Communications to the Spring Meeting of the British Geriatrics Society

4 - 6 May 2011
BT Convention Centre
Liverpool

programme of abstracts
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Introduction
Ageing is associated with increased oxidative damage to muscle and other tissues. Increased oxidative damage to DNA, proteins and lipids has been implicated in mechanisms underlying frailty, e.g. data indicate age-related change in ROS generation plays a pathogenic role in maintaining the chronic inflammatory state in older people (Jackson, Crit Care Med. 2009; 37:S368-71).

We hypothesised that chronic increase in ROS generation occurs in cells of older people, leading to oxidative damage and dysregulation of the normal redox signalling. The aim of this pilot study was to develop a model to monitor intra-cellular ROS activities in lymphocytes from adult and old subjects using CM-DCH (fluorescent ROS probe). Establishment of an ex-vivo model cell system will allow examination of interventions aimed at modifying aberrant ROS generation.

Methods
Ethical approval was obtained from Liverpool Research Ethics Committee. Nine young (mean age 31, range 23-40) and ten old (mean 75, range 66-93) subjects were recruited. Blood samples were taken and lymphocytes isolated using ficoll-paque. Cells were incubated with DCH and fluorescence measured every 10 minutes for 30 minutes (Palomero et al, Antioxid Redox Signal. 2008; 10:1463-74).

Results
Data demonstrated that rate of change in fluorescence was significantly higher in lymphocytes from older people (10mins: adult: 9.5 (2.9), old: 11.5(2.7); 20mins: adult: 10.5(4.4), old: 14.8(2.9); 30mins: adult: 12.0(3.3), old: 21.2(6.3); data presented as mean (SD), p<0.05 at all time points, 2 way ANOVA).

Conclusions
A reliable model for monitoring ROS generation in viable cells from older people has been established. Data are compatible with the theory of an increased oxidant generation with ageing.
ESTERASES, FRAILTY AND MORTALITY IN OLDER PEOPLE IN THE COMMUNITY

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Introduction
Drug metabolism is variable amongst older people. Esterases are enzymes of oxidative drug metabolism found in tissues and plasma, the liver being the most important site of synthesis. Esterases decrease significantly following acute stress such as hip fracture and acute illness. Esterase activities are also reduced in institutionalised older people. Little is known about drug metabolism in older people at population level.

Aims
Measure plasma esterase activities in older people in the community and examine its associations with age, gender, body mass index (BMI), frailty and mortality.

Methods
292 subjects aged over 70 were randomly selected from general practitioner lists. Three plasma esterase assays acetylcholinesterase (ACE), butyrylcholinesterase (BUT) and benzoylcholinesterase (BEN) were measured using spectrophotometer. A frailty index (cumulative deficits) was devised from 48 variables spanning symptoms, signs, medical conditions, function and mental health. Subsequent 10 year mortality was recorded. Ethical approval was obtained.

Results
Esterases were normally distributed. Mean (Std Err) for ACE mean 2.79 (0.39), BUT mean 6.59 (0.11) and BEN mean 1.18 (0.18). Esterases did not significantly change with increasing age or gender. BUT and BEN activities increased slightly with increasing BMI p=0.05. The frailty index (FI) in this community sample scores ranged from 0.02 (minimal deficit) to 0.55 (55% possible deficit present). There was an inverse relationship between FI and esterases, the higher the FI, the lower the esterase activity p<0.05. 10 year mortality increased from 34.3% in the fittest quartile (FI 0.07) to 78% in the frailest quartile (FI 0.38), p=0.000.

Conclusion
In this community based study the main determinant of enzymes of drug metabolism was frailty status. Frailty was also strongly related to mortality.

URINARY C-PEPTIDE CREATININE RATIO (UCPCR) CAN BE USED AS A SCREENING TOOL TO DETECT ABSOLUTE INSULIN DEFICIENCY IN PEOPLE WITH TYPE 2 DIABETES

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Aims
It is unclear whether progressive beta-cell failure in type 2 diabetes (T2D) can result in absolute insulin deficiency (AID). A spot urine sample measuring Urinary C-Peptide Creatinine Ratio (UCPCR) has been recently developed as a non-invasive measure of endogenous insulin secretion (UCPCR < 0.2nmol/mmol reflects AID). We aimed to determine if UCPCR could be used as a screening tool to identify subjects with T2D and AID.

Methods
192 insulin-treated T2D subjects (diagnosis age $\geq 45$, on insulin $>12$ months from diagnosis) collected a 2-hour post-prandial home UCPCR. 9 subjects from two subgroups (UCPCR $< 0.2$ nmol/mmol, and UCPCR $> 0.2$) completed a standard mixed meal tolerance test (MMTT).

Results
24/192 (12.5%) subjects had UCPCR $< 0.2$ nmol/mmol, suggesting AID. Of this subgroup, 5/9 (56%) were confirmed to have AID on MMTT (stimulated serum c-peptide (sSCP) $< 0.2$ nmol/L). 3 of these 5 subjects were GAD antibody-negative. 9/9 (100%) with UCPCR $> 0.2$ demonstrated sSCP $> 0.2$ nmol/L, confirming endogenous insulin secretion. Compared to the 168 subjects with UCPCR $> 0.2$, the 5 subjects with confirmed AID had a shorter time to starting insulin from diagnosis (median 2.5v6 years, $p=0.003$) and a longer duration of insulin treatment (9v4 years, $p=0.02$). They had a tendency to lower BMIs (median 25v29 kg/m$^2$, $p=0.05$), and no significant difference in diagnosis age (63v58, $p=0.6$), HbA1c (8.7v7.8%, $p=0.3$), insulin dose (0.72v0.51 units/kg/24hrs, $p=0.3$), or proportion on oral agents (2/5(40%) v 114/168(68%), $p=0.2$).

Conclusions
Absolute insulin deficiency may occur in T2D. We have shown that UCPCR is a practical non-invasive method to aid detection: clinical features such as having been started on insulin sooner after diagnosis, having been on insulin treatment longer, and having a lower BMI may be pointers to help recognise those at risk, but are not diagnostic. Recognition of AID is important as optimal management may differ. UCPCR may have a valuable role in helping detect people with AID in T2D.
HOMOCYSTEINE AND MENTAL HEALTH IN OLDER PATIENTS: A RANDOMISED DOUBLE-BLIND PLACEBO-CONTROLLED TRIAL

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**Background**
Folstein and colleagues have recently hypothesised that high total plasma homocysteine (Hcy) levels cause neurotransmitter deficiency, which causes depression of mood (Folstein et al. Am J Psychiatry 2007; 164: 861-867). We have recently shown that mixed oral nutritional supplements containing B-group vitamins led to a statistically significant benefit on depressive symptoms and quality of life scores in acutely ill older patients (Gariballa & Forster. Clinical Nutrition. 2007, 26:545-551; JAGS. 2007; 55: 2030-2034). The aim of this report is to examine the associations between elevated plasma tHcy, symptoms of depression and quality of life scores in older patients recovering from acute illness.

**Methods**
Two-hundred and thirty-six hospitalised acutely ill older patients, who were part of a randomised double-blind placebo-controlled trial, were assigned to receive daily mixed oral nutritional supplements containing B-group vitamins or a placebo for 6 weeks. Outcome measures included symptoms of depression and quality of life measured using Geriatric Depression and SF-36 scales respectively and plasma Hcy levels.

**Results**
The mean tHcy concentration fell by 22% among patients given the supplements compared with the placebo group (mean difference 4.1 µmol/L (95% C.I, 0.14 – 8.03), p =0.043. tHcy concentrations was divided into 4 quartiles and analysed against depression and quality of life scores. tHcy concentrations in the first relative to the fourth quartile of the distribution were associated with a lower depression symptoms and better quality of life scores at the end of the supplement period (Geriatric depression score r = -0.20, p =0.042 and SF-36 total score r = 0.25, p = 0.01).

**Conclusions**
Lower plasma tHcy concentrations were associated with better quality of life scores and reduced depression symptoms in older patients recovering from acute illness.
RANDOMISED CLINICAL TRIAL OF THE EFFECTS OF WHOLE BODY VIBRATION THERAPY, IN ADDITION TO A SUPERVISED EXERCISE PROGRAMME, ON MEASURES OF FALLS RELATED PHYSICAL PERFORMANCE

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Introduction
Strength and balance exercise training can reduce falls rates but achieving a sufficient intensity may be difficult for frail older patients. As whole body vibration (WBV) has been suggested to improve strength, power and balance of older people, it may be an effective adjunct to falls prevention programmes. We hypothesised that WBV would improve balance, functional ability and strength more than exercise training alone.

Methods
Seventy seven attendees at a multidisciplinary falls prevention service were randomised to participate in a 60 minute exercise class thrice weekly for 8 weeks, with (EV group) or without (Ex) WBV, performed in standing for 5x1min separated by 30s rest at the end of each class. Initial WBV was at 15Hz and 1mm amplitude, each was progressively increased to the maximal tolerable, no greater than 30Hz and 4mm. Functional mobility (Timed Up and Go (TUG), 6 meter walk), balance (Berg Balance Scale), self reported health status (SF12v2) and fear of falling (FES-I) were assessed pre and post intervention.

Results
Fifty six participants (42 women, mean age 82 years) completed the study (25 EV, 32 Ex). The mean (SD) number of sessions attended was 18.3 (3.6), with no difference between groups. Average total time experiencing WBV was 44.5 (24.3) mins and no adverse reactions were reported. Balance, SF12v2 and FES-I scores improved similarly in each group. TUG improved in both groups but significantly more in EV than Ex group (25.5±4.2 and 15.0±2.6 %, respectively; P=0.025). Six metre walk speed increased significantly more in the EV group (23.9±4.1% vs 12.6±3.2%; P=0.024).

Conclusions
WBV was well tolerated in a frail older population, and was associated with greater improvements in falls related physical performance measures than exercise training alone. It may be a feasible, cheapish and effective adjunct therapy for falls prevention.
Comparison of Mortality Risk in Operated (Vertebropalstsy or Balloon Kyphoplasty) Versus Non-operated Patients: 410,965 Vertebral Fracture Patients of the US Medicare Population

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Introduction
The increased early mortality associated with hip fractures is well recognised, but the impact of vertebral osteoporotic compression fractures (VCF) is still underestimated. The aim of this study was to investigate the difference in survival for VCF patients following non-operative and operative [Balloon Kyphoplasty (BKP) or Vertebroplasty (VP)] treatment.

Methods
Operated and non-operated VCF patients were identified from the US Medicare database in 2006 and 2007 and followed up for a minimum of 24 months. Patients diagnosed with pathological and traumatic VCFs in the prior year were excluded. Overall survival was estimated by the Kaplan-Meier method, and the differences in mortality rates (operated vs non-operated; BKP v VP) were assessed by Cox regression, with adjustments for patient demographics, general and specific comorbidities, that have been previously identified as possible causes of death associated with osteoporotic VCFs.

Results
A total of 81,662 operated (VP or BKP) patients had a survival rate of 74.8% at 24 months following VCF diagnosis compared to 67.4% for the 329,303 non-operated patients. In the operated (BKP or VP) patients there was a significant reduction in mortality 44% (p<0.0001), compared to the non-operated VCF patients. The survival rates for VCF patients following VP or BKP were 72.3% and 76.2% at 24 months, respectively. In the BKP patients there was 12.5% greater survival than in the VP patients (p<0.0001) at 2 years.

Conclusions
This retrospective analysis, in 410,965 patients diagnosed with a VCF confirmed a statistical significant reduction (43%, p<0.0001) in mortality between patients receiving minimally invasive surgery compared to non-operated patients. Furthermore, there was a significant reduction in mortality (12.5%, p<0.0001) in patients treated with BKP compared to VP.
FALLS ARE COMMON IN 85 YEAR OLDS, ARE ASSOCIATED WITH PHYSICAL
AND PSYCHOLOGICAL MORBIDITY, AND HAVE MARKED CONSEQUENCES
FOR HEALTH SERVICES: RESULTS FROM THE NEWCASTLE 85+ STUDY

J Collerton, A Kingston, K Davies, J Bond, M Eccles, C Jagger, T Kirkwood,
J Newton

Institute for Ageing and Health, Newcastle University

Introduction
30% of people aged 65 and older fall each year. Fall related injuries are common
and psychological consequences of falls impact on function and quality of life.
Limited data exist on prevalence and impact of falls in those aged 85 and older, the
most rapidly expanding age sector of the population.

Methods
Design - Cross sectional analysis of baseline data from Newcastle 85+ cohort study.

Participants - 816 85 year olds (community-dwelling and institutionalised) from
Newcastle upon Tyne/North Tyneside, UK.

Measure - Falls questionnaire - research nurse administered.

Results
816 85 year olds (56% of those eligible) completed the falls questionnaire. 77%
(630/816) lived in standard housing, 13% (104/816) in sheltered accommodation
and 10% (82/816) in care homes. Over 38% (313/816) had fallen at least once in
the previous 12 months and of these: 30% (94/312) had attended A&E, 13%
(40/312) were admitted to hospital, 11% (33/312) sustained a fracture, and 10%
(29/300) had an increase in the amount of care received as a result of a fall. 40%
(122/305) of fallers reported ‘loss of confidence’, 42% (128/305) ‘worry about falling’,
and 26% (79/305) ‘going out less often’ as a result of a fall. There were no
statistically significant gender differences in the prevalence of falls, A&E attendance,
and hospital admission but ‘loss of confidence’, ‘worry about falling’, and ‘going out
less often’ were all significantly more frequent in women compared to men (p<0.001
for each, odds ratio (95% confidence interval) for men: women 0.25 (0.14-0.44),
0.38 (0.22-0.69), 0.35 (0.18-0.65) respectively. Only 37% (115/309) of fallers had
specifically discussed their falls problem with their GP and only 13% (39/308) had
seen a falls specialist.

Conclusions
Falls are common in 85 year olds, are associated with notable physical and
psychological morbidity (the latter particularly in women) and have marked
consequences for health services.
RED CELL DISTRIBUTION WIDTH (RDW) - AN INDEPENDENT PREDICTOR OF MORTALITY FOLLOWING HIP FRACTURE

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Background
Red cell distribution width (RDW), an automated measure of variability in red blood cell size on full blood count (FBC), has recently emerged as a strong independent predictor of mortality in large population studies as well as several disease states. We wanted to determine the prognostic value of RDW in patients following a hip fracture – a condition associated with high mortality, as this relationship has not been assessed to date.

Methods
We examined the relationship between admission RDW and all-cause mortality on 1-year follow-up, in consecutive hip fracture cases who presented between January 2007 and November 2009. We used Cox regression analysis to adjust for baseline Haemoglobin (Hb), Mean Corpuscular Volume (MCV), Creatinine, age, gender, ASA grade, Charlson index, pre-morbid independence level, Mental Test Score (MTS), delay to surgery and post-operative cardio-respiratory complication.

Results
Of 577 consecutive patients there were 377 females, 199 males; median age 81.4y. Seventeen (3%) were lost to follow-up at 1-year but were coded as survivors and last follow-up date included, on Cox regression. One-year mortality was 23% overall. Unadjusted mortality was 12%, 15%, 29% and 35% in quartiles of increasing RDW. Along with age, gender, MTS, post-op cardiac or respiratory complication, Charlson and ASA score, RDW remained a significant independent predictor of 120-day mortality (adjusted hazard ratio (HR): 1.211, 95% CI: 1.062-1.380, p=.004), as well as 1-year mortality (HR: 1.142, 95% CI: 1.032-1.263, p=.01). We repeated analysis excluding those lost to follow-up which did not alter its predictive value. A third analysis in non-anaemic patients (n=464) showed that RDW remained an independent predictor of mortality on multivariate analysis (HR: 1.201, 95%CI: 1.039-1.389, p=.013).

Conclusion
RDW, a widely-available parameter on full blood count, is a significant independent predictor of short and long-term mortality following hip fracture, regardless of age, co-morbidity or anaemia status.
THE PREVALENCE OF DISABILITY IN THE ELDERLY POPULATION OF HAI, TANZANIA, AS MEASURED USING THE BARTHEL INDEX WITH COMPARISON TO A EUROPEAN POPULATION

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Introduction
Current data estimate 10% of the world’s population are disabled (Mont D, World Bank, 2007). Disability is associated with increasing age and poverty, yet there are few data regarding disability amongst the elderly in developing countries and no contemporary studies in sub-Saharan Africa. (Sousa et al Lancet, 2009;374:1823-30).

Reported disability prevalence rates worldwide vary significantly because of different definitions, study designs, and lack of a universal assessment tool, leading to difficulty making comparisons. The Barthel Index (BI) is widely used and recommended by the British Geriatric Society (BGS) and the Royal College of Physicians for routine use in the assessment of older people (BGS Best Practice Guide, 2009). It is culturally non-specific and simple modification allows easy use in Africa.

Methods
We performed a community-based study in Hai, Tanzania. 2232 participants aged 70+ underwent disability assessment using the BI, including assessment for underlying cause. Comparison was made to a similarly performed European-based study.

Results
Of 2232 participants aged 70+ (range 70-115) 4.3% (crude prevalence-95% CI 3.4-5.1)/3.7% (age-adjusted to WHO world population-95% CI 2.9-4.5) were severely disabled (BI <15). 6.9% (crude prevalence) were moderately disabled (BI 15-18). 4.6% women and 3.6% men were severely disabled. Disability increased with increasing age.

Conclusion
In this contemporary, community-based study, average disability level was lower than in a similar European study (Heslin et al, Scandanavian Journal Primary Health Care, 2001;19:218-22) involving 4004 participants aged 70+ that revealed 9% were severely disabled and 26% were moderately disabled. 10% women and 7% men were severely disabled. This may reflect increased mortality from disease in developing countries but it may also highlight risk factors for disability within the developed world. Disability levels are likely to increase as the population ages and disease survival increases, thus impacting more on quality of life and requiring urgent attention from healthcare policy makers.
HIGH PREVALENCE OF UNDIAGNOSED CARDIAC DYSFUNCTION IN THE OLDEST OLD: FINDINGS FROM THE NEWCASTLE 85+ STUDY

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Background
Heart failure prevalence increases sharply with age. Those aged 85 and over are the most rapidly increasing age sector. Previous epidemiological studies of heart failure included only small numbers in this age group and were generally conducted in hospital-based settings, introducing ascertainment biases. We conducted a community-based study of the oldest old using domiciliary echocardiography to estimate the prevalence of cardiac dysfunction and heart failure. Since in elderly people with multi-morbidity, heart failure may be misdiagnosed, we cross-referenced findings to preceding diagnoses from general practice (GP) records.

Methods
Design-Cross sectional analysis. Participants - 427 participants (community-dwelling and institutionalised) aged 86-89 years. Setting: Newcastle upon Tyne/North Tyneside, UK. Measures- Domiciliary echocardiography and dyspnoea questionnaire (New York Heart Association [NYHA] severity grading). Clinical heart failure (HF) defined as echocardiographic systolic dysfunction or isolated moderate/severe diastolic dysfunction with NYHA class II, III, or IV dyspnoea. Previous diagnoses of heart failure extracted from GP record.

Results
LV systolic function was quantifiable in 93.2% (n=398) of participants, diastolic function in 88.1% (n=376). Normal cardiac function or isolated mild diastolic dysfunction was found in 37.2% (n=140/376) of participants; mild, moderate or severe LV systolic dysfunction in 49.5% (n=197/398); and isolated moderate/severe diastolic dysfunction in 14.4% (n=54/376). Valid data on previous diagnosis of HF, cardiac function and NYHA class were available in 65.1% (278/427) of participants. Of these, 37.4% (104/278) had clinical evidence of HF but only 7.6% (21/278) had a previous HF diagnosis. Clinical evidence of HF without a previous diagnosis was found in 33.1% (n=92/278). Of those with a previous HF diagnosis, 23.5% (n=5/21) had no echocardiographic evidence of cardiac dysfunction.

Conclusions
Systolic/diastolic dysfunction and HF were more common in our population than previous studies in the “younger old” have suggested. There are significant levels of both undiagnosed and misdiagnosed HF in this age group.
COMPARISON OF THE ENDURANCE SHUTTLE WALK TEST AND THE SIX-MINUTE WALK TEST IN OLDER HEART FAILURE PATIENTS

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1 Ageing and Health and 2 Dept of Clinical Pharmacology, University of Dundee; 3 Dept of Psychology, University of Aberdeen

Introduction
The endurance shuttle walk test (ESWT) is a more responsive test of exercise capacity than the 6 minute walk test (6WT) in patients with chronic lung disease and could therefore provide a useful test of exercise capacity in older heart failure patients. We tested the performance of the endurance shuttle walk test in older patients with heart failure.

Methods
Secondary analysis of data from a randomised controlled trial of exercise training for older heart failure patients. Baseline and 8 week follow-up data from intervention and control groups were used. Data were analysed using the SPSS-17 statistical package.

Baseline distances walked in the two tests were compared using Pearson correlation coefficients. Intraclass Correlation Coefficient was calculated to assess reliability in those without significant change in six minute walk distance. Cohen’s effect sizes were calculated for participants with significant improvement or worsening of walk distance between baseline and 8 weeks.

Results
Data from 107 patients were analysed. Mean age was 80 years; 72/107 were male. Mean baseline 6WT was 266m; mean baseline ESWT was 318m. There was a significant correlation between distance walked in 6WT and distance walked in ESWT (r= 0.67, p<0.001) and the intraclass correlation coefficient for the ESWT in stable patients was 0.78.

Conclusion
The usefulness of the ESWT is limited by non-completion and ceiling effects. In older heart failure patients, the ESWT is no more responsive to change than the six minute walk.
ANTICHOLINERGIC RISK SCORE AND BARTHEL INDEX IN OLDER HOSPITALISED PATIENTS: POTENTIAL IMPLICATIONS FOR ADVERSE OUTCOMES

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Introduction
The anticholinergic risk score (ARS), the sum of the anticholinergic score rankings assigned for each medication taken by a patient, is associated with the number of anticholinergic side effects in older outpatients (Rudolph JL et al, Arch Intern Med 2008;168:508-13). We speculated that a higher ARS negatively impacts also ‘global’ functional parameters (Barthel Index, primary outcome), length of stay, LOS, and in-hospital mortality (secondary outcomes) in hospitalised patients.

Methods
Clinical and demographic characteristics, Barthel Index, ARS, and medications on admission were recorded in 362 consecutive patients (age 83.6±6.6) admitted to two geriatric units (Aberdeen, NHS Grampian) between February 1, 2010 and June 30, 2010. Data on LOS and in-hospital mortality were obtained from electronic records.

Results
In regression analysis a unit increase in ARS was associated with a 29% reduction in the odds of being in a higher Barthel quartile than a lower quartile (OR 0.71, 95%CI 0.59-0.86, z -3.42, P=0.001). The Barthel components mostly affected were bathing (z -5.48, P<0.001), grooming (z -4.61, P<0.001), dressing (z -3.80, P<0.001), bladder function (z -2.55, P=0.011), transfers (z -2.79, P=0.005), mobility (z -4.06, P<0.001), and stairs (z -4.58, P<0.001). A higher ARS did not predict LOS (HR 1.11, 95%CI 0.97-1.28, P=0.13) but predicted in-hospital mortality in the presence of hyponatraemia (HR 12.36, 95%CI 2.16-70.81, P=0.005; effect for interaction: HR 0.09, 95%CI 0.01-0.56, P=0.01).

Conclusions
A high ARS a) is strongly and independently associated with lower scores in various components of the Barthel Index; and b) predicts in-hospital mortality, particularly in the presence of hyponatraemia. The ARS may be used in acutely ill patients to improve risk stratification.
EARLY UPPER GASTROINTESTINAL BLEEDING RISK AND HELICOBACTER PYLORI INFECTION IN PATIENTS TAKING ANTIPLATELET THERAPY FOLLOWING STROKE

E H Fletcher¹,², D E Johnston², T T Oshodi², R J Koerner², J L Newton¹, C S Gray¹

¹ Institute for Ageing and Health, Newcastle University, 2 City Hospitals Sunderland NHS Foundation Trust

Introduction
Antiplatelet therapy (APT) is key to the secondary prevention of ischaemic stroke but is associated with an increased upper gastrointestinal bleeding (UGIB) risk. The long-term UGIB risk in patients taking antiplatelet therapy has been described as 0.6%. The acute risk in hospital patients and associated risk factors is less clear.

Methods
This was a prospective, inception, cohort study of consecutive patients admitted with acute ischaemic stroke and commenced on oral APT within seven days. Helicobacter pylori status was determined by stool antigen testing and gastrointestinal symptoms were assessed using the Short-form Leeds Dyspepsia Questionnaire on admission. UGIB events were determined at six weeks and major bleeding defined as fatal haemorrhage, drop in haemoglobin level of 4g/dL or more, or overt bleeding requiring a transfusion of at least two units of blood.

Results
322 patients were recruited to the study; the six-week review was completed in 314. Seven (2.2%) patients had an UGIB event, 6 (1.9%) of which were major. Of 254 stool samples, 169 (66.5%) were H. pylori positive. Prior dyspepsia was reported by 41 (13.1%) patients. By univariate analysis H. pylori (OR 0.75, 95% CI 0.12-4.58, p=0.76) and dyspepsia (OR 1.11, 95% CI 0.13-9.48, p=0.92) were not risk factors for UGIB. By multivariate analysis increasing age was the only significant predictor of UGIB (OR 1.13, 95% CI 1.01-1.26, p=0.001).

Conclusion
Active Helicobacter pylori infection is not associated with early UGIB events following stroke in patients taking APT. Increasing age, however, is a major risk factor. Older people warrant careful monitoring and review of therapy after the commencement of APT following stroke.
## POSTER PRESENTATIONS

<table>
<thead>
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<tr>
<td>Falls, Fractures and Trauma</td>
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<td>Psychiatry and Mental Health</td>
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<td>Stroke</td>
<td>77-83</td>
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</table>
ARE PATIENT INFORMATION LEAFLETS FOR OSTEOPOROSIS MEDICATION EXCESSIVELY DIFFICULT TO READ?

H Cronin, P Fitzsimmons, J H F Tsang

Specialist Services for Older People, Royal Liverpool University Hospitals

**Background**
Poor compliance with osteoporosis medications frequently limits the effectiveness of treatment.

Inadequate health literacy is common and associated with poor compliance.

USDHSS (United States Department of Health) guidelines recommend patient orientated information should be written at below the 6th grade level, with the average adult reading between the 7th and 8th grades.

We hypothesised that osteoporosis medication patient information leaflets (PILs) are difficult to read and aimed to establish their readability.

**Sampling Methods**
PILs were obtained for all UK licensed osteoporosis medications and calcium/vitamin D supplements. Leaflet readability was determined with 2 validated measures, the Flesch-Kincaid Grade Level (FKGL) and the Simple Measure Of Gobbledygook (SMOG) formula.

**Results**
35 PILs analysed, 13 bisphosphonates, 6 other agents and 16 calcium/Vit D supplements. Grade levels determined with FKGL were significantly lower than those determined with SMOG, mean 2.16 grades lower (95%CI 1.99-2.32) p<0.0001.

Antiresorptive agent PILs were significantly easier to read than calcium/Vit D supplement PILs, mean SMOG 11.9 (95%CI 11.5-12.4) vs 13.1 (95%CI 12.4-13.7), p=0.004.

<table>
<thead>
<tr>
<th>USDHSS Classification</th>
<th>Grade Level</th>
<th>Flesch – Kincaid (Number PILs)</th>
<th>SMOG (Number PILs)</th>
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<td>Easy</td>
<td>4th – 6th</td>
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<td>0</td>
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<td>Difficult</td>
<td>10th – 12th</td>
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<tr>
<td></td>
<td>&gt;12th</td>
<td>1</td>
<td>9</td>
</tr>
</tbody>
</table>

None of the PILs complied with the maximum recommended 6th grade level when readability was assessed using SMOG. Furthermore only 3% were comprehensible to the average adult, with 25% requiring graduate level reading abilities for complete comprehension.

**Conclusions**
Almost all osteoporosis medication PILs exceed recommended maximum levels of reading difficulty and are beyond the reading abilities of the average adult. Excessive reading difficulty may contribute to poor compliance.

Current osteoporosis PILs require major text revision to comply with readability guidelines and be comprehensible to the average patient. In the meantime, clinicians prescribing osteoporosis medications must provide alternative comprehensible information to patients to promote understanding and compliance.
ARE TRAINEES AWARE OF NATIONAL STANDARDS FOR HIP FRACTURE CARE?

H Cronin, P Fitzsimmons, J H F Tsang

Specialist Services for Older People, Royal Liverpool University Hospital

Background
Hip fracture is a major cause of mortality and morbidity for older people, with an estimated national incidence of 76,000 cases per year. In 2007 the British Geriatrics Society and British Orthopaedics Association published the Blue Book on the care of patients with fragility fractures. This outlined six key standards for hip fracture care.

We hypothesised that awareness of the Blue Book was low amongst trainees and aimed to establish baseline awareness and assess if this could be improved with a designated teaching session.

Sampling methods
A questionnaire designed to assess awareness was circulated among Geriatric Medicine and Orthopaedic Trainees both prior to and following a teaching session given by a Consultant Orthogeriatrician on Hip Fracture Care. Data were analysed using Fisher’s exact test.

Results
Questionnaires were fully completed by 97.6% of trainees attending (39 Orthopaedics, 41 Geriatric Medicine). 33 trainees had less than 12 months specialty experience, 42 were of ST3 experience or above. We found no significant difference in baseline knowledge between trainees of both specialties (p = 1.0).

Prior to teaching, trainees with more than 12 months specialty experience were significantly more likely to be aware of the Blue Book (57.4% vs 6% p <0.0001) and to correctly identify the number of Blue Book standards (42.6% vs 9.1% p=0.0005).

Following teaching, awareness of standards for all trainees significantly improved (97.5% vs 36.2% p<0.0001) with almost all trainees correctly identifying the number of Blue Book standards (96% vs 29% p<0.0001).

Conclusions
Baseline knowledge of the Blue Book was inadequate for all trainees, although awareness was improved by increased specialty experience. Designated teaching significantly improved awareness and we would recommend the introduction of a teaching session for all trainees commencing Orthopaedic and Geriatric Medicine training.
GERIATRICIAN INPUT INTO NURSING HOMES REDUCE EMERGENCY HOSPITAL ADMISSIONS

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Background
Nursing home residents tend to be very frail older people with complex pathology who are very dependent, needing complex care needs. These residents will benefit from effective partnerships between primary and secondary care.

Innovation
We looked at 1151 residents admitted from nursing homes at our Trust from April 2006 to March 2009 inclusive. We noted that 3 nursing homes had the highest number of multiple admissions (≥4).

Four interventions were carried out for a period of 3 months to reduce hospital admissions.
1. Monthly Medical Advisory Meetings with GPs by a Consultant Geriatrician.
2. Available for telephone advice on a daily basis.
3. Medihome – A healthcare company that can provide intravenous antibiotics and fluids in nursing homes.
4. End of Life Care

An alert was also sent to the geriatrician if one of the residents were admitted so that their discharge from hospital can be expedited.

Evaluation

<table>
<thead>
<tr>
<th>Period</th>
<th>Average No. of Admissions from 3 Nursing Homes</th>
<th>TOTAL Emergency Admissions</th>
<th>Admission rate per 1,000 admissions</th>
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<tr>
<td>June-August 08</td>
<td>25</td>
<td>3846</td>
<td>6.50</td>
</tr>
<tr>
<td>June-August 09</td>
<td>24</td>
<td>4167</td>
<td>5.76</td>
</tr>
<tr>
<td>Observed June-August 10</td>
<td>11</td>
<td>4251</td>
<td>2.59</td>
</tr>
<tr>
<td>Expected June-Aug 10</td>
<td>23</td>
<td>4251</td>
<td>5.41</td>
</tr>
<tr>
<td>Chi square- admissions</td>
<td></td>
<td>Jun - Aug 08</td>
<td>Jun - Aug 09</td>
</tr>
<tr>
<td>Observed</td>
<td>25</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Expected</td>
<td>25</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>χ²=</td>
<td>6.261</td>
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<td>0.044</td>
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</table>

Conclusion
The results show that geriatrician input into nursing homes had a significant impact on admissions from nursing homes (χ²(2)= 6.261, p<0.05). If extrapolated to all nursing homes covered by our Trust, this means a reduction of 338 residents every year.

There was also a reduction of 57 bed days over a 3 month period for these 3 nursing homes compared to the year before.

Geriatricians working together with co-ordinated multidisciplinary teams are well placed to manage these complex frail elderly care home residents and develop care plans for these residents.
IMPROVING THE MANAGEMENT OF PRESSURE ULCER CARE IN FRACTURE NECK OF FEMUR PATIENTS

R Lisk, N Raison, K Lawton, A Abbot, W Alwan

Orthogeriatrics Service, Ashford & St Peter’s NHS Trust, Chertsey, Surrey

Evidence Base
Pressure ulcers cause considerable morbidity and mortality. One of the six standards for fracture neck of femur (NOF) care mentions that all patients with hip fracture should be assessed and cared for with a view to minimising their risk of developing a pressure ulcer.

Gold standard pressure care includes pressure area inspection, nutritional status documented on admission, early pressure relieving mattress, twice daily inspection of pressure areas whilst immobile, prompt surgery, early mobilisation and early dietician referral.

Change Strategies
We reviewed 27 NOF patients who were admitted between Jan-Feb 2010 and audited them against the gold standard pressure care.

After this audit, the following interventions were carried out: presentation at orthopaedics clinical audit and ward managers meetings, four education sessions by Hip Fracture Nurse to all nursing staff, mobilisation algorithm agreed with physiotherapists, NOF bleep to equipment managers and a new NOF proforma highlighting pressure area inspection.

A re-audit was done on 26 NOF patients between May-June 2010 to complete the audit cycle.

Change Effects
Time until placed onto a pressure mattress improved to 4hrs from 5hrs 6mins. 88.5% had Waterlow score completed on admission compared to 81.5% and 38.5% of patients had twice daily pressure area inspections compared to 3.7% in the previous audit.

73.1% had MUST score completed on admission compared to 63% and 60% of patients who warranted a dietician referral were referred up from 47%. All patients were seen within 4 days by a physiotherapist compared to 78% previously.

4% patient developed a pressure ulcer compared to 22% patients previously. Grade 2 pressure ulcers and above: Jan-Feb 2010 7.4%, May-June 0%, South East Coast SHA 2.83% and National: 1.51%.

Conclusions
Pressure area care has improved significantly compared to the original audit and benchmarks well locally and nationally. This improvement has been sustained.
AUDIT OF STANDARDS OF DOCUMENTATION OF DEATH IN THE MEDICAL NOTES BEFORE AND AFTER THE INTRODUCTION OF A TRUSTWIDE PROFORMA

A Illsley, P Hobza, P Wanklyn, P Belfield

Department of Elderly Care, Leeds Teaching Hospitals NHS Trust

Evidence-base
The medical certificate of cause of death (MCCD) provides a legal record of death and generates important statistical information. Guidelines from the Home Office require that accurate information about conditions causing death and the process of issuing an MCCD are recorded in the medical notes.

Change strategies
Cycle 1 was a retrospective audit of 29 case notes in the elderly medicine department comparing documentation of death and completion of the MCCD in the medical notes to national standards. Poorly performing areas identified included recording details of discussions with the coroner (33%), details of the clinician completing the MCCD (52%) and cause of death in the medical notes (45%). A proforma was introduced on 16/12/2009 which included the areas of weakness identified in the baseline audit. The proforma had to be filled out before the Death Certificate book was provided to the doctor by bereavement office staff. Cycle 2 was a prospective audit of 47 case notes after the proforma was introduced. Standards of documentation in the medical notes were improved – discussions with the coroner recorded in 73%, cause of death and clinician details in 89%.

Change effects
After dissemination of audit findings, a third cycle prospective audit of 50 case notes was performed, demonstrating further improved adherence to national standards for MCCD documentation in the medical notes, most areas of documentation required being recorded in 96 – 100% of cases.

Conclusion
Use of a simple intervention, such as a standardised proforma to be filled out by the doctor completing the MCCD and subsequently filed in the medical notes, greatly improved the standard of documentation of death and the process of issuing an MCCD.
Evidence Base
The 2008 Audit showed that the National Service Framework and NICE standards for Falls and Bone health were not met in patients with Non hip fractures compared to Hip fractures due to inadequate assessment.

Change strategies
In November 2009 the FLS was introduced to provide falls and bone health assessment for patients admitted with Non hip fractures. Patients requiring medical review were referred to the Falls clinic on discharge.

All Hip fracture patients continued to receive regular Orthogeriatric assessment.

Change effects
In 2008 only 26% of all Non hip fracture patients received falls assessment compared with 97% of all Hip fracture patients. Similarly only 26% of Non hip fracture patients were discharged on osteoporosis therapy compared with 94% in the Hip fracture group. In 2010 we audited 29 (58%) patients with Hip fracture versus 21(42%) patients with Non hip fracture admitted between April and May. The mean age for Hip fracture patients was 87 years and 84 years for Non hip fracture. Multifactorial falls risk assessment and bone health assessments provided by the orthogeriatric team were carried out on 97% of patients in the Hip fracture group. 76% of the Non hip fracture patients received falls assessment including referrals to the falls clinic and 67% went home on bone protection medication.

Conclusions
All hip fracture patients who received peri-operative medical assessment by an Orthogeriatrician had access to instant falls and secondary bone health assessment as one stop service.

Development of the FLS has improved considerably patient care for all non hip fracture patients but includes extra falls clinic appointments.

Both FLS and the Orthogeriatric team were unable to reach the 100% target.

We recommend all patients with fragility fracture should have routine access to Orthogeriatric medical support from time of admission, which includes falls and bone health assessment.
AN AUDIT OF THE EFFECT OF EMPLOYING A FRACTURE LIAISON NURSE ON HIP FRACTURE SERVICES AT STOKE MANDEVILLE HOSPITAL

K Dean, K Nagaratnam, S Hasan

Medicine for Older People Department, Stoke Mandeville Hospital

Evidence-Base
Fractured neck of femur (NOF) is a common and costly problem for the NHS with a high associated mortality and morbidity. Guidance in the ‘Blue Book’ published jointly by the British Geriatrics Society and the British Orthopaedic Association states that all patients with fractured NOF should undergo surgical repair within 48 hours of admission to hospital, Department of Health ‘Best Practice Tariffs’ set a target of 36 hours. Blue Book guidance also states all patients with fractured NOF should be assessed regarding falls risk and need for antiresorptive therapy. We audited against this guidance for 146 patients admitted with fractured NOF over 6 months (between December 2008 and May 2009) and found that 75% patients were operated on within 48 hours of admission and 57% within 36 hours, the mean time from admission to operation was 48.3 hours. 71% of patients were assessed for antiresoptives and 28% for falls risk.

Change Strategies
Following the first audit a ‘Fracture Liaison Nurse’ (FLN) was employed within the hospital. The audit was repeated using data collected retrospectively from that entered for the hospital on the ‘National Hip Fracture Database’ for 6 months between April and September 2010.

Change Effects
Following employment of the FLN 77% patients were operated on within 48 hours and 53% within 36 hours, the mean time to operation was 41.5 hours – not a significant difference (p = 0.53) but a trend towards improvement. Record keeping regarding reasons for delay was much improved in the second audit period. There were significant improvements in assessment for antiresorptive treatment and falls risk to 97% (p<0.01) and 96% (P<0.01) respectively.

Conclusion
Employment of a FLN has resulted in much improved data collection, significant improvements in assessment for antiresorptive therapy and falls risk and a trend towards a shorter wait for surgical repair of fractured NOF.
EVIDENCE-BASE

Hyponatraemia is the commonest electrolyte abnormality affecting older people. Even mild hyponatraemia is associated with poor patient outcomes including falls, disability and death. The aetiology of hyponatraemia in older people is under-researched and it is widely accepted that the condition is often poorly managed.

CHANGE STRATEGIES

An 8-week prospective audit of investigation and diagnosis of all patients who developed hyponatraemia (Na<130mmol/l) was undertaken (N=40, 60% female, mean age 81.4), with a 7-week re-audit using identical methods after implementing an action plan (N=31, mean age 82.5). A double-sided proforma was placed in every doctors’ room – one side included an algorithm for the diagnosis of hyponatraemia and the other a checklist for appropriate investigations. Medical staff were encouraged to photocopy the checklist and place it in the front of the notes for every patient with hyponatraemia. A presentation was made locally reinforcing the strategy and the potential benefits to patients of improving management.

CHANGE EFFECTS

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<th>Re-audit (N=31)</th>
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<td>Documented medication review</td>
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<td>27 (87%)</td>
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<td>Serum osmolality</td>
<td>13 (33%)</td>
<td>16 (52%)</td>
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<td>11 (28%)</td>
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<td>Renal / Liver function</td>
<td>40 (100%)</td>
<td>31 (100%)</td>
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<td>Thyroid function</td>
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<td>Adrenal function</td>
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<tr>
<td>SIADH</td>
<td>3 (8%)</td>
<td>7 (23%)</td>
</tr>
<tr>
<td>Dehydration</td>
<td>3 (8%)</td>
<td>2 (7%)</td>
</tr>
<tr>
<td>Cardiac failure</td>
<td>1 (3%)</td>
<td>2 (7%)</td>
</tr>
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<td>Renal/hepatic failure</td>
<td>1 (3%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>Other causes</td>
<td>4 (10%)</td>
<td>1 (3%)</td>
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CONCLUSION

Development of an easy-to-use proforma and checklist improved investigation and helped diagnosis of hyponatraemia in this elderly group.
VENOUS THROMBOEMBOLISM: RISK ASSESSMENT & MANAGEMENT AT ELDERLY CARE DEPARTMENT, BIRMINGHAM HEARTLANDS HOSPITAL

M Ahsan, P Wallis

_Elderly Care Department, Birmingham Heartlands Hospital Bordesley Green East Birmingham_

**Introduction**

There is an inconsistent use of prophylactic measures for Venous Thromboembolism (VTE) in hospital patients. In January 2010, NICE issued VTE guidance to improve practice in inpatients. Using NICE VTE standards as benchmarks, the first audit was done to assess baseline VTE risk management and the repeat audit was conducted after the implementation of change at Elderly Care Directorate, Birmingham Heartlands Hospital (BHH).

**Methods**

In April 2010, the baseline audit done was cross-sectional, prospective, which included 53 medical patients. The repeat audit was done in December 2010, which was also cross-sectional, prospective and included 60 medical patients. The awareness of VTE assessment was highlighted among the medical staff. Furthermore, Heart of England NHS Foundation Trust implemented an innovative strategy of incorporating every patient’s VTE assessment to an online system and the linking it to the Electronic Prescribing (EP).

**Results**

The patients’ mean age was 87 years, and both audits showed females to be about 60%. The VTE assessment on admission improved 66% (initially 32% and repeat 98%). Similarly, the assessment done within 24 hours increased 60% (initially 38% and repeat 98%). Importantly, LMWH prophylaxis, offer/prescription showed an improvement of 40% (initially 40% were not offered LMWH when indicated, compared to 0% in the repeat audit). There was a better bleeding risk assessment prior to LMWH prescription showing an increase of 37% (initially 36% and repeat 73%).

**Conclusions**

This completed audit cycle documented an enormous practice change in VTE assessment at BHH. The main catalysts were the implantation of an innovative strategy using information technology in the VTE assessment (iCare & EP integration) and raising awareness of medical staff.

**Reference**

ADVANCE CARE PLANNING IN A NURSING HOME SERVICE. CAN IT MAKE A DIFFERENCE?

S R Briggs¹, M J Vernon¹, J Yeo¹, D Gosling², J Goodwin², S Simcock²

1 Department of Elderly Care, University Hospital South Manchester, 2 Nursing Home Service, NHS Manchester

Evidence Base
Nursing Home (NH) admission may trigger thoughts about where residents would wish to receive future medical treatment. The Gold Standards Framework (GSF) shares our service's ethos of improving care quality, increasing collaboration between acute and community services and reducing hospitalisation at the end of life. This process is supported by the Royal College of Physicians (RCP) Guidelines on Advance Care Planning (ACP) 2009.

Change Strategies
Notes of 100 residents cared for by South Manchester Nursing Home Service whom died between July 2008 and September 2009 were reviewed for use of GSF coding, ACP and compliance with planning. A standard of 100% compliance was set. 47% had a GSF code at death. 58% had ACP in place, of whom 93% had their wishes followed. This initial work highlighted the need for more comprehensive GSF coding and recommended the introduction of admission/mortality meetings to prioritise residents for review; enabling discussion with families and ACP.

Change Effects
100 deaths between November 2009 and June 2010 were audited. 95% of residents had been GSF coded (5% not coded were new admissions whom died prior to review by the service). 74% had undergone ACP which was complied with in 96% of cases.

Conclusion
ACP is currently high profile with recent guidance from the RCP and General Medical Council. This work shows that ACP can be applied to frail NH residents and aided by the GSF, highlights those approaching the end of life, enabling discussions to be had about preferred place of care. We feel that recent hospital admission is a useful trigger to consider discussion around ACP. Those residents with capacity are supported to make decisions, whilst those lacking capacity undergo a Best Interest process.
WHERE DO ELDERLY PATIENTS WITH HEART FAILURE DIE?

M French¹, H Owles², A J Baxter³

Department of Geriatrics, Sunderland Royal Hospital

Background
The End of Life care strategy suggests the majority of people would wish to die in their own home. The Office of National Statistics states 58% of deaths in England occur in hospital. Our objective was to identify where elderly patients referred to a secondary care heart failure service die with the intention of implementing a guideline to discuss patients’ preferred place of death.

Search methods
The study included consecutive patients with echo proven left ventricular systolic dysfunction (LVSD) that were referred to secondary care elderly heart failure service at Sunderland Royal from July 2001 until July 2007. Electronic hospital records were accessed to identify who had died by June 2010 and the place of death was determined.

Results
Our cohort consisted of 494 patients. Mean age was 84. 333 had died by June 2010. 71.2% of deaths occurred in hospital, 27.9% in the community and 0.9% in hospice care. Of those from care homes, 62% died in the community. Of those living in their own home 76.5% died in hospital

Conclusions
The majority of patients seen in our heart failure service ultimately die in hospital. Patients living in a care home did have a greater chance of death in the community. Our cohort did not include patients managed solely by their general practitioner. More work is needed in identifying patients’ preferred place of death and guideline development for the implementation of advanced care plans.
PREScribing in the Elderly – There is Still Room for Improvement.
A Survey of Inappropriate Prescribing in Hospitalised Elderly Patients at a District General Hospital

A Wong¹, E Mucci²

¹ Department of Accident and Emergency, St Thomas Hospital, London, ² Department of Clinical Gerontology, King’s College Hospital. London Survey was done at Care of the Elderly Department, Conquest Hospital, St Leonards On Sea, East Sussex

Background
Inappropriate prescribing (IP) encompasses the use of medicines that introduce a significant risk of an adverse drug-related event (ADE). IP commonly occurs in elderly people as they have a higher prevalence of chronic disease and disability. Many strategies have been devised to prevent IP including regular medication review and the use of screening tools. The Beers’ criteria are a validated screening tool used to identify IP in elderly people. The aim of this survey is to determine the prevalence of IP in elderly people using the Beers’ criteria at a district general hospital (DGH) on the South Coast of England.

Sampling methods
Convenience sampling: 200 consecutive patients (76 years or older) admitted to care of the elderly wards were surveyed. Using patients’ medical records, their demographics, cause of admission and medications on admission were documented onto a specially designed proforma. Beers’ criteria, independent of diagnosis and condition, were applied to identify the prevalence of IP.

Results
The median patient age was 87 years (range 76 -101). The median number of medications was 6 (range 0-14). 61.5% (n=123) patients were on five or more medications. 34% (n=68) patients were on potentially inappropriate medications (PIM) based on Beers’ criteria. The most commonly prescribed PIMs were ferrous sulphate (n=29), benzodiazepines (n=16), digoxin (n=13) and amitryptyline (n=10). 64% and 60% of patients on benzodiazepines and amitryptyline respectively presented with a fall.

Conclusions
Despite multiple strategies devised to minimize IP, it remains prevalent in hospitalised elderly patients. At our DGH, the prevalence was 34% with a large proportion of patients (61.5%) on five or more medications. This survey has increased awareness of IP and emphasized the key role a secondary care provider, as a member of a multidisciplinary team, should play in promoting appropriate prescribing and consequently reducing ADE.
STOP START TOOL FOR IMPROVING PRESCRIBING AMONGST OLDER IN-PATIENTS: RESULTS FROM A THREE YEAR AUDIT CYCLE

V W Sandoo, P McAughtry, A Al-Hadad, F Mavani, T Zheng, S Conroy

University Hospitals of Leicester

Evidence base
Within an ageing population, multiple co-morbidities leading to polypharmacy and adverse drug events from inappropriate prescribing contribute significantly to poorer health and hospital admissions. Our hospital introduced the STOPP (Screening Tool of Older Person’s Prescriptions) / START (Screening Tool to Alert doctors to Right Treatment) tool to encourage safe prescribing amongst the older inpatient population.

Change strategies
In autumn 2010, 27 senior medical students used a standardised proforma to prospectively re-audit current in-patient prescribing on nine wards over a one week period. Data collected included demographics, co-morbidities and prescribed medication. Appropriateness of prescribing was assessed against the STOPP/START criteria.

Change Effects

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2009</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>191</td>
<td>198</td>
<td>194</td>
</tr>
<tr>
<td>Age (mean range)</td>
<td>82, 65-99</td>
<td>82, 70-97</td>
<td>84, 71-101</td>
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<tr>
<td>Female gender</td>
<td>62%</td>
<td>56%</td>
<td>69%</td>
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<tr>
<td>Mean number of co-morbidities</td>
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<td>3.5</td>
<td>3.7</td>
</tr>
<tr>
<td>Mean number of geriatric syndromes</td>
<td>1.1</td>
<td>1.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Mean number of drugs per patient</td>
<td>N/A</td>
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<td>7.7</td>
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<table>
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<tr>
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<th>2008 Audit</th>
<th>2009 Audit</th>
<th>2010 Audit</th>
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</thead>
<tbody>
<tr>
<td>Patients on ≥ 1 inappropriate drug (STOPP)</td>
<td>27 %</td>
<td>40%</td>
<td>39%</td>
<td>32%</td>
</tr>
<tr>
<td>Patients with ≥ 1 potential drug omissions (START)</td>
<td>15%</td>
<td>47%</td>
<td>37%</td>
<td>45%</td>
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</tbody>
</table>

Table 2: Audit outcomes against Gold Standard

There was a 7% reduction in potentially inappropriate drugs (from 39% to 32%) and an 8% increase in potentially omitted drugs (from 37% to 45%) in comparison to the autumn 2009 audit. Aspirin and codeine were the two most common drugs that met the STOPP criteria, in comparison aspirin and simvastatin were the two drugs meeting the START criteria most often.

Conclusion
This audit cycle shows that it is possible to reduce the prescription of potentially inappropriate medications; however, additional work is still required to develop prescribing skills in frail older people.
AN AIDE-MEMOIR FOR JUNIORS TO IMPROVE CARE IN ACUTE ISCHAEMIC STROKE

J A Pelc, W Gibson, J Okwera

Stroke Unit, Rotherham District General Hospital

Background
Management of acute ischaemic stroke is defined by the National Institute for Clinical excellence (NICE). All patients should have CT head in the first 24 hours and receive 300mg aspirin, unless contraindicated. Anecdotal evidence suggested variability in early medical management within the department. A retrospective case note review was conducted on 30 consecutive patients admitted with acute ischaemic stroke who were not thrombolysed. It assessed time to CT scan, investigations ordered and prescription of aspirin 300mg, in the first 24 hours of admission. The mean age was 74 years (32-93), 63% were female. 90% had CT imaging of the brain, but only 40% received aspirin, (orally or PR). All were suitable for anti-platelets. A change in practice was necessary.

Innovation
A proforma was developed and publicised among junior doctors and made available on the Stroke Unit. It aimed to improve investigation and aspirin administration by providing an accessible, concise reference tool for managing stroke patients, especially out of hours. After a six week trial the study was repeated.

Evaluation
A second cohort of 30 was randomly selected (mean age 78, range 44-94, 53% male) using the same study design. Acute administration of aspirin improved from 40% to 90% (p<0.0001), 97% had a CT within 24 hours (90% cycle 1- not significant (NS)). 93% were prescribed statins (70% cycle 1, NS). 90% were prescribed aspirin 300mg for 2 weeks (43% cycle one, p<0.0001)

Conclusions
The introduction of the proforma was successful in improving appropriate administration of aspirin. Feedback from junior doctors was positive, who felt more confident in ordering investigations correctly and prescribing therapy. The proforma continues to be used and a further audit is planned.
CAN NORTH-WEST GERIATRIC TRAINEES ASSESS INCONTINENT PATIENTS TO NATIONAL STANDARDS?

J Barker, T Kondratowicz

Department of Elderly Care, Trafford General Hospital, Manchester

Background
Up to two-thirds of patients on geriatric wards suffer from some form of incontinence. The recent National Audit of Continence Care highlighted areas regarded as key components of initial incontinence assessment such as performing peritoneal examination and assessing pelvic floor contractility. However, there is currently no formal training available for trainees in the North-West in these skills. We surveyed geriatric trainees in the North-West to determine whether they felt adequately prepared to competently assess incontinent patients.

Sampling methods
Geriatric trainees (levels ST3-7) in the North West Deanery were asked to complete a short survey regarding their ability to assess patients with incontinence. The survey was sent out via e-mail and was completed anonymously.

Results
43% (19 of 44) of those surveyed returned data. 90% (17) reported they had no system on their ward for identifying all patients with incontinence. Only 21% (4) felt competent in assessing patients with urinary incontinence and 5% (1) those with faecal. 42% (8) felt competent performing a perineal/pelvic examination to identify prolapse and 16% (3) felt competent assessing pelvic floor contractility. Only 16% (3) had been formally trained in assessing incontinent patients. 16% (3) worked within a team involving a clinician with a special interest in incontinence.

Conclusions
Few trainees felt competent performing some or all of the key components involved in the assessments of incontinent patients. Many had not been formally trained in this. Ward teams were not alerted to patients with incontinence issues and rarely contained a clinician interested in incontinence. Systems to identify incontinent patients should be implemented on wards. Introducing a formal training programme for trainees delivered by specialists in both uro-gynaecology and geriatrics is a potential method to improve incontinence care as well as generating an interest in the specialty.
STROKE 90:10 – ACCELERATING IMPROVEMENT IN ACUTE STROKE CARE USING A COLLABORATIVE MODEL

M Power

Salford Royal NHS Foundation Trust, Manchester

Introduction
Stroke 90:10 is a two year improvement collaborative in North West England, involving 26 hospitals. The national Sentinel audit of stroke collects data on 9 key process indicators. We were able to determine that between 2004 and 2008 the region had improved by only 18% (from 54% to 72% on these key indicators).

Change strategies
We applied the Institute for Healthcare Improvement’s Breakthrough Series Collaborative model requiring teams to attend three face to face learning events (90 days apart) and test improvements. We worked on 9 processes in 2 bundles. Teams were asked to measure ‘all or nothing’ measures for the two bundles to determine the proportion of patients receiving ‘defect free’ care. Increase in compliance to these two bundles was the primary outcome of interest. We randomly allocated 13 sites to the intervention group and 13 sites to the control group. The intervention group were invited to participate from January 2009 to October 2010. The control group participated from January 2010.

Change effects
Data collection was carried out through case note review. Twenty cases per month for 24 months were randomly selected from coded discharges. Data were analysed for changes over time using statistical process control charts (p charts). A total of 7572 cases were included (4287 intervention, 3284 control). For Bundle 1, the intervention sites improved from 19 to 43% (↑ 24%) and the control sites from 24 to 38% (↑ 14%) during the same period. For Bundle 2, the intervention sites improved from 25 to 56% (↑ 31%) and the control sites from 20 to 31% (↑ 11%).

Conclusions
A breakthrough series collaborative model can be used as a framework to deliver improvements in stroke care. Improvement-naive teams can learn quickly in an established collaborative. These findings have significant implications for models of diffusion and spread.
INTERVENTIONS IN COMMUNITY SETTINGS THAT PREVENT OR DELAY DISABLEMENT AND PROMOTE HEALTHY AGEING IN LATER LIFE

H Frost, S Haw, J Frank

Scottish Collaboration for Public Health Research and Policy, Edinburgh

Background

The population of older people in the UK is expected to rise rapidly over the next 20 years. It is not inevitable that all older people will live with disability and ill health but identifying effective interventions that prevent or delay disablement is a public health priority. The aim of the review is to provide a summary of the evidence for interventions in community settings that prevent or delay disablement in later life.

Search Methods

A search of review-level literature was conducted for the period September 1999 to 2009 of Ovid MEDLINE, EMBASE and CINAHL databases. It included interventions that aimed to prevent or delay disablement of community dwelling people (50+ years old). It excluded interventions carried out in institutional care and those focused on specific disease. In addition, a search of grey literature and citation tracking was conducted. The reviews were screened using the AMSTAR quality assessment scoring tool.

Results

The search identified 62 reviews of complex interventions (comprehensive geriatric assessment n=3, preventive home visits n=9, falls prevention n=17, case management n=3) and specific interventions (exercise n=15, nutritional interventions n=3, telecare n=5, social integration n=3, vision screening n=2, medication review n=2).

Conclusions

The review identified many areas of unknown effectiveness, partly due to unstandardised use of outcomes and poor experimental design. The most promising complex interventions include; assessment of risk factors, direct referrals to easily accessible interventions that are tailored to need and include long-term follow up. There is consistent evidence that exercise can be beneficial, particularly in preventing the risk and rate of falls but overall, the evidence-base for other specific interventions is limited. Careful consideration of the evidence along with feasibility, affordability, sustainability and effects on equity needs to be considered by stake holders in the process of developing any intervention in this field.
THE GLOBAL BURDEN OF STROKE: AUDIT OF ACUTE STROKE MANAGEMENT IN RURAL SOUTH AFRICA

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Princess Royal University Hospital, Department of Elderly Care, London

Evidence-base
Stroke is a leading cause of death and disability accounting for 8-11% of deaths worldwide. As with many other developing countries, South Africa is experiencing a health transition with cerebrovascular disease becoming more prominent. Despite the challenges posed by resource limitations, cultural beliefs, and the burden of HIV-related strokes, simple evidence-based measures can help to standardise and improve care in the rural setting.

During an out of programme year in a South African District General Hospital, I performed an audit assessing stroke management against universally recognised guidelines from the National Institute for Health and Clinical Excellence and the South African Medical Association Stroke Working Group.

Change Strategies
All patients admitted to the 190-bed hospital with a clinical diagnosis of stroke over a three-month period were included. Hospital notes were analysed both on admission and at discharge to determine acute and subsequent management practices. The results were presented and a stroke pathway, adapted to local resources, was then instituted. Further analysis was performed over a four-week period to close the audit loop.

Change Effects
A total of 14 patients were recruited into the initial cycle with a mean age of 63. Acute management was found to be variable. Only 14% of patients underwent a swallow assessment, less than a third had been referred to the physiotherapist and less than 70% had been appropriately prescribed aspirin. Discussions with carers and discharge plans were poorly documented. Following the introduction of the stroke pathway, a significant improvement was seen with over 80% of patients referred for physiotherapy, and 100% receiving swallow assessments and appropriate aspirin therapy.

Conclusions
The changes delivered by the stroke pathway demonstrate that simple measures can bring stroke care in line with international recommendations even in the setting of resource-limited, rural populations, helping to reduce the global burden of stroke.
DO HOME-BASED EXERCISE INTERVENTIONS IMPROVE OUTCOMES FOR FRAIL OLDER PEOPLE? FINDINGS FROM A SYSTEMATIC REVIEW

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¹ Academic Unit of Elderly Care & Rehabilitation, University of Leeds, ² Department of Primary Care and Population Health, UCL

Scope
Frailty is common and is associated with adverse outcomes, including increased risk of disability, admission to long-term care and hospitalisation. Exercise can be successful at improving outcomes for frail older people living in long-term care, but there is uncertainty regarding whether exercise interventions can be successful for frail older people living at home.

Search Methods
We searched systematically for all randomised controlled trials (RCTs) and cluster RCTs that evaluated home-based exercise interventions for frail older people. Primary outcomes were mobility, quality of life and daily living activities. Secondary outcomes included admission to hospital and long-term care. Trials were assessed for quality using Cochrane criteria.

Results
12,729 trials were identified. Six trials met the inclusion criteria. Four trials were assessed as high quality. One high quality trial that used an operationalised measure of frailty to select and stratify participants reported improved disability score in people with moderate, but not severe, frailty at 12 months. No other trials stratified participants using operationalised measures of frailty and inconsistent effects on both primary and secondary outcomes were reported in these trials. No trials measured quality of life. High rates of intervention completion and adherence were generally reported. Heterogeneity of interventions and absence of consistent outcome measures precluded meta-analysis.

Conclusion
There is preliminary evidence from one high quality trial that stratified participants using an operationalised measure of frailty to suggest that home-based exercise interventions may be effective at improving disability in community-dwelling older people with moderate, but not severe, frailty. Adequately powered RCTs that use validated measures of frailty to select and stratify participants and that incorporate long-term follow-up of important outcome measures will help address the uncertainties that we have identified. Home-based exercises are a potentially simple, safe and widely applicable intervention to prevent dependency decline for frail older people.
SURVEY OF DEATHS OF ELDERLY PATIENTS DYING WITHIN 48 HOURS OF ADMISSION TO THE JOHN RADCLIFFE HOSPITAL. COMPARING ADMISSIONS FROM CARE HOMES TO THOSE FROM OWN HOME

V Britton, N G Lovett, M Thompson

John Radcliffe Hospital, Oxford

Background
Survival rates in care home residents admitted acutely to hospital are low. In order to offer end of life care in the residential setting it must be necessary to predict end of life. It may be possible to do this using co morbidities and mortality indexes.

We performed a survey to record the number of elderly patients being admitted from home or care home who died within 48 hours of admission. The focus was the cause of death, co morbidities and mortality index within the two groups.

Methods
A retrospective analysis was conducted of patients over 65 years, dying within 48 hours of hospital admission to the John Radcliffe Hospital between February and July 2009. Patient records and death certificates were reviewed to establish; age, sex, place of residence, cause of death, number of co-morbidities and Charlson co-morbidity index.

Results
A total of 113 patients over the age of 65 years were admitted and died within 48 hours, 22% were from care establishments. The mean age of death for males was 80 years and 84 years for females. The mean number of co morbidities was highest in those admitted from community hospitals 4.89, followed by care home 4.49 and own home 3.33

The highest Charlson co morbidity score was seen in patients admitted from residential homes 5.25 compared to 3.31 for patients form their own home. The commonest cause of death was pneumonia regardless of place of admission. The rate of patients admitted form nursing homes dying from cancer was zero

Conclusion
The results show that the percentage of patients admitted from care homes who die within 48 hours of admission is low compared to own home admissions. Many studies have attempted to predict mortality of nursing home residents to allow for end of life planning. All conclude this is not an easy task.
THE MODIFIED EARLY WARNING SCORE (MEWS) DOES NOT PREDICT MORTALITY IN COMMUNITY DWELLING NURSING HOME RESIDENTS

A T Pattison¹, M J Vernon²

1 North Western Deanery, 2 University Hospital South Manchester NHS Foundation Trust

Background
Track and trigger systems are in widespread use in hospitals as a means of detecting patients at risk of deterioration. The Modified early warning score (MEWS) has been shown to predict mortality in medical inpatients and older people admitted to hospital. It is being used in the community but little evidence exists to demonstrate outcomes in these settings.

Innovation
The South Manchester nursing home case management service provides in-hours medical cover for nine nursing homes including one EMI unit. They use MEWS to triage visit requests for nursing home residents made by care home staff.

Evaluation
MEWS were recorded and plotted against mortality at 7, 30 and 90 days for individuals triaged during a four-month period (September to December 2009). The area under the ROC (AUROC) was calculated for total MEWS and each component. Record forms were excluded if less than 2 of the MEWS criteria had been collected (66 forms) or individuals had scores repeated (172 forms). As the study was based on retrospective data, Manchester Community Health clinical governance department waived the need for formal ethical approval.

MEWS for 178 individuals were included. Median age 83 (range 59-98), 37% male, 63% female. AUROC for total MEWS were 0.633 at 7 days (95% CI 0.398-0.868), 0.566 (95% CI 0.431-0.701) at 30 days and 0.533 at 90 days (95% CI 0.449-0.658). None of the subcomponents of MEWS significantly predicted mortality at any of the time intervals.

Conclusions
The MEWS does not predict mortality accurately in community dwelling nursing home residents. This may be as nursing home residents have significantly more co-morbidity, reduced functional status and cognitive function when compared to the general population. Other studies have shown that physiological and functional variables can predict outcome in nursing home residents and further research is required to develop tools that utilise these.
ARE OLDER HOSPITALISED PATIENTS AT RISK OF PARACETAMOL TOXICITY?  
A SURVEY OF CLINICAL PRACTICE

D Wilson, T A Jackson

University Hospital Birmingham

Background
The BNF recommends the dosing of paracetamol as 0.5-1g every 4-6 hours with a maximum of 4g daily. However, in patients at high risk of liver damage, the malnourished or those taking enzyme inducing drugs, liver toxicity may develop at 75mg/kg/24hrs. In a 50kg patient this equates to 3.75g/24hrs.

Weight is often not considered when prescribing paracetamol. This potentially leaves a significant number of older hospitalised patients at risk of paracetamol toxicity.

There is an absence of literature exploring the numbers of hospital inpatients over 65 at potential risk of unintentional paracetamol toxicity.

Sampling Methods
We identified medical inpatients over 65 with a current prescription of paracetamol, either regular or as required, using our local electronic prescribing software (PICS). We noted if a weight was recorded and those without an accurate weight (non-estimate) entered in the last 15 days were identified and their MUST (malnutrition universal assessment tool) was reviewed to obtain either preferentially a weight or MUAC (middle upper arm circumference) measurement as a proxy for malnourishment. We then reviewed the dose of paracetamol prescribed to identify patients at risk of toxicity.

Results
We identified 346 patients. 81.7% of patients had been weighed in the last 15 days, but only 48.8% of patients had an accurate weight recorded on the computer database.

In total 92.1% of patients had the correct dose of paracetamol prescribed for their weight.

However of the 54 patients with a weight identified as <50kg or MUAC <23.5cm, 33 (61%) had paracetamol prescribed at an at risk dose.

Conclusions
Older hospitalised patients under 50kg in weight are at significant risk of paracetamol toxicity. In our population this was 9.5% (33) of those prescribed paracetamol on the medical wards.

Further study to quantify this risk using paracetamol levels and markers of toxicity would be appropriate.
A SIMPLE INPATIENT FALLS PREVENTION PROGRAMME IMPROVES PATIENT SAFETY

T Chattopadhyay, L Wentworth, H Joyce, N James, C Haldone, A Datta, P Ngoma

Stepping Hill Hospital

Background
Elderly patients are three times more likely to fall as inpatients, of which a significant number result in injury or death. Ninety percent of fractured neck of femur patients fail to return to their previous level of independence and mobility. The cost for immediate treatment is estimated at £15million per annum (National Patient Safety Agency 2007) with an additional cost of rehabilitation and social work. The risk of falling is increased by delirium, poly-pharmacy, previous history, visual impairment, dementia, age, poor balance, postural instability and hypotension, common in the elderly.

Innovation
In 2010 Stockport NHS Foundation Trust’s corporate objective was to reduce harm from inpatient falls by ten percent. On our elderly care ward we introduced a falls prevention programme, identifying high risk patients and improving overall patient safety. Four basic fall prevention principles were used, as outlined by the Institute for Healthcare Improvement (IHI 2009); falls history, medication review, appropriate footwear, call bell in sight and reach. Action plans were initiated for each. Practice was reviewed on a monthly basis. We aimed to achieve all principles for most patients. Outcome was assessed by the number and severity of falls.

Evaluation
Initially seventeen percent of the 35 ward patients had all principles. This rose to over fifty percent after four months. Over this time the average number of monthly falls has reduced by forty six percent, see graph. With comparison to similar wards our fall rate shows a downward progression.

A Graph Showing the Reduction of Falls since the Introduction of a Falls Prevention Programme: fall severity categorized as per trust guidelines.

Conclusion
A simple falls prevention programme has reduced inpatient falls, improved patient safety and achieved the trusts objective, with subsequent financial savings. Postural hypotension and delirium management have been introduced as further principles. We suggest this simple and effective programme be introduced on all hospital wards.
DESIGN AND VALIDATION OF NEW ABBREVIATED MALNUTRITION UNIVERSAL SCREENING TOOL (AbrMUST) WITH STANDARD MUST, IN FOUR IN-PATIENT CLINICAL SETTINGS, IN OXFORDSHIRE

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Background
MUST identifies adults at risk of malnutrition. Guidelines recommend weekly measurements in in-patients. In reality this is often not done, or done badly, due to the complexity and time taken to calculate BMI and percentage weight loss. An audit on acute geratology wards found that staff training in use of MUST, only marginally increased completion of MUST scores.

Innovation
A simpler tool, the AbrMUST, easily completed at the bedside, was designed and studied in four in-patient settings. Paired AbrMUST and MUST scores were obtained for each patient. Kappa statistic (unweighted and weighted) were calculated, to assess correlation between the measurement scales.

AbrMUST:
Weekly weight
A: Normal, overweight or obese 0
Thin 1
Very thin 2
B: Weight stable 0
Recent/ ongoing weight loss 1
(weight less than last week, patient/ relative report)
C: Eating well 0
Inadequate oral intake 1
Total score: 0=low risk, 1=moderate risk, ≥2=high risk (as in MUST)

Evaluation

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<th>Stroke</th>
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<th>CityCom Hospital</th>
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<td>2.94%</td>
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Conclusion
Kappa statistic is significant for all settings, except the stroke unit. When using the weighted Kappa statistic, this becomes significant.

There is therefore good agreement between measurement scales, indicating that AbrMUST is as accurate as the standard MUST. Using this instead of the standard MUST could save time. False positives (Score higher on AbrMUST than MUST) and false negatives (Score lower on AbrMUST) were calculated. AbrMUST is more likely to overestimate risk, than miss high risk patients.
TELEPHONE TRIAGE AND FALLS RISK STRATIFICATION: A NEW MODEL OF SERVICE FOR PATIENTS WITH FALLS

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Background
A new model of service was introduced for the Falls Service to streamline the service by identifying high-risk patients in most need of medical review.

Innovation
Telephone triage and risk stratification was piloted in a UK teaching hospital. All referral letters to the Falls Clinic from Accident & Emergency department, other clinics and therapists were directed to one contact point. A senior sister trained in Falls assessments phoned each referred patient or their next of kin. During the call the nurse explained the reason for referral, checked that the patient agreed to attend the Falls Clinic appointment and asked a preset list of questions to stratify risk into high, medium or low.

High risk patients were referred for comprehensive assessment by a consultant geriatrician in the falls clinic. Intermediate risk patients were referred to the Community Falls Service. This provided assessment in the patient's home with options to attend community physiotherapy and occupational therapy. Low risk referrals were sent a falls information leaflet and were given the option for self referral to the above services if needed.

Evaluation
Over an 18-week evaluation period, 98 referrals were received. Of these, 23% declined to accept the service, 52% were referred to the Falls Clinic, 10% were referred for the Community Falls Service and 13% were sent information leaflets.

The telephone triage system reduced the DNA rate by identifying patients who would not have attended the Clinic appointment (23%). A further 13% low risk patients were sent information leaflets and so were saved the discomfort of unnecessary hospital attendance. Intermediate risk patients (10%) were seen at home by the Community Falls team. Falls Clinic appointments were thus reserved for those deemed at highest risk.

Conclusions
1. Telephone triage is an effective approach to reduce the DNA rate of the Falls Clinic.
2. Falls risk stratification is a useful tool to direct the patient to the appropriate service and optimise use of resources.
Background
The social and financial support network available to older people is an essential component of the comprehensive geriatric assessment (CGA). This is recognised by the British Geriatrics Society (1) and in the 2010 geriatric curriculum (2) as a core skill. We surveyed geriatric trainees and Consultants in the North Thames deanery to establish their knowledge of this subject.

Sampling Methods
An online survey of 17 questions was emailed to geriatric trainees and Consultants in the North Thames deanery. Subjects included the state pension, eligibility for benefits and discharge planning.

Results
There were 44 responses (27 trainees and 17 Consultants). Thirty seven percent of trainees were in their final year. Twenty nine percent of Consultants had less than 5 years experience and 47% over 10 years. The correct response rate for questions varied between 11-63% for trainees and 17-64% for Consultants. Respondents were asked to rate their knowledge before and after completing the survey. Pre-survey, 93% of trainees felt their knowledge was poor to average whereas 65% of Consultants rated their knowledge as average. Post-survey, 96% of trainees and 77% of Consultants rated their knowledge as poor or very poor. Ninety six percent of trainees and 88% of Consultants felt further training was required. Overall feedback was positive.

Conclusions
Contrary to pre-test perception, we demonstrate trainee and Consultant geriatricians lack certain key facts concerning the UK financial and social support system. One could argue this information is provided by social services; however, as professionals working with older people, we have a responsibility in providing optimal physical, psychological and financial care - principles set out in the CGA. The planned streamlining in the benefit system should raise awareness. Further action must include tailored training in this area.

References
1. www.bgs.org.uk
2. www.jrcptb.org.uk
TWENTY YEAR TRENDS IN DEPENDENCY IN RESIDENTIAL AGED CARE

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Background
The proportion of older adults living in residential aged care has steadily decreased over the last two decades due to many factors including introduction of compulsory pre-admission assessments, increased community care, and more retirement villages, encouraging only those with the highest dependency to be admitted. This study examines residents’ dependency changes over 20 years in Auckland, New Zealand.

Sampling Methods
All people residing in aged care facilities in the Auckland region in 1988, 1993, 1998, and 2008 were assessed using the same 23-item functional ability survey. There were 7,516 residents assessed in 1988 (99% response rate), 6,972 in 1993 (85% response), 5,056 in 1998 (65% response), and 6,828 in 2008 (89% response). Analyses for 1993, 1998 and 2008 surveys were weighted to accommodate non-response. A composite dependency score with five ordinal levels from ‘apparently independent’ to ‘highly dependent’ was derived from mobility, activities of daily living ability, continence and cognitive function items.

Results
All functional indicators demonstrated significantly increased dependency over the 20-year period (p<0.001). However, in years between 1998 and 2008 surveys there were significant increases in dependency for toileting, urinary and faecal continence, mobility, dressing and orientation, but no significant changes in memory, orientation to place, disturbing behaviours, wandering and need for night care. The proportion of ‘apparently independent’ residents decreased from 18% in 1988 to 9% (1993), 5% (1998), and 4% in 2008, whilst those ‘highly dependent’ increased from 16% in 1988, to 18% (1993), 19% (1998) to 21% in 2008.

Conclusion
Dependency of aged care residents has increased significantly between 1988 and 2008. The population of older people will increase dramatically in the future including the population of those with dementia signalling a likely continued rise in aged care resident dependency.
HOW SHOULD WE NAME HOSPITAL DEPARTMENTS SPECIALISING IN THE CARE OF OLDER PEOPLE?

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Background
The term “Geriatric” has become increasingly unpopular because of the stigma associated with it.

Few UK hospital departments now call themselves “Departments of Geriatric Medicine” many preferring titles such as “Department of Medicine for the Elderly”. This has resulted in several different names with no standardisation of nomenclature.

Rarely have the opinions of older people themselves been sought in surveys considering name preferences for these departments.

‘Future Years’, the Yorkshire & Humber Regional Forum on Ageing undertook this survey to determine whether older people (and their carers) had a preference for the name of such departments.

Survey Methods
A questionnaire was sent out via ‘Future Years’ networks in Yorkshire and Humber. Respondents were offered a list of 6 alternative names (Care of the Elderly, Medicine for Older Persons, Ageing and Health, Medicine for the Elderly, Medicine for Older People and Geriatric Medicine) to be placed in order of preference and whether they had alternative suggestions. These alternatives were chosen as in two previous recent surveys undertaken by Baylis et al and Murphy et al. they appeared to be the most commonly used and favoured names.

Results
The number of respondents was 87 (60 female), mean age 68.6. The most popular name was Ageing and Health placed first by 25 respondents, followed by 'Other' (23) and Care of the Elderly (21). No consistent choice was suggested for ‘Other’ but the most popular word featuring in ‘Other’ choices was Senior. Medicine for the Elderly (3) and Geriatric Medicine (0) were the least popular. 41/87 (47%) selected Ageing and Health as their first or second choice and 36% Care of the Elderly.

Conclusions
Ageing and Health and Care of the Elderly were the 2 most popular names for hospital departments in this survey of older people in Yorkshire and Humber. Hospitals should consider the results of this survey when naming their departments.
SHARING CLINIC LETTERS WITH PARKINSON’S DISEASE PATIENTS – A MULTICENTRE QUANTITATIVE HEALTH LITERACY STUDY

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Background
Department of Health guidelines recommend patients should receive copies of clinic letters. Parkinson’s disease (PD) patients report excellent (>90%) understanding of clinic letter contents¹. Inadequate health literacy is common, with the average adult reading at the 8th grade level. United States Department of Health (USDHHS) guidelines recommend patient orientated literature should not exceed the 6th grade. We aimed to establish the readability of PD clinic letters.

Sampling Methods
We determined the readability of 150 consecutive PD clinic letters, from each of 8 UK centres using the Simple Measure Of Gobbledygook (SMOG) formula.

Results
1200 clinic letters. 484 copied to patients. 1030 dictated by medical staff.

Mean grade level was significantly lower in letters copied to patients 12.3 (95%CI 12.2-12.4) vs 12.95 (12.8-13.1), p<0.0001. Letters dictated by PD specialist nurses were significantly easier to read than those dictated by medical staff, Mean SMOG grade 12.3 (12.1-12.5) vs 12.8 (12.6-12.9), p=0.004.

Conclusions
Letters copied to patients were significantly easier to read, in terms of both mean grade level and USDHHS classification, than those sent solely to GPs. However less than 5% of letters copied to patients would be fully comprehensible to the average adult. The majority of clinic letters are written at postgraduate level (>12th grade). None of the letters complied with current readability guidelines. This data suggests a possible discrepancy between patient’s self-rated understanding and the measured reading difficulty of PD clinic letters.

Background
In June 2006, the Royal College of Physicians [RCP] published guidelines on the management of delirium, a common condition affecting up to 20% of older hospitalised patients over the age of 65.

In order to determine junior doctors’ knowledge, an anonymous questionnaire survey was undertaken in 2008 with 84 questionnaires returned by 45 F1, 12 F2, 25 SHO doctors, one Specialist Registrar and one Associate Specialist.

Objective
This was a survey to reassess junior doctors’ knowledge and attitudes towards the recognition of delirium in older hospitalized patients following the initiation of regular in hospital educational training programmes.

Sampling method
61 anonymous completed questionnaires were returned by junior doctors comprising of 34 F1, 8 F2, 9 SHO doctors and 10 Specialist Registrars.

Results
Survey results compared to two years previously showed the following.

89% compared to 32% felt that they had enough knowledge and training to manage delirium in older people. 73% compared to 56% felt that they had managed delirium appropriately. 97% compared to 83% would always obtain a history from a relative or carer. 92% compared to 75% felt that they were competent to test cognitive function. The majority (74%) felt that the diagnosis of delirium was not easy to make in contrast to the previous audit where 70% felt the diagnosis was easy to make. More junior doctors (21%) compared to (< 1%) knew about the different types of delirium. 66% compared to 7% in the previous audit will start haloperidol at the initial recommended dose of 0.5 mg.

Conclusion
There was significant improvement in the diagnosis and management of delirium in older hospitalised patients in comparison with two years previously. Significant improvement has been made in prescribing the initial correct dose of haloperidol when needed. Teaching on delirium has been inculcated into junior doctors’ induction programmes. A clinical proforma on diagnosis and management of delirium was designed to further enhance care.
THE EFFICACY AND TOLERABILITY OF LEVETIRACETAM IN OLDER PEOPLE DURING ROUTINE CLINICAL PRACTICE

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Background
Levetiracetam (LEV) has been shown to be an effective antiepileptic drug as add-on and monotherapy. Most evidence is derived from younger adults with a mixture of idiopathic and localisation related epilepsy. Evidence for its use in older patients is lacking, based on trials from younger adults and short term efficacy data. We wished to examine the use of LEV in older patients.

Sampling Methods
From the case-notes of patients over 60 years old prescribed LEV we obtained information regarding individual demographics, seizure aetiology and symptomatology, dosage regimen, tolerability and efficacy.

Results
36 patients were identified (17 males, 19 females) with a mean age of 80 (range 67 to 95 years), 5 had a longstanding/cryptogenic epilepsy whilst 31 had localisation-related epilepsy; 25 due to cerebrovascular disease, the remaining 6 were due to neurodegenerative disease. 27 patients had complex partial seizures, 13 had simple partial motor or sensory seizures and 7 patients had secondary generalisation. Most (28) of these patients were prescribed LEV monotherapy with initial titration from 250mg bd and maintenance doses ranging from 250mg bd to 1g bd. 8 patients discontinued treatment at initial introduction, 2 did not tolerate higher doses. Intolerance was mainly due to symptoms of drowsiness and lethargy but 1 person had suicidal ideation. Of those that tolerated LEV, 21 patients achieved freedom from seizures on LEV whilst 5 had > 50% reduction in seizures.

Conclusions
Although our numbers are small, we have found LEV to be reasonably well tolerated and effective in the control of epilepsy in older patients, with doses lower than anticipated, suggesting a role as monotherapy. In the absence of published/pending head to head clinical trials next steps could be collective data collection of similar patients among BGS members to further explore tolerability and efficacy during routine practice.
THE ATTITUDES & OPINIONS OF JUNIOR DOCTORS REGARDING THE ELDERLY

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Background
We previously surveyed medical students’ attitudes towards older patients. We now present a survey of junior doctors within our hospital, examining the associations between socio-demographics, attitude towards older adults and interest in pursuing additional training in geriatric medicine.

Sampling methods
Eighty junior doctors were given questionnaires containing the 14-item UCLA Geriatric Attitudes Scale. They were asked about their interest in pursuing additional training in geriatrics. Demographic data was collected. The Likert scale and Spearman rank correlation coefficient were used to measure the strength of association.

Results
Of 80 junior doctors, 71 (89%) responded. Average scores on 10 items indicated a positive attitude towards the elderly. There was neutral response to two items: preference for seeing younger patients and, older people being less organized. There was slightly negative response to two items: history-taking being an ordeal, and being less sympathetic to older patients. Twenty one percent of our sample intended to pursue additional training in geriatrics. Those who were born outside the UK, who were married and had children, were more likely to want to pursue additional training in geriatrics. Preference for seeing elderly patients, sympathy towards the elderly and a positive approach to treating chronically ill patients were significantly associated with intention to pursue additional training in geriatrics (p value <0.05).

Conclusions
The responses from junior doctors were mostly positive. But taking medical history from older patients seemed to be viewed as more of an ordeal than as a worthwhile clinical challenge, key to accurate diagnosis. For junior doctors, having their own family seemed to be associated with a greater interest in geriatric medicine. A fifth of our sample stated an interest in pursuing additional training in geriatrics. However, it is important to develop a culture amongst junior doctors that encourages viewing elderly patients in a positive light.
NUTRITIONAL INTAKE IN FRACTURED NECK OF FEMUR PATIENTS

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Introduction
Hip fracture is a common, serious and costly injury. It has been postulated that outcomes are poorer in patients who receive inadequate nutrition during their hospital admission. This is due to high levels of underlying malnutrition and the catabolic demand in acute illness.

We undertook a survey of elderly hip fracture patients to evaluate the calorific and protein intake over a 7 day period from the day of admission.

Method
In this prospective survey dietary intake was collected for 7 days on 50 patients admitted via the emergency department. Daily food charts were used to record oral intake. The daily intake was then calculated using standardised average values.

Standards were set against normal daily requirements of a well individual aged over 75.

1. Calorific intake (Kcal): Men = 2100Kcal, Women = 1810Kcal
2. Protein intake (g): Men = 56g, Women = 45g

Results
50 patients were audited over the assessment period. One of the 50 died shortly after surgery and seven had incomplete data, leaving 42 subjects for analysis. Average age was 85 years (range 63-96) with 83% (35/42) being female.

Average calorie and protein intake:

- Average calorific intake (range 0-1860Kcal)
  - Mean = 571.0Kcal
  - Median = 522.3Kcal
- Average Protein intake = 20.6grams (range 0-71.6grams)
  - Mean = 20.6grams
  - Median = 20.2grams

Conclusions
Trauma, such as a fracture or major surgery, induces a catabolic state with increased nutritional requirements. Despite this nutritional requirements were often not met during the first seven days.

Barriers to adequate nutrition include being nil by mouth prior to surgery, pain, nausea, drowsiness and pre-existing malnutrition. There also appears to be inadequate awareness and screening of at risk patients. Nutritional supplements maybe of benefit in the majority of patients presenting with hip fractures but further research is required.
PREVALENCE OF SPECTACLE, DENTURE AND HEARING AID USE IN PATIENTS ADMITTED UNDER MEDICINE FOR THE ELDERLY

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Background
We recognise that a large proportion of our inpatients use a combination of spectacles, dentures and hearing aids (here collectively termed prostheses). These may be lost in hospital. This can have a significant impact on health and length of stay owing to factors including sensory impairment, social isolation, delirium, falls and poor nutrition. It may also prove expensive for individuals and trusts.

While intending to audit the loss of such prostheses and associated documentation it became apparent that little data exists to suggest the current prevalence of their usage. We extended the scope of our project to explore usage rates in both our and other regional hospitals. These data are presented here.

Sampling Methods
We assessed all patients, admitted under medicine for the elderly in the three centres, for use of prostheses. A combination of direct observation and questioning of patients, visitors and nursing staff was used. A reliability study was undertaken at two weeks to confirm the validity of the findings.

Results
In total 269 patients were involved across 3 acute trusts with a median age of 84.6 years (66.6 – 101 years) and a 101:168 male:female divide. We found that 165 (61%) of patients owned dentures, 74 (28%) owned hearing aids and 210 (78%) owned spectacles. 390 of the 449 items owned (86%) had been brought in to hospital. Of the 104 patients in the largest centre, 22 (21%) used all 3 prostheses, 50 (48%) used 2, 23 (22%) used only 1 and 9 (9%) used none. The reliability study demonstrated concordant results for 29/30 items across 10 patients.

Conclusions
Our findings give an estimate of the prevalence of spectacle, denture and hearing aid use in an elderly hospitalised population. They support the need for clear property documentation and introduction of strategies to safeguard against loss.
# A CLINICAL DESCRIPTION OF BONE HEALTH CLINIC ATTENDEES WITH A HISTORY OF RENAL STONES

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## Background
Idiopathic hypercalciuria is associated with osteoporosis. Some patients have abnormal calcium and phosphate absorption and excretion. A concern in utilisation of vitamin D and parathyroid hormone (PTH) therapy is potential to induce renal calculi.

## Sampling Methods
We interrogated the 3600-patient database of St. James’s Hospital Bone Clinic – an osteoporosis tertiary referral centre. We identified 29 patients (6 male, 26 female) with renal calculi. We recorded baseline age, sex, serum 25-OH vitamin D, serum PTH, serum calcium, magnesium and phosphate, creatinine clearance (Cockcroft-Gault) and 24-hour urinary calcium excretion, as well as serum bone markers (osteocalcin, Procollagen type 1 N-terminal propeptide (P1NP), and CTX-telopeptide) and DEXA T-scores of spine and hip.

## Results
Mean age 70 years (SD 11.7); mean T-score spine -2.93 (SD 2.19), mean T-score hip -2.30 (SD 1.18); mean 25-OH vitamin D 43 nmol/L (SD 27); mean PTH 47.8 pg/mL (SD 31.9); mean serum calcium 2.32 mmol/L (SD 0.24); mean magnesium 0.83 mmol/L (SD 0.10); mean serum phosphate 0.94 mmol/L (SD 0.19); mean creatinine clearance 66 mL/min (SD 28.6); mean osteocalcin 25.2 ng/mL (SD 25.03); mean P1NP 50.2 ng/mL (SD 57.08); mean CTX 0.34 ng/mL (SD 0.51); mean 24-hour urinary calcium excretion 3.48 mmol/24hr (SD 1.80). Correlation co-efficients: serum PTH vs. 24-hour urinary calcium excretion -0.29; creatinine clearance vs. T-score hip 0.61; age vs. PTH 0.41; age vs. 24-hour urinary calcium excretion -0.34.

## Conclusions
This elderly cohort has vitamin D deficiency and renal impairment, but normal bone turnover. Few patients were hypercalciuric, perhaps due to underlying vitamin D deficiency. Ideally, we would treat some with alphacalcidol; however, this is an active metabolite of vitamin D, and should be used cautiously in the context of renal calculi. These data will assist in making rational therapeutic decisions in optimal therapeutic options for this complicated patient group.
WITHDRAWN
A SYSTEMATIC REVIEW OF BEDSIDE DIAGNOSTIC TESTS FOR ASPIRATION IN OLDER PATIENTS WITHOUT STROKE

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Scope
Aspiration is common in older patients in hospital, but is often not systematically sought. Simple bedside tests may be able to detect aspiration and pneumonia risk in this population, but require rigorous evaluation. We aimed to determine: a) the sensitivity and specificity of bedside screening tests, and b) the predictive values of these tests for predicting pneumonia, in older hospitalised patients without stroke.

Search Methods
We included studies where the primary aim was to examine aspiration and the mean age was ≥65 years. We excluded studies where more than half the study population had acute stroke or Parkinson’s disease; studies of diagnostic accuracy had to include a gold standard test (videofluoroscopy or fibreoptic endoscopy). Two authors independently searched databases from 1966 – September 2009 (Medline, CINAHL, Embase, Cochrane Library, Controlled Clinical Trials) and hand searched references of included articles and references from previous reviews of aspiration. Grey literature was searched using Google.

Results
1653 reports were identified for scrutiny. Seventeen studies were eligible for inclusion, nine of which were bedside screening studies. Heterogeneity of methods and outcomes precluded meta-analysis. Only one study was performed on an unselected population of hospitalised older patients. Screening tests examined included water swallow tests, cough test, risk factor checklist, pulse oximetry and auscultation tests. Sensitivity varied from 0% to 100%, with no single bedside test clearly superior. Specificity varied from 29% to 100%. None of the studies compared the predictive value of bedside screening testing with a gold standard aspiration test to predict pneumonia outcome.

Conclusions
The predictive value of bedside screening tests for pneumonia in this patient group remains unknown, and diagnostic accuracy of bedside swallow tests in this patient group remains unclear. Existing evidence is insufficient to support the use of these bedside tests in a general older population.
MOBILE HEALTHCARE APPS FOR GERIATRIC MEDICINE

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Scope
A rapidly ageing population combined with advances in the delivery of personalised and 'smart' healthcare, offers potential opportunities within geriatric medicine. 'mHealth' applications, i.e. those typically available on smart phones, may have value in providing novel tools for geriatricians in terms of information provision, patient monitoring, assessment and communication. We sought to provide a narrative review of the availability of mobile phone-based healthcare apps relevant to the key 'geriatric giants', immobility, instability, incontinence, impaired intellect, and iatrogenic drug injury.

Search Methods
Applications within the 'App Store' are categorised with pertinent categories to this review being 'health & fitness' and 'medical'. A thorough search of this online database was performed for relevant iPhone-based applications using a comprehensive list of keywords. Resulting apps were reviewed for suitability of use within everyday geriatric medical practice.

Results
A very small number of specialist apps were identified that could support the issues of immobility, instability and incontinence in practice. A number of patient-targeted tools were identified for cognitive self-assessment, however, only a few unvalidated memory assessment apps exist for the clinician. For general health issues a large number of information/reference apps were identified, particularly in relation to pharmaceutical drugs, for both the professional and patient. Numerous self-monitoring applications for specific conditions e.g. diabetes, targeting the patient, were identified. Many patient/caregiver apps were identified that could provide a novel method for personalised monitoring and management of health.

Conclusions
mHealth for geriatric medicine is generally under-developed, however, a wealth of up to date information is highly accessible via mobile phone-based applications. mHealth apps have potential for unobtrusive collaborative health monitoring between patient and physician with the added capability of providing a novel communication tool.
USING AN EXISTING TELEPHONE HEALTH INFORMATION SERVICE TO IMPROVE THE DIAGNOSIS AND TREATMENT OF OSTEOPOROSIS POST FRAGILITY FRACTURE

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Background
Osteoporotic fractures cause morbidity and mortality. Nonetheless, osteoporosis remains under-diagnosed and under-treated. Presently, fewer than 30% of patients receive osteoporosis assessment post-fracture and <15% receive treatment. This is a world-wide problem. Addressing this care gap is a major challenge.

Innovation
In Edmonton, Canada, an innovative fracture intervention project is underway using existing health system infrastructure (consumer telephone information service) to deliver sustainable, cost-effective follow up of post-fracture patients aged over 50 years. Fracture patients are identified (electronic medical record) and then phoned by a nurse to determine if the fracture might be attributable to osteoporosis. If so, the patient receives immediate education and advice, and the patient's physician receives a letter and treatment algorithm. Patients are called again at 3, 6 and 12 months to ensure recommended assessment has occurred.

Evaluation
Outcomes were determined following a patient telephone survey at 3, 6 and 12 months. The 12 month data is reported here. There were 515 patient contacts, and 322 questionnaire results. (49 declined, 39 moved, 12 were admitted to LTC, 6 died, 87 lost to FU). Average age was 72 years (254 women and 68 men). In the last year: 82% had seen their doctor about their bones; 52% received a diagnosis of osteoporosis; but 81% had had a BMD test (50% men, 89% women). 37% were on bisphosphonate therapy, and 49% were not taking any anti-resorptive medications. However, 83.5% were taking calcium and Vitamin D supplements. 5.6% had had another documented fracture.

Conclusions
This simple intervention using an existing telephone help line was uniquely utilised as a case-finding tool in the setting of fractures. Based on published historical data (from the Edmonton population) this intervention has resulted in a substantial increase in the diagnosis, investigation and treatment rates, as well as fewer reported new fractures in this group.
# ASSESSING THE IMPACT OF SENIOR REFERRALS TO A SPECIALTY RHEUMATOLOGY CLINIC

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## Introduction

The increasingly aging population is impacting healthcare delivery in subspecialty areas of medicine outside of Geriatrics. Rheumatic diseases are a prevalent cause of disability, and increase with age. Therapy for these diseases can add to polypharmacy and negatively impact other co-morbidities.

## Methods

Retrospective, chart review of all patients attending a rheumatology subspeciality clinic over a one year period. All referrals had been prescreened, and those with probable degenerative axial and peripheral disease, and chronic pain syndromes had been triaged to another clinic. Data was collected on demographics, diagnoses and medications in all patients.

## Results

513 patients were seen (new and review). Of these, 94 (18%) were Seniors (age >65 years). The mean age of this subgroup was 73 years (65-90) and 55% were female. When comparing the >65 to the <65 age group, the prevalence of inflammatory arthritides (rheumatoid arthritis (RA), psoriatic arthritis, palindromic rheumatism) was comparable: 48% vs 53%; however osteoarthritis and polymyalgia rheumatica was twice as common in the older age group. Co-morbidities in >65 group included hypertension (31%), osteoporosis (27%), diabetes (15%), hypothyroidism (11%) and coronary artery disease (9%). Only one patient had documented dementia. There were no cases of uncontrolled hypertension identified, and all patients were receiving a mixture of anti-hypertensives. 81% of osteoporosis patients were on antiresorptives, but only 40% of prednisone users were taking bisphosphonates. Regarding RA, the treatment pattern was comparable between the two age groups, with all but 2 patients receiving disease modifying anti-rheumatic drugs (DMARDs), including 11% on biologics.

## Conclusions

Seniors comprise a significant number of referrals to a subspeciality Rheumatology clinic. The pharmacotherapy does not differ in Seniors but the co-morbidities do, which may contribute to polypharmacy. This poses significant challenges to subspecialists. This study highlights the need for reciprocal knowledge by both geriatricians and rheumatologists to optimize the management of these complex patients.
PREVALENCE OF ARTHRITIS AND JOINT PAIN IN THE OLDEST OLD – FINDINGS FROM THE NEWCASTLE 85+ STUDY

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Introduction
The prevalence of arthritis increases with age. The predicted increase in longevity specifically in the oldest old, will result in a higher prevalence of arthritis with subsequent consequences for its management. Information regarding arthritis in the oldest old is currently lacking. This study provides estimates of arthritis and joint pain in 85 year olds.

Methods
Prospective observational cohort study of 85 year olds living in the community. Disease was ascertained by GP record review (GPRR) and joint pain from a nurse administered multidimensional health assessment (MDHA) conducted in the participant’s home.

Results
1029 individuals participated in the GPRR of whom 845 underwent the MDHA. Lifetime prevalence of arthritis was 65.4% (95% confidence interval (CI) 62.5, 68.3), occurring more commonly in women (women 69.1% vs men 58.8%, p=0.001). Knee osteoarthritis (30.6%) was the most commonly occurring arthritis followed by cervical spondylosis (19.0%), hip osteoarthritis (17.5%) and lumbar spondylosis (16.9%). Inflammatory arthritis was recorded in 4.6% (47/1029) of participants. 13.5% (139/1029) of participants had undergone a joint replacement. 507 participants (63.1% (95% CI 59.8, 66.5) complained of joint pain in the last month, women reporting pain more commonly than men (p=0.001). The knee, shoulder and lower back were the commonest areas to have pain and women reported higher numbers of painful joints than men (p=0.001).

Conclusion
We have identified and described a high prevalence of arthritis and joint pain in 85 year olds. Evaluating the contribution this makes to disability, health and wellbeing and healthcare use is the next step in order to establish the true impact of arthritis in this age group.
COMPARATIVE ANALYSIS ON ANTICIPATED LONGEVITY AMONG ACTIVE AND SEDENTARY ELDERLY PEOPLE

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Introduction
Despite the paradigm of the importance of leisure physical activity in health promotion, there are some controversies regarding self-perception of the protective role of the active lifestyle. The aim of this study was to investigate the role of regular exercise and sport during lifespan from the perspective of people’s anticipations of their own longevity.

Methods
We evaluated a group of 420 subjects (average age 65 years, 216 men and 204 women), randomly selected from the general population, regarding their life expectancy and past participation in regular exercise and sport activities. Subjects were informed about the medium life expectancy in Romania and were asked if they consider overdrawing the indicated values. Taking into account the exercise and sport antecedents (as type, duration and frequency) we divided our subjects in two subgroups: an active one (at least 3 days/week, 20 minutes/day of vigorously intense aerobic exercise) and an inactive one (less values of the mentioned items). The association between life expectancy and leisure physical activity was analyzed using a conditional logistic regression technique that estimates the odd ratio (OR) and the 95% confidence interval (CI) for OR.

Results
The greater anticipated longevity was recorded in the subgroup of active subjects, 72.7% of them estimating in an optimistic manner their life expectancy: OR = 3.94 (95% CI = 2.45-6.34), p=0.001. Moreover, the association was stronger for men than for women: for men OR = 6.5 (95% CI = 3.42–12.35), p=0.001 and for women OR = 2.97 (95% CI = 1.39–6.31), p=0.004.

Conclusions
People’s anticipated longevity is significant associated with their leisure physical activity behaviour and men are more conscious than women about the protective role of the physical active lifestyle. The revealed gender differences are essential for developing specific strategies of prophylactic intervention, based on leisure physical activities.
A RANDOMISED CONTROLLED TRIAL OF EXERCISE TRAINING FOR OLDER HEART FAILURE PATIENTS

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Introduction
Substantial evidence exists documenting the beneficial effects of exercise training in younger patients with heart failure. Current heart failure exercise programmes are unsuitable for the majority of very old, frail heart failure patients. We tested whether a programme tailored to the needs of such patients could improve exercise capacity and quality of life.

Methods
Parallel-group, single-blind randomised controlled trial. Patients aged 70 years and over with symptomatic heart failure and left ventricular systolic dysfunction were randomised to either 24 weeks exercise training (8 weeks supervised in a group then home based with telephone follow-up) or to usual care. Six minute walk distance was the primary outcome; sit to stand time, shuttle walk distance, quadriceps strength, quality of life and health status (Minnesota, EuroQol, Functional Limitations Profile, Hospital Anxiety and Depression scale) and daily activity (accelerometry) were measured at baseline, 8 & 24 weeks. Carer strain and health costs were also recorded.

Results
107 participants were randomised, mean age 80 years. 72/107 were male. 704/850 (83%) person-sessions of exercise were attended, with 41/53 (77%) of participants in the exercise group attending at least 80% of allocated sessions. Number and intensity of exercise repetitions increased significantly for all exercises between baseline and 8 weeks. Six minute walk distance did not improve compared to control group at 8 weeks (+9.8 vs +22.4m, p=0.28) or at 24 weeks (-3.0 vs -2.8m, p=0.99). For secondary outcomes only the sit to stand test improved significantly (-8.2s vs -3.1s at 24 weeks; p=0.015); there was no between-group difference in change for the Minnesota quality of life score (0 vs -1 points at 24 weeks; p=0.85)

Conclusion
This exercise intervention did not improve exercise capacity or quality of life in older heart failure patients.
DETERMINATION OF THE POTENTIAL BENEFIT OF NEUROMUSCULAR ELECTRICAL STIMULATION IN THE TREATMENT AND PREVENTION OF ORTHOSTATIC HYPOTENSION

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Objectives
The hypothesis of this study was that Neuromuscular Electrical Stimulation (NMES) might prevent significant blood pressure (BP) reductions in elderly subjects with orthostatic hypotension (OH). A secondary objective was to determine the optimal NMES stimulation setting for this purpose.

Methods
15 subjects over 65 years with OH according to the European Society of Cardiology guidelines were recruited. Each subject had a control Head up Tilt (HUT) performed: 9 underwent two further HUT’s with both synchronous and asynchronous NMES settings. 4 had one further HUT with either setting. Each HUT was assigned randomly. NMES was applied using the Duo-STIM muscle stimulator applied to the soleus muscle on each leg. Symptoms and tolerability were recorded. Continuous phasic BP was monitored using a Finometer (TNO Amsterdam) and heart rate recorded using continuous three lead ECG. Non-parametric data was analysed using ANOVA comparison of means.

Results
1 was excluded due to presence of a pacemaker while another did not complete the protocol due to chronic shoulder discomfort. Within the study group (n=13), 7 had reproducible OH. The IQR of those with OH was 73.5 years (71-79), 5 were female and 2 male. The mean change in systolic BP was -33.3mmHg for the control HUT, -24.6mmHg with asynchronous NMES (p=0.275), and -26.0 mmHg with synchronous NMES (p=0.445). There was no significant difference between NMES settings (p=0.804). The mean change in diastolic BP was -13.6mmHg for the control HUT, -7.1mmHg with asynchronous and -10.5mmHg with synchronous NMES settings. Orthostatic symptoms were recorded in 3 subjects during control HUT and in 1 subject for both NMES settings. All found NMES tolerable.

Conclusion
A non-significant trend towards benefit using NMES in attenuating OH and associated symptoms was demonstrated in this pilot study. A larger sample size and objective measurements of haemodynamic change are needed to confirm this and determine the optimal NMES setting.
DIABETES IN CARE HOMES: RESIDENTS’ EXPERIENCE OF CARE

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Introduction
Diabetes care in care homes is recognised to be of poor standard and, although the Diabetes UK (DUk) good clinical practice guidelines for care home residents were revised in 2010, the opinions of patients and their carers have not been reported in the literature. We sought the views of residents on their diabetes and examined current care against DUK standards.

Methods
Qualitative and quantitative methods were used, including interviews with residents, carers, and staff, record reviews and focus group discussions. Ethical approval was received from the local research ethics committee.

Results
31 residents with diabetes took part in seven care homes across the city. Median abbreviated mental test score was 4/10 and clock-drawing test 1/5. Weight, body mass index and blood pressure were satisfactorily monitored. Glucose monitoring took place in all residents who received insulin but was monitored unnecessarily in those with diet-controlled diabetes (63%). 90% of residents had seen a chiropodist recently, and >80% reported having retinal screening. Staff received diabetes training in one out of the seven care homes. On questioning, many residents did not recognise the fundamental aspects of managing diabetes, such as taking medications as prescribed. However, when asked what they knew about diabetes, comments included “It’s a common thing....like cancer”; “People should be told the seriousness of diabetes” and “They told me they could control it by diet, and then it was tablets, then insulin. They didn’t explain why.”

Conclusions
In care homes, there is good care provided but also evidence of inadequacies. Despite high levels of cognitive impairment, many patients have strong and valid opinions about their disease. Regardless of the challenges, we believe that discussions with residents must be included during service developments. Focus on targets such as retinal screening and chiropody services may miss important qualitative aspects, including patient and staff education and satisfaction.
SCREENING FOR DEMENTIA IN RURAL TANZANIA: INITIAL RESULTS FROM THE SCREENING PHASE OF THE HAI DEMENTIA PREVALENCE

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Introduction
The worldwide prevalence of dementia is increasing, particularly in low- and middle-income countries undergoing demographic transition (Kalaria et al, Lancet Neurol 2008;7:812–26).

There are few previous data from sub-Saharan Africa (SSA). Studies from West Africa have reported the prevalence of dementia as 2.3-6.4% (Hendrie HC et al, Am J Psychiatry 1995;152:1485–1492, Ochayi B, Aging Mental Health 2006;10(6):616-20.).

We conducted a community based prevalence study of dementia in a rural elderly Tanzanian population. These findings are from the initial screening phase.

Methods
A representative sample of those aged 70 years and over were screened using the Community Screening Instrument for Dementia (CSID), a widely validated tool developed for countries with low literacy levels (Hall KS et al, Int J Methods Psychiatric Research 1993;3:1-28).

The CSID ranks subjects into 3 groups: ‘probable’, ‘possible’ and ‘no’ dementia. In the second phase of the study all with ‘probable dementia’, 50% ‘possible dementia ‘and 5% with ‘no dementia’ underwent detailed clinical assessment.

Results
From 1277 subjects approached 1198 were interviewed (age range 70 – 115 years). 71 were excluded. 184 subjects had CSID ‘probable dementia’ with rates significantly higher in women and over 85s. The crude prevalence of CSID ‘probable dementia’ was 15.4% (95% CI 13.3%-17.4%) and age-adjusted (WHO World population) prevalence 14.1% (95% CI 12.1%-16.0%).

Conclusions
Rates of CSID ‘probable dementia’ were higher in this study than previously reported in SSA (6.4-11.2% with final prevalence rates of 2.3-6.4% following clinical assessment). However these studies used a lower age cut-off (65 years) and included urban populations.

Screening for dementia in SSA is problematic due to confounding educational, linguistic and cultural factors. Although the CSID is designed for countries with lower educational levels few elderly Tanzanians are literate and many subjects had significant sensory impairments affecting performance and leading to false positive results.
WITHDRAWN
FALLERS AND THE CARBON FOOTPRINT

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Introduction
Older people who fall make up a substantial proportion of referrals to the Emergency Ambulance service. This results in huge costs both financially and environmentally.

The aim of this study was to examine the environmental cost.

Methods
We examined the records of all patients aged 65 years and over between 1st April-31st Dec 2008, in the Nottinghamshire area coded as category C (non urgent 999 call out), falls by the attending hospital crew. This was subdivided into those not transported to hospital and those transported to hospital. Detailed carbon emissions (CO2) were calculated for a random sample in each group, using individual residential post codes.

Results
Between 1st April-31st Dec 2008, there were 9870 category C calls coded as falls, for patients aged ≥65yrs (catchment population, 776,600, [137,900 aged ≥65yrs]. 6874 were from a residential address, and of those, 2770 (41%) were transported to hospital. Average CO2 emissions for patients not transported were 2.5kg per patient and for transported 3.7kg. This equates to an annual emission for Nottinghamshire of 13.9 tonnes for not transported and 13.7 tonnes for transported patients.

10 tonnes is equivalent to filling 24 million balloons with carbon.

Conclusions
Falls in the elderly are a common problem and result in a significant number of emergency calls. The cost is enormous both financially and environmentally.

Nottingham City public transport are currently evaluating the use of bio-ethanol in buses, which may also be an alternative fuel for ambulance vehicles which may reduce carbon emissions.
A COMPARISON OF OUTCOMES OF REHABILITATION ON A DISTRICT GENERAL HOSPITAL WARD WITH REHABILITATION IN "RECUERATIVE CARE", A "STEP-DOWN" INTERMEDIATE CARE FACILITY

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Introduction
Recuperative Care provides "step-down" Intermediate Care in a Residential Care Home setting. It provides "social rehabilitation" which aims to improve independence and build self-confidence after a hospital stay and reduce unnecessary Care Home placement. We compared the outcomes of rehabilitation in Recuperative Care with those of standard NHS Hospital inpatient rehabilitation.

Method
A controlled trial comparing outcomes of consecutively admitted elderly patients receiving rehabilitation in a District General Hospital in a locality without Recuperative Care with similar patients admitted to Recuperative Care after a period of hospitalisation in other localities. Inclusion criteria were as follows: patients were medically stable, not confused, able to transfer with one, continent and wishing to return home. The primary outcome measure was discharge destination initially and at three-months and twelve-months follow-up.

Results
145 patients were studied: 76 received NHS inpatient rehabilitation and 69 recuperative Care. There was no significant difference between the groups in baseline characteristics including Barthel, cognitive function, age, gender and diagnostic group but significantly more people in the study group lived alone (p=0.01, chi sq=6.695, df=1). At initial discharge significantly more Recuperative Care patients went home rather than to a Care Home but the difference was not significant at three months (p= 0.265, df=3, chi sq = 3.968) nor at twelve months post-discharge (p=0.6, df=2, Chi sq=1.021). There was no significant difference in mortality between the two groups in the one year follow-up period.

<table>
<thead>
<tr>
<th>Initial discharge destination</th>
<th>Control (N= 76)</th>
<th>Study (N=69)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>57 (75.0%)</td>
<td>60 (87.6%)</td>
</tr>
<tr>
<td>Care home</td>
<td>14(18.4%)</td>
<td>6 (8.7%)</td>
</tr>
<tr>
<td>Hospital</td>
<td>N/A</td>
<td>3(4.35%)</td>
</tr>
<tr>
<td>Died</td>
<td>5(6.6%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table of initial discharge destination
p=0.012, df=3, Chi sq=10.965

Conclusion
Initially more patients who received Recuperative Care were discharged home than those who received hospital inpatient rehabilitation but there was no significant difference in outcome at three nor at twelve months post-discharge.
STATIN USE ASSOCIATED WITH GREATER FUNCTIONAL GAINS IN OLDER REHABILITATION PATIENTS – A RETROSPECTIVE COHORT STUDY

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Introduction
Older patients are frequently prescribed statins, but the benefits in very old patients remain controversial, and side effects including myopathy may occur. Cardiovascular disease is strongly associated with disability and has been implicated in the pathogenesis of sarcopenia. Statins are effective treatments for cardiovascular disease and have also been associated with reductions in infection risk, mechanisms that could facilitate the rehabilitation process. We therefore examined the association between statin use and functional outcomes after rehabilitation in a cohort of older people.

Methods
Retrospective cohort study. Patients admitted to Royal Victoria Hospital, Dundee between 01/01/1999 and 31/12/2008 for rehabilitation were identified from an existing clinical database. Data were collected regarding statin therapy, antiplatelet therapy as a marker of vascular disease, sex, age, admission & discharge 20-point Barthel scores, length of stay and comorbid disease. Patients without baseline or discharge Barthel scores, and individuals who died during admission were excluded. Multivariate analyses were performed to examine the difference between admission and discharge Barthel score, adjusting for age, sex, admission Barthel score, antiplatelet use and comorbid disease.

Results
Three thousand four hundred and twenty two patients were included in the analysis. Mean (sd) age was 81.4 (7.6); 39.9% were male. 690/3422 (20.2%) were taking a statin on admission. Baseline Barthel scores were similar in the statin/non-statin groups respectively (10.4 vs 10.3, p=0.57). The adjusted improvement in Barthel score between admission and discharge was greater in the statin group than in the non-statin group (3.59 points vs 4.30 points, p<0.001). Those taking statins were also more likely to be discharged home (relative risk for discharge destination other than home 0.76; 95% CI 0.52 to 0.81; p<0.001).

Conclusion
Statin use was associated with improved functional outcomes and higher rates of discharge to home.
CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS’ EXPERIENCE AFTER RECEIVING LONG-TERM OXYGEN THERAPY

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Introduction
Long-term oxygen therapy (LTOT) improves survival for patients with chronic obstructive pulmonary disease (COPD) with chronic hypoxemia. COPD has been associated with impaired quality of life, social isolation and increased level of anxiety and depressive symptoms. To date, there are no studies that explored the impact of LTOT on COPD patients’ daily lives, experience and satisfaction with the oxygen service.

Aims
We investigated qualitatively COPD patients’ experience and satisfaction with staff and service after receiving LTOT from the newly established oxygen service at NHS Wirral.

Method
All COPD patients who received LTOT and in the registry list were invited to participate in the study by post. 22 COPD patients in the focus groups and 11 semi-structured interviews who had received LTOT from the newly established oxygen delivery centre (since September 2009) agreed to participate in the study. Focus groups and semi-structured interviews were transcribed verbatim and an iterative approach used to derive themes from the data set.

Results
The majority of participants reported that they are satisfied with the Oxygen service. These included COPD patients’ perceptions of reduced hospital admissions, increased awareness and understanding about COPD and their treatment, resuming leisure activities, increased ability to self manage and improved freedom, and control in accessing services. A minority of participants were unsatisfied with the service. They do not feel that they have sufficient understanding of COPD, their treatment or the services available to them. This requires flexible strategy to provide a higher level of care in order to satisfy the specific needs of the COPD patients e.g. coordination and follow-up services when the patients were discharged from the Oxygen service.

Conclusion
LTOT was perceived by the majority of participants to improve their health status and resuming their leisure activities. Further support is needed for the minority who were unsatisfied with the service.
EFFECT OF ORAL NUTRITIONAL SUPPLEMENTS COMPARED TO ENERGY-ENRICHED FOODS ON ENERGY AND PROTEIN INTAKE IN MALNOURISHED GERIATRIC INPATIENTS

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Introduction
From our own research we learned that enriched foods are not effective in improving energy and protein intake of malnourished geriatric patients (D Z B van Asselt et al. Abstractbook Dutch Geriatric Meeting 2009). In the present study we compare the effectiveness of oral nutritional supplements (ONS) with enriched foods.

Methods
In this cluster-randomized study, 52 geriatric inpatients with (risk of) malnutrition received ONS (2dd Nutri Compact (250ml, 600kcal, 24g protein): intervention group) and 56 patients received enriched porridge (150ml, 175kcal,12g protein) and pudding (125ml, 200kcal,11g protein): care-as-usual group). Primary outcome was the number of patients achieving an extra intake of 450 kcal/day. Secondary outcomes were: adequate energy (Harris Benedict formula) and protein intake (1.2g protein/kg/weight), length of stay and total days of antibiotic use. Energy and protein intake were measured on the third day of stay and on the day before discharge.

Results
No significant differences were found for patient characteristics (age, sex, Body Mass Index, Mini Nutritional Assessment-short form) between the two groups. Both on day 3 and on the day before discharge more patients in the intervention group achieved 450 kcal/day extra (day 3: 11/34 vs. 6/49, p=0.03; day before discharge: 12/28 vs. 2/30, p=0.001). On day 3 significantly more patients in the intervention group achieved adequate energy intake (9/40 vs. 3/45, p=0.04) and protein intake (7/28 vs. 2/44, p=0.02). No differences were found in length of stay and days of antibiotic use.

Conclusions
Achieving adequate energy and protein intake for malnourished geriatric patients proved to be very difficult. ONS is more effective than energy-enriched foods in achieving goals concerning energy and protein intake. We therefore recommend ONS instead of energy-enriched foods to improve the nutritional status of geriatric patients.
OBESITY IN OLDER PEOPLE IN THE COMMUNITY

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Introduction
Obesity is defined as body mass index (BMI) >30. Currently 24.5% of people in the United Kingdom are obese. Obesity increases with age and is associated with chronic diseases and increased risk of death in midlife (aged 50-71) (1) However its effect on mortality in older people is unclear (2).

Aims
Determine the prevalence of obesity in older people in the community and examine its association with function, quality of life, and mortality.

Methods
A random sample of 500 subjects aged over 70 was selected from general practitioner lists. Body mass index was recorded. Psychological health, functional status and quality of life were assessed using Hospital Anxiety and Depression (HAD), Nottingham extended Activities of daily living (NEADL) and SF 36 questionnaires. 10 year mortality was recorded. Ethical approval was obtained

Results
Prevalence of obesity was 20.5%, 19.8% in women and 21.8% in men. 41.1% were overweight (BMI 25-29.9), 41% women and 39% men. 35.3% had normal BMI and 3.1% were underweight (BMI<18.5). Function was lower in obese (mean NEADL 43.8) compared to normal BMI (NEADL 48.4), and overweight (NEADL 49.1), (p 0.014). Obese subjects had significantly lower SF36 physical cumulative scores (mean 31) compared to overweight (SF36 37.6), and normal BMI (SF36 39.1) (p 0.000). There was no association between BMI and SF36 mental cumulative scores or HAD. 10 year mortality was significantly lower in obese (43.2%) compared with the underweight (58%), normal BMI (56.4%), and overweight (52.9%), p=0.05.

Conclusions
Interestingly obesity is disadvantageous to older people in terms of function and physical status but appears to be advantageous to survival.
IMPROVING SLEEP QUALITY IN NORTH WALES PARKINSON’S DISEASE PATIENTS: AN UNFULFILLED NEED

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Introduction
The presence of sleep disturbances in Parkinson’s disease (PD) is well documented. The study aim was to find out the prevalence of sleep problems in PD patients in the local population and the relationship between stages and duration of the disease with the degree of sleep disturbance.

Methods
Patients with definite diagnosis of PD were selected from a PD database and were asked to complete by post the Parkinson’s Disease Sleep Scale (PDSS) questionnaire. The duration of PD and staging using modified Hoen and Yahr (H&Y) score were collected from clinic notes. The total PDSS score and the scores of all individual PDSS items were recorded. The relationship between PDSS scores, disease duration and staging were calculated using Spearman correlation coefficient.

Results
Data from 81 patients (53% men and 47% women) with a mean age of 76.2 (SD 8.01) were analysed. The mean disease duration was 6.2 (SD 5.22) years and the mean modified H&Y score was 2.3 (SD 1.07). All the included patients had sleep problems and 44.4% had severe sleep disturbance as evidenced by a PDSS score of <90. The mean PDSS score for individual patient’s was 95.8 (SD 27.9) which is lower than all previous studies indicating more severe sleep disturbances in our study population. Urinary frequency (mean score 3.71±3.45) was the most troublesome symptom causing sleep disturbance as reported in majority of the studies. There was no significant correlation between total PDSS scores and disease duration (correlation coefficient 0.197, p=0.08) or H&Y stage (correlation coefficient 0.178, p= 0.11).

Conclusion
The more severe sleep problems in local population indicates the need for a more proactive approach in the detection and management of these problems as improving sleep problems can improve quality of life and reduce institutionalisation.
WITHDRAWAL OF DOPAMINE AGONISTS IN PATIENTS WITH PARKINSON’S DISEASE

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Introduction
Dopamine agonists (DA), widely used in managing Parkinson's disease (PD), can cause side effects which require dose tapering. This however can result in DA withdrawal syndrome (DAWS): a severe stereotyped cluster of physical and psychological symptoms, occurring only in patients with impulse control disorders (ICD). This syndrome was only recently described by Rabinak and Nirenberg in Archives of Neurology 2010;67(1):58-63. We wished to study its occurrence in our patients and to elucidate possible risk factors.

Methods
A retrospective case note review of PD patients whose DA were tapered between July 2008 and July 2010. We noted patient demographics, duration of PD and DA prescription, reason for discontinuation, taper duration and withdrawal symptoms.

Results

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number</th>
<th>All</th>
<th>ICD</th>
<th>DAWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICD</td>
<td>12 (40%)</td>
<td>23/30</td>
<td>10/12</td>
<td>2/4</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>9 (30%)</td>
<td>71</td>
<td>66</td>
<td>68</td>
</tr>
<tr>
<td>Drowsiness</td>
<td>3 (10%)</td>
<td>4.1</td>
<td>3.75</td>
<td>4.4</td>
</tr>
<tr>
<td>Confusion</td>
<td>2 (6.7%)</td>
<td>2</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Dyskinesia</td>
<td>2 (6.7%)</td>
<td>3.5</td>
<td>3.5</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>2 (6.7%)</td>
<td>3.5</td>
<td>3.5</td>
<td>4</td>
</tr>
</tbody>
</table>

30/69 (43%) of patients on DA required dose tapering.

4/30 (13.3%) developed DAWS. All had ICD. 1 required their DA to be restarted, albeit at a lower dose for symptom control. 4 other patients had possible mild withdrawal symptoms: low mood and apathy. 2 of these had ICD.

Conclusions
12/69 (17%) on DA required stoppage due to ICD over the 2 year period. Of these 1/3 developed DAWS. They did not differ significantly from the other ICD patients. Our average taper period was 3.5 weeks compared with 1 week recommended by manufacturers. Patients who develop ICD on DA are at risk of developing DAWS and require close monitoring when tapering doses. Prospective studies are urgently required to elucidate strategies to reduce the occurrence of DAWS and to clarify optimal management.
WITHDRAWN
A CASE-CONTROL STUDY INTO THE PREVALENCE OF RESTLESS LEGS SYMPTOMS IN PATIENTS WITH PARKINSONISM

C Cole

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Introduction
This study was carried out by a final year medical student as part of an eight week elective project. The aims were to examine the link between Parkinsonism and the symptoms of restless legs syndrome (RLS) in the over 65s. RLS is classed as a non-motor symptom of Parkinson’s disease and can cause significant morbidity by disturbing sleep. Published data on the prevalence of non-motor symptoms in Parkinson's Disease suggests a higher prevalence of RLS in Parkinson’s patients compared with the general elderly population. This study aims to compare the prevalence of RLS symptoms in patients with Parkinsonism against controls.

Methods
A case-control design was used, using a questionnaire for RLS which had been validated in previous general population studies and followed the diagnostic criteria for RLS as agreed by previous literature. Patients were recruited from various out-patient elderly medicine clinics based in Woodend hospital, Aberdeen and also from peripheral clinics in Banchory and Peterhead. The case group included all patients over 65 with a Parkinsonian diagnosis documented by a consultant physician. The control group included patients attending elderly out-patient clinics with no suggestion of Parkinsonism.

Results
The prevalence of RLS was found to be 28.6% (n=42) in patients with Parkinsonism and 9.6% (n=52) in the control group. Chi-squared analysis showed this difference to be significant (p<0.05).

Conclusions
This result strengthens the dopaminergic hypothesis of RLS and highlights a prevalent non-motor symptom of Parkinsonism which responds well to dopamine agonist therapy. Future work could aim to replicate this result in the general population as this study only featured patients attending out-patient services.
REVIEW OF THE ROLE OF PARKINSON’S SPECIALIST ON ACUTE ADMISSIONS OF PARKINSONS PATIENTS

M T O’Neill

Introduction
Following the retirement of a physician with expert experience in the management of parkinson’s disease a review was carried out on the potential effect of this on the duration of length of stay (LOS) on patients with idiopathic parkinsons disease (IPD). Comparison made between IPD patients acutely admitted over 2 month period (with general geriatric input) - may to june 2010 (group A) and those admitted over 2 month period (with expert input) - february to march 2010 (group B).

Methods
A retrospective review was made of 43 case notes in group A and 24 case notes in group B.

Results
30 patients in group A and 17 in group B had idiopathic Parkinsons Disease.

Of these 17 (57.5%) had a PD related admission in group A and 4 (23%) in Group B.

Type of PD-related problem in each group A(B) : Falls 13(1), Delirium 2(2), Pneumonia 2(1), Orthopaedic 3(1), UTI 2 (1)

and remainder were other medical or surgical problems.

Age range of all IPD patients was 63 - 91 years (58 to 89 in group B)

Average LOS was 14.8 days in group A (range 1 - 68) and 9 days in group B (1 -34).

7 (40%) of the patients with a PD related problem in group A were reviewed by a physician whilst 2 (50 %) in group B were reviewed by a PD expert.

Using Mann-Whitney test a significant difference in LOS was observed in those patients in whom a physician with expert experience guided management (z = -3.29, p = 0.001).

Conclusion
NICE guidelines advise the expert management of all IPD patients. Our study exposed a likely effect of prolonged LOS in such patients in the absence of expert guidance.
DRUG BURDEN INDEX AND FUNCTIONAL STATUS IN OLDER HOSPITALISED PATIENTS: IMPLICATIONS FOR ADVERSE OUTCOMES

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Introduction
Anticholinergic and sedative drug scoring systems might better predict drug-related side effects. The recently developed Drug Burden Index (Total DBI: anticholinergic DBI + sedative DBI; DBI = ∑ [D/(δ+D)], where D is the daily dose and δ is the recommended minimum daily dose) is associated with poorer physical performance and functional status in community-dwelling older patients (Hilmer SN et al, Arch Intern Med 2007;167:781-7). We speculated that a higher total DBI negatively impacts also functional status (Barthel Index, primary outcome) as well as outcomes (length of stay, LOS, and in-hospital mortality, secondary outcomes) in older hospitalised patients.

Methods
Clinical and demographic characteristics, Barthel Index, total DBI, and medications on admission were recorded in 362 consecutive patients (age 83.6±6.6) admitted to two geriatric units (Aberdeen, NHS Grampian) between February 1, 2010 and June 30, 2010. Data on LOS and in-hospital mortality were obtained from electronic records.

Results
In regression analysis a higher total DBI was strongly associated with a lower Barthel Index (OR 0.71, 95%CI 0.55-0.91, z -2.68, P=0.007). The Barthel components mostly affected were bathing (z -4.76, P<0.001), grooming (z -4.60, P<0.001), dressing (z -3.44, P=0.001), bladder function (z -3.70, P<0.001), transfers (z -3.48, P=0.001), mobility (z -4.57, P<0.001), and stairs (z -4.77, P<0.001). The total DBI predicted LOS (HR 1.23, 95%CI 1.06-1.42, P=0.005) but not in-hospital mortality (HR 1.17, 95%CI 0.72-1.90, p=0.52).

Conclusions
The use of anticholinergic and sedative drugs a) adversely affects Barthel Index components; and b) predicts LOS in older hospitalised patients. The DBI can be used in acutely ill patients to improve risk stratification.
CURRENT CHALLENGES IN HOSPITAL MANAGEMENT OF ANAPHYLAXIS

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Introduction
Anaphylaxis is a potentially life threatening condition. As it occurs relatively infrequently, estimated 1 in 1,333 of the UK population at some point in their lives, geriatric ward staff may have little or no experience in managing anaphylaxis. The UK resuscitation guidelines recommend 0.5mg intramuscular adrenaline or 0.3mg via auto-injector as first line treatment. We wished to determine staff knowledge of anaphylaxis management and competence with the available auto-injector EpiPen.

Methods
Hospital staff were interviewed over a two week period. General knowledge, experience, training and staff preference of adrenaline administration route were noted. In addition, they were scored on their ability to administer the auto-injector EpiPen.

Results
51 staff were interviewed.

<table>
<thead>
<tr>
<th></th>
<th>Ward Doctors (n=18)</th>
<th>Ward Nurse (n=24)</th>
<th>A&amp;E Staff (n=9)</th>
<th>All (n=51)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dose &amp; administration site:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All correct</td>
<td>38.9%</td>
<td>4.2%</td>
<td>11.1%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Partially correct</td>
<td>61.1%</td>
<td>70.8%</td>
<td>66.7%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Incorrect</td>
<td>0%</td>
<td>25%</td>
<td>22.2%</td>
<td>17.6%</td>
</tr>
<tr>
<td>Accidental finger injection:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aware</td>
<td>33.3%</td>
<td>29.2%</td>
<td>33.3%</td>
<td>31.4%</td>
</tr>
<tr>
<td>Drug interactions:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unaware</td>
<td>61.1%</td>
<td>79.2%</td>
<td>88.9%</td>
<td>74.5%</td>
</tr>
<tr>
<td>Aware</td>
<td>38.9%</td>
<td>20.8%</td>
<td>11.1%</td>
<td>25.5%</td>
</tr>
<tr>
<td>2nd line treatment:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unaware</td>
<td>5.6%</td>
<td>50%</td>
<td>0%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Aware</td>
<td>94.4%</td>
<td>50%</td>
<td>100%</td>
<td>74.5%</td>
</tr>
<tr>
<td>Prior experience</td>
<td>22.2%</td>
<td>29.2%</td>
<td>44.4%</td>
<td>29.4%</td>
</tr>
<tr>
<td>Prefer auto-injector</td>
<td>33.3%</td>
<td>58.3%</td>
<td>22.2%</td>
<td>43.1%</td>
</tr>
<tr>
<td>Training:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some training</td>
<td>5.5%</td>
<td>33.3%</td>
<td>11.1%</td>
<td>19.6%</td>
</tr>
<tr>
<td>No training</td>
<td>94.4%</td>
<td>66.7%</td>
<td>88.9%</td>
<td>80.4%</td>
</tr>
<tr>
<td>Demonstration of auto-injector:</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Correct</td>
<td>5.6%</td>
<td>4.2%</td>
<td>0%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Partially correct</td>
<td>83.3%</td>
<td>70.8%</td>
<td>77.8%</td>
<td>76.5%</td>
</tr>
<tr>
<td>Incorrect</td>
<td>11.1%</td>
<td>25%</td>
<td>22.2%</td>
<td>19.6%</td>
</tr>
</tbody>
</table>

Conclusion
Overall hospital staff knowledge and experience in managing anaphylaxis is limited, especially potential contraindication to use. Accident and emergency (A&E) staff did not score particularly better than ward staff although had had more experience (44.4% versus 26.2%). 22/51 (43.1%) preferred the auto-injector to other administration methods, but only 2/51 (3.9%) demonstrated correct usage. This study highlights the need for training in the management of anaphylaxis, in particular in the use of available auto-injector devices.
ADVANCED DRUG EVENTS IN OLDER PATIENTS FOLLOWING ADMISSION TO HOSPITAL

M N O’Connor, D O’Mahony

Department of Geriatric Medicine, Cork University Hospital, Cork, Ireland

Introduction

Adverse drug events (ADE’s) occur commonly in older people and are a major cause of morbidity and associated healthcare costs (Gallagher P et al. Age and Ageing 2008;37:96-101). Inappropriate prescribing (IP) and inadequate monitoring of drugs are the main causes of ADE’s in older people (Lindly CM et al. Age and Ageing 1992;21:294-300).

Methods

We prospectively studied patients aged ≥65 years admitted acutely to a tertiary referral centre. Baseline demographics, current diagnoses, co-morbidities, drugs and investigations were recorded on admission and 2 different time-points during the patients’ admission. At each time-point patients were reviewed for ADE’s. WHO defined ADE’s were determined by review of the medical records, nursing records and confirmation with medical staff. ADE causality was assessed using WHO-UMC criteria (www.who.umc.org). Data were analysed using SPSS.

Results

513 patients (56% female) were studied. Median age was 77 IQR (72-82) years. 21% were on ≥11 medications. 51% were prescribed at least one STOPP medication. A total of 178 ADE’s occurred in 135 patients (26%). 29% were certain, 66% probable and 5% possible. ADE’s frequently detected during hospital stay included falls (24%) and acute kidney injury (17%). Diuretics (25%) benzodiazepines (18%) and opiates (13%) were the most commonly implicated prescriptions. ADE patients were older (U=20094.00, z=-3.67, p<0.001) and taking more medications (U=20043.50, z=-3.713, p<0.001) than the non ADE group. Patients who had a nosocomial ADE also had a significantly longer hospital stay (U=17573.500, z=-5.077, p <0.001).

Conclusion

Nosocomial ADE’s continue to be a hazard of hospitalisation for older people. Whilst many factors are associated with an increased risk of ADE’s, polypharmacy is the main risk factor amenable to correction. Admission to hospital should be an opportunity to optimise and rationalise older persons’ prescriptions.
PREDICTING ADVERSE DRUG REACTIONS IN HOSPITALISED OLDER PATIENTS: AN EVALUATION OF THE GERONTONET ADVERSE DRUG REACTION (ADR) RISK SCORE

M N O’ Connor, D O’ Mahony

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Introduction
Adverse drug reactions (ADR’s) occur three times more commonly in older people than younger adults (Hanlon, JT et al. J Am Geriatr Soc. 1997; 45:945-948) and are a major cause of morbidity and economic cost. Gerontonet is a recently published ADR risk score specific to older people (Onder G.et al. Arch Intern Med.2010;170(13):1142-1148). This study aimed to assess the predictive value of the Gerontonet ADR Risk Score in hospitalised older people in Ireland.

Methods
We prospectively studied patients aged ≥65 years. All patients were admitted with acute illness to a tertiary referral centre. Baseline demographic details were recorded on all patients. Principal reason for admission, medical co-morbidities, medications and laboratory investigations were also recorded. The Gerontonet ADR risk score was calculated on each patient on admission and on day 5 and day 10, where applicable. ADR’s were ascertained from review of medical notes, nursing notes and discussions with attending healthcare staff. ADR causality was assessed using the WHO-UMC criteria. Ability of the Gerontonet risk score to predict ADR occurrence in hospital was measured by constructing receiver operator characteristic curves (ROC).

Results
513 patients (56% female, median age 77 years) were studied, with a median of 7 regular medications. 21% of patients were on ≥ 11 medications. 4% of study populations had an ADR Risk Score ≥8, 45% scored 4-7 and 50% scored 0-3. A total of 178 ADR’s occurred in 135 patients (26% of patients). Mean ADR risk score was 4.43 in ADR group compared with 3.46 in non ADR group. Construction of the ROC demonstrated an area under the cure (AUC) was 0.606 (95% CI, 0.551-0.661) P<0.0001 using Gerontonet scores on admission. AUC on day 5 and 10 were 0.489 and 0.574 respectively.

Conclusions
In an older Irish hospital population the Gerontonet ADR Risk Score had poor predictive value for nosocomial ADR’s.
Introduction
Delirium is common with an incidence amongst elderly inpatients of up to 56% (Inouye SK, NEJM 2006;354:1157-65) and carries a high morbidity and mortality burden. Delirium risk factors include environmental change and therefore ward transfers both within and between hospitals may contribute to a higher risk of delirium.

In June 2010 our NHS trust moved sites from a traditional converted Victorian workhouse into a purpose build ‘super hospital’, involving ambulance transfer of the inpatients. Our aim was to identify whether this change in environment was associated with higher rates of delirium in older medical inpatients.

Methods
For a 4 week period we regularly screened older medical inpatients (≥ 65 years) for delirium (2 weeks prior to the move & 2 weeks after). Assessment was performed during regular clinical ward rounds aided with the Confusion Assessment Method and delirium was diagnosed according to DSM-IV criteria.

Results
52 patients were initially screened, 17 of whom remained inpatients for the full 4 weeks and were therefore included in the analysis. Mean age was 84.7 years (range 66-102 years) and 65% were female. Delirium incidence was 6% (n=1) pre-move and 23% (n=4) post-move. 1 patient developed hyperactive delirium on the day of transfer, providing its own set of new challenges.

Conclusions
The rise in delirium post-move compared to pre-move, suggests the move itself was a risk factor despite the low numbers in this cohort. It is important that clinicians recognise the potential for increased delirium when planning the move of elderly inpatients across hospital sites or into new hospital buildings. However, as the modern NHS journey routinely involves multiple ward transfers, for example Accident and Emergency, a medical admissions unit and then finally a medical ward, we may be inadvertently routinely exposing elderly patients to a higher risk of delirium than necessary.
A COMPARISON OF THE USE OF TRANSIENT ISCHAEMIC ATTACK SERVICES BETWEEN SOUTH ASIAN AND WHITE PATIENTS IN A UK INNER-CITY POPULATION

Z Zaheer, D Eveson

Department of Stroke Medicine, University Hospitals Leicester NHS Trust

Introduction
Access and utilisation of hospital-based services for acute stroke varies according to ethnic origin. However, no data are available for transient ischaemic attack (TIA). We compared the use of TIA services by patients of South Asian and White ethnic backgrounds resident in the City of Leicester, a multi-ethnic population with 30% residents of South Asian origin.

Method
Case records of TIA clinic attendances from the Leicester City area between 2008 and 2010 were examined. Patients of South Asian and White ethnic-background were compared in their use of TIA services including the mode and time interval of presentation.

Results
476 patients were reviewed, of which 339 (71%) were White, 119 (25%) Asian and 18 (4%) other ethnicity. Median (IQR) age was 59 (49, 71) years for Asian and 70 (57, 79) years for White patients (p<0.001). Mode of presentation was: GPs (61% Asian, 65% White), medical admissions units (21% Asian, 17% White) and ED (13% Asian, 12% White). Mean delay between symptom-onset and TIA clinic attendance was 11.9 days for Asians and 11.3 days for Whites. The mean delay between symptom-onset and first-healthcare contact was 4.0 days for Asians and 5.8 days for Whites and the mean delay between the first-healthcare contact and TIA clinic attendance was 4.7 days for Asians and 4.6 days for Whites (p=NS for all intervals).

Conclusion
In this evaluation of a TIA clinic serving a UK inner-city population, there were no significant differences in the use of TIA services between South Asian and White populations.
ESTIMATED GLOMERULAR FILTRATION RATE AND INPATIENT OUTCOMES FOLLOWING STROKE THROMBOLYSIS

L Cuddy, P Fitzsimmons, A M Hill, R Durairaj, A K Sharma, C Cullen, R Kumar, R White

Aintree Stroke Centre, University Hospital Aintree, Liverpool

Introduction
Impaired renal function is associated with poor outcome in unselected cohorts of ischemic stroke patients. Two recently published studies investigating the relationship between admission eGFr and outcomes following stroke thrombolysis have produced conflicting results (Agrawal et al Nephrology Dialysis Transplantation, 2010 25(4):1150-1157. Lyrer et al Neurology, 2008; 71(19):1548-1550). We aimed to further investigate this relationship.

Methods
Retrospective analysis of anonymous stroke register data for consecutive patients who received intravenous thrombolysis between September 2004 and April 2010. eGFr calculated using the MDRD formula, with renal dysfunction defined as eGFr ≤60. Outcome measures were poor functional outcome (discharge Barthel <15 or inpatient death) and inpatient mortality.

Results
139 patients. Mean age 69.3 (SD 11.8), 57% male, mean NIHSS 12.6 (SD 5.8). 44% eGFr ≤60.

Patients with eGFr ≤60 were significantly older p<0.001, significantly more likely to have atrial fibrillation p=0.021 and showed a non-significant trend towards more severe strokes (mean admission NIHSS 13.7 vs 11.8, p=0.061).

Mean eGFr was significantly lower in patients with poor functional outcomes, 57.1 (95%CI 52.4 - 61.7) vs 65.4 (61.6 - 69.3) p=0.008 and in those who died as inpatients, 54.1 (45.6 - 62.6) vs 63.7 (60.5 - 66.9) p=0.034.

Univariate analysis suggested eGFr ≤60 was not significantly associated with both a poor functional outcome OR 2.059 (1.01 to 4.16), p=0.051 or inpatient death OR 2.84 (0.99 - 8.07) p=0.073).

Multiple logistic regression analysis revealed no significant association between eGFr ≤60 and inpatient outcomes (poor functional outcome p=0.255, inpatient death p=0.188), while increasing NIHSS was significantly associated with a poor functional outcome OR 1.20 (1.11 to 1.30) p<0.001 and death OR 1.139 (1.03 to 1.26) p=0.013.

Conclusions
In this sample, when corrected for age and admission NIHSS, renal dysfunction was not significantly associated with poor functional outcome or inpatient mortality following stroke thrombolysis.
Introduction
Dyspepsia is common with a UK adult prevalence of 30 to 40%. Antiplatelet therapy (APT) is widely used for the secondary prevention of ischaemic stroke but may be discontinued by patients experiencing upper gastrointestinal (GI) side-effects. We sought to determine the impact of pre-existing dyspepsia on early APT concordance in patients following acute ischaemic stroke.

Methods
All patients with acute ischaemic stroke admitted between 1st July 2008 and 28th February 2010 and commenced on oral APT were eligible to participate in the study. Dyspepsia was defined using the Short-Form Leeds Dyspepsia Questionnaire (SF-LDQ). Where patients lacked capacity assent was sought from the next-of-kin/carer who completed the SF LDQ, where possible, on the patient’s behalf. Concordance with APT was assessed at six weeks.

Results
The study comprised 322 patients; median age 72 years (interquartile range 63-80). Assent was obtained in 41 (12.7%) cases and the SF-LDQ fully completed by the next-of-kin/carer in 39. There was no statistical difference in the number of patients defined as having dyspepsia whether the SF-LDQ was completed by the patient (n=39) or the next-of-kin/carer (n=3) ($\chi^2$, p=0.28). At six weeks, 8 (2.5%) patients were taking modified APT regimens (reduced dose, APT stopped or alternative APT prescribed) due to upper GI side-effects. Prior dyspepsia was not a predictive factor for non-concordance (OR 2.25, 95% CI 0.44-11.53, p=0.33).

Conclusion
The SF-LDQ can be completed by the next-of-kin/carer to determine dyspepsia when cognitive impairment precludes self-completion of the questionnaire. Although dyspepsia affects concordance with APT, pre-admission symptoms cannot be used to predict those patients at risk of developing side-effects to APT following stroke.
OBSERVATIONAL STUDY OF URINARY CATHETER USE FOR SEVERE URINARY INCONTINENCE IN ACUTE STROKE

M P Barrett¹, R Davies¹, T French¹, R Mukherjee¹, H Clarke¹, D Evans¹, R Babuvanka¹, M Dale¹, A Kumar¹, B Roe¹, C Watkins², M Leathley², L Thomas², J A Barrett¹

¹ Wirral University Teaching Hospital NHS Trust, 2 University of Central Lancashire

Introduction
Urinary incontinence is a strong predictor of disability and mortality after stroke. Avoidance of urinary catheters is recommended in Stroke Guidelines but there is no trial data to support this. The use in clinical practice of urinary catheters in early stroke has been investigated in this observational study.

Methods
All total anterior circulation or partial anterior circulation ischaemic stroke patients with severe urinary incontinence (>3 episodes) on the first day after stroke onset were invited into this study. The participants were clinically assessed on days 3, 7, 14 and 90 with particular attention to survival, functional ability, catheter and/or pad use, markers of infection and the presence of pressure sores.

Results
43 patients were recruited (median age 82 years (IQR 71-86). 28 female (65%)). 20 patients were catheterised on or before day 3 post stroke (C3). 23 were not catheterised on day 3 (N3). Catheterised patients had a lower day 3 Barthel (median - C3 0, N3 1 (p<0.05)) and higher day 90 mortality (C3 80%, N3 26%). There was no significant difference in infection rates between the 2 groups. Pressure sores of any severity were common in patients surviving to day 14 (C3 4/4 (100%), N3 16/23 (70%) p>0.5).

Conclusions
Acute stroke patients catheterised by day 3 had high rates of mortality and morbidity in this study. It is possible that urinary catheters are being used in severe stroke patients as a palliative care measure. The results of this study are being used to inform the design of a randomised controlled trial of catheter use in patients with severe acute stroke with frequent (>3 daily) episodes of incontinence with mortality, pressure sores and rates of infection as the main outcome measures.
Factors Associated with Urinary Incontinence on Day 3 After Acute Stroke


Wirral University Teaching Hospital NHS Trust, University of Central Lancashire

Introduction
The peak incidence of urinary incontinence (UI) occurs soon after stroke onset. The characteristics of patients who experience UI on or before day 3 after a stroke have been explored in this study to investigate the factors that might be used to predict its presence.

Method
195 consecutive stroke patients (median age 75 years, IQR 67-82) were assessed within 24 hours of admission. UI was defined as 1 or more episodes of urinary leakage in the previous 24 hours or having a urinary catheter in situ for urinary incontinence. The incontinent patients on day 3 were compared with continent patients for their premorbid status, characteristics of stroke including NIH score and functional status.

Results
181 (93%) patients were still alive on day 3. 89 (49%) of these were incontinent of urine. Many significant differences were found in the univariate comparisons between this group and the continent patients which reduced on multivariate analysis to five variables that were independently associated with UI on day 3, listed in table 1.

<table>
<thead>
<tr>
<th></th>
<th>Continent on day 3</th>
<th>UI day 3</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial NIH score (mean)</td>
<td>6.1</td>
<td>17.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Day 3 Barthel score (mean)</td>
<td>13.6</td>
<td>13</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Faecal incontinence on or before day 3</td>
<td>1</td>
<td>27</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Fluid intake on day 3</td>
<td>60</td>
<td>11</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Normal oral fluids</td>
<td>60</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Thickened oral fluids</td>
<td>21</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>IV fluids</td>
<td>11</td>
<td>64</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>60</td>
<td>41</td>
<td>0.017</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>48</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion
Urinary incontinence is very common in the early stages of acute stroke. It is more likely in patients who have a high initial NIH score, a low day 3 Barthel score, a need to receive IV fluids, episode(s) of faecal incontinence on or before day 3 and who are female.
Factors Associated with Faecal Incontinence on or Before Day 7 After Acute Stroke


Wirral University Teaching Hospital NHS Trust, University of Central Lancashire

Introduction
The peak incidence of faecal incontinence (FI) after a stroke occurs towards the end of the first week after stroke onset. The characteristics of patients who experience FI on or before day 7 after a stroke have been explored in this study to investigate the factors that might be used to predict its presence.

Method
195 consecutive stroke patients (median age 75 years, IQR 67-82) were assessed within 24 hours of admission. FI was defined as the involuntary leakage of faeces on one or more occasions by day 7. The incontinent patients on day 7 were compared with continent patients for their premorbid status, characteristics of stroke including NIH score and functional status.

Results
170 (87%) patients were still alive on day 7, by which stage 46 (27%) had experienced faecal incontinence. Univariate comparison showed significant differences between groups in several areas. Following multivariate analysis the factors that remained significant were initial NIH score, age, parietal infarction on CT scan, the achievement of privacy for bowel emptying on day 7, faecal loading and loose faeces in the first week.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>FI on or before day 7</th>
<th>Continent up to day 7</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>124</td>
<td>46</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Initial NIH score (mean)</td>
<td>15.5</td>
<td>9.6</td>
<td>0.014</td>
</tr>
<tr>
<td>Age (mean)</td>
<td>78.6 years</td>
<td>71.7 years</td>
<td>0.005</td>
</tr>
<tr>
<td>Parietal</td>
<td>27 (59%)</td>
<td>23 (19%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Privacy achieved</td>
<td>3 (7%)</td>
<td>113 (91%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Faecal loading</td>
<td>19 (41%)</td>
<td>12 (10%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Loose faeces</td>
<td>13 (28%)</td>
<td>5 (4%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Conclusion
The patients who develop faecal incontinence in the first week after acute stroke are more likely to have a high initial NIH score, are older, have a parietal infarct, do not achieve privacy to empty their bowels, and have faecal loading and / or loose motions. One or more of these features should prompt specific enquiry regarding bowel continence.
THE HYPERDENSE INTERNAL CAROTID ARTERY SIGN – A PROGNOSTIC MARKER IN STROKE THROMBOLYSIS?

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Introduction
The Hyperdense Middle Cerebral Artery Sign (HMcAS) on non contrast CT brain (NCCT) is an established marker of early ischemic stroke. The supraclinoid Hyperdense Internal Carotid Artery Sign (HIcAS) has been suggested as a common marker of intracranial internal carotid artery thrombus, associated with a poor outcome following thrombolysis1. We aimed to investigate the incidence and prognostic significance of the HIcAS in a larger, unselected cohort of patients undergoing intravenous thrombolysis.

Methods
2 independent investigators, blinded to all clinical data, retrospectively examined the pre-thrombolysis NCCT of patients, undergoing thrombolysis between December 2006 and May 2010 for the presence of HIcAS and HMcAS. Disagreements where settled by an expert third investigator. Poor outcome following thrombolysis was defined as a discharge Barthel score <15 or inpatient death.

Results
120 patients, mean age 69.7 (SD 11.9), 56% male, mean NIHSS 13 (SD 5.8). A HIcAS was present in 3 patients (2.5%). Patients with a HMcAS were significantly more likely to display a HIcAS, 9.1% vs 1% p=0.028. Mean pre-thrombolysis NIHSS was significantly higher in patients with a HIcAS, mean NIHSS 21.0 (95%CI 16.7-25.3) vs 12.8 (11.7-13.9), p=0.019. The presence of a HIcAS was not significantly associated with a poor outcome, 66.7% vs 38.5%, OR 3.2 (0.28-36.3), p= 0.323. The presence of a HIcAS was significantly associated with a poor outcome OR 3.45 (1.31-9.04), p=0.009. Inter-observer agreement was excellent for HMcAS (Cohen’s Kappa 0.972), but poor for HIcAS (Cohen’s Kappa 0.239).

Conclusions
In this sample we observed a much lower incidence of HIcAS than previously reported. HIcAS was associated with a significantly more severe pre-thrombolysis neurological deficit, but was not associated with a poor outcome when compared to patients without a HIcAS. The role of the HIcAS as a prognostic marker in stroke thrombolysis remains unclear.
