels and quality of care: A literature review. *Journal of Applied Gerontology*, 27(4), 375-405. Chung, G. (2012). Understanding Nursing Home Worker Conceptualizations about Good Care. *The Gerontologist*, 53(2), 246-254. The New York Times, 2015.5.28. ([http://www.nytimes.com/2015/05/28/opinion/we-need-more-nurses.html?emc=edit\\_th\\_20150528&nl=todaysheadlines&nlid=62676382&\\_r=0](http://www.nytimes.com/2015/05/28/opinion/we-need-more-nurses.html?emc=edit_th_20150528&nl=todaysheadlines&nlid=62676382&_r=0))

**P27- PRELIMINARY STUDY OF HUMAN SOCIAL INTERACTIONS DURING ENTERTAINMENT USING A COGNITIVE STIMULATION MEDIUM (MÉMOIRE-REDTM) IN A NURSING HOME.** E. Bougeois<sup>1</sup>, J. Duchier<sup>2</sup>, N. Vigouroux<sup>3</sup>, F. Vella<sup>3</sup>, B. Boudet<sup>4</sup>, P. Rumeau<sup>2,4</sup> ((1) LERASS, Université Jean Jaurès, Toulouse II, France; (2) UMR 1027 INSERM/Université Paul Sabatier, Toulouse III, France; (3) IRT UMR CNRS 5505/Université Paul Sabatier, Toulouse III, France; (4) Laboratoire de Gérontechnologie La Grave/Gérontopôle/ CHU Toulouse, France)

**Introduction:** While the late stage of Alzheimer's disease and related conditions benefit from an increased medical support, medical care (family physician) and nursing staff availability get scarcer. According to the literature and our practice, most of the cognitive stimulation based on technological tools are designed for individual, « face to face » use and are a transposition of regular neuropsychological tests and rehabilitation exercises. Mémoire-Red™ is developed by a nursing-home facilitator for entertainment sessions. In a preliminary study we have observed the use of Mémoire-Red™ by a facilitator and the interactions with and between the residents during a regular entertainment session with cognitively impaired residents in a nursing-home. What we studied was mainly the use of a multimedia tool initially designed in a recreational purpose as a cognitive stimulation aid. **Objectives:** This different approach is proposed to fulfil the needs for entertainment optimizing the socializing of the nursing home residents in facilitated group activities. It should enable to: - fight apraxism; - help the residents to feel useful and in control; - decrease the disruptive behaviours caused by isolation due to disease and cognitive impairment; - limit the use of psychotropic medications. Project members are structured as a transdisciplinary research team. We use the framework of the Living Lab and previous collaboration links ease common work. The True Life Lab assessment of Mémoire-Red™ took place in two different nursing home with, in each nursing home, one facilitator and two groups of 5 to 8 residents (one mild and one moderate cognitive impairment group). The scientific objectives concerned: - the qualification of the effects of a system including a human component (the facilitator) and a technology on the apraxism of nursing home patients with Alzheimer's disease or related condition; - the study the interactions of people with neurodegenerative cognitive impairment. **Discussion:** This interactive software contains varied exercises organized in an empirical gradation of difficulty. Three visual workshops were used during entertainment sessions. Observations of the interactions between the residents of the nursing home and with the facilitator were performed by 2 researchers (in ethnography and communication). We could observe that some residents would behave more as in a work situation than a playful situation while for others there was an entertaining dimension. We wonder about the impact of the cognitive impairment, its stage, and about the social representations (social imperative to maintain ones autonomy, metaphor of the school master) on how the residents perceive the session. A long term study of the effects would be required to see if the communication level between residents would be improved, on average, outside the sessions. **Conclusion:** This preliminary study showed that Mémoire-Red™, used by a facilitator, fosters social participation and interactions between the residents. In this case study, there is an obvious co-construction of the cognitive stimulation between the facilitator, the participants and Mémoire-red™. We would like to confirm those first results and address the issues we raised in other action-research contexts (other facilitators, same facilitator with different levels of difficulty, other groups with different cognitive impairment stages). It also seems necessary to check whether residents perceive the session as playful or as a work situation according to their cognitive impairment or not.

**P28- THE EXPERIENCE OF INSPECTION IN SCOTTISH CARE HOMES: DISCOVERING WHAT'S WORKING WELL.** E. Roddy, B. Dewar (UWS, Hamilton, Scotland, United Kingdom)

**Background:** The creation of enriched environments in care homes, where all involved in care feel valued and appreciated, is central to attaining positive outcomes for those receiving care (Nolan et al., 2006). Within Scotland the regulatory landscape has evolved in recent years through the reconfiguration of the regulatory agencies, and the enshrinement in law of the responsibility of the regulator of care homes (Care Inspectorate) to pursue an improvement agenda. The importance of centering outcomes is reflected in a shift within the focus of regulatory inspection; there has been a movement away from an input and process-oriented inspection agenda to one which seeks to prioritise outcomes which matter to residents (Simmons et al., 2013). However, a report by Lawther (2014) on care home managers' experiences of inspections reveal that there is scope for further enhancement of the experience; with a particular emphasis being placed on consistency within the inspection process and collaborative partnerships between inspectors and managers. This paper will outline a PhD study which seeks to add to the existing body of knowledge in relation to inspections in care homes as experienced by all involved and how an enhanced inspection process can contribute to an enriched care home environment. The aim of the study is to generate new understanding of the experience of the inspection process in care homes from an appreciative perspective, and use this to co-create ways by which to enhance the process. The methodology for this study is appreciative action research, the role of an appreciative approach in this study is in assisting to co-create a narrative that has the potential to challenge assumptions and leverage the positive. The four phases of appreciative action research are: discover, envision, co-create and embed. The focus for this paper will be on the Discover phase of the inquiry which seeks to explore "the best of what is", using generative questioning to find out what people value about their experience of inspections within care homes. This phase is designed to provide insights in relation to the current context which can then be taken forward and further developed in the following phases. Edell Roddy Nursing Home Research June 2015. **Methods:** During the Discover phase interviews, observation, documentary analysis and discussion groups will take place with a core group of co-inquirers which will involve representatives from each of the stakeholder groups involved in the inspection process in care homes i.e. inspection, care home and commissioning staff, residents and relatives. Monthly meetings will provide the forum through which the co-inquirers will be involved in the planning of the Discover phase, topics for discussion at interview will be decided upon by this group. Interactions between care inspectors and care home managers will be observed over a 3 month period by the researcher and mapped against the 7 C's of caring conversations (Dewar and Nolan, 2013), as a means by which to capture positive relational practices. The 7 C's of caring conversations is a tool for appreciative dialogue and includes: being courageous, connecting emotionally, being curious, collaborating, considering other perspectives, compromising and celebrating. Documentary analysis will involve the researcher reading Care Inspectorate inspection reports, as well as care homes self-assessment documents. When reading the documents the researcher will be alert for documentary evidence of examples of positive ways of working, the researcher will then discuss these examples with the co-inquirers during interviews and group discussions for checking of relevance and resonance. **Results:** During each stage of data collection co-inquirers will be involved in discussions regarding the findings, which will allow for further clarification and expansion of the data. Findings from this phase in relation to what is working well, what "gives life" to those involved in inspections will be collated and analysed using thematic analysis in collaboration with the co-inquirers. Data gathered from during the Discover phase will be brought forward to inform the following phases. **Conclusion:** Much of the research to date has focused on the correlation between the inspection process and improved outputs in terms of grades/compliance achieved at time of inspection. This study purposefully focuses its attention on exploring the experience of care home inspection from the perspective of the key stakeholders. This is in keeping with the aspiration of Audit Scotland (2014) which listed co-production as being key to the vision of future service delivery whereby there is a reciprocal relationship between professionals and those using the services. By adapting an appreciative stance this study demonstrates the place of a strengths-based approach in researching how to develop and sustain enriched environments for all who live, visit and work in care homes. Edell Roddy Nursing Home Research June 2015. **Selected Bibliography:** Audit Scotland (2014) Reshaping care for older people. Edinburgh: Audit Scotland. Dewar, B. and Nolan, M. (2013). Caring about caring: Developing a model to implement compassionate relationship centred care in an older peoples setting. *International Journal of Nursing Studies*. Vol. 50 (9), pp. 1247-1258. Lawther, S. (2014). 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**P29- PLACES TO FLOURISH- A PATTERN BASED APPROACH TO.** L. Carragher<sup>1</sup>, B. McCormack<sup>2</sup>, S.A. Coyle<sup>3</sup>, R. Bond<sup>4</sup> ((1) the Netwell Centre, DkIT, Dundalk, Ireland; (2) Institute of Nursing, University of Ulster, Northern Ireland; (3) Older People's Services, Ireland; (4) Netwell Centre, DkIT, Ireland)

**Backgrounds:** There is an urgent need to bring new ideas into the culture and design of nursing homes in order to meet the rights and expectations of ageing populations and

their families. "Places to Flourish" is a programme designed to support organisations embarking on culture change in nursing homes. The question this resource sets out to address is 'how can we positively change the culture of caring and living in nursing homes so that life for residents and staff can continue to grow and flourish? It has been supported by the Health Service Executive (HSE) Innovation Fund 'to create a framework for changing the culture of Irish residential care settings for older people which respects their right to home and a meaningful life connected to their families and friends'. **Methods:** Places to Flourish comprises a rich knowledge resource providing guidelines, case-studies, scenarios, patterns and developmental tools and techniques that can be used in-situ to support nursing homes on their change journeys. The concept of "patterns" is used to describe challenges that occur over and over again in a nursing home environment or operational context. Patterns describe the core of a solution to everyday care challenges in such a way that it can be used a million times over – without ever doing it the same way twice. As such, patterns can be generalised at a conceptual level while they are absolutely unique at a local implementation level. **Results:** To date, the Places to Flourish programme has been delivered in 20 public nursing homes and made available as an online resource for nursing homes. Evidence suggests the programme effectively addresses the care challenges faced by staff while at the same time respecting the rights of residents to "home". **Conclusions:** Creating a person-centred and client-empowered culture, supported by facilities appropriate to the needs of current and future generations of older people requires setting aside older institutional 'command and control' approaches to make space to shape a more desirable place in which everyone can flourish. To achieve smooth holistic change while working through smaller incremental and piecemeal steps and sequencing, action needs to be couched within a programme of continuous quality improvement in a way that is resilient to internal and external pressures and which is economically sustainable. The resource is set within the context of a service innovation programme shaping a framework for cultural change in nursing homes in Ireland. The programme addresses an integrated approach to innovation and leadership, person-centred practice, resident empowerment, and spatial reconfiguration. Together these interwoven strands can provide a healthier, life-enhancing place for older people and care professionals to live, work and flourish.

**P30- ANIMAL ASSISTED INTERVENTIONS IN DUTCH NURSING HOMES, A SURVEY.** L. Schuurmans<sup>1,2</sup>, M.-J. Enders-Slegers<sup>1</sup>, J. Schols<sup>3</sup>, T. Verheggen<sup>1</sup> ((1) *Anthrozoology Department, Faculty of Psychology and Educational Sciences, Open University, The Netherlands;* (2) *De Zorgboog, Nursing Home and Healthcare Institution, Bakel, The Netherlands;* (3) *Department of Health Services Research and Department of General Practice, Maastricht University, The Netherlands*)

**Backgrounds:** Animal assisted interventions (AAI) have become more and more popular in nursing homes in the last decade. Various initiatives for using animals in nursing homes have been developed over the years (e.g. animal visiting programs, residential companion animals, petting zoos) and on the whole, the number of nursing homes that refuse animals on their premises has declined. In this survey we aim to determine how many Dutch nursing homes offer animal assisted interventions, what type of interventions are used and with what aim. We also focus on the use of underlying health, hygiene and (animal) safety protocols. **Methods:** Using an online Dutch nursing home database, we invited all listed (457) nursing home organizations in the Netherlands (encompassing a total of 804 nursing home locations) to participate in our digital survey, powered by SurveyMonkey. The survey consisted of a total of 45 questions, divided in general questions about the use of animals in interventions, the targeted client population(s) and specific questions about goals, guidelines and protocols. The results were analyzed with SPSS Statistics. **Results:** In the end 244 surveys, representing 187 organizations, were returned: 167 of the respondents stated to use AAI in one way or another, 77 responded they did not. Nursing homes that did not offer AAI cited allergy and hygiene concerns as the most important reasons. Most nursing homes offering AAI used visiting animals, mostly dogs (109) or rabbits (77). A few nursing homes had resident animals, either living on the ward (12) or in a meadow outside (5). Almost all programs involved animal assisted activities with a recreational purpose, only 10 nursing homes provided animal assisted therapy with therapeutic goals. The animal programs were mostly used to influence the mental and social health domains of the residents, predominantly psychogeriatric residents. A total of 195 respondents claimed to use alternatives when real animals were not an option or not available. The most popular alternative was the use of regular stuffed animals (97) followed by FurReal Friends robotic toys (19). The sophisticated robotseal Paro was used in 8 nursing homes. A large percentage (80%) of nursing homes that worked with animals did not have AAI specific health protocols or animal welfare and safety protocols underlying the animal activities nor specific selection criteria for the selection of suitable animals. **Conclusion:** The majority of the participating Dutch nursing homes offer AAI, mostly in recreational programs (animal assisted activities) for psychogeriatric clients (using visiting animals, especially dogs). The number of specific goal oriented animal assisted therapy programs is still very small, but nonetheless a possible worthwhile avenue of pursuit for promoting non-pharmacological interventions in nursing homes, especially in psychogeriatric care. Special attention needs the fact that most nursing homes do not have specific AAI protocols for animal welfare, hygiene and safety during animal activities, nor do they employ specific criteria for the selection of participating animals and their handlers.

**P31- PREVALENCE OF POTENTIALLY INAPPROPRIATE DRUG PRESCRIBING IN NURSING HOME RESIDENTS.** S. Qassem<sup>1</sup>, C. Cool<sup>2</sup>, C. Lebaudy<sup>3</sup>, A. Stillmunkes<sup>4</sup>, S. Bismuth<sup>4</sup>, J.-L. Mousset<sup>5</sup>, M. Lapeyre-Mestre<sup>6</sup>, Y. Rolland<sup>7</sup>, B. Vellas<sup>7</sup>, P. Cestac<sup>8</sup> ((1) *Department of Pharmacy, Toulouse University*

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**Backgrounds:** People who live in nursing-home (NH) are dependant and suffer from chronic diseases. They usually receive between 8 and 10 medications per day. In this polymedicated population, the risk of finding a potentially inappropriate medication (PIM) is high. Medications underused, misused and overused, cause many adverse events such as falls or hospitalizations. Potentially inappropriate drug prescribing (PIDP) need to be detected to decrease iatrogenic events. The main aim of our study was to identify the prevalence of PIDP among NH residents and secondary to propose pharmaceutical intervention to enhance quality of care in NH and improve health professional care coordination. **Methods:** A cross-sectional, multicenter study was conducted, during a 5 months period from February to June 2015. Data were collected in 5 public NHs around the city of Toulouse (Midi-pyrénées area, France). Residents aged over 75 years and having a length of stay in NH longer than 3 months were included. Palliative care residents were excluded. The collected data included demographic characteristics of residents, comorbidities, drug prescriptions, renal function, any recent adverse event, and modalities of administration (ground pills) related to deglutition disorders. A drug utilization review was performed by a pharmacist according to a standardized method using both explicit and implicit criteria to identify PIDP. The explicit criteria was: - The French Laroche's list. Which contains medication agents and classes that should be avoided in the elderly aged of 75 years and older. - The STOPP and START criteria, respectively for Screening Tool of Older Persons' Prescriptions and Screening Tool to Alert doctors to Right appropriate indicated Treatment. The implicit criteria was: - The Summary of Product Characteristics of each drug to detect overdose, underdosing, contraindications and drug-drug interactions. - The recommendations of good clinical practice provided specifically for the elderly by the French Health Authority including the clinical practice indicators, Alert and Mastering of Iatrogenesis (AMI). The primary outcome (PIDP) was defined by the presence of at least one of the following criteria: (i) drug with an unfavourable benefit-to-risk ratio, according to the Laroche's list and to the available patients data; (ii) drug with questionable efficacy; (iii) absolute contraindication; (iv) significant drug-drug interaction; (v) drug with an excessive dosage; (vi) drug underdosed; (vii) drug without any indication; (viii) and untreated indication. Statistical analysis was performed using SAS 9.3TM software. The results of the study were fed back to general practitioners, nurses, nurses-aid, physicians care coordinators and directors. The intervention was carried out in each NH, by the physician care coordinator, in collaboration with a clinical pharmacist and took place during a Commission of Geriatric Coordination. **Results:** 274 NH residents over the 342 met eligibility criteria and were enrolled. The mean age ( $\pm$ SD) was  $88.9 \pm 6.2$  [75-105]. An average of  $8.1 \pm 3.2$  [0 – 20] drugs per day per resident was found. The most common comorbidities were hypertension (64.6 %), and depression (47.5%). The most prescribed drug classes were anxiolytics (58.4%), and analgesics (57.7%). Our study revealed that 209 NH residents had PIDP, corresponding to a prevalence rate of 76.3%. Especially, among the 274 NH residents, 32.9% had at least one PIM drug with an unfavourable benefit-to-risk ratio or with questionable efficacy according the Laroche's list. The most frequent PIDP involved long half-life benzodiazepine and derivatives (23.7%), the association of 3 or more psychoactive drugs (12%) and the prescription of proton pump inhibitors without any indication (10.2%). **Conclusion:** The study revealed a high prevalence of PIDP among the NH residents. Previous study using the same method displayed nearly the same prevalence. Care coordination between professionals is an essential way of improving quality of prescriptions. The presence of a pharmacist dedicated to the NH can help physicians to detect PIDP and avoid iatrogenic events. The role of the pharmacist in NHs needs to be better defined. Further investigations will be undertaken to examine our intervention's effects on health outcomes.

**P32- TREATMENT OF HEART FAILURE IN NURSING HOME RESIDENTS.** M. Daamen<sup>1</sup>, J. Hamers<sup>1</sup>, A.P.M. Gorgels<sup>2</sup>, F.E.S. Tan<sup>3</sup>, J. Schols<sup>1,4</sup>, H.-P. Brunner -la Rocca<sup>2</sup> ((1) *Department of Health Services Research, Research School Caphri, Maastricht University, Maastricht, The Netherlands;* (2) *Department of Cardiology, Maastricht University Medical Center, Maastricht, The Netherlands;* (3) *Department of Methodology and Statistics, Research School Caphri, Maastricht University, Maastricht, The Netherlands;* (4) *Department of Family Medicine, Research School Caphri, Maastricht University, Maastricht, The Netherlands*)

**Backgrounds:** Heart failure (HF) is a common chronic disease and highly prevalent in nursing home residents. Adequate treatment of HF may not only lead to a reduction of mortality and hospital admissions, but it may also relieve symptoms, lead to improvement of quality of life and increase functional capacity. For the treatment of HF both pharmacological and non-pharmacological treatment should be employed in HF patients. According to the guidelines, nursing home residents should be treated similarly to other patients, but previous studies conclude that this is often not the case. The objectives of this study were to investigate how HF is treated in nursing home residents and to determine to what extent the current treatment corresponds to the guidelines of the European

Society of Cardiology (ESC) and the American College of Cardiology/American Heart Association (ACC/AHA). **Methods:** Nursing home residents of five large nursing home care organizations in the southern part of the Netherlands with a known diagnosis of HF based on medical records, over 65 years of age, and receiving long-term care on somatic or psychogeriatric wards, were included in this cross-sectional design study. Data were gathered from the (medical) records, which included clinical characteristics and pharmacological- and non-pharmacological treatment. **Results:** 112 residents with HF were included. One-third of these residents received an Angiotensin Converting Enzyme (ACE) -inhibitor and 40% used a beta-blocker. Only 17% of the residents received a combination of a beta-blocker with an ACE-inhibitor or Angiotensin Receptor Blocker (ARB)-antagonist. In 66% of the residents, diuretics were prescribed with a preference for loop diuretics. In only a minority, residents received a combination of an ACE- inhibitor/ ARB- antagonist and a beta-blocker. The median daily doses of ACE-inhibitors and ARBs were lower than those recommended by the guidelines For the beta-blockers, metoprolol was the drug of preference with a median dose of 87 mg, which is <50% of the target dose stated in the guidelines. Non-pharmacological treatment, such as fluid-restriction, sodium-restriction or physiotherapy, was recorded in 5% or less of the residents. **Conclusion:** According to the current guidelines (ESC, ACC/AHA), the recommended medical therapy for HF was mostly not applied in this study population of nursing home residents with HF. There was an underuse of ACE- inhibitors. This may be explained by the fact that nursing home residents are at greater risk for adverse drug reactions, such as renal dysfunction and hypotension due to polypharmacy and co-morbidities. In addition, the time of onset of HF was not always obvious and, as a result, no medication adjustments might have taken place as recommended by more recent guidelines. A relatively high rate of diuretics use can be expected because diuretics are recommended for symptomatic treatment of fluid overload, often observed in these residents. In almost none of the residents, the recommended daily target dose of cardiac medication was provided. An overall reason for not prescribing and/ or prescribing cardiac medication in a lower dosage might be due to the fact that reducing mortality is not the primary goal in nursing home residents, but relieving symptoms and improving quality of life are more crucial. The use of non-pharmacological interventions was nearly absent in the residents of this study. Further research into the reasons for this should be performed.

**P33- THE EXPERIENCE OF AN ALZHEIMER'S SPECIAL CARE UNIT IN THE CARE OF ELDERLY WITH DEMENTIA: EIGHT YEARS CASE REPORT OF TEMPORARY PROJECTS.** M. Turci<sup>1</sup>, A.Bonora<sup>2</sup>, G. Menabue,<sup>2</sup> L.P.DeVreese<sup>3</sup>, F.Orsi<sup>2</sup>, G. Modonesi<sup>3</sup>, A.Fabbo<sup>3</sup> ((1) Psychogeriatric Centre of Mirandola, Mirandola, AUSL Modena, Italy; (2) ASP North Area, Mirandola, Italy; (3) Dementia Programme, Local Health Agency, Modena, Italy)

**Background:** In the last decades there is a constant increasing in elderly people with Alzheimer dementia (AD); the natural course of the disease is associated with a number of specific complications such as behavioural symptoms (BPSD), that represent a major burden both to the patient and to the family. Staying at home may not be a realistic option for some AD patients, especially in the late stages of the disease or in the presence of persistent and severe BPSD. A number of observational studies have reported benefits from multidomain caring programmes implemented in Alzheimer Special Care Units (SCUs) that include the presence of trained caregivers, the use of personalised psychosocial interventions, a prothetic physical environment, and family involvement. The SCU of Mirandola located in the "CISA Nursing Home", started to admit patients with temporary projects from 2008. This SCU is characterised by person-centred management and organizational programmes, the use of comprehensive geriatric assessment tailored to the residents with dementia and BPSD, training of formal carers oriented to learn specific stimulation techniques and psychological support to prevent burn-out. **Methods:** admission criteria to SCU are: BPSD difficult to manage at home and non responsive to pharmacological or non pharmacological treatment, current stress and burn-out of the family (Relative's Stress Scale score of 16-30), presence of clinically relevant BPSD (NPI, Neuropsychiatry Inventory > 28/144, or NPI single item=12, except for depression and apathy), independent walking (Tinetti scale >18/28). The length of permanence in the SCU ranges from one to six months; during this period the activity of the staff (medical, nursing, formal carers, psychologists) is oriented to the assessment and preservation of residual skills, management of BPSD favouring psychosocial interventions such as "Snoezelen", "Occupational therapy" and "Reminiscence" ) aimed to reduce psychotropic medications and physical restraints, sustain family members and plan with them in collaboration with the social services a return at home after discharge. Each patient is assessed at admission and shortly before discharge. Patients are also followed longitudinally. We present the results obtained the SCU activity from October 2008 to May 2015. **Results:** One hundred and fifty consecutive patients (56,7% females, mean (+SD) age 80.7±7.4 years) have been admitted and discharged from the SCU . Mean (+SD) baseline MMSE and NPI were 9.5(±7.3) and 45.4(±14.8), respectively. Four patients died and they have been excluded from the analyses. Mean (+SD) length stay was 113.4 (±72.3) days. Comparisons showed an unchanged cognitive and functional profile against a significantly decrease in BPSD (NPI at discharge 30.8±11.9, Student's T test =4.34; p<0.001). The improvement of the behavioural symptoms resulted independent of psychotropic medications. We applied a Principal Component Analysis (PCA) to the 12 baseline NPI items. Five clusters were found capturing 45.3% of the overall variance. A MANCOVA for repeated measures was computed taking each cluster as within-subject variable and its baseline score as covariate. A significant within-subject difference between admission and discharge was found for all clusters except for the frontal symptoms ("euphoria" and "disinhibition" falling short of the level of statistical significance, p=0.053) and for the cluster composed of "aberrant motor behavior", "eating

disorders" and "insomnia". When applying the same MANCOVA to these three single NPI items a significant with-subject difference was found only for "insomnia". At last, we standardised the delta scores of the total NPI score (NPI at admission – NPI at discharge) into z-scores: [Delta score of each single patient – mean delta score of the entire study sample]/DS of delta score of the entire study sample] in order to separate responders (> 0) from non-responders (<0) within this study sample. Sixty patients (40%) resulted to be significant responders. There were no significant differences between responders and non-responders neither in distribution by age groups, gender, typology of dementia and by severity of dementia (indexed through MMSE) or in the mean length of stay and in the mean baseline MMSE scores. Responders, however, obtained a significantly higher mean (±SD) baseline total NPI score compared to non-responders: 55.4 (±14.6) vs. 38.7 (±10.5); mean difference: -16.7 (95% -21-12.4); Mann-Whitney's U test p<0.001). At discharge 69 % of the patients returned at home. **Conclusion:** these results suggest that specific temporary person-centred programs in a special environment, together with family involvement, seem to be an effective model of care for elderly people with dementia complicated by severe BPSD and help to improve home-care even in the presence of severe BPSD. Some symptoms appear to benefit more than others from a stay in a SCU. Multicentre controlled randomised studies with larger samples are needed to confirm the present findings.

**P34- ROLE OF ATYPICAL PATHOGENS IN NURSING HOME-ACQUIRED PNEUMONIA.** H.M. Ma, J. Woo (Department of Medicine and Therapeutics, the Chinese University of Hong Kong, HKSAR, China)

**Backgrounds:** There is no international consensus on the empirical use of antibiotics with atypical coverage in nursing home-acquired pneumonia (NHAP). Aspiration is an important cause of NHAP but it does not require anti-microbial treatment. This study aimed to investigate the prevalence and clinical characteristics of atypical pathogen (AP) infections, and review the need for empirical antibiotics with atypical coverage in NHAP. **Methods:** In Hong Kong, a prospective cohort study was conducted in four nursing homes with a total number of 772 residents from April 2006 to March 2007. We analyzed older patients who were aged ≥ 65 years and hospitalized for respiratory symptoms with abnormal chest radiographs. Demographic characteristics, clinical parameters and investigation results were recorded. Microbial investigations comprised sputum routine and mycobacterial cultures, blood and urine cultures, serology, and nasopharyngeal aspirate (NPA) viral culture and polymerase chain reaction (PCR) tests. Aspiration pneumonitis was arbitrarily defined as NHAP without pathogens identified. **Results:** After excluding lone bacteriuria, 108 episodes of NHAP in 94 patients were included. Twelve APs were detected in 11 patients. There was no difference in the clinical feature of infections caused by atypical and other pathogens. The AP infections were not clustered in time or in a single facility. The most common APs were Mycoplasma pneumoniae (6) and Chlamydia pneumoniae (3). No Legionella pneumophila was detected by urinary antigen test. With the exception of one patient owing to drug allergy, antibiotics with atypical coverage were not prescribed in these patients. No mortality was related to AP infections. Etiology was not identified in 34 patients (31.5%). Compared to those with pneumonia caused by identified pathogens, they were less likely to have purulent sputum and crepitations on chest auscultation, and have a lower in-hospital mortality rate (5.9% v.s. 18.9%, P=0.077). **Conclusion:** Atypical infections were not associated with mortality even when most of the infected patients did not receive antibiotics with atypical coverage. Thus, NHAP may not necessarily be treated with empirical antibiotics indicated for APs. Aspiration pneumonitis was not an uncommon cause of NHAP. It is advisable to adopt a 'de-escalation' approach and refrain from prescribing prolonged empirical antibiotics in patients with bulbar dysfunction who are at high risk of aspiration.

**P35- TECHNICAL ASSESSMENT OF LIFE-SPACE IN NURSING HOME RESIDENTS.** C.-P. Jansen<sup>1</sup>, M. Diegelmann<sup>1</sup>, E.-L. Schnabel<sup>1</sup>, H.-W. Wahl<sup>1</sup>, K. Hauer<sup>1,2</sup> ((1) Department of Psychological Aging Research at Heidelberg University, Heidelberg, Germany; (2) Department of Geriatric Research, AGAPLESION Bethanien Hospital, Geriatric Center at Heidelberg University, Heidelberg, Germany)

**Background:** Life-space (LS) can be defined as the area through which a person (purposefully) moves over a specified time period and is suggested to be effective in estimating enacted function. Most studies addressing LS in older adults included community-dwelling subjects and used assessment methods based on subjective, retrospective report. However, due to decline in cognitive abilities or presence of cognitive impairment like dementia these are likely to be hampered in a sample of older adults, and even more so in nursing home (NH) residents. Hence, objective and technical measurements may be more effective and ideally suited for reliable assessment of life-space in a sample of NH residents. The purpose of this presentation is to describe an innovative approach to a technical assessment of life-space and to present findings on different parameters of this concept in a sample of NH residents. **Methods:** As part of a study on physical activity promotion in frail, multi-morbid NH residents (N=78, M=85.1 years, range=61-100 years) a wireless sensor network was installed in two NHs in the Rhine-Neckar Metropolitan Region, Germany. For data collection, sensors (anchor nodes) were evenly distributed in the nursing home. Each resident wore a corresponding, battery operated end node that calculates and periodically transmits its position via radio at short intervals. The surrounding anchor nodes gather and forward this information to the destination (gateway node connected to the back-end system) according to a predefined communication protocol. Residents' location and temporo-spatial changes in activity were tracked continuously for two consecutive days. Various measures of LS such as amount of time spent at defined locations and location changes were calculated from the data log.

**Results:** Results show that LS was severely limited in NH residents. Daytime activity was mainly restricted to the living-units and private rooms and most residents neither left their living-unit nor the facility. Overall, life-space use and movement patterns during the day showed low day-to-day variability. Measures of LS were associated with cognitive status and living-unit specific conditions, and not related to age, motor performance and gender. The technical assessment was very unobtrusive and showed high compliance on the part of the participants. Loss or damage of technical equipment was more likely in participants with severe cognitive impairment than in cognitively healthy subjects. **Conclusions:** Opportunities and limitations of the technical measurement considering technical properties of the system, compliance as well as feasibility in a sample of NH residents will be discussed. Determinants of LS use and population- as well as setting-specific implications, e.g., the effect of cognitive impairment and code-secured living-units on movement patterns in the facility, will be pointed out.

**P36- HOW DO YOUNG DOCTORS' CLINICAL EXPERIENCES FROM NURSING HOMES PROVIDE ACCESS TO SITUATED LEARNING ABOUT DEATH AND DYING? A FOCUS GROUP STUDY.** A.Fosse<sup>1,2</sup>, S. Ruths<sup>1,2</sup>, K. Malterud<sup>1,2,3</sup>, M. Aase Schaufel<sup>1,4</sup> ((1) *Research Unit for General Practice, Uni Research Health, Bergen, Norway;* (2) *Department of Global Public Health and Primary Care, University of Bergen, Norway;* (3) *Research Unit for General Practice in Copenhagen, Denmark* (4) *Department of Thoracic Medicine, Haukeland University Hospital, Bergen, Norway*)

**Background:** In Norway, 48% of deaths take place in nursing homes. Health care professionals often find dialogues about death difficult. Recently qualified medical doctors serve in nursing homes during internship. We need knowledge about how nursing homes can become useful sites for learning about end-of-life care. We aimed at exploring recently qualified doctors' learning experiences with end-of-life care in nursing homes, with a special focus on dialogues about death. **Methods:** Recently qualified doctors serving as community general practitioner assistants in nursing homes (n=16) participated in three focus group interviews. The participants were invited to share experiences with end-of-life care in nursing homes, to tell about preparatory dialogues with patients and relatives, and how their experiences made an impact on their thoughts about death and their role as a doctor. The interviews were audiotaped and transcribed verbatim. Data were analyzed with systematic text condensation. We used Lave & Wenger's theory about situated learning to support our interpretations, focusing how the recently qualified doctors experienced end-of-life care through participation in the nursing home's community of practice. **Results:** Preliminary analysis revealed issues related to the doctor's role concerning end-of-life care, the importance of dialogues with patient and family about death and dying, and the impact of interdisciplinary team work on recently qualified doctors' development of professional identity. These matters will be further elaborated for presentation at the conference. **Conclusions:** Participating in end-of-life care in nursing homes can provide recently qualified doctors with valuable insight into the needs of patient and family, and training in interdisciplinary team work. **Keywords:** Death, nursing home, recently qualified medical doctors, learning experiences

**P37- DETERMINANTS OF PRESCRIPTION OF VITAMIN D SUPPLEMENTATION IN NURSING HOMES: A SURVEY AMONG GENERAL PRACTITIONERS.** F. Buckinx<sup>1,2</sup>, J.Y. Reginster<sup>1,2</sup>, E. Cavalier<sup>3</sup>, J. Petermans<sup>4</sup>, C. Ricour<sup>4</sup>, C. Dardenne<sup>6</sup>, O. Bruyère<sup>1,2,5</sup> ((1) *Department of Public health, Epidemiology and Health Economics, University of Liège, Liège, Belgium;* (2) *Support Unit in Epidemiology and Biostatistics, University of Liège, Liège, Belgium;* (3) *Department of Medical Chemistry, CHU of Liège, Belgium;* (4) *Geriatric Department, CHU of Liège, Liège, Belgium;* (5) *Department of Motricity Sciences, University of Liège, Liège, Belgium;* (6) *"Medical Center Oxygène", Seraing, Belgium*)

**Background:** The aim of this study was to assess the prescription profile of vitamin D supplementation in nursing homes and its potential determinants. **Methods:** General practitioners (GPs) having at least one patient in a nursing home in Liège, Belgium, were asked to complete the survey. Two possibilities were given to complete the survey: either through an online survey sent to GPs via associations of GPs, or through a paper version of the questionnaire that was placed in nursing homes who have accepted to collaborate in this particular study. **Results:** A total of 103 GPs participated to the survey: 19 (18.4%) responded to the paper version and 84 (81.6%) responded to the online version. Among these GPs, 57 (55.3%) systematically prescribe vitamin D to their institutionalized patients and the 46 (44.7%) 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 (92.7%), because they believe vitamin D supplementation prevents osteoporotic fractures (78.2%), and because vitamin D supplementation is recommended by various scientific societies (41.8%). GPs who only prescribe vitamin D supplementation in some patients mainly do that on the basis of results of a blood test (86.4%), following a diagnosis of osteoporosis (86.4%), in case of history (51.2%) or recent fracture (39.5%). Surprisingly, 14 physicians (32.6%) only prescribe vitamin D when they think about it. Interestingly, 41.8% of GPs always prescribe the same dose of vitamin D. For the remaining 58.2%, the dose prescribed mainly depends on the results of the blood test (94.8%), the patient's bone health (49.1%) or the history of fracture (42.1%). At last, 51.6% of GPs always prescribe calcium in combination with vitamin D, 45.4% sometimes prescribe calcium with vitamin D and 3% never prescribe this supplementation. **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 the result of the blood test or after a diagnosis of osteoporosis.

**P38- ENERGY AND NUTRIENT CONTENTS OF FOOD SERVED AND CONSUMED BY NURSING HOME RESIDENTS.** F. Buckinx<sup>1,2</sup>, N. Paquot<sup>3</sup>, S. Allepaerts<sup>4</sup>, J.Y. Reginster<sup>1,2</sup>, J. Petermans<sup>4</sup>, C. Backes<sup>5</sup>, O. Bruyère<sup>1,2,6</sup> ((1) *Department of Public health, Epidemiology and Health Economics, University of Liège, Belgium;* (2) *Support Unit in Epidemiology and Biostatistics, University of Liège, Belgium;* (3) *Diabetology, nutrition, metabolic (diseases), CHU of Liège, Belgium;* (4) *Geriatric Department, CHU of Liège, Liège, Belgium;* (5) *Dietetics and Nutrition section, haute Ecole de la Province de Liège, Belgium;* (6) *Department of Motricity Sciences, University of Liège, Liège, Belgium*)

**Background:** The aim of this study was to compare the amount of energy and protein of served food in Belgian nursing homes with that actually consumed by the residents. **Methods:** Nutrient content of the served and actually consumed food was calculated for all meals during 5 consecutive days by a precise weighing method. Difference between consumed and served dietary intake was evaluated by the Chi. test. **Results:** Fifty-six subjects (86.6 ± 7.01 years on average, 71.4% of women) from two nursing homes in Liège, Belgium were included in this study. These subjects had a mean body mass index of 24.8 ± 4.85 kg/m.; a mean Tinetti score of 21.6 ± 6.05 points; a MMSE average score of 22.3 ± 6.61 points and a mean SF-36 score of 71.2 ± 17.3%. Out of the 56 subjects, 36 (64.3%) had a normal nutritional status according to the MNA, 18 (32.2%) were at risk of malnutrition and 2 (3.57%) were malnourished. The mean energy content of the served food was 1748.2 ± 126.6 kcal per day. However, residents did not eat whole of (all) the meals. Indeed, the mean actual energy intake was 1570.4 ± 314.9 kcal. The difference between the energy content of the served and consumed food was significant (p<.001). The average protein amount of the food served was equal to 0.91 ± 0.19 g/kg/day and the average actual protein intake was 0.89 ± 0.23 g/kg/day. The difference between protein served and consumed was not significant (p=.63). Although there was no significant difference in gender (p=.88), age (p=.83) and BMI (p=.88), energy content of the served and consumed food were significantly different between the two nursing homes studied (p-values were respectively <.001 and =.02). On the contrary, protein amounts served and actually consumed were not significantly different between the two nursing homes. In addition, subjects who had a normal nutritional status, according to the MNA, ate significantly more calories (1631.3 ± 261.8 kcal) than subjects at risk of malnutrition or malnourished (1454.9 ± 377.5 kcal) (p=.05). Surprisingly, no significant difference in protein intake was observed according to the nutritional status (p=.07). **Conclusion:** Meals served in nursing homes are not entirely consumed by residents. Indeed, the amount of energy intake is significantly less than that provided. However, residents consume almost all of the served proteins. The adequacy of the food consumed in nursing homes for the residents' health needs to be better investigated.

**P39- PHYSICAL ABILITIES OF ELDERLY NURSING HOME RESIDENTS: THE SENIOR COHORT.** F. Buckinx<sup>1,2</sup>, J.Y. Reginster<sup>1,2</sup>, J.L. Croisier<sup>3</sup>, J. Petermans<sup>4</sup>, E. Goffart<sup>1</sup>, O. Bruyère<sup>1,2,3</sup> ((1) *Department of Public health, Epidemiology and Health Economics, University of Liège, Belgium;* (2) *Support Unit in Epidemiology and Biostatistics, University of Liège, Belgium;* (3) *Department of Motricity Sciences, University of Liège, Liège, Belgium;* (4) *Geriatric Department, CHU of Liège, Liège, Belgium*)

**Background:** The SENIOR (which stands for Sample of Elderly Nursing home Individuals: an Observational Research) cohort, is an ongoing longitudinal follow up of elderly subjects in nursing homes with the aim to assess the change in their physical abilities across time in order to identify people at risk of deterioration and in time to give some insight in the implementation of preventive interventions. In the present study, we present the baseline functional and motor abilities of these nursing home residents. **Methods:** Participants were volunteer residents in 21 nursing homes in the area of Liège, Belgium. Subjects disoriented (i.e. not able to give an informed consent) or unable to stand and walk, even with a technical support were excluded. A large number of demographic and clinical characteristics were collected at baseline: age, gender, body mass index (BMI), use of a walking support, attendance to physiotherapy sessions, cognitive status (MMSE test), quality of gait and balance (Tinetti test, SPPB test, Timed up and go test, walking speed), grip strength (hydraulic dynamometer), isometric strength of 8 muscle groups: knee flexors, knee extensors, hip abductors, hip extensors, ankle flexors, ankle (MicroFET2 dynamometer) and peak flow. We also compared these characteristics according to the walking speed of the residents (i.e. ≤ 0.8m/s or >0.8m/s). **Results:** Currently, 450 subjects are recruited in this ongoing study. Among them, 69.8% are women and the mean age is 83.1 ± 9.36 years. Out of the 450 subjects, 186 (41.3%) did not need technical assistance to walk whereas others used a cane (16.2%), a walking frame (32.9%) or another assistance (9.6%). About one third of the subjects attended physiotherapy sessions (35.6%). Subjects had an average MMSE score of 23.8 ± 4.72 points. Regarding motor skills, subjects had a mean Tinetti score of 22.0 ± 6.52 points, a mean SPPB score of 5.39 ± 3.29, a mean time to perform the TUG test of 26.6 ± 21.27 seconds and a mean walking speed of 8.13 ± 26.4 m/s. Muscle strength, measured/assessed with the MicroFET2, ranged between 58.2 ± 38.7 N (hip abductors) and 98.8 ± 62.3 N (knee extensors) whereas the grip strength measured with a hydraulic dynamometer was equal to 18.8 ± 11.8 kg. Finally, subjects had a mean peak flow of 144.7 ± 94.0 ml/min. Subjects who walked slower than 0.8 m/s were more often women and were older than those who walked faster than 0.8 m/s. No difference in BMI was observed between these two groups. After adjustment for gender and age, 2 potential confounding variables, subjects who walked more slowly had a lower muscle strength, both in the upper limbs (p-value of 0.0004 for hand grip and 0.02 for elbow flexors and elbow extensors) and in the lower limbs, except for ankle flexors (p-value ranged from <.001 for knee flexors, hip abductors and hip extensors, to 0.04 for ankle

extensors). **Conclusion:** This study shows the baseline functional characteristics of the current participants in the ongoing SENIOR cohort. Physical abilities, quality of life and major health outcomes of subjects will be evaluated annually with the objective to identify people at risk to deteriorate. This is indeed important from a public health perspective, at least in order to implement preventive interventions for people at risk of physical frailty.

**P40- RELATIONSHIP BETWEEN ISOMETRIC STRENGTH OF 6 MUSCLE GROUPS OF THE LOWER LIMBS AND MOTOR SKILLS AMONG NURSING HOME RESIDENTS.** F. Buckinx<sup>1,2</sup>, J.Y. Reginster<sup>1,2</sup>, J.L. Croisier<sup>3</sup>, J. Petermans<sup>4</sup>, E. Goffart<sup>1</sup>, O. Bruyère<sup>1,2,3</sup> ((1) Department of Public health, Epidemiology and Health Economics, University of Liège, Belgium; (2) Support Unit in Epidemiology and Biostatistics, University of Liège, Belgium; (3) Department of Motricity Sciences, University of Liège, Liège, Belgium; (4) Geriatric Department, CHU of Liège, Liège, Belgium)

**Background:** The role of lower limb muscle strength in motor abilities of the very elderly people is not clear. Therefore, this research aimed to assess the correlation between isometric muscle strength of the lower limbs and motor skills. **Method:** This is a cross sectional study performed among volunteer nursing home residents included in the SENIOR (Sample of Elderly Nursing home Individuals: an Observational Research) cohort. In this ongoing longitudinal cohort, a large number of demographic and clinical data are collected annually. The present analysis focused on isometric muscle strength of 6 lower limb muscle groups (i.e. knee extensors, knee flexors, hip abductors, hip extensors, ankle flexors and ankle extensors), assessed using a hand-held dynamometer (i.e. the MicroFET2 device), and motor skills evaluated using the Tinetti test, the Timed Up and Go (TUG) test, the Short Physical Performance Battery test (SPPB) and the walking speed. The relationship between lower limb muscle strength and motor skills was tested by means of a multiple correlation, adjusted on age, sex and BMI. A value above 0.5 was considered as a strong relationship. **Results:** Currently, a total of 450 nursing home residents have been included in the SENIOR cohort (69.8% of women, mean age of 83.1 ± 9.36 years). Our results have highlighted a significant inverse correlation between the time required to perform the TUG test and muscle strength of the lower limbs, except for ankle flexors and ankle extensors. However, this correlation was low, with Pearson's correlation values ranging from -0.19 (p=0.014) for knee extensors to -0.25 (p<0.001) for hip abductors and hip extensors. A low negative and significant correlation was also observed between walking speed and lower limb muscle strength, except for ankle flexors and ankle extensors, with correlation values ranging from -0.18 (p=0.006) for knee flexors to -0.26 (p<0.001) for hip abductors. The relationship between the Tinetti test and lower limbs muscle strength was significant, except for ankle flexors and ankle extensors, with correlation values ranging from 0.25 (p<0.001) for ankle flexors to 0.44 (p<0.001) for hip abductors. Correlation between SPPB score and muscle strength of the muscle groups tested was also positive and significant, excepted for ankle flexors and ankle extensors, with correlation values ranging from 0.29 (p<0.001) for ankle extensors to 0.56 (p<0.001) for hip abductors. **Conclusion:** A positive association between lower limb muscle strength and motor skills of the very elderly nursing home residents was found in this research. Strategies aiming to increase lower limb strength of different muscle groups among institutionalized subjects should be further investigated.

**P41- HOSPICE CARE USE AND LOCATION OF DEATH AMONG PATIENTS WITH FIVE MAJOR CANCERS IN SOUTH KOREA.** Y.J. Rhee<sup>1,2</sup>, Y.-H. Tae<sup>3</sup>, Y.-S. Choi<sup>3</sup> ((1) Department of Health Science, College of Natural Science, Dongduk Women's University, Sungbuk-gu, Seoul, Korea; (2) Department of Psychiatry & Behavioral Sciences, Mental Health Services & Policy Program, Affiliate with Buehler Center on Aging, Health & Society, Northwestern University - Feinberg School of Medicine, Chicago Illinois, USA; (3) Research Fellow, National Health Insurance Corporation, Mapo-gu, Seoul, Korea)

**Backgrounds:** The place of death has been regarded as an important outcome to support "dying with dignity". South Korea has expanded comprehensive care for patients with terminal cancer supported by Cancer Control Act. Finally, South Korea launched hospice care in hospital for cancer patients through the National Health Insurance in 2013. This study aims to examine the hospice care use among patients with five major cancers (stomach, colon, liver, pancreatic, and lung) and the factors associated with location of death and effect of hospice use on location of death. **Methods:** We selected the claims data for the decedents with five cancers in National Health Insurance from 2009 to 2013 and examined the health care services and location of death. We used logistic regressions to identify factors associated with home death. Among decedents with five major cancers who received any hospice, total 55,107 patients (lung 16,632, liver 15,872, stomach 10,092, colon 7,654, pancreatic cancer 4,857) were identified. **Results:** Among decedents with five major cancers (total sample =55,107), 68.5 % of decedents were male. The average age was 64.0 years and mostly lived in urban area (87.5%). Over half of them were covered by any employer's insurance. The most frequent comorbid diseases were diabetes (13.3%), hypertension (6.4%) and Chronic Obstructive Pulmonary Disease (COPD) (4.5%). Only 3.2% of patients pursued hospice care and stayed in hospice care on average 16.6 days. The most frequently received health services were pain management (9.0%), chemotherapy (6.3%), emergency room visit (5.0%) and intensive care use (4.6%). Pancreatic cancer patients (10.76%) and stomach cancer patients (9.48%) used more pain management medication. Less than half (46.7%) died in hospital (inpatient) that reported death on discharge date whereas only 8.8% died at home. We found that persons stomach cancer decedents were significantly more likely to die at home if they lived in metropolitan area (OR =1.50, p<0.05), or visited ER (OR=1.19, p<0.05), or had stayed longer in hospice

unit in hospital (OR =0.67, p<0.01). Colon cancer patients with comorbid coronary artery disease condition (OR = 2.53, p<0.05) or living in metropolitan area (OR=1.43, p<0.05) were significantly associated with home death. Liver cancer patients with COPD (OR=2.21, p<0.05) or having lower income (OR =1.02, p<0.05) were significantly likely to die at home. Being female with pancreatic cancer (OR=1.33, p<0.05) or those living in urban area (OR=1.65, p<0.05) were significantly more likely to die at home. Among lung cancer patients, being female (OR=1.23, p<0.05) or those aged between 41 and 55 (OR=1.53, p<0.05) or living in urban area (OR=1.32 p<0.05) were significantly associated with home death. **Conclusion:** Patients with five major cancers in South Korea were more likely to die at home if they lived in urban area or had lower income or visited ER prior to death. Among stomach cancer patients, longer stay in hospice unit was significantly associated with home death. Given rising issues in providing better end-of-life care in South Korea, these findings will help policymakers understand hospice users' profiles and help develop hospice models.

**P42- FRAILITY : THE ELDERLY LIVING IN A NURSING HOME'S PERSPECTIVE.** Z. Azeredo<sup>1</sup>, A.P. Barbeiro<sup>2</sup>, Ma. Guerra<sup>3</sup>, C. Laranjeira<sup>4</sup> ((1) Family Doctor, RECI Coordinator (IPiaget), MSc on Social Gerontology, Portugal; (2) Primary Health Care Nurse, Portugal; (3) Nurse, Teacher at School of Health of Jean Piaget in Viseu, Portugal; (4) PHD of Nursing Sciences , RECI member, Professor at School of Health of Jean Piaget in Viseu, Portugal)

**Background:** Ageing is a process that needs a permanent person adaptation, to the life cycle events and to the environment. Each person has her/him mechanisms to cope with changes, but when we become old or very old, our abilities to cope with adversities become less and less available. There is a great possibility to become frail. **Methods:** The aims of this research were: To know how the elderly define frailty. To know how themselves see as a frailty person. We inquiry 123 old persons ( 65 years or older), living in four nursing homes in Viseu , who agree to collaborate in the study, and have physical and psychological condition to answer the questions Our study was a qualitative research using the interview We respect the ethical principles **Results:** The majority was female. The majority don't feel a frail person, The main reasons why some feel a frail person are: age, fear of falling and the feelings of weakness (both physical and mental). As frailty definition they refer: weakness (both physical and mental) and several fears. **Conclusion:** Although the inquired persons were living and some were very old , the majority don't feel like. They know how to identify a frail person which is important to make prevention

**P43- COMPARISON REGARDING QUALITY OF LIFE IN THE ASPECT OF SELF-EFFICACY BETWEEN NURSING-CARE FACILITY PATIENTS AND ELDERLY PEOPLE LIVING WITH FAMILIES.** B. Penar –Zadarko, B. Gugala, M. Nagórska, D. Pięciak – Kotlarz (University of Rzeszow, Medical Department, Institute of Nursing and Health Sciences, Chair of Nursing, Poland)

**Objective:** Loss of health and changes in the organism related with ageing lead to the limitation of self-efficacy, loss of sense of security and in a result to inability to make one's decisions. Ill and elderly people cannot meet their needs, which in turn force them to live with the family or in a nursing-care facility. Self-efficacy should be comprehend as objectively satisfactory physical efficacy, and that is the ability to be independent from other people in the scope of basic existence and functioning. Therefore an attempt was made to analyze the impact of self-efficacy on quality of life. The aim of the paper is to compare the quality of life in the aspect of self-efficacy between nursing-care facility patients and elderly people living with families. **Material and methods:** The study was conducted among 184 respondents divided into two groups between November 2014 and April 2015. Respondents included 78 nursing-care facility patients and 106 elderly people living with families (control group). The exclusion criteria were: cognitive disorder (MMSE), and lack of signed a consent form. The diagnostic survey with the use of an author's questionnaire and standardized tools were implemented in the study. Self-efficacy was assessed using basic and complex actions of everyday life (ADL Katz Scale, IADL Lawton Scale). The quality of life was assessed using WHOQOL-BREF questionnaire. The statistical analysis was performed with a use of chi-square test Manna-Whitney test, and Spearman's rank correlation coefficient. The Commission for Bioethics at Medical Department of University of Rzeszow approved the study protocol. **Results:** The age of respondents ranged from 35 – 95 years old. Women constituted the majority in two study groups. People living with families more often were married than nursing-care facility patients (p=0,0000\*\*\*). Subjective health state of nursing-care facility patients (49,3%) was assessed better than respondents living with their families (22,6%). As many as 39,6% of people living with the families, and only 9,3% of nursing-care facility patients assessed their health as bad. There are no statistical differences regarding self-efficacy of basic actions of everyday life using Katz Scale. In both study groups the rate of fully self-efficient respondents was comparable: nursing-care facility patients (85,9%), and people living with their families (83,0%). An assessment of the complex actions with the use of Lawton Scale showed comparable results in both groups. As many as 67,9% of nursing-care facility patients and 62,8% of people living with their families did not required assistance in everyday life actions. The quality of life was assessed using WHOQOL-BREF questionnaire (assessed on unified scale 0-100 points). There are statistical differences between study groups regarding the quality of life (p=0,0000\*\*\*). There are no statistical differences only regarding social field. In general nursing-care facility patients better assessed the quality of life than people living with patients. The most difference considers the somatic field and equals 14.9 points, with higher results for nursing-care facility patients. To assess the relations between different measurements of self-efficacy and quality of life Spearman's rank correlation coefficient was used. The stronger relations

between self-efficacy and quality of life were observed among people living with families. Stronger relations regarding Lawton Scale and quality of life were identified in the control group, especially in somatic and psychological, correlation coefficient higher than 0.70. The lower self-efficacy the lower quality of life ( $p=0.0000^{***}$ ). In the group of nursing-care facility patients some relations, especially regarding Katz Scale are not significant. In the control group all relations are statistically significant. **Conclusions:** The majority of respondents in both groups regarding basic and complex actions of everyday life was self-efficient. The self-assessment of health and quality of life assessment was definitely higher among nursing-care facility patients. The self-efficiency had definitely stronger impact on the quality of life in the control group than in nursing-care facility patients. **Key words:** Nursing-care facility, self-efficacy, quality of life, family.

**P44- THOUGHT OF FAMILY MEMBERS ACTING AS A SURROGATE DECISION-MAKERS FOR COMMUNITY-DWELLING ELDERLY ADULTS WITH DEMENTIA IN SELECTING LIFE-SUSTAINING MEDICAL TREATMENTS.** H. Takamura<sup>1</sup>, R. Rokkaku<sup>1</sup>, H. Taneichi<sup>1</sup>, M. Sugimoto<sup>2</sup>, M. Kumakura<sup>1</sup> ((1) Dokkyo Medical University School of Nursing, Tochigi, Japan; (2) Dokkyo Medical University Graduate School of Nursing, Tochigi, Japan)

**Background:** Patient self-determination has been emphasized in Japan in recent years, but an increasing number of elderly adults with dementia have difficulty making their own decisions about medical procedures. As a result, in most cases, their families decide for them. This is called "surrogate decision-making". In such situations, it is common in Japan for a family member to act as a surrogate decision-maker. Most past research on surrogate decision-making by family members of elderly adults with dementia has been related to gastrostomy, and there has been almost no research regarding surrogate decision-making in regards to mechanical ventilation and other life-sustaining medical treatments. Therefore, in this study we interviewed family members who acted as surrogate decision-makers for community-dwelling elderly adults with dementia in selecting life-sustaining medical treatments and who also provided end-of-life care. Our aims were to determine what thoughts they had and to obtain suggestions about where to direct nursing support for families finding themselves in this situation. **Methods:** Semi-structured interviews were conducted with five families who were acting as surrogate decision-makers for relatives in community-dwellings. These elderly relatives were suffering from many forms of dementia, which included Alzheimer's disease, vascular dementia and so on. All were incapable of understanding the severity of their conditions and the treatments they needed. The families decided whether or not to use life-sustaining medical treatments and also they provided end-of-life care. Interview data were analyzed qualitatively and inductively. **Results:** The average age of the family members was  $65.6 \pm 10.4$  years when they acted as surrogate decision-makers for their elderly relatives, who were in community-dwellings, and suffering with dementia. The family relationships were as follows: two cases were spouses (2 husbands), and 3 cases were children (1 son, 2 daughters). The average period of providing care was five years and five months (min: one year and six months, max: ten years). The thoughts of the family members could be classified into thirty-two <sub categories>, 15 <categories> and seven (large categories): (relationship with the elderly adult), (personal thoughts of the family member), (thoughts regarding the elderly adult with dementia), (positive thoughts regarding the decision), (negative thoughts regarding the decision), (questioning the decision), and (coping with thoughts about the decision). **Conclusion:** When family members acted as surrogate decision-makers, their (relationship with the elderly adult) influenced the (personal thoughts of the family member) and their (thoughts regarding the elderly adult with dementia) affected their decision-making. Moreover, after they made the decision regarding treatment, they had (positive thoughts regarding the decision) and opposing (negative thoughts regarding the decision) and these were repeatedly (questioning the decision). As they were (questioning the decision), they were also (coping with thoughts about the decision). Furthermore, their (relationship with the elderly adult with dementia) was the key factor in their thoughts about the decisions that they made. These findings suggest that rather than directing support at only surrogate decision-making for the elderly dementia care recipients, nurses should focus on the relationships of the family members and to understand the family members' personal thoughts and their thoughts regarding their loved one that are now suffering with dementia so that they can provide continued support to help the family member acting, as a surrogate, feel positive about the decisions that they make.

**P45- INAPPROPRIATE NEUROLEPTIC DRUG PRESCRIBING IN NURSING HOMES AND ORGANIZATIONAL FACTORS: A MULTILEVEL APPROACH.** C. Laffon de Mazières<sup>1,3</sup>, M. Lapeyre-Mestre<sup>2,3</sup>, B. Vellas<sup>1,2</sup>, P. de Souto Barreto<sup>1,2</sup>, Y. Rolland<sup>1,5</sup> ((1) Department of Geriatric Medicine, Gérontopôle, Toulouse University Hospital (CHU de Toulouse), Toulouse, France; (2) Inserm UMR 1027, Toulouse, France; (3) Department of Clinical Pharmacology, CHU de Toulouse, Toulouse, France; (4) UMR7268 Aix-Marseille University, Laboratory of Biocultural Anthropology, Law, Ethics and Health, Marseille, France (de Souto Barreto)

**Background:** The potential impact of NH organization on inappropriate neuroleptic prescribing is not known. The main aim of this study was to determine if the number of different general practitioners (GPs) should influence inappropriate neuroleptic prescribing. **Methods:** We used the baseline data from the IQUARE study (6275 residents ; 175 NH). The primary outcome measure was inappropriate prescribing of neuroleptic drugs in accordance with French guidelines. The analysis was done on the sub-sample of NH residents with at least one N05A prescription, and divided in appropriate/not appropriate neuroleptic prescribing. Due to the hierarchical structure of data (resident level and facility level), a multilevel binary logistic model was used. **Results :** Among the 6275

NH residents, 1532 (24.41%) had at least one prescription of neuroleptic. Of these, 513 (34.49%) had prescriptions that followed national guidelines -with regards to indication, substance and dose- and 1019 (66.51%) had an inappropriate prescribing of neuroleptic drug. Residents who lived in a nursing home with more than 30 GPs/100 beds have a higher risk to have an inappropriate prescribing than those who live in a nursing home with less than 10 GPs/100 beds (OR 1.80, 95% CI 1.04-3.12). **Conclusion:** Facility characteristics, regardless of residents' characteristics, have an influence on the quality of the neuroleptics prescribing.

**P46- THE FINE (FACTORS PREDISPOSING NURSING HOME RESIDENT TO INAPPROPRIATE TRANSFER TO EMERGENCY DEPARTMENT) STUDY PROTOCOL.** A. Perrin<sup>1</sup>, C. Mathieu<sup>1,2</sup>, N. Tavassoli<sup>1,3</sup>, S. Hermabessiere<sup>1</sup>, E. Berard<sup>4,5</sup>, S. Fernandez<sup>6</sup>, S. Charpentier<sup>6,7</sup>, D. Lauque<sup>6,7</sup>, S. Bismuth<sup>8</sup>, B. Chicoulaa<sup>8</sup>, S. Oustric<sup>8</sup>, B. Vellas<sup>1,5</sup>, Y. Rolland<sup>1,5</sup> ((1) Gérontopôle, Toulouse University Hospital, Toulouse, France; (2) ORSMIP, Toulouse, France; (3) Equipe Territoriale Vieillesse et Prévention de la Dépendance, Toulouse, France; (4) Département d'Epidémiologie, Economie de la Santé et Santé Publique, Université Toulouse III, Toulouse, France; (5) INSERM, U1027, Toulouse, France; (6) Pôle Médecine d'Urgence, Toulouse University Hospital, Toulouse, France; (7) Université Toulouse III, CHU Toulouse, France; (8) DUMG Université Toulouse III, CHU Toulouse, France)

**Backgrounds:** According to the data of our nursing homes (NH) research network, REHPA (345 NH in France), 13.5% of NH residents are hospitalized every 3 months or about 50% per year. These hospitalizations concern for half, transfers to Emergency Departments (ED). A pilot study led during a week in December 2012 revealed that 43% of the NH resident transfers to ED were considered as inappropriate. This result confirms international data. It also suggests that many factors, medical and non-medical, support these inappropriate transfers. Our primary objective is to determine the factors predisposing NH residents to inappropriate transfer to ED. Our secondary objectives are to assess: the cost of NH residents' transfers to ED; the prevalence of NH residents' inappropriate and potentially avoidable transfers to ED; the evolution of NH residents' functional status; factors predisposing NH residents to potentially avoidable transfer to ED; psychotropic drug prescription and inappropriate drugs for elderly before, during and after transfer to ED. **Methods:** This is an observational, case-control study approved and funded by the French Ministry of Health (PREPS-14-0185). Sixteen hospitals, all situated in Midi-Pyrénées area, south-west of France, participate in the study. Inclusion will last one year, including 4 periods (one per season) of 7 days (24h / 24, including necessarily each day of the week). All the NH residents admitted in ED will be included. The estimated number of 1004 NH residents will allow a strong analysis of 43 independent factors. For each resident included, medical and non-medical data will be collected in 4 times: before transfer to ED, at ED, in hospital services (in case the patient is hospitalized) and at the patient's return to NH. The inappropriateness of ED transfers will be determined by a multidisciplinary group of experts. It is defined by the absence of somatic emergency and / or palliative care known before decision to transfer and / or the presence of advance directives of non-hospitalization in the resident's file. The cost of ED transfers and the direct medical costs of residents 6 months before and 6 months after the first transfer will be calculated. **Results:** The analysis of factors predisposing to inappropriate transfer to ED will be based on the comparison of percentages for qualitative variables and on the comparison of means or distributions for quantitative variables. The variables significantly associated with an inappropriate transfer to ED in univariate analysis will be included in a logistic regression model. The final model including variables significantly and independently associated with an inappropriate transfer to ED will be obtained by step down method. Interconnected intermediate models will be compared using the likelihood ratio test. The interactions between the independent variables in the final model will be searched. **Conclusion:** Knowing the determinants of inappropriate transfers to ED of NH residents would allow the improvement of the care organization in NH. This approach could optimize the flow of residents between NH and ED and thus improve the care system. The originality of our project is to determine the cost of transfers to ED of NH residents. The analysis of potentially avoidable transfers will also allow defining preventive actions to implement in NH. This work will allow us to lead targeted actions in partnership with public health organizations. First results are expected in 2018.

**P47- BEYOND NUMBERS AND RATIOS: A STUDY OF THE MANPOWER SHORTAGE PHENOMENON IN LONG-TERM CARE FACILITIES FOR THE ELDERLY IN HONG KONG.** S.P.P. Choi, C.C.Y. Yeung, J.K.L. Lee (Division of Nursing & Health Studies, The Open University of Hong Kong)

**Background:** Hong Kong has been facing the challenge of a growing ageing population. The proportion of the population aged 65 and above is projected to rise markedly, from 13% in 2011 to 19% in 2021, and further to 32% in 2041. The increasing ageing population has prompted the local authority to expand and improve the quality of the long-term care services so as to respond to the escalating service demand; yet heightened concern has been raised regarding the issue of shortage of long-term care staff. To meet the service need, the authority has increased training places, while at the same time imposing regulations to mandate minimum staffing levels or ratios in long-term care facilities. Critics have commented that numbers and ratios alone cannot help to resolve the manpower issue; there requires a more comprehensive understanding of what influence staff recruitment and retention in the long-term care sector. This paper is intended to fill the evidence gap by explicating the phenomenon of manpower shortage through delineating staffs' lived experiences of working in long-term care facilities for the elderly in Hong Kong. **Methods:** The study adopted a phenomenological approach, and data

were collected from January to August 2015. A total of 24 long-termcare staffs, including nine nurses, eight health workers and seven personal care workers from a variety of publicly- and privately-funded residential/nursing homes for the elderly, were recruited by the snowball sampling technique. Individual semi-structured interviews were conducted, and their views in regard to their work and work conditions, such as work role, job demand, management, team collaboration, career development and professional value, were extensively examined. Findings were analyzed through a systematic inquiry of controlled explication, which involves a process of translating lived experiences into more explicit and structured knowledge. **Results:** Analysis of the findings revealed a dynamic interaction between work vulnerability and supportive work environment that determines long-termcare staffs' sense of job satisfaction, retention and attrition. Work vulnerability refers to the practice reality in which long-termcare staffs experience stress arising from the needs to take care of elderly residents with different dependency levels, handle unpredictable incidents such as sudden deteriorations in residents' health conditions, manage conflicts with and complaints from residents and/or relatives, work with ageing staff with different work values, and bear overwhelming workload and take on duties and responsibilities that are not aligned with their work roles during times of manpower shortage. A supportive work environment refers to a favorable work environment in which long-termcare staffs gain support from co-workers and management at work, and their efforts and merits are rewarded by appropriate means through offering financial incentives or promotion opportunities, and that they are facilitated to provide quality of care, and to further develop their potentialities in their work contexts. A supportive work environment helps to alleviate the stress originated from work vulnerability, while long-termcare staffs working in a less supportive work environment with increasing burden of work vulnerability are likely to experience stress and job dissatisfaction, thereby resulting in attrition and manpower shortage. **Conclusion:** The lived experiences of the long-termcare staffs have uncovered important aspects of their work and work conditions, and a dynamic interaction between work vulnerability and supportive work environment that determine staff retention and attrition. The findings do not only help to expand our understanding of the underlying factors leading to the phenomenon of manpower shortage, but also provide implications for formulating appropriate strategies to attract new entrants and retain staff in the long-term care sector in the future.

**P48- THE TRANSFORMATIONAL JOURNEY OF A CANCER VICTOR: A GROUNDED THEORY APPROACH.** R. Dante Tan, G. Yang (*Far Eastern University, Manila, Philippines*)

**Introduction:** Incidence of Cancer morbidity in the Philippines continues to escalate; in contrast to the survival rate that much still need to be desired. Few were able to cross the bridge however, the social processes that cancer patients experiences from diagnosis to becoming a victor has not been well given much attention. Aim. This study was undertaken to understand and describe the social processes that cancer survivor goes through. **Discussion:** Cancer is one of the major health concerns around the globe, despite of its markedly high death rate; some survive to share the telltale experience of a cancer victor. This study was undertaken to understand and explore the social processes of a cancer victors' experience. To our knowledge, it is the first grounded theory that was carried out to develop an evolving theory to help explain the processes that cancer victor experiences. Study findings revealed that cancer victor goes through a transformational journey. Their journey was described as a life changing phenomena that changes their perspective in life. Cancer participants are meaning making (Pascal, 2006) contrary to the findings of Williams and Jeanetta (2015) which shows that cancer survivor found it difficult to articulate what survivorship meant however, study of Van der Spek and et. al indicated that meaning making is highly individualized (2013). Participants in this study were able to find more meaning in their life by engaging in activities to serve as the hope for others. Furthermore, result also showed that despite of the increase in the survival rate due to technological advancement (Carreon, 2013) our findings indicate that cancer was still associated with a feeling of death sentence. Contrary to the view that cancer is no longer an automatic death sentence as survival rates soar (Willey, 2014) nearly half of cancer patient still viewed that cancer is a death sentence despite advances in treatment" (Hope, 2013). The impact of feeling that death is lurking is inevitable despite what science can already offer. Moreover, gender is another aspect that is worthy to be accounted for, female participants tend to display intense emotional outburst as compared to male who seemed to be subtle. This could be associated with the "macho" image depicted in the Filipino culture that men seemed to showcase a projection of being strong. This is contrary from the research indicating that men suffer much than women when diagnosed with cancer ("Men hit harder," n.d., para 1). Interestingly, there were quite a few unexpected findings in this study. Several types of mental consuming have been identified; it could be children-driven, condition-driven and or financial driven. All these aspect keeps their mind floating. Likewise, acceptance can be in the form of: from own free will, due to family solicited advice or due to family history. Family involvement plays a crucial role in the process to facilitate earlier acceptance to help them move on. This is in consonance with that study of McDonough, Sabiston and Wrosch (2013) showing that high level of social group can lead to the improvement of subjective well-being of cancer patient. In addition, numerous factors had been vividly recognized by the participants that need emphasis to help them strengthen their will to survive. Foremost is their children, having children who are still young becomes the defining factor that gives participants that determination to go through the struggle of fighting cancer. Another characteristic highly valued by the participants emphasizes on strengthening support system, being optimistic, having faith and acceptance. Consistent with the study of Jones (2014), cancer adult faced their experience with optimism, leaned on relationship with family and health care provider. Many cancer patients in order to deal with the battle turn to their faith

which serves as spiritual motivation (Gorman, 2014). However, some of the limitations of the study could be related to profile variables; the investigators were not able to find participants who were single and younger. Moreover, this study cannot be generalized to a wider base of population due to small sample size. Although data saturation has been reached, additional types of cancer could have been included to determine fittingness on the categories to the evolving theory that emerged in the study. In general, this study walks us through the journey of a cancer victors' life. Healthcare provider can be guided by using the evolving theory in order to help them understand the different phases that cancer victor goes through henceforth can provide the most appropriate intervention to strengthen the aspects that are highly priced by participants. **Conclusion:** Findings from this study elucidates that cancer patients who become victorious after battling the disease traverses a transformational journey that defies and changes their perspective at what life is. Healthcare provider should develop protocol on how to support and assist patient as they battle through the challenges in the different stages of their journey.

**P49- ANTI-PSYCHOTIC MEDICATION USE IN CANADIAN NURSING HOMES: EVIDENCE BASED ON INTERRAI ASSESSMENTS.** J.P. Hirdes (*School of Public Health and Health Systems, University of Waterloo, Canada*)

**Background:** The potentially inappropriate use of antipsychotic medications among nursing home residents without an indication for their use is a growing quality concern in many countries. While these medications may benefit persons with conditions related to psychosis (e.g., schizophrenia), there is a widespread consensus that they may be harmful in nursing home residents without these conditions. A number of national initiatives have been undertaken in Canada with the aim of reducing inappropriate use of antipsychotics in nursing homes. **Methods:** Previously published rates of antipsychotic use in 7 European nations based on interRAI assessment data were compared with Canadian national and provincial rates. In addition, Canadian interRAI data are used to compare antipsychotic use among persons with dementia in home care, nursing homes, acute hospital and complex continuing care hospital settings. Finally, the characteristics of 48 nursing homes participating in a national intervention study to reduce antipsychotic use led by the Canadian Foundation for Healthcare Improvement (CFHI) were compared. **Results:** International rates of antipsychotic use have been reported to range from a low of 18% in Israel to a high of 60% in the Czech Republic. Within Canada, the rates of potentially inappropriate antipsychotic use at the facility level range between 20 and 50%, with an overall national average of about 30%. This represents a reduction in national rates, but some provinces have notably lower rates of use than others. Rates of antipsychotic use among persons with dementia are strongly related to indications of behaviour disturbances and are notably higher in nursing home and hospital settings compared with home care. Homes participating in the CFHI intervention study were comparable to other homes nationally in terms of their resident population and quality performance prior to the onset of the quality initiative. Outcomes of the CFHI initiative are currently being analyzed but will be available at the time of presentation. **Conclusion:** Potentially inappropriate use of antipsychotic medications is a pervasive problem in nursing homes in Canada and Europe. Their use varies between organizations, health care sectors and countries, suggesting that practice patterns are important considerations in addition to characteristics of care recipients. interRAI assessment may be used to target inappropriate medication use at the person level and to inform quality improvement efforts at the organizational, regional and national levels.

**P50- INTERPROFESSIONAL CARE PROCESSES TO MANAGE RESIDENTS WITH HEART FAILURE IN LONG-TERM CARE.** G. Heckman<sup>1</sup>, V. Boscart<sup>2</sup>, K. Huson<sup>2</sup>, R. McKelvie<sup>3</sup>, J.P. Hirdes<sup>1</sup>, P. Stolee<sup>1</sup> (1) *Schlegel Research Chair for Geriatric Medicine, School of Public Health and Health Systems, University of Waterloo, Waterloo, Canada;* (2) *School of Health & Life Sciences and Community Services, Conestoga College, Kitchener, Canada;* (3) *Department of Medicine; Population Health Research Institute, McMaster University, Hamilton, Canada*)

**Backgrounds:** Heart failure (HF) affects 20% of long-term care (LTC) residents, in whom it is associated with significant morbidity, acute care transfers, and mortality. Our previous work identified two key barriers to optimal HF management in LTC: staff knowledge gaps and ineffective interprofessional (IP) communication. This pilot study assessed the acceptability, feasibility, and preliminary impact of an intervention designed to: (1) improve staff HF knowledge; (2) develop efficient IP communication processes to better manage residents with HF; and (3) integrate improved HF knowledge and IP communication processes into regular work routines in LTC. **Methods:** The intervention was implemented on single units in each of two LTC homes (n= 29 staff). A mixed methods approach was used to collect qualitative (focus groups, interviews, observations) and quantitative (surveys) process and outcome data. HF knowledge surveys and IP scales were collected at baseline and three months post-intervention. **Results:** Results were similar between participants at both study sites. Baseline scores on the Dutch HF Knowledge Survey varied from 33%-100%, with a mean of 74%. Post-intervention scores ranged from 80%-100%, with a mean of 90%. At baseline, nurses' and personal support workers' self-efficacy ranged from 60%-92%, with a mean of 74%; this increased to a range of 70%-94%, with a mean of 87% post-intervention. Participants optimized and developed new communication processes to promote IP care. Observations and interviews indicated a perceived increase in staff confidence, strong assessment and clinical proficiency skills, and more effective IP collaboration. Staff deemed the intervention as useful and feasible, particularly the tools, education, and bedside sessions with physicians. **Conclusion:** This pilot study suggests that a novel intervention to enhance knowledge and IP care processes for managing HF in LTC is acceptable and feasible, and

has a favourable preliminary impact on staff knowledge and IP communication. Findings of this study inform an expansion of the pilot study to remaining units in each home and beyond, in order to determine the impact of the intervention on HF care quality indicators and resident outcomes.

**P51- SADNESS AS PERCEIVED BY NURSING HOME PATIENTS.** K. Riis Iden<sup>1</sup>, S. Ruths<sup>1,2</sup>, S. Hjørleifsson<sup>2</sup> ((1) *Research Unit for General Practice, Uni Health, Uni Research, Bergen, Norway;* (2) *Dept of Global Public Health and Primary Care, University of Bergen, Norway*)

**Backgrounds:** Depression is prevalent among nursing home patients, but may be difficult to disentangle from non-pathological sadness. Diagnostics on psychological symptoms in nursing homes is sometimes haphazard, and there are reasons to believe that sadness is commonly treated as depression with antidepressant drugs. **Methods:** Objective: To explore sadness as perceived by nursing home patients. The first author (a GP) conducted individual interviews with 12 long term care patients. The informants were recruited by primary nurses who perceived them as sad, but not suffering from cognitive impairment. The interview guide comprised the following questions: Do you feel sad? Can you tell me about it? What do you think about it? The interviews were audio-recorded and transcribed verbatim. The analysis was based on phenomenological theory and Malterud's method. **Results:** The interviews revealed three main themes. (I) Decay and loss of agency. The informants expressed that sadness was caused by health problems, functional impairment and poor care losses, such as declining health and functional ability, reliance on long-term care and dysfunctional technical devices and aids. Among other diseases and functional impairments, they most frequently and empathetically stated urinary incontinence, loss of teeth and lack of mobility as being causes of sadness. The informants described how illness would disable them and cause discomfort and pain. Bed rest and painkillers were important companions, but on days with no relief, sadness arose. (II) Loneliness in the middle of the crowd. Loss of family and friends, staff members having little time to converse and poor caretaking were sources of sadness. Many informants emphasized that they wanted to converse with the nurses, whom they perceived as being preoccupied with providing bodily care, medications and meals. Several informants told that they felt lonely because they had lost their spouse and other family members. They expressed difficulty and frustration about not being able to talk with other patients, since most of them had dementia. (III) Relating and identity. According to the participants, what helped them avoid sadness was accepting the realities of old age, gratitude for remaining function and for care, relating to own and family's life-history. Some informants declared their faith, explained about their religious activities in the past, and conveyed that religious beliefs and practice still were a source of comfort to them. Our findings suggest that health problems, functional impairment and poor care are major causes of sadness to nursing home patients; with urinary incontinence as the most empathetically stated example. Some of these conditions may be amenable to intervention. We consider sadness to be rational responses to distress caused by health conditions. Therefore, more consideration should be given to understanding the lived experience from patients' perspectives. Sadness may also arise from lack of communication. Facilitating contact with family and other patients is important for preventing sadness. The patients also reported ways of keeping sadness at bay through acceptance and re-orientation to their current life situation, and through maintaining past and current narratives about their identity and belonging. Engaging with the patients is a prerequisite for nursing home staff to identify their needs and help them maintain a meaningful existence. Being old and frail must not lead to the abrupt conclusion that the persons' sad expression is not depression. Among patients in primary care with long term conditions, depression is frequently normalized. Gaining insight into the patients' everyday life enables nurses and doctors to recognize and address actionable causes of patients' sadness. On the other hand this will probably also facilitate the identification of cases of sadness which are truly a symptom of depression. If staff is able to first identify and address meaningful sadness, subsequent initiatives to diagnose counterproductive depression are likely to be more accurate. **Conclusion:** The concern that motivated this study was that normal responses to inevitable processes towards the end of life may be inappropriately medicalized in nursing homes, contributing to suboptimal medical treatment and care, and undermining of the patient's own resources. Doctors and nurses in nursing homes should identify and support coping resources among patients, avoid undue medicalization and address manageable causes of sadness.

**P52- THE SNOEZELN APPROACH IN AN ALZHEIMER'S SPECIAL CARE UNIT TO MANAGE BEHAVIOURAL SYMPTOMS IN ELDERLY WITH DEMENTIA: OBSERVATIONAL STUDY RESULTS.** G. Menabue<sup>1</sup>, A. Piccinini, A.Fabbo<sup>2</sup>, A. Bonora<sup>1</sup>, M. Turci<sup>3</sup>, F. Orsi<sup>2</sup> ((1) *Alzheimer Special Care Unit ASP North Area, Mirandola, Italy;* (2) *National Health System, Modena, Italy;* (3) *Psychogeriatric center of Mirandola, Mirandola, AUSL Modena, Italy*)

**Background:** Snoezelen is multi-sensory stimulation that combines a person-centered approach with the integration of sensorial stimuli that can be applied in daily care for people with dementia (PwD) and behavioral symptoms (BPSD) associated. The studies of Julia van Weert suggested that the application of the principles of Snoezelen into daily care activities seemed to be beneficial in reducing maladaptive behaviors, promoting mood and encouraging interaction. In the setting of an Alzheimer Special Care Unit (SCU), Mirandola's SCU, that consider person-centered caring programs, trained staff and adapted physical environments, Snoezelen interventions are conducted specifically to manage BPSD, one of the major burden for both PwD and caregivers. The aim of the study is to evaluate the benefits of Snoezelen intervention in short-term in managing specific BPSD (agitation, aggressiveness, motoric aberrant activity) exhibited by PwD, in the setting of

SCU. **Methods:** Inclusion criteria for the 13 subjects involved in the study are: moderate-severe dementia diagnosis (CDR 2-3 or MMSE $\leq$ 18); severe BPSD (NPI total score  $>$ 24 or NPI single item =12, excluding "apathy" and "depression"; length of permanence at least 3 months. The sample is composed by 8 men and 5 women (61.5% M, 38.5% F), mean age  $79.7 \pm 6.97$ , 8 people with Alzheimer Dementia (61.5% AD) and 5 Vascular Dementia (38.5% VD), mean MMSE  $7.8 \pm 5.11$ . Every subject was evaluated for every intervention session in three different times - 30 minutes before Snoezelen intervention (S0), at the end of 30 minutes Snoezelen intervention (S1) and 30 minutes after Snoezelen intervention (S2) - for a total period of one month, by a modified version of Cohen Mansfield Agitation Inventory (CMAI-Modify), a 29 items test that measures specific behaviors (aggressive, physical non aggressive and verbally agitated behavior); mean intervention sessions per subject was 9.5 (range 8-11); sessions were 2-3 per week. Furthermore, standardized tests scores - Clinical Dementia Scale Rating (CDR), Cornell Scale for Depression in Dementia (CSDD) and CMAI - were collected at the start of intervention sessions (T0), at the end of 4 week intervention period (T1), than 4 week more after the end of intervention period (T2). **Results:** Analysis (T-test for paired samples) conducted on CMAI-Modify data about intervention sessions showed a statistically significant reduction ( $p < 0.05$ ) for 6 specific behavioral items between S0-S1 (30 minutes before Snoezelen intervention - end of 30 minutes Snoezelen Intervention) and between S0-S2 (30 minutes before Snoezelen intervention - 30 minutes after Snoezelen intervention); these 6 items are "pacing and aimless wandering", "inappropriate dressing of disrobing", "cursing or verbal aggression", "constant unwarranted request for attention or help", "trying to get to a different place", "handling things inappropriately". Concerning periodic test scores (at times T0, T1 and T2), a statistically significant reduction ( $p < 0.05$ ) was found: on CMAI mean total scores between T0-T2; on CSDD mean total scores between T0-T1 and T0-T2. Qualitative analysis showed a general reduction of BPSD (CMAI mean total scores) and an improvement of mood (CSDD mean total scores) between T0-T1 and T0-T2. **Conclusion:** These results suggested that Snoezelen approach, associated to person-centered daily care plans and adapted physical environment (in the contest of a SCU) could be a good psychosocial intervention to manage behaviors disorders that cannot be directly treated by specific pharmacological therapy. In addition to BPSD reduction, also an improvement of mood was observed and maintained after Snoezelen intervention period.

**P53- POLYPHARMACY AND RELATED FACTORS IN ELDERLY LIVING IN RESIDENTIAL HOME.** N. Tekin<sup>1</sup>, Ö. Gökdemir<sup>2</sup>, M. Kartal<sup>2</sup> ((1) *Narlıdere Residential and Nursing Home, İzmir, Turkey;* (2) *Department of Family Medicine, Dokuz Eylül University, Balçova, İzmir, Turkey*)

**Backgrounds:** As life expectancy increase the world population is aging faster compared to each previous year and this increase is considerable for the management of chronic diseases and multi-morbidity. 'Polypharmacy' generally refers to simultaneous use of multiple medications for multiple indications. Although there is a plenty of pharmacoepidemiological studies about multiple drug use in developed countries, it is so limited in Turkey. The aim of this research was to evaluate polypharmacy in the elderly living in a nursing home having the maximum capacity of in Both Turkey and Europe and the factors affecting this situation. **Methods:** Narlıdere Residential and Nursing Home consists of residential section where elderly who can manage their self-care and a nursing home section where elderly who cannot manage their self-care and dependent. The study was conducted in residential home that has 790 person-capacity. This is the initial phase of the study assessing 301 residents who accepted to participate, and the target of the second phase will be the evaluation of all elderly living in residential home. In this study, the definition of polypharmacy was accepted as use of a combination of 5 or more drugs as relevant to the literature. The questionnaire was conducted via face to face interviews with the elderly who has given informed consent for participation for the survey. The statistical program used for analysis of this study was SPSS (Statistical Package for Social Sciences) for Windows 15.0 (SPSS inc. Chicago, IL). **Results:** The number of elderly participated in this study was 301 and 56.5 % (n=170) of them were female, 43.5% (n=131) were male. Their mean age was  $79.46 \pm 7.14$  (Range: 61-95). Regarding to the education level; 37.2% (n=112) were graduated from university and 33.9% (n=102) were from high school. The first preference of application for their health problems was the health office of the residential home (86.7%) while 60% reported that they applied to a health care provider 3-4 times per year, and 16% were hospitalized once for the last year. When they were asked whether did they took drugs without being prescribed by a physician; 91% (n=274) replied as they didn't. The drugs used without any prescriptions were 18.3% (n=55) analgesic, and 11% (n=33) vitamins. Only 66.8% (n=201) of them do know their drugs namely while 80% (n=241) had the habit of reading the prospectus of the drugs. Most of them (88.7%) thought that all their drugs were necessary for them. They mentioned that they have learned how to use their drugs from the physicians at hospitals (56.5%), and physicians in the institution (16.6%). Of the elderly 56.8% (n=171) thought that these information were appropriate. The mean number of the drugs used was  $3.13 \pm 2.07$  (Range:0-12). The drugs used were prescribed for 62.4% (n=188) hypertension, 34.2% (n=103) cardiovascular drugs (including anticoagulants), 22.2% (n=67) oral anti-diabetics and insulin, 15.9% (n=48) analgesics, 14.3% (n=43) vitamins. Overall, it is stated that 83% of the drugs used was prescribed by specialized physicians in hospitals, and only 17% was by family physicians. **Conclusion:** Polypharmacy and the related factors were studied in residential and nursing home with highest capacity in Turkey and Europe where elderly with quite high educational level, and mean age. It is found that most of the elderly did not use drugs other than prescribed by a physician. The elderly generally preferred to apply to Residential home health office. However, the fact that majority of the drugs they have used initially prescribed by specialists working in Ministry of Health and University hospitals should be evaluated carefully.

**P54- THE DYNAMIC OF A NURSING HOME.** Z. Azeredo (*Family Doctor, RECI Coordinator (IPIaget), MSc on Social Gerontology, Portugal*)

**Backgrounds:** Demographic aging and a high longevity are rather new humanity processes with very important and still unknown consequences. Some of the consequences we already know are: Changes of disease patterns, increase number of very old people living alone in the community, increase of frail elderly and increase on nursing home demands. **Methods:** Taking into account her practice ( medical doctor in a nursing home) and her knowledge about what is going on in these institutions the Author make a reflection about its dynamic, the cohesion chains and the actors involved, and, its implications on caring and the elderly wellbeing. **Results:** There are several cohesion forces in a nursing home behind the old person, and the carer. Although physical environment is very important, the social environment is even more important. Cohesion chains such as the relationships among the institutionalized persons, or between them and their families can change the wellbeing of elderly persons. Also the relationships among old persons and carers can influence it. Other conditions that also can influence the elderly well-being are: the mass-media (television) organization climate and the external environment, among others). **Conclusions:** The Author make a global analysis and after that she analyze in deep each factor that can influence the elderly wellbeing in a nursing home. At last, the Author make some recommendations

**P55- THE COME-ON STUDY: COLLABORATIVE APPROACH TO OPTIMISE MEDICATION USE FOR OLDER PEOPLE IN NURSING HOMES. STUDY PROTOCOL.** G. Strauven<sup>1</sup>, P. Anrys<sup>2</sup> the Come-On consortium<sup>3</sup>, A. Spinewine<sup>2</sup>, V. Foulon<sup>1</sup> (*(1) KU Leuven, Department of Pharmaceutical and Pharmacological Sciences, Leuven, Belgium; (2) Université catholique de Louvain, Louvain Drug Research Institute, Clinical Pharmacy Research Group, Brussels, Belgium; (3) A UCL – KU Leuven consortium that includes, in addition to the four co-authors, the following persons: Boland B., Dalleur O., Declercq A., Degryse J.M., De Lepeleire J., Lacour V., Macq J., Simoens S., Speybroeck N., Van Durme T., Vanhaecht K.*)

**Introduction:** Potentially inappropriate medications and potential prescribing omissions are highly prevalent in the nursing home setting. This increases the risk of adverse drug events, of hospital admission, as well as mortality and healthcare costs. The Belgian situation is no exception to this, with a limited number of large and recent initiatives launched to improve the situation. In 2013, the Belgian National Institute for Health and Disability Insurance decided to fund a research project to evaluate the effect of an interdisciplinary approach to improve the use of medicines in Belgian nursing homes. **Objectives:** The Come-On study aims to evaluate the effect of a complex, multifaceted intervention on the appropriateness of use of medicines for older people in Belgian nursing homes. **Discussion:** For this multicentre cluster controlled trial 63 nursing homes, spread all over Belgium, have been recruited to participate (30 in intervention group; 33 in control group). In each of these nursing homes, 35 residents under the care of participating GPs were selected to participate. Residents receiving palliative care or in short stay/revalidation were excluded. Intervention. The intervention includes the following components: • Education and training provided to participating healthcare professionals (general practitioners, pharmacists and nurses) in the form of (a) e-learning (4 modules) and (b) on-site training. • Local concertation at the nursing home level to discuss and generate consensus on the appropriate use of two specific medication classes, namely antidepressants and lipid-lowering drugs. All health care professionals working in the nursing home are invited to these meetings, which also should stimulate collaboration between practitioners. • Interdisciplinary case conferences at the resident-level on a 4-monthly basis, where the nurse, the general practitioner and the pharmacist meet to perform a structured medication review in order to optimize the resident's medication profile. For residents with a hospital admission or entering end-of-life care, an additional interdisciplinary case conference could be conducted. As primary outcome the number of potentially inappropriate medications and potentially prescription omissions per resident will be compared between the intervention and the control groups. Secondary outcomes will relate to process and outcomes of case conferences, cost, facilitators and barriers for implementation of the intervention. Preliminary results. The study protocol, based on input from a pilot study performed in four nursing homes, has been approved by the Ethical Committee of UZ Leuven and by the Privacy Commission. A web-based application has been developed to facilitate coding, as well as sharing of data between healthcare professionals in the intervention group. Patient recruitment started in early 2015 and baseline data collection occurred in April-May-June 2015. Access to the e-learning platform was provided from May onwards, and onsite training sessions were organised in June 2015. Local concertation and multidisciplinary case conferences will start from June 2015 onwards. Preliminary data will be available in autumn 2015. **Conclusion:** This abstract describes the protocol for a multicentre cluster controlled trial that will be conducted in 63 nursing homes in Belgium. This project is a great opportunity to explore the impact of a complex, multifaceted intervention on the quality of prescribing in Belgian nursing homes. **Acknowledgements:** This abstract is presented on behalf of the consortium KU Leuven – UCL, funded by RIZIV/INAMI.

**P56- TELL ME YOUR SECRETS AND I'LL SHOUT THEM OUT.** J. Hodges (*Service Improvement Lead (Care Homes for older people), NHS Highland, Assynt House, Inverness, Highland, Scotland*)

**Introduction:** NHS Highland is one of the fourteen territorial boards of NHS Scotland and employs around 10, 000 people, making it one of the largest employers in the region. The board are co-terminous with two local authority areas: Highland

Council and Argyll & Bute. In the Highland Council area the population was 232,950 in 2013 with 20,172 people over the age of 75. By 2022 the population of highland is expected to be 239,298 with 27,417 over 75. This age group is expected to grow faster than any other. There is expected to be an increase in lone adult houses, and the number of households headed by a 75+ person is expected to increase by 107% between 2012 and 2037. Alzheimer Scotland statistics show that in 2014, 4085 individuals over 65 living in Highland have a diagnosis of dementia. A relatively small proportion (10%) of these people lives in Care Homes. In some of our more remote and rural areas Care Homes and are often central to the sustainability of rural living providing accommodation locally, employment and a central point for care in the community. Highland is leading the way in Scotland in adopting an integrated approach to adult health and social care. Now a joint resource, we are in a strong position to be able to influence adult social care. This is multi-faceted but one component is looking at care provided in care homes and how to do this in an inclusive way. Drawing on the visions for 'My Home Life' we wanted to focus on relationship centred care where everyone's voice matters. For the purpose of this specific presentation we will primarily present the experiences of the residents. **Aim:** To improve the experience of care for older people by promoting positive relationships with all stakeholders. **Objectives:** • To carry out focussed discussions with residents, carers, staff and visitors to discover what really matters to the people who live, work and visit the care home; • To analyse the data to identify themes to inform future developments for the service; • To consider how NHS Highland can influence, encourage and adapt provision to fully reflect the support required. **Methods:** NHS Highland has full time, permanent service improvement Quality Improvement (QI) manager committed to raising standards within care home settings, and to encourage change in service delivery. The role itself is part of the approach to explore issues and test improvements. From November 2014 to present QI manager carried out semi-structured interviews using an appreciative inquiry approach, with residents (n=35), carers (15) and older people in the community attending services (50). **STAFF?** **Results:** This work is ongoing and includes information about the current "lived" experiences of residents, and how it feels to be the carer / family of a resident, the hopes and fears of people preparing or considering residential care as well as wider community perspectives. Specifically for this presentation the main focus will be on the residents' current experience of care homes in Highland and their reflections on how we can improve this experience for them and their closest family members. During the process of information gathering and analysis four broad themes have emerged: • Nobody plans to go into a care home; • Culture of care; • Impact of leadership and management and how this influences staff conduct; • Wider responsibilities. Emerging from discussing these themes are some challenges around how can we work in a way that promotes everyone's responsibility whilst having the resident at the heart of their own home? **Conclusion:** Indications are we still don't get things right and yet we seem to over think solutions. We don't listen properly or identify "what really matters" to people. Even if we can improve this it doesn't address a fundamental issue that 99 per cent of those interviewed would rather be dead than live in a care home. The prospect of living in a care home for older people is feared as much as contracting dementia. We need to understand why this is and to work now on changing the culture of care, attitudes and perceptions and to a degree allow care home services to be everyone's business. In Highland, we are in to this journey and are committed to learning lessons from those at the heart of the service and to supporting change from this learning.

**P57- IDENTIFYING RESEARCH UNCERTAINTIES: UNDERSTANDING AND ENGAGING WITH THE NURSING AND RESIDENTIAL CARE HOME SECTOR IN THE SOUTH WEST OF ENGLAND TO IMPROVE ELDERLY RESIDENT CARE.** J. Day, I. Lang (*Collaboration for Leadership in Applied Health Research and Care South West Peninsula, University of Exeter Medical School, Exeter, United Kingdom*)

**Introduction/Background:** The South West Peninsula of England, popular as a retirement area, has a disproportionately large elderly population and a high number of residential and nursing care homes. Elderly people residing in care homes are more likely than the general population to have complex needs, comorbidities and cognitive impairment. Reports have highlighted that the provision of national health services to residents in care homes can be variable. A project was initiated by PenCLAHRC, the National Institute for Health Research (NIHR) Collaboration for Applied Health Research and Care for the South West Peninsula. This is a programme that seeks to promote the translation of knowledge and evidence into routine practice. The purpose was to engage and understand in collaboration with the local health and care home sectors research uncertainties to improve the quality of care and shape a research programme involving potential local partners / collaborators. Within this presentation we aim to share our methods, analysis and reflections on the experience of undertaking this work. **Objectives/Methods:** Our primary objective was to identify specific research uncertainties to assist the development of a collaborative programme of research work relating to the health and social care of elderly people living in care homes. We used a combination of methods to enable this process. We scoped and collated evidence on interventions within care homes that may improve quality of care for residents from both published material and local initiatives. We also conducted a stakeholder analysis and undertook engagement activities through the use of 'purposeful conversations' with stakeholders, including members of the public, and attendance at existing forums within the South West. We held two workshops in which we worked alongside those with an interest in care homes to identify the current issues for those involved in working with or in the elderly residential care home sector. **Discussion/ Results:** We undertook a thematic analysis of the data generated to enable (a) identification of key local issues and research uncertainties, and (b) mapping of the range of interventions and evidence base for improving the quality of health and social care for elderly residents in care homes. We identified challenges to and

opportunities for undertaking collaborative research in this area. We also produced insights into how to best engage and identify potential local partners and collaborators. From our analysis a significant gap was highlighted in how knowledge and evidence is disseminated, mobilised and implemented in residential settings to improve the care of elderly residents. **Conclusion:** Our bottom-up approach enabled the identification of research uncertainties that can inform the development of a collaborative applied health and social care work programme on how knowledge and evidence is disseminated and implemented within residential and nursing care homes. Potential partners and collaborators were identified and insights were gained on how to effectively engage with local stakeholders.

**P58- INTERPROFESSIONAL CARE PROCESSES TO MANAGE RESIDENTS WITH HEART FAILURE IN LONG-TERM CARE.** G. Heckman<sup>1</sup>, V. Boscart<sup>2</sup>, K. Huson<sup>2</sup>, R. McKelvie<sup>3</sup>, J.P. Hirdes<sup>1</sup>, P. Stolee<sup>1</sup> ((1) *Schlegel Research Chair for Geriatric Medicine, School of Public Health and Health Systems, University of Waterloo, Waterloo, Canada;* (2) *School of Health & Life Sciences and Community Services, Conestoga College, Kitchener, Canada;* (3) *Department of Medicine; Population Health Research Institute, McMaster University, Hamilton, Canada*)

**Backgrounds:** Heart failure (HF) affects 20% of long-term care (LTC) residents, in whom it is associated with significant morbidity, acute care transfers, and mortality. Our previous work identified two key barriers to optimal HF management in LTC: staff knowledge gaps and ineffective interprofessional (IP) communication. This pilot study assessed the acceptability, feasibility, and preliminary impact of an intervention designed to: (1) improve staff HF knowledge; (2) develop efficient IP communication processes to better manage residents with HF; and (3) integrate improved HF knowledge and IP communication processes into regular work routines in LTC. **Methods:** The intervention was implemented on single units in each of two LTC homes (n= 29 staff). A mixed methods approach was used to collect qualitative (focus groups, interviews, observations) and quantitative (surveys) process and outcome data. HF knowledge surveys and IP scales were collected at baseline and three months post-intervention. **Results:** Results were similar between participants at both study sites. Baseline scores on the Dutch HF Knowledge Survey varied from 33%-100%, with a mean of 74%. Post-intervention scores ranged from 80%-100%, with a mean of 90%. At baseline, nurses' and personal support workers' self-efficacy ranged from 60%-92%, with a mean of 74%; this increased to a range of 70%-94%, with a mean of 87% post-intervention. Participants optimized and developed new communication processes to promote IP care. Observations and interviews indicated a perceived increase in staff confidence, strong assessment and clinical proficiency skills, and more effective IP collaboration. Staff deemed the intervention as useful and feasible, particularly the tools, education, and bedside sessions with physicians. **Conclusion:** This pilot study suggests that a novel intervention to enhance knowledge and IP care processes for managing HF in LTC is acceptable and feasible, and has a favourable preliminary impact on staff knowledge and IP communication. Findings of this study inform an expansion of the pilot study to remaining units in each home and beyond, in order to determine the impact of the intervention on HF care quality indicators and resident outcomes.

**P59- IMPROVING OUTCOMES FOR FRAIL SENIORS: IMPACT OF THE ASILA PROGRAM FOR LONG-TERM CARE STAFF.** V. Boscart<sup>1</sup>, G. Heckman<sup>2</sup> ((1) *CIHR & Schlegel Industrial Research Chair for Colleges in Seniors Care, School of Health & Life Sciences and Community Services, Conestoga College Institute of Technology and Advanced Learning, Kitchener, Canada;* (2) *School of Public Health and Health Systems, University of Waterloo, Waterloo, Canada*)

**Backgrounds:** There is a rapidly increasing need to care for seniors requiring complex care in long-term care (LTC) settings. As the number of seniors rises, pressure increases on the care capacity in these organizations. The majority of these workers will be registered nurses and unregulated health care staff. Limited geriatric content in Canadian health care education and complex care demands of residents in LTC has resulted in care deficits. These deficits lead to diminished health outcomes and poor quality of life for residents. This presentation describes the Applied Simulated and Integrated Learning Approach (ASILA), a novel intervention targeting clinical outcomes for LTC residents through the use of evidence-informed case simulations related to cognitive and physical challenges common among frail seniors. ASILA employs the principles of Comprehensive Geriatric Assessments and the use of Minimum Data Set (MDS) tools to enhance staff's care approaches. The pilot study evaluated the feasibility of the ASILA Program and investigated the effects of ASILA on staff's knowledge and perceptions and residents' outcomes. **Methods:** Two LTC homes (n=26 staff) participated in this pilot. Staff completed pre and post (immediate and 3-months post intervention) knowledge and experience based questionnaires and participated in focus group interviews. MDS data was collected from residents (n=40) at baseline and 3 months post-intervention. All data underwent a descriptive analysis. **Results:** Following ASILA, staff had higher scores in knowledge and positive perceptions of the use of comprehensive assessments and MDS tools to guide care. Several positive changes were found in resident clinical outcomes (less restraint use, increased pain and functional assessments, changes in medications). **Conclusion:** This work builds on leading practices in simulation education to develop inter-disciplinary and evidence informed training scenarios for health care staff. Pilot findings indicate that ASILA is a feasible and successful approach to enhance care for frail residents in LTC, emphasizing quality of life, promoting best practices, all while working within a financial framework of accountability.

**P60- ANALYSIS OF AWARENESS OF OLD PEOPLE'S RELATIVES OF PHYSICAL FIXING PRACTICE FOR OLD PATIENTS STAYING AT NURSING HOME.** E. Böçkün<sup>1</sup>, Y. Tokem<sup>2</sup>, N. Tekin<sup>1</sup> ((1) *Izmir Narlıdere Residential and Nursing Home, Turkey;* (2) *Izmir Kâtip Celebi University Faculty of Health Sciences, Turkey*)

**Backgrounds:** This study was conducted to evaluate the awareness of elderly relatives of physical fixing practice for old people staying at nursing home and process of decision making. **Method:** 99 relatives of old people followed and care at Izmir Narlıdere Nursing Home, contacted between the dates of 1st t September and 31st December 2014 and participating in the study voluntarily were included in the study. Questionnaire related to Practice of Physical Fixing (PPF), sociodemographic data collection form of old people's relatives developed by the researcher, knowledge level and attitude questionnaire were used to collect data. Beck Depression Inventory and Beck Anxiety Inventory was employed to determine physiological conditions of old people's relatives for making a decision about the practice. **Results:** It is seen by the results of the study that age average of old people's relatives is 58.14±12.74, 85.7% of them are married, 70% of them are women and 45.7% of them have the degree of higher education. It was reported that 82.9% of them were satisfied with the care provided at nursing home and 92.9% of them were informed when PPF was necessary and 95.7% said that the practice was necessary. 81.4% of old people's relatives expressed that PPF was applied to the old people if necessary, 60.0% stated that PPF affected their emotional state psychologically and physically 92.9% said that they wanted feedback related to the time of PPF and method of practice and 80.0% of them said that they were peaceful when the institution provided apparatus used for PPF. 74.3% of them expressed that detailed consent form would make them feel better, 74.3% of them stated that informing by the nurse performing the practice and physician making the decision would reduce the anxiety. It was found out that depression score average of old people's relatives describing physical fixing practice as the protection was higher and anxiety scores of the ones accepting it as the restriction was lower. **Conclusion:** Relatives of the elderly staying at the nursing home reported that they accepted PPF as the protection and they would allow the practice if the old person could fall down or harm himself and around. It is thought that old people's relatives and nurses should provide training to develop knowledge, attitude and awareness of old people's relatives about PPF and PPF consent form should be prepared. **Keywords:** Physical fixing, elderly's relative, nursing home, practice of nursing

**P61- INNOVATION IN GERONTOLOGICAL HEALTH CARE EDUCATION: A LIVING CLASSROOM IN LONG-TERM CARE.** V. Boscart<sup>1</sup>, L. McCleary<sup>1</sup>, P. Stolee<sup>2</sup> ((1) *CIHR & Schlegel Industrial Research Chair for Colleges in Seniors Care, School of Health & Life Sciences and Community Services, Conestoga College Institute of Technology and Advanced Learning, Kitchener, Canada;* (2) *School of Public Health and Health Systems, University of Waterloo, Waterloo, Canada*)

**Backgrounds:** Enhanced care and quality of life for seniors requires change in many areas, including gerontology education for health care professionals; practice development and skills enhancement for those working with seniors; and knowledge translation research that is relevant for seniors care. When these elements occur independently of each other, as they often do, there are serious disconnects between what is going on in practice, education, and research. To overcome this silo approach to practice development in Long-Term Care (LTC) and improve access for students, Conestoga College, the Schlegel-University of Waterloo Research Institute for Aging (Schlegel-UW RIA), and Schlegel Villages (retirement and long-term care organization) have collaboratively developed an innovative learning model to improve gerontological knowledge and skills for future health care professionals. This learning model, called the "Living Classroom" (LC), utilizes existing care environments as accessible knowledge solutions and training grounds for students. **Methods:** The LC program was implemented at a LTC setting in Ontario, Canada. The program consists of classroom and clinical teaching for Practical Nursing (PN) and Personal Support Worker (PSW) students, all in a live LTC and retirement environment. Students are intentionally exposed to first-hand, real-life situations, where they may practice and apply the gerontological content learned in their classes. They also have the opportunity to interact and form relationships with staff and residents in the facility, and gain insight into the daily occurrences and work life in LTC and retirement facilities. **Results:** Preliminary evaluation of the LC program demonstrates a high rate of satisfaction amongst students, educators, and LTC staff and residents. The proportion of both PN and PSW students who intend to seek employment in LTC after graduation increased upon completion of the LC program. Students also reported having a greater appreciation of LTC residents, increased confidence in working in LTC, and enhanced teamwork skills. **Conclusion:** Findings of this 2-year descriptive evaluative study have significant implications for career attractiveness of LTC, recruitment and retention issues, interprofessional collaboration education and resident-centered learning; and the promotion of LTC as a professional learning and mentoring environment.

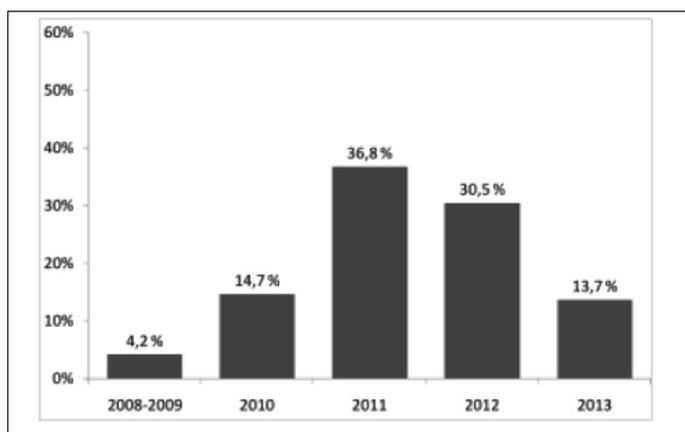
**P62- A SIMPLE TOOL TO MEASURE THE IMMEDIATE WELLBEING OF ELDERLY PEOPLE IN NURSING HOMES.** S. Stéphane<sup>1</sup>, M.-L. Kuhnel<sup>2</sup>, A. Philippe<sup>3</sup>, P. Denormandie<sup>4</sup>, M. Dramé<sup>5</sup> ((1) *Chef de clinique des universités – Assistant des hôpitaux, Pôle IMER, Hospices civils de Lyon, Lyon, France;* (2) *Psychologue, Ehpad Korian Le Clos du Murier, Fondettes, France;* (3) *Directeur médical et qualité, Institut du bien vieillir Korian, Paris, France;* (4) *Directeur de l'institut du bien vieillir, Institut du bien vieillir Korian, Paris, France;* (5) *Maître de conférences universitaire, praticien hospitalier, Pôle de recherche, CHU de Reims, rue du général Koenig, Reims, France*)

**Introduction:** Immediate wellbeing and quality of life in an institution are of paramount importance. The assessment of the quality of life of elderly people is both complex and poorly adapted to daily practices. The instant assessment of wellbeing tool (EVIBE), developed in the field, is an original and practical alternative. The aim of this study was to describe EVIBE tool, measure general reliability and specific reliability on different nursing home workers. **Methods:** We conducted an observational cross-design study during one year, January 2012 to December 2012, on elderly people in 12 nursing homes. We calculated an intra-class correlation for all of our participants and by occupation. For the statistical analysis, the significance was fixed at 0.05 for the alpha risk. **Results:** Of the 1980 observations, the average on the instant assessment of wellbeing tool EVIBE tool was 3.48 (+/- 1.1) for evaluation by the resident (self-assessment) and 3.63 (+/- 1.2) for the evaluation by the staff. This tool allows caregivers to carry out allows an immediate assessment of the resident with a good reliability. Intra class correlation was included between 0.79 and 0.90 ( $p < 0.001$ ). **Discussion:** This tool allows caregivers to carry out an immediate assessment and a qualitative approach with residents while involving professionals in a well-treatment approach improving daily practices.

**P63- LES UNITÉS D'HÉBERGEMENT RENFORCÉES (UHR) : ETAT DES LIEUX EN 2013.** S. Hermabessière<sup>1</sup>, B. Lavallart<sup>2</sup>, C. Laffon de Mazières,<sup>1</sup> P. Saidlitz<sup>1</sup>, T. Voisin<sup>1</sup>, B. Vellas<sup>1</sup>, Y. Rolland<sup>1</sup> ((1) *Gérontopôle, CHU de Toulouse – Hôpital Garonne, Toulouse, France;* (2) *Chargé de la Mission de pilotage du plan Alzheimer, Paris*)

Dementia is frequently associated with behavioral disorders that can be difficult to manage. In regards to these symptoms, psychoactive drugs have poor effect and large potential side effects. In order to take care of such patients with severe disorders, specific units called “reinforced hosting units” (“UHR; Unités d’Hébergement Renforcées in French”) have been developed in long-term care unit. They employ specifically trained teams in appropriately design setting. We report the results of a French national inquiry studying the deployment, the characteristics and the activity of these units in 2013 and 2012.

**Figure 1**  
UHR's deployment in France



**P64- NUTRITIONDAY IN NURSING HOMES – PREVALENCE OF QUALITY INDICATORS IN NUTRITIONAL CARE IN DIFFERENT COUNTRIES.** M. Streicher<sup>1</sup>, C. Kolb<sup>1</sup>, M. Mouhieddine<sup>2</sup>, S. Kosak<sup>3</sup>, R.E. Roller<sup>4</sup>, K. Schindler<sup>2</sup>, M. Hiesmayr<sup>2</sup>, C. Sieber<sup>1</sup>, D. Volkert<sup>1</sup> ((1) *Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany;* (2) *Medical University Vienna, Austria;* (3) *nutritionDay Office, Vienna, Austria;* (4) *Medical University Graz, Austria*)

**Background:** It is currently unknown, what institutional measures are taken in different countries to ensure good nutritional care of nursing home residents. Using the database of the “nutritionDay project”, this analysis compares participating countries at unit level with respect to the presence of defined quality indicators (QI) in nutritional care. **Methods:** All units from countries participating between 2007 and 2013 with more than 20 units were included. Units were characterized on the following four QI: availability of a dietitian, availability of a person responsible for nutritional care, weighing 1x/month and screening for malnutrition 1x/month. In addition, the presence of nutritional experts (dietitian or nutritional care person) and/or method for nutritional assessment (weighing or screening 1x/month) was considered. Differences in QI between countries were examined using  $\chi^2$ -test for significance with Bonferroni correction. **Results:** A total of 770 units with 24,981 residents from 8 countries were analyzed. The number of units/country varied between 28 (Italy) and 273 (Austria). The prevalence of all four QI was significantly different between the countries (Table 1). Dietitians were available in Austria and Canada, a person responsible for nutritional care in Austria, Spain, and Canada in more than 50% of the units. Weighing 1x/month was conducted in 6 countries (Austria, Hungary, Norway, Switzerland, Canada, and Italy) and screening for malnutrition in Austria and Switzerland in more than 50% of the units. In Austria and Canada 67% and 93% of the units had a

nutritional expert and assessed the nutritional status 1x/month, while this was the case in only 25% and 17% of the units in Germany and Spain, respectively. **Conclusion:** There are great differences in the prevalence of one or more quality indicator between the countries. To what extent these QI have an impact on the prevalence of malnutrition must be shown in further analyzes.

**Table 1**

Prevalence of quality indicators in nutritional care in nursing home units from different countries Country

Prevalence of QI (%)	AT (n=273)	HU (n=214)	DE (n=105)	NO (n=51)	ES (n=36)	CH (n=33)	CA (n=30)	IT (n=28)
Dietitian (DA)	54a	39c	22c	0d	42a,c	30a,c	100b	39a,c
Person responsible for nutritional care (PN)	53a	44a	45a	29a	56a	46a	97b	32a
Nutritional expert (DA or PN)	74a	65a,d	52c,d	29c	69a,d	49a,c,d	100b	46a,c,d
Weighing 1x/month	87a	71b	51c	69b,c	19d	100a	93a,b	64b,c
Screening 1x/month	74a	37c	38c	49c	8b,d	55a,c	3b	39c,d
Nutritional assessment (Weighing or screening)	89a	71b	51c	71b,c	19d	100a	93a,b	64b,c
Nutritional expert or nutritional assessment	30a,b	49c	53c	41a,c	56a,c	52a,c	7b	39a,b,c
Nutritional expert and nutritional assessment	67a,b	44c	25d	29c,d	17c,d	49a,c,d	93b	36c,d

AT= Austria, CA= Canada, CH=Switzerland, ES=Spain, DE= Germany, HU= Hungary, IT= Italy, NO= Norway, QI= Quality indicator; Each letter denotes a subset of country categories whose column proportions do not differ significantly from each other at the .05 level.

**P65- DETERMINANTS CONDITIONING THE UNDERTAKING OF PHYSICAL ACTIVITY BY RESIDENTS OF NURSING HOMES.** D. Gutkowska, B. Gugafa, B. Penar-Zadarko, M. Nagórska (*Institute of Nursing and Health Sciences, University of Rzeszow, Rzeszow, Poland*)

**Backgrounds:** The aging of the human body is a complex physiological process associated with a gradual decrease in functional capacity and an increasing incidence in disability and the amount of coexisting chronic diseases. Regular physical activity is one of the important factors mitigating the adverse consequences associated with age and allows for so-called ‘successful aging’. Exercise is also an important component of any prevention and rehabilitation activities conducted among elderly patients, therefore understanding the determinants of the practice of physical activity for seniors will allow for more efficient care for this group of dependents. **Methods:** The aim of this study was to assess the factors determining the undertaking of physical activity by residents of Nursing Homes (NHs). The survey was conducted in the period from December 2013 to April 2015 with a group of 170 residents of NHs who qualified from a total of 524 persons who are residents of these establishments. The criteria for exclusion from participation in the study were: lack of intellectual ability (MMSE), lack of understanding and logical answers to the questions asked in the survey, lack of functional capacity (Katz scale) and lack of consent to participate in the study. The method used was a direct interview using the author’s questionnaire and standardized tools (Katz ADL, MMSE). Statistical analyses of data were performed using IBM SPSS Statistics 20. Verification of the differences between variables were performed using  $\chi^2$  test of independence (taking into account the Yates’ correction and Fisher’s exact test), the Mann-Whitney test and the Kruskal-Wallis test. The level of significance was set at  $p < 0.05$ . The study was approved by the Bioethics Committee of the University of Rzeszów. **Results:** Among the respondents, women accounted for 56.6% and men 43.5%. The average age of the respondents was 65.9. The vast majority of respondents presented a lack of knowledge of the effects of physical activity on health maintenance (80.6%). A sufficient level of knowledge in this area was shown by 18.8% of respondents, and good, only one person. None of the participants had very good knowledge about the beneficial effects of exercise on health. Respondents with a sufficient level of knowledge on the subject often shared the opinion that physical activity is required of all ages (62.5%), while those with a lack of knowledge often argued strongly that older people should not undertake this kind of activity (27.0%) ( $p = 0.0109$ ). The most common reasons indicated by the residents for taking exercise was to improve their well-being

(45.9%), weight loss (35.3%) and the desire to improve their state of health (28.8%). A statistically significant relationship was found in the range of motives for undertaking physical activity by the respondents and their level of knowledge on the impact of physical activity on maintaining health. As many as 68.8% of respondents who are in possession of sufficient knowledge in this area indicated a desire to improve their well-being as the most common reason for undertaking physical activity ( $p = 0.0077$ ). For a similar proportion of this group of respondents (53.1%), the reason for taking exercise was indicated as the desire to improve their state of health ( $p = 0.0008$ ). Based on the data obtained, it was found that one in three respondents (33.5%) indicated a nurse as the person who most often motivates residents to undertake physical activity. Just 14.7% of respondents stated that the main person motivating them to exercise was a doctor. **Conclusions:** The majority of respondents were characterized by a lack of expertise on the effects of physical activity on health maintenance and they often argued that older people should not undertake physical activity. The main factors motivating residents of Nursing Homes to exercise were: the desire to improve their well-being, weight reduction and the desire to improve their state of health. The level of knowledge among respondents about the health benefits of physical activity significantly affects the reasons for undertaking such activity..

**P66- CANAGLIFLOZIN CONTRIBUTION TO DEPRESCRIBING IN NURSING HOME. DIABETES ASSOCIATED WITH HYPERTENSION.** R. López Mongil, J.A. López Trigo, M<sup>a</sup> J. Carranza Priante, B. Pastor Cuadrado, A. Gordaliza Ramos. (*Dr. Villacián Care Centre. Nursing Home, Spain*)

**Backgrounds:** Deprescribing is the process of reconstructing multiple medication use by review and analysis and which concludes with dose modification, replacement or elimination of some drugs or adding others trying to improve polypharmacy. Canagliflozin belongs to a new group of drugs is today a new therapeutic option in the treatment of patients with diabetes mellitus type 2. This drug is a selective inhibitor of glucose transporters co-coupled to sodium channels (SGLT). Canagliflozin reduces glucose reabsorption, resulting in increased urinary excretion of glucose and thus a decrease in blood glucose, both basal and postprandial. Osmotic diuresis causes can produce a reduction in both systolic and diastolic blood pressure. **Objectives:** Identify the presence of arterial hypertension (HTA) among diabetic patients in a nursing home as potential beneficiaries of a diabetes treatment that can decrease blood pressure levels and open up the possibility of reducing or suspending a drug prescribed for treatment of such pathology. **Methods:** A cross-sectional study was conducted in May 2015 in 39 diabetic patients belonging to three units in a geriatric nursing home (A1, A2, A3). Statistical analysis was performed with Statgraphics Centurion XVI (version 1.16.03) under license from the University of Valladolid. **Results:** The mean age of diabetic patients is 83.91 years old in A1, A2 of 85.56 and 76.97 A3. Canagliflozin is indicated in patients without moderate or severe renal impairment, so we selected diabetic patients with renal function as measured by glomerular filtration with formula MDRD4 (Modification of Diet in Renal Disease) or above 60 mL / min / 1.73m<sup>2</sup>. In the results we appreciate that 69.23% of diabetic patients have higher MDRD4 to 60 mL / min / 1.73m<sup>2</sup>. Of all diabetic patients, 89.74% were hypertensive, and then analyze how many diabetic patients with MDRD equal to or greater than 60 mL / min / 1.73m<sup>2</sup> have hypertension, finding a score of 85.19%, which is a high number of patients possible beneficiaries of such treatment. **Conclusion:** The coexistence of hypertension is common and usual for older people with diabetes. Definitely appears to be an epidemiological association between diabetes and hypertension, we know that both diseases increase cardiovascular risk, which is a key factor in aging blood, and as two situations are likely so common, the possibility of dealing with canagliflozin can be a benefit to diabetic patients and help in deprescribing and, in some cases, can promote the reduction of dose or withdrawal of any of the drugs indicated for the treatment of hypertension that could be justified, being substantially safe doing so.

**P67- BRAIN DONATION IN NURSING HOMES. NEED TO ADVANCE IN KNOWLEDGE.** R. López Mongil<sup>1</sup>, J.A. López Trigo<sup>2</sup>, M<sup>a</sup> J. Carranza Priante<sup>3</sup>, B. Pastor Cuadrado<sup>4</sup>, A. Gordaliza Ramos<sup>4</sup> (*(1) Centro Asistencial Dr. Villacián. Diputación de Valladolid. Valladolid, Spain; (2) Ayuntamiento de Málaga, Spain; (3) Centro Asistencial Dr. Villacián. Diputación de Valladolid, Spain; (4) Cátedra de estadística. Departamento de Estadística e I. O., Universidad de Valladolid, Spain*)

**Backgrounds:** Brain donation is a procedure to enhance in nursing homes. A case of a patient who died 96 years old without cognitive impairment and autonomous for DLA is presented. The possibility of donating to relatives contacted after recent cancer diagnosis prior to death. **Objectives:** To describe the procedures for brain donation tissue and expose photographs showing each of the stages of extraction. Submit macroscopic diagnoses. **Methods:** Brain donation is made. We proceed to the signature of the required documents. It alerts the tissue bank of the nearest town. The extraction should take place in the city where the nursing home is located. The Chief Service of Pathology, after accepting, requested authorization of medical leadership of its own hospital. We outlined the procedure for transfer after exitus directly to the autopsy room. **Results:** Photographs of the process are discussed. To access the cranial cavity a chainsaw is used to vacuum for opening the skull. After removing the brain, (weight: 1150gr), it is divided into two halves. Right hemiencephalus is reserved to freeze. The anterior and posterior half are serialized in coronal slices of 1.2cm. Previous cuts, identifying them as A1, A2, etc. and later as P1, P2, P3, etc. are stored The cerebellum: C1, C2, C3, etc. And the trunk T1, T2, etc. Each slice is wrapped in foil and frozen at -80 Celsius degrees. The left hemiencephalus is immersed in formaldehyde for a month. And then is cutted with coronal sections of 1.5 to 2 cm thick, is processed in alcohol, xylene and paraffin, which allows finer cuts that once stained microscopic displayed. It appears global cerebral edema, brain atrophy is not

evidence, and in vessels of the circle of Willis few plaques without significant stenosis at any level. Moderate ventricular dilation and two rounded lesions suggestive of metastases as cerebellar multiple nodules seen. In trunk is evidence substantia nigra depigmentation. **Conclusions:** The brain tissue donation is an important value for understanding the brain aging and possible neurodegenerative disease (for the depigmentation of the substantia nigra) and can let to know about possible causes of death, in this case there is evidence of cerebral metastases and brain atrophy does not appear. This practice must be known and strengthened in nursing homes

**P68- CANAGLIFLOZIN THERAPEUTIC IMPLICATIONS OF DIABETES IN THE ELDERLY PATIENT IN NURSING HOMES.** R. López Mongil<sup>1</sup>, J.A. López Trigo<sup>2</sup>, M<sup>a</sup> J. Carranza Priante<sup>3</sup>, B. Pastor Cuadrado<sup>4</sup>, A. Gordaliza Ramos<sup>4</sup> (*(1) Centro Asistencial Dr. Villacián. Diputación de Valladolid. Valladolid, Spain; (2) Ayuntamiento de Málaga, Spain; (3) Centro Asistencial Dr. Villacián. Diputación de Valladolid, Spain; (4) Cátedra de estadística. Departamento de Estadística e I. O., Universidad de Valladolid, Spain*)

**Background:** A new class of drugs known as selective inhibitors of glucose cotransporter coupled sodium channels (iSGLT) found between canagliflozin, increases urinary glucose excretion, decreasing blood glucose in a separate process insulin, which is associated with a low incidence of hypoglycemia. The heat loss from glucosuria, leading to a reduction of visceral adiposity and osmotic diuresis reduced blood pressure. Therefore it confers a cardiovascular safety, with an influence on lipid levels. **Methods and objectives:** Analyze the prevalence of diabetes in three geriatric units (A1, A2, A3) of a nursing home. Comparison of the mean age of residents diabetics and nondiabetics. Gender distribution. Canagliflozin possibilities of intervention in diabetic patients with central obesity, hypertension (HTA), and in patients with low HDL-cholesterol, according to genre: less than 40 mg / dl in men and less than 50 mg / dl in women, or greater than or equal to 150 triglycerides, all according to criteria of IDF (International Diabetes Federation). Knowing which is the most altered component of metabolic syndrome. A cross-sectional study was conducted in May 2015 in 39 diabetic patients. Statistical analysis was performed with Statgraphics Centurion XVI (version 1.16.03) under license from the University of Valladolid. **Results:** The study was performed in a nursing home with the followings prevalence of diabetes : A1, 21.74%, A2: 43.48% , A3: 22.50%. Total: 29.55%. The mean age of women with diabetes is 84.81yo (min: 65.9-max: 94.81) and men is 80.47yo (min: max 73.4 and 89.3). The mean age of non-diabetic women is 86.46 years (min: 71.02-max: 99.36) and men is 86.39 years (min: max 71.51 and 93.23) . Prevalence of diabetes: 64% female and 36% male. Canagliflozin is indicated in patients with renal function as measured by glomerular filtration with MDRD4 formula (Modification of Diet in Renal Disease) or above 60 mL / min / 1.73m<sup>2</sup>. In the results we appreciate that 69.23% of diabetic patients have higher MDRD4 to 60 mL / min / 1.73m<sup>2</sup>. Altering the frequency of central obesity is 81.58%, 89.74% have impaired HTA in decreased HDL-cholesterol, 76.92% and 34.21% had elevated triglycerides. **Conclusion:** The personalized treatment is currently the paradigm in the therapeutic approach to diabetes mellitus type 2. In the decisionmaking, the clinician has to meet the specific characteristics of the disease, with about 70% likely to be treated with canagliflozin, comorbidities, especially hypertension, and central obesity, patient preferences, this drug is orally administered and single daily dose, and the resources available.

**P69- DIABESITY PATIENTS IN NURSING HOMES. CANAGLIFLOZIN, A NEW POSSIBILITY IN THE PHARMACOLOGICAL APPROACH.** R. López Mongil<sup>1</sup>, A. Gordaliza Ramos<sup>2</sup>, M<sup>a</sup> J. Carranza Priante<sup>3</sup>, B. Pastor Cuadrado<sup>3</sup>, J.A. López Trigo<sup>4</sup> (*(1) Centro Asistencial Dr. Villacián. Diputación de Valladolid, Spain; (2) Cátedra de estadística. Departamento de Estadística e I. O., Universidad de Valladolid, Spain; (3) Centro Asistencial Dr. Villacián. Diputación de Valladolid. Valladolid, Spain; (4) Ayuntamiento de Málaga, Spain*)

**Background:** Canagliflozin belongs to a new group of drugs is today a new therapeutic option in the treatment of patients with diabetes mellitus type 2. This drug is a selective inhibitor of cotransporter glucose coupled sodium channel (SGLT). In the kidney, SGLT -2 is the most important since it is responsible for 90% filtrated glucose. Canagliflozin reduces glucose reabsorption, resulting in greater urinary excretion of glucose and thus a decrease in blood glucose, both basal and postprandial. The heat loss posed by glucosuria leads to a decrease in weight and it reduces visceral adiposity. **Methods and objectives:** To identify diabetic population in nursing homes, showing those without renal impairment and in central obesity according to the criteria of the metabolic syndrome by the International Diabetes Federation (waist circumference over 94 cm in men and over 80 cm in women). In this way we can detect patients with diabesity that could be susceptible to use this treatment. **Results:** The study was performed in a nursing home with diabetes prevalence of 29.55%. The mean age of women in diabetes is 84.81yo (min: 65.9max: 94.81) . Mean age for men is 80.47yo (min: max 73.4 and 89.3). Statistical analysis was performed with Statgraphics Centurion XVI (version 1.16.03) licensed by the University of Valladolid. This drug requires a good kidney function that we measured with the formula MDRD4, and select those with or above 60 values, obtaining a result of 69.23% plus characteristic improves patients who are obese, using the IDF criteria, results in a 85.19% with less than MDRD4 60 and values central obesity. **Conclusion:** Canagliflozin can be used in approximately 70% of the diabetic patients living in a nursing homes. 85% of these patients may benefit from using these drugs to present concomitant obesity. All this provides insight into the potential clinical use of a new drug for use in patients with diabesity listed with an innovative profile with respect to the currently existing oral antidiabetic.

#### **P70- DEVELOPMENT AND EVALUATION OF A METHODOLOGY FOR THE ROUTINE MEASUREMENT OF QUALITY OF LIFE IN CARE HOMES.**

L. Hughes, S. Banerjee (*Centre for Dementia Studies, Brighton and Sussex Medical School, England*)

**Background:** Dementia is one of the great health and social care challenges that we face. As the symptoms of dementia progress it is often necessary for people to move into care or nursing homes to gain appropriate care and support. It has been estimated that one third of people with dementia live in care homes in the UK and that 80% of people in care homes have dementia. There has been increasing concern about the quality of care provided for people with dementia in many nursing homes in the UK and a lack of consensus about how best to measure quality of care. One potential approach to be able to measure the overall wellbeing of people with dementia in care homes that has been suggested is the routine use of measurement of quality of life (QoL). A number of measures of dementia-specific QoL have been developed, some of which have been validated for use in care home settings. These measures are usually questionnaire-based measures for self-completion by the person with dementia or for completion by proxy such as a carer. However, the regular use of QoL measures in care homes as a part of routine care practice is limited. The available questionnaire measures have been developed for research use rather than for use by care home staff, and observational measures developed specifically for use in care homes are often time consuming and require additional training, which can be costly. These data will be reviewed and the protocol and emerging findings of a study to develop and evaluate a method whereby it is possible to incorporate into routine practice the systematic and repeated measure of QoL in care homes will be presented. The aim of the project is to determine the feasibility, validity and impact of gathering data from care staff using the DEMQOL-Proxy, a well validated measure of health-related QoL in dementia. **Methods:** Stage 1: Feasibility and method development. A mixed methods approach will be used in a small number of care homes in Sussex, England to determine the feasibility of routinely measuring QoL in care homes. Interviews and focus groups will be conducted with care home staff to explore the views and opinions of completing a QoL measure as a part of routine care practice. The study will assess whether the DEMQOL-Proxy system can be used without the need of a researcher or interviewer, it will assess and determine who is the most appropriate person to rate QoL in a care home (e.g. are keyworker or non-keyworker staff more reliable), and assess how often QoL can feasibly be routinely measured in care homes. Stage 2: Evaluation of methodology. Following Stage 1 a further set of care homes will be recruited to evaluate the method developed. The psychometric properties of the DEMQOL-Proxy in routine use in care homes will be assessed, including validating the data collected by staff against Dementia Care Mapping. The difference/agreement between family and paid carer proxy QoL ratings will be assessed. The study will also explore the differences in staff QoL ratings of those residents known to have dementia and those not known to have dementia. **Discussion/Conclusion:** Being able to accurately measure QoL in people with dementia in a care home setting is the first step to identify methods to maintain and improve residents' QoL and routinely assess quality of care. By working closely with care home staff the study will determine the feasibility of routinely measuring QoL in care homes and derive a method for the effective integration of the DEMQOL-Proxy QoL measure into routine care practice.

#### **P71- NURSE PRACTITIONERS SUPPORTING STAFF AND ELDERNS IN RESIDENTIAL AGED CARE: TIMELY, PROFICIENT AND WELCOME.**

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**Backgrounds:** In Australia, as with many countries worldwide, people living in residential aged care facilities (RACF) have increasingly specialized and acute care needs placing substantial pressure on health care systems. In response, the Australia government in 2010 extended the Nurse Practitioner model of care to include the aged care Nurse Practitioner. The aged care nurse practitioner (ACNP) is a generalist nurse with a Master's degree and extensive gerontological nursing experience. They can refer, prescribe and undertake advanced skills either independently or as part of the collaborative health care team. Emergent research to date has demonstrated that ACNP model of care is valued, reduces emergency department presentations and hospital admissions. While the evidence supporting the role of the ACNP, the majority of studies eliciting nurses experiences have been conducted in larger urban areas. The delivery of the ACNP service in regional settings is different, one ACNP may have to service many RACFs in different towns. The aim of this study is to understand RACF nurses' experiences when interacting with the ACNP to care for residents in regional aged care facilities. **Methods:** This study adopted a qualitative descriptive approach. Ethical approval to conduct the study was received from both the University and the participating health service Human Research Ethics committees. A purposive sample of six nurses, from different RACFs, who interact with the ACNP agreed to participate. In-depth interviews were conducted of around 40 minutes in duration. Interviews were audio recorded, transcribed verbatim and entered into Nvivo to assist with data management. Inductive content analysis in accordance with the process outlined by Braun and Clark (2006) was followed. Initial codes emerged when the researchers immersed themselves in the data, listened and re-read the transcripts line-by-line to identify words and key ideas. Analysis followed an iterative process where the researcher moved between the audio/transcripts and the emergent themes. **Results:** Participant RACF nursing staff were very satisfied with the ACNP communicating they enabled the RACF nurse in the provision of quality care. The theme of enabling was informed by the sub-themes of decision making and learning. Participants articulated

that given the speciality nature of caring for the deteriorating aged care resident, timely support and desired care were often not available. The ACNP provided an avenue to assist with problem-solving, decision making and caring intervention. They also delivered opportunistic formal and informal teaching sessions. Being actively involved in decision making and maintenance of acute care clinical skills was reported as satisfying for the RACF nurse. The theme of quality care was informed by the sub-themes of intervening early and connecting. The advanced skills of the ACNP positioned them to intervene earlier, through the administration of antibiotics, suturing or replacing indwelling catheters. This early intervention potentially avoided hospital admission, keeping the resident at the facility. As the ACNPs was able to 'speak the same language' as the medical doctor they became the connector between the medical doctor and the aged care nursing staff. Early intervention and connecting were perceived to promote better health outcomes for residents and improved collaboration with the medical team. **Conclusion:** RACF nurses in the study were committed and motivated to provide quality care for the residents in aged care facilities. Caring for the deteriorating aged care resident with complex care demands requires speciality skills. Such a skill set has not traditionally been deemed within the scope of practice of the aged care nurse, and consequently contemporary education and equipment may be lacking. This coupled with the limited availability of the medical doctor to attend to the deteriorating resident in a timely manner potentially impacts staff workload and satisfaction. The ACNP, because of their ability to respond in a timely manner, prescribe, and provide advanced clinical and communication skills are well positioned to enable RACF nurses to deliver quality care in regional areas, indirectly impacting staff satisfaction.

#### **P72- FRAILTY IN OLDER ADULTS: A LOSS OF COMPLEXITY HYPOTHESIS.**

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There is still a huge debate on what could really be the meaning and definition of frailty, along with the real impact in older adults. However there is a fair consensus on what it could really mean: a deregulation of the whole organism of an older adult that renders him/her vulnerable to stressors, that if not having this condition, it would respond appropriately (1-3). Even though there is this consensus, it is still having a lack of biomarkers that could make the concept more "clinically friendly". Nowadays the means of detection of this problem are very large to be applied or with the need for special equipment (even it is minor just as a dynamometer) to classify an older adult as frail. Moreover, none of these tools have demonstrated to be time changing sensitive, thus lacking the property to follow-up interventions. Nowadays, the way to say that an intervention is effective on frailty is just to look at the alleged adverse outcomes of frailty, such as mobility disability, falls, institutionalization. Moreover, the tools used in research to categorize frailty are mainly based on the secondary outcomes of frailty not in frailty itself. That is how the picture of frailty is so poor currently, not looking at the phenomenon (because researchers and clinicians are not sure that it even exists) and just looking at those secondary outcomes or complications of frailty, without looking at the real phenomenon. Maybe one of the most accurate or closer looks at the frailty phenomenon is the frailty index, due to the fact that it sums up a number of so-called deficits, giving a number between zero and one, which in turn could be taken as the probability of suffering a complication such as a fall, disability, institutionalization allegedly caused by frailty when the subject confronts a stressor. It is impressive how scarce is the research in frailty and complex systems. Although a complicated field due to the transdisciplinary character of it, however it seems very clear how the simultaneous interaction of the components of an organism with subclinical "failures" could be an accurate and feasible biomarker of frailty. This has been approached in other pathologies, mainly with fibromyalgia, a loss of complexity has shown how this pathology, that had a similar history to that of frailty, with a lot of low credit for the disease, is nowadays a paradigm of how humans can become ill in a different fashion from that of linear thinking. Studies of frailty and loss of complexity have been studied mainly by Lipshitz et al., adding evidence to what was known in those years about frailty, this research group found how a loss of complexity measured by multi-scale entropy of balance signals in older adults was associated with frailty in older adults. Another thing in which using the signal analysis of different components of the human organism is the avoidance of cognition in the tests that are usually used to categorize this entity, by just analyzing a signal provided by for example an electroencephalogram, the subject has only to be seated comfortably, without having to follow any direction that is relevant to the classification of him as a frail older adult. This is of higher importance currently, due to the increasing trend of talking about cognitive frailty, an entity that could be just derived from classification bias. Therefore, signal analysis would give to the field of frailty a more specific tool. There is a need to test simultaneous signals, up-to-date the signals that have been used in other diseases are single, however and following the hypothesis of a complex origin of the problem, the synergy between subclinical derangements of different organs needs to be tested. These tests could also monitor effectively interventions aimed at diminishing in one hand the impact of frailty, complications; and in the other hand, rather than treating complications, treating frailty itself. Finally in the treatment rail also, the preventive role that this biomarkers could have is enormous. [1] L.P. Fried, Conference on the physiologic basis of frailty. April 28, 1992, Baltimore, Maryland, U.S.A. Introduction, Aging (Milano) 4 (1992), pp. 251-252. [2] L.P. Fried, C.M. Tangen, J. Walston, et al., Frailty in older adults: evidence for a phenotype, J Gerontol A Biol Sci Med Sci 56 (2001), pp. M146-156. [3] K. Rockwood, R.A. Fox, P. Stolee, D. Robertson and B.L. Beattie, Frailty in elderly people: an evolving concept, Cmaj 150 (1994), pp. 489-495.