Communications to the Spring Meeting of the British Geriatrics Society

22 - 23 April 2010
Edinburgh International Conference Centre
Edinburgh

programme of abstracts
## Thursday, 22 April

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### PLATFORM PRESENTATIONS

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<td>12:05 - 12:50</td>
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PREVENTING FALLS IN PARKINSON'S DISEASE: THE GETUP STUDY

V A Goodwin¹, S H Richards¹, P Ewings², A H Taylor³, J L Campbell¹

¹. Peninsula College of Medicine and Dentistry, University of Exeter 2. NIHR Research Design Service (South West) 3. School of Sport and Health Sciences, University of Exeter

Aims

Falls are a common problem affecting up to two thirds of people with Parkinson’s disease (PD) each year resulting in injury, fear of falling and activity restriction. This study aimed to establish the effectiveness of a strength and balance training programme on falls with people with PD who had a history of falling.

Methods

A pragmatic randomised controlled trial was undertaken recruiting patients via specialist clinicians, primary care and PD support groups from throughout Devon. Falls and injuries were monitored by weekly prospective diaries for 30 weeks. Berg Balance scale, Timed Up and Go, Falls Efficacy Scale - International (FES-I), EuroQOL-5D and physical activity were collected during face to face assessments at baseline, 20 and 30 weeks. The intervention comprised ten sessions of group strength and balance training, with supplementary home exercises. Controls received usual care. Analysis was undertaken on an intention to treat basis. The primary outcome (number of falls) was analysed using negative binomial regression.

Results

130 participants were recruited. Seven people did not complete the study. A between-group difference in falls of 33% (95% CI = 2 to 54, p=0.04), in favour of the intervention, was found during the intervention period, however at follow up, the 28% difference was no longer significant (95% CI = -8 to 52, p=0.11). Significant between-group differences were observed in Berg Balance scale, FES-I and recreational physical activity but no significant differences were observed in other outcomes.

Conclusions

We found that a strength and balance programme improves balance, fear of falling and recreational physical activity, and shows the potential to reduce falls among people with PD who have a history of falling.
QUALITATIVE VISUAL ASSESSMENT?

J H W Rimer, N R Colledge

Liberton Day Hospital, Liberton Hospital, Edinburgh

Introduction
Targeted intervention can reduce the incidence of falls in the elderly. Patients referred with falls to LDH automatically undergo multi-disciplinary falls risk assessment. However, patients referred for other reasons can also be unsteady and at risk of falls. Our study compared qualitative visual assessment (VA) of falls risk with formal Timed Up and Go Test (TUGT) to evaluate its potential as a rapid risk assessment tool. The presence of a Falls Intervention Checklist (FIC) was then documented.

Methods
One clinician (ST3, 10 months Elderly Medicine training) classified all patients attending LDH during a one week period as at high or low risk of falls by observing weighing on arrival (for ~10 seconds), blinded to clinical details. All patients then underwent physiotherapy led TUGT (blinded to VA but not clinical details). TUGT of ≤20 or >20 seconds was classified as low or high risk respectively. Case notes were subsequently reviewed for presence of FIC.

Results
VA sensitivity 0.93 (95% CI 0.83 – 0.98); specificity 0.63 (95% CI 0.39 – 0.83). FIC was present in 13 of 19 patients (68%) with a TUGT of ≤20 seconds and 42 of 60 patients (70%) with a TUGT of >20 seconds.

<table>
<thead>
<tr>
<th>TUGT (seconds)</th>
<th>No. patients</th>
<th>VA Risk</th>
<th>FIC present</th>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>≤20</td>
<td>19</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>&gt;20</td>
<td>60</td>
<td>4</td>
<td>56</td>
</tr>
<tr>
<td>Total</td>
<td>79</td>
<td>16</td>
<td>63</td>
</tr>
</tbody>
</table>

Conclusions
This study demonstrated subjective VA of falls risk has a high sensitivity compared with TUGT. While potentially time and cost effective, VA alone failed to identify 4 and unnecessarily identified 7 of 79 patients as at higher risk of falls. FIC was completed in 68% of low risk and 70% of high risk fallers. More efficient identification and targeting of patients at high risk of falls could enable improved use of limited resources.
MALE SEX IS A STRONG PREDICTOR OF MORTALITY IN HIP FRACTURES

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1. Academic Department of Medicine for the Elderly, Norfolk and Norwich University Hospital, Norwich, 2. Ageing and Stroke Medicine, Health and Social Sciences Research Institute, Faculty of Health, School of Medicine, Health Policy and Practice, University of East Anglia, Norwich,

Introduction
Hip fracture is common in older women. Little is known about the outcome of hip fracture in older men.

Methods
200 patients admitted to the Orthopaedic Medical Unit following a hip fracture between November 2008 and October 2009 were randomly selected from the departmental hip fracture audit database. The variables presented in the results section below were selected to examine the predictors of mortality.

Results
N = 200. There were 179 (89.5%) women, mean age 84.6 years and 21 (10.5%) male, mean age 80.9 years. Mean length of stay was 14.2 days for women and 16.3 for men. 15.6% (28) of women and 38.1% (8) of men had ≥3 co-morbidities (e.g. diabetes, asthma/COPD, IHD, hypertension, stroke/TIA). 68.7% (123) women and 90.5% (19) men were admitted from their own home, the remainder were from sheltered housing or care homes. 13.4% (24) of women and 19% (4) of men had surgery within 48 hours. 60.9% (109) of women and 66.7% (14) of men had an American Society of Anaesthesiologists (ASA) score ≥3. Preoperative mean haemoglobin in women 12.4g/dL and men 12.5g/dL. Postoperative mean haemoglobin in women 9.75g/dL and 10.0g/dL in men. 21.8% (39) of women and 14.3% (3) of men received a blood transfusion. 3.9% (7) of women died during the acute admission compared to 28.6% (6) of men (Relative Risk = 7.33). Multiple logistic regression analysis controlling for all the above co-variates and additionally adjusting for operation type and grade of surgeon showed that male sex was the strongest risk factor for in-patient mortality (p=0.002)

Conclusion
Male patients admitted with hip fracture had a greater risk of dying compared to female patients after adjusting for age, co-morbidities, residence, ASA score, haemoglobin, blood transfusion, time of surgery, and length of hospital stay.
HOMOCYSTEINE AND MENTAL HEALTH IN OLDER PATIENTS: A RANDOMISED DOUBLE-BLIND PLACEBO-CONTROLLED TRIAL

S E Gariballa

*Internal Medicine, Faculty of Medicine & Health Sciences, United Arab Emirates University*

**Background**
Folstein and colleagues have recently hypothesised that high total plasma homocysteine (tHcy) 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.
WHITE MATTER LESIONS ARE NOT RELATED TO IPSILATERAL CAROTID ARTERY STENOSIS

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1. Division of Clinical Neurosciences, University of Edinburgh, 2. SINAPSE Collaboration, SFC Brain Imaging Research Centre, Edinburgh

Introduction
Cerebral white matter hyperintensities (WMH) on T2-weighted magnetic resonance (MR) are common and possibly caused by small vessel disease or microemboli (e.g. from internal (ICA) carotid artery stenosis). Studies have linked carotid stenosis to the severity of whole brain WMH load but have not specifically examined brain ipsilateral to a stenosis. We hypothesised that if microemboli from a stenosis cause WMH, increased WMH in one cerebral hemisphere would be associated with increased ipsilateral carotid artery stenosis.

Methods
We prospectively recruited patients with lacunar and mild cortical ischaemic stroke from a tertiary hospital. Patients were imaged with a 1.5T MR scanner (T2/DWI/GRE/FLAIR) and carotid doppler ultrasound. We measured carotid artery stenosis with the NASCET method. We recorded deep and periventricular Fazekas WMH scores in each hemisphere. We used multivariate regression to assess associations between carotid stenosis and ipsilateral dichotomised WMH scores correcting for age, diabetes and hypertension using first the patients’ left carotid stenosis and then the right stenosis and then also for stenosis ipsilateral and contralateral to the side of the brain lesion (ie symptomatic and asymptomatic stenoses respectively).

Results
Of 253 patients, mean age 68 years (SD11), 65% were male, 14% had diabetes, 61% had hypertension and the median NIHSS score was 2 (IQR 2-3). 51% had lacunar stroke. For left carotid stenosis - dichotomized WMH in the left cerebral hemisphere were associated with increasing age (OR 1.10, 95% CI 1.06-1.13, p<0.001) but not ICA stenosis (OR 0.99, 95% CI 0.98-1.01, p=0.51), diabetes or hypertension. These results were similar for right carotid stenoses and stenoses both ipsilateral (symptomatic) and contralateral (asymptomatic) to the brain lesion.

Conclusions
We found no link between cerebral hemisphere WMH score and ipsilateral carotid artery stenosis, suggesting that microemboli, at least from carotid stenoses, are unlikely to cause most WMHs.
IS THERE AN ASSOCIATION BETWEEN DELIRIUM AND PLASMA TRYPTOPHAN AND KYNURENINE LEVELS IN ELDERLY HOSPITALISED PATIENTS?

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Academic Medical Centre, University of Amsterdam, Department of Internal Medicine, Geriatric section F4-218. The Netherlands

Introduction
One of the hypotheses in the pathophysiology of delirium is a low plasma tryptophan. The reduction in tryptophan might be caused by increased breakdown of tryptophan to kynurenine. It has been hypothesized that this is accompanied by an increased breakdown of serotonin and melatonin. An imbalance in both neurotransmitters, could be responsible for the inattention and disturbances of the sleep-wake cycle seen in delirium. The aim of this study was to compare tryptophan and kynurenine in patients with and without delirium.

Methods
In a prospective cohort study, patients with a hip fracture, aged 65 years and older were included. Delirium was diagnosed by the Confusion Assessment Method. Tryptophan and kynurenine were assayed in repeated blood samples. The association of tryptophan, kynurenine and kynurenine/tryptophan ratio with delirium state was analysed with linear mixed models.

Results
461 blood samples of 71 delirious and 70 non-delirious patients were collected. Patients with delirium were significantly older (85 versus 83 years, p=0.03). and they experienced pre-existing cognitive (47 % vs 11 %) and functional (8 % vs 3 %) impairment significantly more often than patients without delirium (p<0.001). Adjusted for day of withdrawal, tryptophan, kynurenine and kynurenine/tryptophan ratio of samples taken ‘before delirium’, during delirium’, and ‘after delirium’, and of samples taken of patients without delirium were overall not significantly different (table 1).

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<tr>
<th></th>
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<th>During delirium</th>
<th>After Delirium</th>
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<td>37.7</td>
<td>38.0</td>
<td>35.9</td>
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<td>Kynurenine</td>
<td>2.48</td>
<td>2.54</td>
<td>2.39</td>
<td>2.23</td>
<td>0.96</td>
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<tr>
<td>kynurenine/tryptophan</td>
<td>68.2</td>
<td>72.4</td>
<td>61.0</td>
<td>68.2</td>
<td>0.24</td>
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Table 1: Calculated mean levels on the first day after surgery of tryptophan, kynurenine, and kynurenine/tryptophan ratio.

Conclusion
No evidence could be found in serial blood samples from postoperative patients with and without delirium that changes in plasma tryptophan and kynurenine levels are associated with the development of delirium.
DO OLDER PEDESTRIANS HAVE ENOUGH TIME TO CROSS ROADS IN DUBLIN? A CRITIQUE OF THE TRAFFIC MANAGEMENT GUIDELINES BASED ON CLINICAL RESEARCH FINDINGS

R Romero-Ortuno¹, L Cogan¹, C U Cunningham¹, R A Kenny²

¹. Technology Research for Independent Living (TRIL) Clinic, St James's Hospital, Dublin, 2. Department of Medical Gerontology, Trinity College Dublin

Introduction
Many older pedestrians report inability to complete crossings in the time given by pedestrian lights. Standard times for pedestrian lights in Dublin pelican crossings are specified in the Traffic Management Guidelines (TMG). The TRIL Centre is building a database of gait assessments of Irish community-dwelling older people using GAITRite™. Objective: to compare the usual walking speed of our participants against that required by the TMG.

Methods
Design: cross-sectional observational study. Setting: comprehensive geriatric assessment outpatient clinic. Subjects: 355 community-dwelling older subjects aged ≥ 60 assessed between August 2007 and September 2008 (mean age 72.7, SD 7.2). Methods: linear regression analysis between age and observed walking speed, followed by comparison of predicted walking speeds at four different ages (i.e. 60, 70, 80 and 89) against minimum walking speeds required to cross standard Irish roads when regulated by the pelican system.

Results
Age and walking speed had a strong inverse correlation F (1, 353) = 108.48, p < 0.001, R2 = 0.235. The regression predicted a walking speed of 1.30 (95% CI 1.24 – 1.35) m/s at the age of 60, 1.10 (1.07 – 1.13) at 70, 0.91 (0.87 – 0.94) at 80 and 0.73 (0.66 – 0.80) at 89. Against these predicted walking speeds, standard crossing times appeared insufficient for very old people.

Conclusions
As currently defined in the TMG, maximum pedestrian crossing times at pelican crossings may represent a hazard for very old people. This should be addressed within the Irish authorities’ plan to improve safety and equality for older people.
USE OF THE NHS DIRECT TELEPHONE ADVICE AND INFORMATION SERVICE
BY OLDER PEOPLE

W Hsu¹, P A Bath², S Large³, S Williams³

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Introduction
Although the telephone advice and information service, NHS Direct, commenced in 1998, no research has examined the utilisation of NHS Direct by older people. The aim of this population study was to describe the characteristics of calls made to NHS Direct by, or on behalf of, older people.

Methods
Computerised Clinical Assessment System (CAS) data on all calls made to NHS Direct by, or on behalf of, people aged 65 and over between 1st December 2007 and 30th November 2008 were anonymised and analysed using SPSS. The CAS data included the callers’ demographic characteristics, call date, the algorithm followed during assessment (e.g. falls, non-traumatic) and call outcome (e.g. home care).

Results
During the 1-year study period, 402,959 telephone calls were made to NHS Direct concerning older people. The rate of calls was lowest for those aged 65-69 (3.8_10^{-2} calls per person per annum (pppa)) and highest for those aged 85 and over (6.4_10^{-2} calls pppa). The rate of calls was higher in women (4.9_10^{-2} calls pppa) than in men (3.9_10^{-2} calls pppa); however, the differences decreased with age. The most common reasons for calls were for pain (n=99419; 24.7%), digestive problems (n=51884; 12.9%) and respiratory tract disorders (n= 40326; 10.0%). Over two-thirds of calls were dealt with by NHS-Direct with some degree of some urgency (29.8% urgent, n=120283; 38.7% moderate urgency, n=156107). However, the number of calls referred to 999 services (n=27612, 6.9%) and an Accident and Emergency department (n=21650, 5.4%) was relatively small: with a further 14.7% (n=59154) being advised to see their GP, primary care services or dentist urgently.

Conclusions
This study provides unique insights into older people’s use of NHS Direct and the patterns of referral via NHS Direct to primary and secondary care services. The findings will help NHS Direct to develop service provision for older people.
ACUTE STROKE SERVICE PROVISION ASSOCIATED WITH LOW SOCIO-ECONOMIC STATUS

G D Kerr¹, P Higgins¹, M R Walters¹, S K Ghosh², F Wright³, P Langhorne¹, D J Stott¹

¹. Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow, ². Department of Medicine, Ayr Hospital, Ayr, ³. Department of Medicine of the Elderly, Glasgow Royal Infirmary

Introduction
Socio-economic (SE) deprivation is associated with increased stroke risk and severity but the underlying cause for this is unclear. One suggestion is that there may be inequalities in service provision for those in low SE groups.

Methods
A prospective series of 467 consecutive patients with diagnosis of stroke or transient ischaemic attack (inpatients and outpatients), referred to three Scottish Hospitals. Data collected included; stroke severity, investigations, where patient treated and whether patients attended outpatient appointments/investigations. SE status was derived from post-codes using Scottish Neighbourhood Statistics. Data were analysed in quartiles of SE status.

Results
Stroke patients in the lowest SE quartile were less likely to attend their outpatient appointment than those in the highest SE quartile (81% attendance versus 98% attendance, p=0.001), have a CT scan (82% vs 90%, p=0.036), have an ECG (72% vs 87%, p=0.003), attend for outpatient carotid imaging (95% vs 100%, p=0.02) and attend for outpatient echocardiogram (75% vs 93%, p=0.017) but had equal access to stroke unit care, thrombolysis, appropriate blood tests, carotid imaging and echocardiogram. However multivariate analysis controlling for gender, age, stroke severity and whether patient treated as outpatient or inpatient showed no independent association with socio-economic status and CT scanning/having an ECG. The numbers of patients who did not attend their outpatient appointment/investigations were not large enough to allow multivariate analysis.

Conclusions
Stroke patients with greater SE disadvantage have equal access to appropriate investigations, stroke unit care and thrombolysis but may be less likely to attend outpatient investigations.
POSTER PRESENTATIONS

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APPROPRIATE PRESCRIBING IN OLDER PEOPLE IN ACUTE HOSPITALS

S Ghafur¹, D Steadman², S Meghji², S Phillips², D Leeder², S Conroy²

1. University Hospitals of Leicester, 2. University of Leicester

Evidence-base
The STOPP/START1 criteria can be used to guide prescribing. Audit data from 2008 showed high rates of inappropriate prescribing in patients being discharged home from our acute medical unit (AMU).

Change Strategies
We introduced a practice change in the AMU, consisting of staff education (medical and pharmacy), and readily available STOPP/START criteria.

Change Effects
Prospective case note review of in-patients aged 65+. Information was collected from notes and drug charts for in-patients over two weeks.

Table 1 Baseline data

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<td>83</td>
<td>77</td>
<td>74</td>
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<tr>
<td>Age (mean)</td>
<td>82</td>
<td>84</td>
<td>82</td>
<td>81</td>
</tr>
<tr>
<td>Female gender</td>
<td>55%</td>
<td>63%</td>
<td>44%</td>
<td>58%</td>
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<td>Mean number of comorbidities</td>
<td>3.1</td>
<td>3.3</td>
<td>7.6</td>
<td>3.8</td>
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<td>Mean number of geriatric syndromes</td>
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<td>1.5</td>
<td>2.6</td>
<td>1.0</td>
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<tr>
<td>Mean number of drugs</td>
<td>6.0</td>
<td>6.9</td>
<td>7.9</td>
<td>6.3</td>
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<tr>
<td>% patients taking ≥4 drugs</td>
<td>74%</td>
<td>78%</td>
<td>83%</td>
<td>84%</td>
</tr>
</tbody>
</table>

Table 2 STOPP/START outcomes by ward area

<table>
<thead>
<tr>
<th></th>
<th>Gold standard (RCTs)</th>
<th>Acute admissions (baseline, 2008)</th>
<th>Other ward areas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Medical</td>
<td>Geriatrics</td>
<td></td>
</tr>
<tr>
<td>STOPP</td>
<td>27% (15%)</td>
<td>34% (49%)</td>
<td></td>
</tr>
<tr>
<td>START</td>
<td>30% (45%)</td>
<td>45% (31%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion
1. Potentially inappropriate prescribing rates were high in all settings; 2 STOPP prescribing in AMU improved following the practice change, and was equivalent to prescribing in geriatric wards; 3 START prescribing deteriorated in the AMU, but was better than on general medical wards, though worse than geriatric wards.

Alternative explanations include: 1. Casemix; 2. Active, poor prescribing in general medical wards; 3. Different prescribing habits on AMU according to: a. current in-patients vs. discharged patients b. medical team on duty.

DAY HOSPITAL FACILITY FOR BLOOD TRANSFUSION IN CHRONIC ANAEMIA IN OLDER PEOPLE: AN AUDIT OF SAFETY AND COMPLIANCE

S Sen, S Ashraf, M Datta-Chaudhuri, J Martin

Integrated Day Hospital (Marjory Warren Unit), Department Of Medicine for Older People, Stockport NHS Foundation Trust

Evidence Base
Chronic anaemia is common in older people (>65 years). Myelodysplasia is increasingly seen in the ageing population. Blood transfusion is frequently the mainstay of treatment. Traditionally, this has been provided by admitting patients to hospital. Alternative strategy for blood transfusion is an organised system of anticipation of the need for transfusion and administering it in the day hospital with appropriate facility. This can avoid unnecessary hospitalisation. National guidelines for transfusion require having a local policy for documentation of indication, date of transfusion, number and types of units transfused and record of adverse reaction.

Change Strategy
Based on British Committee for national standards in Haematology 2001 a transfusion therapy chart was designed by local transfusion service to improve documentation of blood and blood products.

Objective
1. To check adherence to local and national standard
2. Completion of all domains of transfusion chart made mandatory
3. Several awareness sessions held with junior doctors and nursing staff to raise profile of day hospital blood transfusion
4. Hospital grand round held by lead clinician to advertise the existence of the facility of blood transfusion at day hospital

Change Effect
Compliance with use of transfusion chart: Cycle 1-100% (40/40) vs Cycle 2- 100% (100/100)
Recording of pre-transfusion haemoglobin: Cycle 1-17% (7/40) vs Cycle 2- 97% (97/100)
Principal indication for transfusion: Cycle 1- 20% (8/40) vs Cycle 2- 100% (100/100)
Transfusion leaflet given: Cycle 1- 0% (0/40) vs Cycle 2- 70% (70/100)
Adverse reaction documented-100% in cycle 1 vs 100% in cycle 2

Conclusion
1. Implementation of structured transfusion therapy chart improves documentation of transfusion undertaken in the day hospital
2. Day hospital transfusions remains safe as evidenced by absence of adverse reactions in both cycles
3. Older people preferred day hospital service for blood transfusion to hospital admission (from previous local patients’ satisfaction survey).
IMPROVING THE USE OF THE EARLY WARNING SCORE: ADHERENCE TO THE ESCALATION PATHWAY TO IDENTIFY ACUTELY ILL PATIENTS ON CARE OF THE ELDERLY WARDS

D Sivapathasuntharam, L Persaud, C Tickner, A Thwaites, E Summersgill, C Carrasco, R Rolph, A Hopper

Department of Health and Ageing, Guys and St Thomas’ Hospital

Evidence-base
Early recognition of and appropriate response to acute illness in older patients can potentially reduce morbidity and mortality. The National Institute of Clinical Excellence Clinical Guideline 50 (2007) states that track and trigger systems should be used to monitor all adult patients in acute hospital settings. In our hospital patient observations are recorded and given a numerical value which when added up generate an Early Warning Score (EWS). Raised scores should trigger an “escalation” response. At low scores, an increase in the frequency of observations should occur. Higher scores should alert staff to urgently contact and request the attendance of practitioners with appropriate competencies for managing acutely ill patients. We carried out a retrospective review of observation charts. The setting was 84 acute care of the elderly beds in a central London teaching hospital. Initial audit was over two days in November 2008. Re-audit occurred over two days in July 2009. The audit standard was full adherence to the escalation pathway.

Change Strategies
Dissemination of the results at multidisciplinary meetings and leadership from senior medical and nursing staff raised awareness. Laminated sheets outlining the escalation pathway were placed in all patient observation folders making the information more accessible.

Change Effects
The initial audit showed adherence to the pathway to be 63.9% (53/83) on the weekday and 68.3% (56/82) at the weekend. The re-audit demonstrated improved figures of 97.6% (80/82) and 94.5% (69/73) respectively.

Conclusion
A significant improvement in adherence to the escalation pathway is shown. This demonstrates that simple measures such as strong leadership, increasing multidisciplinary awareness and improving the visibility of the escalation pathway can improve standards of care and patient safety.
DO NOT RESUSCITATE (DNR) POLICY IMPLEMENTATION BY DNR LINK TRAINERS IN AN ACUTE TRUST

S Blayney, A Swan, J Ashworth Jones, M Diwan, D King

Dept of Medicine for the Elderly, Wirral University Teaching Hospital

Evidence Base
There has been a 'Do Not Resuscitate' policy at WUTH since 1999. It was developed to meet the needs of patients, relatives and staff. In October 2007 the BMA and RCN published joint guidelines emphasising the need for training. We assessed policy implementation and staff awareness.

Change Strategies
A pilot audit of 210 casenotes was carried out in Department of Medicine for the Elderly (DME) in 2001. A standard questionnaire was used (available from authors). DME re-audit was carried out with Trustwide audits in 2003, 2005 and 2008. Interventions included compulsory training during Trust induction and establishing Link Trainees on wards and clinical areas. Training was cascaded to 665 staff and patient information leaflets were developed.

Change Effects
Audit of staff awareness of DNR policy showed that 97% were aware in 2001 compared to 99.5% (2003), 85% (2005) and 81% (2008). Over 60% of staff received training. More staff had spoken to patients about DNR (50% v 23%, p=<0.0001) and more felt comfortable having the conversation (85% v 23%, p=<0.00001) in 2008 than 2001. Trustwide casenote audit results are:

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2003</th>
<th>2005</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of casenotes</td>
<td>632</td>
<td>574</td>
<td>752</td>
<td>493</td>
</tr>
<tr>
<td>Contained CPR sticker</td>
<td>48%</td>
<td>55%</td>
<td>39%</td>
<td>57%</td>
</tr>
<tr>
<td>Completed part/all of CPR status sticker</td>
<td>15%</td>
<td>26%</td>
<td>18%</td>
<td>47%</td>
</tr>
<tr>
<td>Blue dot to denote DNR status</td>
<td>52%</td>
<td>9%</td>
<td>91%</td>
<td>84%</td>
</tr>
<tr>
<td>Written documentation in current episode</td>
<td>11%</td>
<td>13%</td>
<td>12%</td>
<td>18%</td>
</tr>
<tr>
<td>Both sticker and written documentation</td>
<td>8%</td>
<td>10%</td>
<td>11%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Conclusions
There has been an improvement in staff knowledge and implementation of the policy using DNR link trainers. DNR policy training should be mandatory to further improve understanding. As a consequence of this audit, it has been incorporated into mandatory Basic Life Support training. Ongoing audit is necessary to ensure complete policy implementation.
ASSESSMENT OF COGNITION IN THE ELDERLY: SOUTH-EAST SCOTLAND MULTICENTRE AUDIT

K F M Marwick¹, A L Calvert², M Corretge³, I Drummond⁴, C Kong⁴, C McKay¹, S J Turpin⁵ and S D Shenkin⁴

1. Queen Margaret Hospital, Dunfermline, 2. St John’s Hospital, Livingston, 3. Royal Infirmary, Edinburgh, 4. Western General Hospital, Edinburgh, 5. Borders General Hospital, Melrose

Evidence Base
Cognitive impairment in the elderly is common, underdiagnosed and under-investigated. The British Geriatrics Society guidelines ‘Delirious about Dementia’ (2006) suggest that all admissions should be assessed by Mini Mental State Exam (MMSE) and a clock-drawing test (CLOX1). If cognitive impairment is detected (MMSE<24, CLOX1<11), duration and/or presence of delirium should be assessed using the Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE) and Confusion Assessment Method (CAM). Relevant investigations (CT head, thyroid function (TFTs), vitamin B12/folate) should be considered.

This audit aimed to assess and improve cognitive assessment by performing cross-sectional note reviews in geriatric ward inpatients aged >65 in five South-East Scotland hospitals before and after intervention (total n=465).

Change Strategy
Presentations to junior and senior medical staff, posters in some admissions units.

Change Effects

<table>
<thead>
<tr>
<th>Site</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loop</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>n (total)</td>
<td>51</td>
<td>44</td>
<td>35</td>
<td>30</td>
<td>55</td>
</tr>
<tr>
<td>% AMT</td>
<td>31%</td>
<td>36%</td>
<td>46%</td>
<td>40%</td>
<td>13%</td>
</tr>
<tr>
<td>% MMSE</td>
<td>18%</td>
<td>18%</td>
<td>34%</td>
<td>33%</td>
<td>45%</td>
</tr>
<tr>
<td>n (MMSE&lt;24)</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>% CT</td>
<td>100%</td>
<td>71%</td>
<td>86%</td>
<td>50%</td>
<td>69%</td>
</tr>
<tr>
<td>% B12/folate</td>
<td>86%</td>
<td>79%</td>
<td>71%</td>
<td>67%</td>
<td>15%</td>
</tr>
<tr>
<td>% TFTs</td>
<td>86%</td>
<td>71%</td>
<td>57%</td>
<td>67%</td>
<td>77%</td>
</tr>
</tbody>
</table>

Documentation of CLOX1, IQCODE, : 0% throughout.
AMT= Abbreviated Mental Test

Conclusions
There was substantial variation in documentation of cognitive ability and investigation of cognitive impairment in geriatric in-patients between sites in South-East Scotland. AMT frequency increased in most centres post intervention (although the guidelines do not recommend this test), but MMSE frequency and duration assessment did not. Additional strategies are needed to aid change, and to encourage best practice.
USING LEAN TO REDUCE FALLS ON IN-PATIENT ACUTE ELDERLY MEDICAL WARDS

D J Ahearn, A Kallat, S Varman, C Walton

Department of Elderly Medicine, Royal Bolton Hospital

Background
During June 2009 two acute medical wards with predominately older people underwent a one-week mapping gateway event. The Bolton Improving Care System was used which is based on Lean Methodology. One of the four target areas for improvement is ‘to improve quality of patient care, by improved ward processes’. A specific indicator within this area is the number of patient falls.

During the mapping event a multidisciplinary team (including medical, nursing and therapy staff) scrutinised existing ways of working and followed patient journeys and staff movements to establish ‘patient gateways’ and ‘standard work’. An important aspect is developing methods to sustain changes and engender a culture of continuous improvement.

Change Strategies
♦ De-cluttering the ward environment
♦ Actively placing patients at high risk of falling nearer to the main nursing station
♦ Introduction of a secondary nursing station at the far end of the ward
♦ Improving flow of ward processes and reducing the number of footsteps made by standardising structure of nurses’ and junior doctors’ days
♦ Improved and more efficient processes for generic patient gateways, freeing up nursing and medical time for direct patient care
♦ Enhanced multi-disciplinary working including a daily MDT board round to develop patient-specific strategies to reduce falls

<table>
<thead>
<tr>
<th></th>
<th>Pre-event April-June 2009</th>
<th>Post-event July-Sept 2009</th>
<th>CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of falls Ward B3</td>
<td>26</td>
<td>18</td>
<td>31% decrease</td>
</tr>
<tr>
<td>Ward B4</td>
<td>27</td>
<td>14</td>
<td>48% decrease</td>
</tr>
</tbody>
</table>

Conclusion
Using Lean Methodology we have worked hard to improve patient safety and ward efficiency, free up staff time for direct patient contact, de-clutter the ward and alter the ward layout with a view to falls prevention. We have seen a 31-48% reduction in falls following the event. We recommend that all wards and departments with elderly patients consider using similar strategies as part of the goal to reduce falls.
INTRODUCTION OF AN ELECTRONIC DISCHARGE SUMMARY IMPROVES TRANSFER OF CARE INFORMATION POST-STROKE

D J Ahearn, R L Westwood

Specialist Registrars, Royal Blackburn Hospital

Background
A comprehensive well-planned transfer of care following hospital discharge after a stroke is essential (National Clinical Guideline for Stroke, 2008). General Practitioners and others need to be informed of the diagnosis, level of impairment and complete/ pending investigations.

A further local issue is that patients are followed-up in a community stroke clinic where hospital notes are not available, making a clear discharge summary crucial.

The RCP(London) has produced a ‘Transfer of Care’ document. When surveyed, 88% of General Practitioners stated it helped them manage their post-stroke patients more effectively.

www.rcplondon.ac.uk/pubs/brochure.aspx?e=158

Modifiable risk factors are poorly addressed following Stroke (Sapsonik Stroke 2009;40;1417-1424).

We audited written discharge information in 31 consecutive patients from the Acute Stroke Unit over three months (Summer 2008). Our initial results showed considerable room for improvement, notably that minimal attempt was made at recording weight or functional status, or specifying targets for modifiable risk factors.

<table>
<thead>
<tr>
<th>Change Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following discussion with medical and nursing staff, we created a template using the ICEDesktop electronic discharge system to prompt data entry and include risk factor targets. A further audit of 29 consecutive patients was conducted over 10 weeks (Spring 2009).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>We aim to improve matters further by making certain questions mandatory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction of an electronic-based discharge summary template post-stroke improves documentation of functional status, investigations, modifiable risk factor targets, smoking status and discharge weight. We believe accurately recording and disseminating this information will aid the provision of optimal post-stroke care.</td>
</tr>
</tbody>
</table>
PANIC4S: IMPROVING PRESCRIBING THROUGH USE OF AN ACRONYM

DJ F Mayne, A Blake, J E O’Connell, T Aspray, C S Gray

Newcastle University Department of Medical Education and City Hospitals Sunderland NHS Foundation Trust

Evidence Base
In 2008 junior doctors attending Trust induction undertook a compulsory prescribing assessment. This demonstrated that basic errors or omissions were made by all grades of medical staff, especially Foundation Year 1 (F1). We therefore developed a safe prescribing acronym PANIC4S and evaluated its implementation with the next cohort of F1 doctors.

Change Strategies
Thirty seven F1 doctors attending induction in August 2009 were introduced to the PANIC4S acronym during a teaching session, along with the distribution of pens, mugs, and other items inscribed with the acronym. They then completed the same prescribing assessment used in 2008 comprising a written case scenario of a typical older patient. Those making critical errors or omissions were deemed to have failed and invited for reassessment 4 weeks later.

Change Effects
Thirty six (97.3%) doctors failed the assessment. The median number of critical errors was 4.5 (0-8) and 4 (0-7) in 2008 and 2009 respectively (p=0.97). On reassessment however, seven (23.3%) candidates failed and the number of critical errors was significantly lower (median 0, range 0-2, p=0.00).

Conclusion
Again we have demonstrated that newly qualified doctors starting work in an NHS Trust cannot prescribe safely. Introduction of a prescribing strategy using the PANIC4S acronym alone did not improve the performance of F1 doctors. However PANIC4S combined with a period of experiential learning followed by reassessment was associated with an improvement in prescribing ability.
**USE OF A FALLS AND OSTEOPOROSIS RISK ASSESSMENT TOOL TO IMPROVE BONE PROTECTION IN A MULTIDISCIPLINARY PARKINSON'S DISEASE CLINIC: A COMPLETED AUDIT CYCLE**

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1. Dept of Elderly Medicine, Royal Derby Hospital, 2. Specialist Assessment and Rehabilitation Centre (SPARC), London Road Community Hospital, Derby, 3. Dept of Elderly Medicine, King's Mill Hospital

**Evidence-Base**

Parkinson's disease (PD) patients are at increased risk of falls and fractures. Osteoporosis increases with age and is common in PD patients. The National Institute of Clinical Excellence (NICE) recommends older people in contact with health professionals be asked about falls. An earlier audit (2005) showed poor assessment of osteoporosis and falls risk in PD patients.

**Change strategies**

Following the earlier audit, a ‘falls and osteoporosis risk assessment tool’ was adopted in 2006. The clinic nurse aimed to complete this assessment as part of each patient's annual review. The completed assessment tool served as a prompt to consider osteoporosis medication. We carried out a retrospective case note review of 106 patients attending a multidisciplinary PD clinic between November 2007 and April 2009. Management was compared with the Falls and Osteoporosis guidelines set by NICE and RCP London. We were looking for improvement in falls and fracture documentation and use of bone protection medication in PD patients in line with the published guidelines.

**Change effects**

The re-audit did show significant improvement in our fracture documentation (from 10% to 98%) as well as improvement in bone protection (mainly calcium and vitamin D and/or bisphosphonates.)

<table>
<thead>
<tr>
<th>OUTCOME MEASURES</th>
<th>2005</th>
<th>2009</th>
<th>Chi squared</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Total patients in audit</td>
<td>50</td>
<td>100</td>
<td>106</td>
</tr>
<tr>
<td>Falls enquiry</td>
<td>49</td>
<td>98</td>
<td>104</td>
</tr>
<tr>
<td>Fallers</td>
<td>23</td>
<td>46</td>
<td>45</td>
</tr>
<tr>
<td>Fracture enquiry</td>
<td>5</td>
<td>10</td>
<td>104</td>
</tr>
<tr>
<td>Patients with fracture</td>
<td>5</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Bone protection</td>
<td>8</td>
<td>16</td>
<td>48</td>
</tr>
</tbody>
</table>

**Conclusions**

This re-audit has shown that use of a nurse-administered Falls & Osteoporosis risk assessment tool during annual multidisciplinary Parkinson's review has improved bone protection in PD patients. We look forward to the development of fracture prevention guidelines specific to Parkinson's Disease.
PAYMENT BY RESULT: IMPROVING EFFICIENCY OF DISCHARGE SUMMARIES - WHAT WORKS?

P Fernando¹², N Abeysekara¹, A Warusavithane¹, A Arora¹

¹.University Hospital of North Staffordshire, Stoke-on-Trent, 2. New Cross Hospital, Wolverhampton

Background
Payment by Results (PbR) is the financial model, which aims to provide a transparent rule-based system. The previous audit demonstrated that there was some discrepancy between information provided on the electronic discharge summaries used by coders for calculating the tariffs and the case notes. This meant a potential extrapolated annual uplift of £780 000 within our department which completes 2100 Finished Consultant Episodes (FECs) every year. A six month programme was rolled out to improve the quality of discharge summaries and its related financial impact. The interventions undertaken were

1. One to one training, induction sessions and presentations by consultants and coders for junior doctors
2. Consultants vetting completed discharge summaries
3. Introduction of laminated co-morbidities list and discharge templates

We now present the re-audit done in August 2009.

Aim and Sampling Method
To audit effectiveness of the training programme in bridging the financial gap observed in the previous audit of December 2008.

PbR Tariffs were calculated for 42 FCEs, using information on the electronic discharge summaries alone and then re-calculating the tariffs after supplementing information from case notes.

Results
No changes in the PbR tariffs were noted in 27 (64%); coding was unaffected and no potential loss of income due to inappropriate discharge summaries. In further 14 (33%) there were no changes in PbR tariffs although case notes carried more co-morbidities compared to the electronic discharge summaries alone. In one case (3%) there was a change in the PbR tariff and the commissioners were overcharged.

Conclusion and Implications
The re-audit demonstrated significant improvement in the quality of discharge summaries with more information and effectively no loss of income. Simple measures taken above could be easily instituted and results achievable in 6 months. The model can be replicated in other areas to minimise the potential loss of income.
AN AUDIT OF PATIENTS' UNDERSTANDING OF SECONDARY BONE PROTECTION IN AN ORTHOPAEDIC WARD

K F Yeong, A Basit, N Singh

Care of the Elderly Department, St Helier Hospital, Surrey

Introduction
Bisphosphonates and strontium ranelate are effective drugs widely used in secondary prevention of osteoporosis. Compliance to these effective drugs is poor in part due to complicated regimes for taking these drugs. Non compliance is associated with a 45% increased risk of further fragility fractures.

Objective
The aim of this study was to examine the patients’ knowledge of their drugs prescribed for secondary prevention post fracture neck of femur.

Method
Patients were recruited from an orthopaedic ward over a 3 month period. All patients had sustained a fracture of the neck of femur and had an AMTS of >7. Either the consultant geriatrician or SpR informed the patients of the correct protocol for taking these drugs and potential side effects within the first week of admission. The patients were then interviewed on the day of discharge and the information was collected on a proforma.

Results
We recruited 50 patients in total, with an average age and AMTS of 82 years and 9.3 respectively. 100% of patients were on secondary bone protection, 66% on a weekly bisphosphonate and 34% on strontium. All patients were supplemented with calcium and vitamin D. 96% of patients were aware they were on bone protecting drugs, however, 40% could not name any of the drugs. 22% had no recollection of receiving instructions on how to take the drugs. Of the patients that did recall being given instructions only 26% remembered ALL instructions for either the bisphosphonates or strontium. More patients correctly remembered instructions for strontium than for bisphosphonates. 68% of patients did not remember being informed of any potential side effects and only 66% were aware that these were long-term drugs.

Conclusion
Despite being cognitively intact, patients’ knowledge of secondary bone protection was suboptimal. This may in part explain the poor compliance associated with these drugs.
READABILITY OF PATIENT ORIENTATED GERIATRIC HEALTH INFORMATION ON THE INTERNET

P Fitzsimmons

Department of Medicine for The Elderly, University Hospital Aintree

Background
Older patients increasingly use the Internet to access health information. The prevalence of inadequate health literacy is high in older patients and increases with age. Guidelines recommend patient orientated information should be written at below the 6th grade level. Previous studies of printed geriatric health information have demonstrated poor levels of readability. This study aimed to determine the readability of patient orientated Internet geriatric health information.

Sampling Methods
The 10 most popular UK and US health websites and the highly ranked user generated content website Wikipedia were searched for patient orientated articles regarding 10 major geriatric medical conditions. Readability assessed using Flesch-Kincaid Grade Level (FKGL) and Flesch Reading Ease (FRE) formulae.

Results
99 web-articles identified. 7% of articles had FKGL ratings bellow the recommended maximum 6th grade level. Mean FKGL grade 9.93 (95%CI 9.43 - 10.4). 77% of articles rated as difficult to read, 6% rated as easy to read. Mean FRE reading ease rating ‘difficult’, mean FRE score 49.8 (95%CI 47.0 - 52.6). Commercial websites were significantly easier to read than non-commercial websites, mean FKGL 9.25 (95%CI 8.72 - 9.79) vs 11.74 (95%CI 10.84 - 12.65) p<0.0001. Professionally produced websites were significantly easier to read than user generated content, mean FKGL 9.49 (95%CI 9.03 - 9.96) vs 13.8 (95%CI 12.73 - 14.95) p<0.0001. No significant difference in readability demonstrated between articles from US and UK based websites, mean FKGL 9.18 vs 9.84 p=0.16.

Conclusions
The majority of patient orientated geriatric health information websites are difficult to read, exceed maximum recommended levels of reading difficulty and are beyond the reading abilities of many older patients. Commercial websites and professional production were associated with significantly higher levels of readability in this sample. Website editors should consider routinely monitoring readability of articles to improve the accessibility of internet geriatric health information.
THE COGNITIVE IMPAIRMENT IDENTIFIER PROGRAM - A VICTORIAN HOSPITAL BEDSIDE ALERT AND EDUCATION PROGRAM FOR COGNITIVE IMPAIRMENT

M W Yates, M Theobald, M Movell

Subacute Medicine Services, Ballarat Health Services

Background
Hospitals are not geared to meet the needs of people with dementia and the care given can be compromised. Hospitals have unfamiliar routines and environments that may aggravate confusion in a patient with Cognitive Impairment (CI). CI, like hearing and visual impairment, carries no visual physical stigmata, is often under recognised and is likely to impact on many aspects of care planning and treatment while in hospital. The lack of easy identification of patients with CI often results in ineffective targeting of support, lost opportunities for carer engagement and poor staff awareness of its prevalence.

Innovation
We postulated that better identification of CI with early, appropriate intervention would improve patient care. In 2003 BHS in partnership with Alzheimer’s Australia Victoria ran focus groups involving people with dementia and carers to identify issues related to acute hospital care. This generated an education program and a novel graphic used as a bedside cognitive impairment identifier (CII).

Evaluation
After establishing baseline staff knowledge and comfort managing CI and carer satisfaction with the care received the CII and an all of hospital staff education program was rolled out across the hospital. Post intervention data was collected 9 months later. 80% of staff with daily or weekly patient contact reported the CII and education had improved their practice and 40% reported it had improved their response to carers. Carer satisfaction shifted positively by 23.6%. 2006 the CII and education package was tested in 7 other health services. Six demonstrated a significant improvement in staff confidence managing CI (p=0.05). This program is now offered to all hospitals by the Victorian Government.

Conclusion
The use of a bedside graphic to alert hospital staff to CI, when linked to an all of hospital education program, is acceptable to people with dementia and carers and improves care.
IN PATIENT FALLS - DO FALLS RISK TOOLS PREDICT THOSE WHO FALL?

Z N Muir

Medicine for the Elderly, Perth Royal Infirmary

Introduction
Falls in elderly hospitalised patients form a significant proportion of reported patient safety incidents. Resulting injuries can be serious, confidence is often reduced and length of stay increased. Many tools exist to try and predict those who fall. Do these work in day to day clinical practice?

Methods
Two falls risk tools (CANNARD and STRATIFY) were calculated for all in-patients on the unit (54 assessment and rehabilitation beds) on a weekly basis over an 8 week period. Scores were calculated using information from medical notes, nursing and therapy staff to complete the two tools. Falls on the unit were recorded.

Results
Data was collected for 105 patients. There were 25 falls in 15 patients. 35 patients were admitted with fall, slip or trip. The following table illustrates the baseline score and subsequent fall during the follow up period comparing the two scoring systems and history of recent fall.

<table>
<thead>
<tr>
<th></th>
<th>STRATIFY</th>
<th>CANNARD</th>
<th>Fall in last 6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>80%</td>
<td>93.3%</td>
<td>93.3%</td>
</tr>
<tr>
<td>Specificity</td>
<td>48.9%</td>
<td>37.8%</td>
<td>54.4%</td>
</tr>
<tr>
<td>Positive predictive value (PPV)</td>
<td>20.7%</td>
<td>20%</td>
<td>25.5%</td>
</tr>
<tr>
<td>Negative predictive value (NPV)</td>
<td>93.6%</td>
<td>97.1%</td>
<td>98%</td>
</tr>
</tbody>
</table>

In terms of identifying a high risk group for targeted intervention, at any one time up to 50% of patients were calculated as being high risk. On a weekly basis predictive scores were calculated – results were similar with poor PPV and good NPV for both tools.

Conclusion
Neither tool was sensitive for detecting “fallers” correctly with low positive predictive values. This is in keeping with recent systematic review evidence for the STRATIFY tool (Oliver et al, Age and Ageing 2008;37:621-627). Perhaps by identifying those who have had a recent fall as high risk, time currently being used to calculate falls risk scores could be used to address falls risk factors.
SUBCLINICAL ANAEMIA AND THE NECESSITY AND FEASIBILITY OF GIVING ERYTHROPOIETIN IN ELECTIVE ORTHOPAEDIC SURGERY

J Gossage¹, C Harrison², I Momoh² , J Dhesi¹

1. POPS, Department of Health and Ageing, Guys and St Thomas’ Hospital, London  2. Department of Haematology, Guys and St Thomas’ Hospital, London

Background
Subclinical anaemia (Hb11-13g/dl) is common in orthopaedic surgery. It is associated with increased morbidity, mortality and transfusion requirement. Previous work has focussed on peri-operative management techniques, whilst the opportunity for proactive management at pre-assessment has been overlooked. Recent studies suggest preoperative erythropoietin(EPO) may reduce transfusion requirements.

Innovation
Proactive identification of patients with subclinical anaemia undergoing primary or revision hip replacement(THR, 2°THR) and revision knee replacement(2°TKR).

Implementation of a protocol for preoperative EPO, promoted by a nurse specialist through widespread publicity across surgery and pre-assessment services.

Evaluation

No difference in prevalence of Hb<11g/dl between younger and older patients, but higher transfusion rates in >65yr group.

Only 21% of those >65yrs and 14%<65years eligible for EPO, were actually referred for EPO.

Proactive care for Older People undergoing Surgery(POPS) saw 33% eligible for EPO and referred 71% of those.

Conclusion
Interestingly, younger adults have the same prevalence of subclinical anaemia as older patients, but the older group have a higher rate of postoperative transfusion. This group requires further attention and interventions to reduce postoperative transfusion. Numbers in this study were small, but the patients who received EPO did not require transfusion. The uptake of EPO was disappointingly poor and this was related to the referral process, awareness and patient choice. Referrals increased if reviewed preoperatively by the geriatric preassessment service, further demonstrating the potential benefits of POPS.
JOB SATISFACTION IN GERIATRIC MEDICINE TRAINEES

J Ruddlesdin¹, J Fox²

¹. Trafford General Hospital, Manchester. 2. Fairfield General Hospital, Bury

Background
The recent Postgraduate Medical Education and Training Board (PMETB) trainee survey showed high levels of satisfaction with training but highlighted some outlying results.

¹ Many geriatricians who regret their choice of specialty do so due to the service demands of general medicine.
² We wished to survey trainees’ satisfaction with training placements.

Sampling Methods
A link to an on-line survey was sent to all geriatric medicine trainees in the North West deanery.

Results
44/54 (81%) of trainees from 16 hospitals completed the survey.
15/44 (34.1%) stated they were very satisfied in their current positions, 25/44 (56.8%) were satisfied and 4/44 (9.1%) were dissatisfied.
26/44 (59.1%) believed that making at least one change to their current position would improve training. 21/44 (47.7%) felt that this change would be realistically achievable.

Changes that trainees believed would improve their training and their frequency are shown in the Table.

<table>
<thead>
<tr>
<th>Change</th>
<th>Number of Trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td>More opportunity to attend specialist clinics</td>
<td>12</td>
</tr>
<tr>
<td>Improve staffing levels</td>
<td>7</td>
</tr>
<tr>
<td>Reduce on-call intensity</td>
<td>6</td>
</tr>
<tr>
<td>Reduce on-call frequency</td>
<td>4</td>
</tr>
<tr>
<td>Reduce time spent on the ward</td>
<td>4</td>
</tr>
<tr>
<td>More consultant presence</td>
<td>2</td>
</tr>
<tr>
<td>More opportunities for non-clinical training</td>
<td>2</td>
</tr>
<tr>
<td>Better hospital accommodation</td>
<td>1</td>
</tr>
<tr>
<td>Formal post-take ward round with feedback</td>
<td>1</td>
</tr>
<tr>
<td>Clearer idea of what on-call responsibilities are</td>
<td>1</td>
</tr>
<tr>
<td>Remove the European Working Time Directive</td>
<td>1</td>
</tr>
</tbody>
</table>

Conclusions
The majority of trainees in geriatric medicine in the North West are satisfied or very satisfied with their current jobs but many would like to spend more time in specialist clinics.

Changes that trainees would most like to make relate mainly to generic hospital issues rather than to geriatric medicine.

References
1. PMETB / COPMeD, National Survey of Trainee Doctors 2008-2009
ATTITUDE OF FOUNDATION YEAR ONE DOCTORS TOWARDS PEOPLE WITH DEMENTIA

J Bussin

Department of Medicine for Older People, St Helens and Knowsley NHS Trust, Prescot, Merseyside

Background
Awareness and skills training for healthcare staff who support people with dementia is a core recommendation within the National Dementia Strategy in England. The dementia training needs of Foundation Year One (FY1) doctors have not been clearly defined. This survey aimed to assess the attitudes of FY1 doctors towards people with dementia in order to identify their learning and development needs.

Sampling methods
Twenty four FY1 doctors completed the Approaches to Dementia Questionnaire¹ in August 2009. This questionnaire was developed and validated in the UK to assess attitudes of care staff towards people with dementia. It can be used to calculate a total score and a hope score. Total scores range between 19 and 95. Higher scores indicate a more positive approach. Hope scores range between 8 and 40. Hope scores are more predictive of staff behaviour than total score. Higher hope scores indicate better quality physical and social interaction between staff and the person with dementia.

Results
The median total score was 74 (range 60 to 92, interquartile range 9). This indicates that the FY1 doctors generally had a positive attitude towards people with dementia. The median hope score was 28 (range 18 to 30, interquartile range 3.25). This suggests that while their general approach to people with dementia is positive, the quality of their interactions with people with dementia could be improved.

Conclusions
The FY1 doctors included in our survey generally had positive attitudes towards people with dementia. The results of the hope score suggest that future training should focus on techniques to improve the quality of physical and social interaction between these doctors and people with dementia.

1. Lintern T and Woods B, University of Bangor 1996
ARE PATIENTS BEING REFERRED BEFORE TREATMENT FOR SUSPECTED PARKINSONISM? A SURVEY OF 17 CENTRES TO ASSESS CONCORDANCE WITH NICE GUIDANCE

E Henderson¹, D J Ahearn², V Lyell¹, D MacMahon³ on behalf of the participants on the 15th BGS Parkinson’s Academy

1. Frenchay Hospital, Bristol, 2. Royal Bolton Hospital, 3. Camborne-Redruth Hospital

Background
The 2006 NICE guidance on Parkinson’s disease recommends that people should be referred quickly and untreated to a specialist with expertise in the differential diagnosis of this condition (NICE 2006, CG035). Assessment by a specialist neurologist or geriatrician, without prior dopaminergic treatment, confers better diagnostic accuracy (Schrag, Ben-Schlomo, Quinn, Journal of Neurol Neurosurg Psychiatry 2002; 73: 529-534), with implications for prognosis and management.

Sampling Methods
Data was collected by participants on the 15th BGS Parkinson’s Academy. We collected data from 17 secondary care centres across the UK (up to 20 patients per site). All referrals from the community were considered if the referrer requested an opinion on tremor, Parkinsonian features or movement disorder. Patients were excluded if the referral was made within secondary care, if patients had an established diagnosis of a parkinsonian syndrome made by a movement disorder specialist or if no adequate drug history was available.

Results
Data was collected on 325 patients. 6.8% of patients referred to a movement disorder specialist were on dopaminergic therapy - 4.6% (15/325) were on recently initiated dopaminergic therapy and a further 7 had long-standing levodopa prescriptions. Of the treated patients, all were taking levodopa and 3 were also taking other dopaminergic treatment. The duration of treatment, where it could be ascertained, varied from 3 weeks to 10 years.

Conclusions
The majority of referrals were made on untreated patients with fewer than 7% on treatment when first seen. Further promotion of the NICE guidelines in primary care would appear to be appropriate and since 1.9% were on long term dopaminergic therapy in the community without formal diagnosis there would also appear to be a place for prescription review in primary care. However, we were encouraged that most referrals were being made appropriately as suggested by NICE guidance.
IS SINGLE ROOM ACCOMMODATION HARMING OUR ELDERLY IN-PATIENTS?

T A Jackson¹, S Jones²

¹. University Hospitals Birmingham Foundation Trust, 2. Heart Of England NHS Foundation Trust

Scope
With increasing political and social pressures in the United Kingdom to reduce cross infection patients are nursed in single rooms for an increasing number of reasons. Anecdotally these patients, particularly the elderly frail seem to do worse.

Search Methods
Medline, CINHAHL, Pubmed and Google between 1995 and April 2009 were searched using the terms side rooms, single rooms and infection with modifying terms of elderly and risk.

Results
No studies were found looking specifically at elderly patients. 7 peer reviewed papers were found with 1 comprehensive review including 12 studies looking at the evidence for isolation. Only 1 study investigated adverse events.

Conclusions
The evidence for isolating patients to reduce the spread of hospital acquired infections is limited. A report commissioned for NHS Scotland admits this when asking how many side rooms to build in new hospital. The most comprehensive review was done by Dowdeswell [i], concluding that although intuitively convincing that greater use of side rooms prevented and controlled infection rates, there was insufficient evidence on the benefits, particularly from an infection control perspective. Only one quality study has been done by Ulrich and colleagues [ii] who noted that infection rates were usually lower when patients were nursed in single room accommodation.

Stelfox et al Journal of the American Medical Association, 2003 290(14), 1899-1905 showed patients in side rooms were twice as likely to suffer adverse events (falls), more likely to have incomplete observation readings, have an increased length of stay and be more likely to be dissatisfied with care.

More research needs to be done to investigate this question especially with a frail elderly population.
THE MONTREAL COGNITIVE ASSESSMENT: REVIEW OF UTILITY IN A COGNITIVE STUDIES CLINIC

M P Martin, R F Coen, C Walsh, M Hodder, O Keane, B A Lawlor

Mercer’s Institute of Ageing, St James’ Hospital, Dublin

Background
The Montreal Cognitive Assessment (MoCA) was specifically developed as a screening tool for Mild Cognitive Impairment (MCI) and early Alzheimer’s dementia (AD)¹. It tests 7 domains. The original cutpoint was set at normal cognition being a score ≥26¹. Recently a cutpoint of ≤23 has been recommended²,³.

Sampling Methods
Results of patients attending a cognitive studies clinic over a ten month period were reviewed. Diagnosis had been made by consensus based on clinical assessment, MMSE, EXIT and MoCA. Ten patients were diagnosed with dementia, 39 with MCI and 15 with subjective memory complaints (SMC)(excluding those with mood or medication-related or general medical disorders).

Results
The MoCA was 100% sensitive for MCI and dementia for both cutoff scores. The specificity for SMC was 27% (cutpoint of 25) and 47% (cutpoint of 23). In patients with MCI, 52% had normal MMSEs and 82% had normal EXIT scores. In the SMC group all had normal MMSEs and EXIT scores. In patients with normal EXIT and MMSE there was a significant difference between failure ratios on different subscales of the MoCA by grouped chi squared testing: MCI ≤25 $\chi^2=25.8$, p=0.0003; SMC ≤25, $\chi^2=27.9$, p=.0001.

Conclusion
The MoCA was 100% sensitive to MCI/dementia but 47% specific for SMC at the lower cutpoint. In patients with normal EXIT and MMSE scores the greatest proportion of imperfect scores was on delayed recall. The MoCA may be oversensitive, misclassifying cognitively intact individuals as impaired. Alternatively it may be detecting genuine cognitive impairment in the SMCs not detected by the other tests. To clarify this will require longitudinal evaluation of the SMCs.

References:
3. RF Coen, R Cahill, BA Lawlor. Int J Geriatr Psychiatry (in press)
A PRIMARY/SECONDARY CARE PARTNERSHIP IN THE RESIDENTIAL HOME SETTING IS ASSOCIATED WITH A REDUCTION IN EPISODES OF ‘CRISIS’ HEALTHCARE UTILISATION

R Mappilakkandy, N Lo, G Gamble, R Wong

Dept Medicine for the Elderly, Leicester General Hospital, Leicestershire County and Rutland Community Health Services

Background
With rising co-morbidity levels in Residential Home (RH) populations, some out-of-hours (OOH) medical/paramedical call-outs may result from reduced anticipation of health decline by carers and an absence of clear joint management plans between specialists and GPs, potentially resulting in inappropriate hospitalisations and interventions. We explored whether Geriatrician input might affect such ‘crisis’ healthcare utilisation in RHs.

Innovation
A partnership with primary care services was established, involving Geriatrician input to 3 RHs with dementia registration. ‘Intensive’ input (geriatric assessment inclusive of carers/family, care planning, rapid written feedback post-assessment and a telephone advisory service to GPs) was provided to selected residents according to pre-specified criteria, over 3 months, with ‘follow-up’ input thereafter.

Evaluation
We report preliminarily on 6 month outcomes (OOH call-outs, place of death - as surrogates for anticipating health decline) for the first home (KRH, 45 beds). With varying bed occupancy, averaging 98% during the intervention and 93% during the comparator period (same season, 1 year prior), hospital admission data was benchmarked per 100 population.

<table>
<thead>
<tr>
<th></th>
<th>Number of patients with OOH consultations</th>
<th>Total OOH call-outs generated</th>
<th>Deaths in hospital</th>
<th>Deaths in KRH</th>
<th>Hospital admissions</th>
<th>Total cost of hospital admissions</th>
<th>Average cost of hospital admissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparator period: 1/3/08-30/9/08</td>
<td>19</td>
<td>43</td>
<td>7</td>
<td>3</td>
<td>55*</td>
<td>£139,118*</td>
<td>£2529</td>
</tr>
<tr>
<td>Intervention period: 1/3/09-30/9/09</td>
<td>16</td>
<td>27</td>
<td>2</td>
<td>6</td>
<td>26*</td>
<td>£55,107*</td>
<td>£2119</td>
</tr>
</tbody>
</table>

*Figures benchmarked per 100 population

Conclusions
Commencement of geriatrician input into a RH was associated with less ‘crisis’ healthcare utilisation, as measured by reduced OOH consultations (from fewer repetitious call-outs), fewer hospitalisations and more deaths occurring appropriately at the RH. Preliminary data also suggests a reduction in average cost of hospital admissions for which further studies are required to dissect out potential causes eg shorter duration of stay/fewer unnecessary interventions.
DIFFERING DEMOGRAPHICS OF THE OLDEST PATIENTS ADMITTED TO HOSPITAL IN ABERDEEN OR NORWICH

C J Lunt¹, ², C Webster¹, Y Pai³, N Gautam³, J F Potter³, ⁴, R L Soiza¹, P K Myint³, ⁴

1. Department of Medicine for the Elderly, Woodend Hospital, Aberdeen, 2. Acute Medical Admission Unit, Aberdeen Royal Infirmary, 3. Department of Medicine for the Elderly, Norfolk and Norwich University Hospital, 4. Ageing and Stroke Medicine Section, School of Medicine, University of East Anglia, Norwich

Background
There are few data on the demographic characteristics of the oldest patients admitted to hospital in the UK. The extent to which findings of single-centre studies in this age group could be generalisable to other areas is unclear. This two-centre survey looked for evidence of differing demography in nonagenarians and centenarians acutely admitted to hospital in an English and a Scottish centre.

Methods
A prospective survey was conducted in two centres over a three-month period (Nov '08 – Jan '09 in Norwich and Feb '09 – April '09 in Aberdeen) of all admissions aged 90 years and over to acute medical or geriatric medicine wards. Differences in characteristic at admission were assessed using chi-square, t-test or Mann-Whitney U test as appropriate.

<table>
<thead>
<tr>
<th></th>
<th>Aberdeen (N=164)</th>
<th>Norwich (N=255)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, %</td>
<td>71.3</td>
<td>65.1</td>
<td>0.18</td>
</tr>
<tr>
<td>Age, mean (SD)</td>
<td>93.4 (2.3)</td>
<td>93.6 (3.0)</td>
<td>0.79</td>
</tr>
<tr>
<td>Place of residence, %</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own home</td>
<td>47.6</td>
<td>58.4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sheltered housing</td>
<td>26.2</td>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>Residential home</td>
<td>7.9</td>
<td>21.2</td>
<td></td>
</tr>
<tr>
<td>Nursing home</td>
<td>18.3</td>
<td>9.4</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Chronic medical conditions, mean (SD)</td>
<td>3.1 (1.4)</td>
<td>2.1 (1.4)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prescribed medications, mean (SD)</td>
<td>6.8 (3.4)</td>
<td>4.3 (2.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Modified Rankin scale, median (IQR)</td>
<td>2 (0.3 - 3)</td>
<td>1 (0 - 2)</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Conclusion
Despite similar age and sex distributions, there were important differences in key measures of health and dependency in the oldest old hospital populations of Aberdeen and Norwich. This implies that, even in studies of the oldest old, findings from single-centre studies may not be generalisable to the wider UK population and studies comparing outcomes between centres will still need to take careful account of case-mix.
THE ACUTE FRAILTY UNIT - A NOVEL APPROACH TO MANAGING FRAIL OLDER PEOPLE IN THE AMU

S P Conroy¹, J Carver², K Johnston², N Shah²

¹. University of Leicester, 2. Leicester Royal Infirmary

Background
Frail older people have especially poor outcomes following discharge from Acute Medical Units. We report findings from our Acute Frailty Unit (AFU).

Innovation
1. 9 bedded unit embedded within the AMU; 2. all standard care; 3. enhanced nursing care
4. dedicated specialist geriatric input

Evaluation
Data from NHS systems, limited to people aged 70+ and using HRG 99 codes (complex) as a proxy for frail older people.

Outcomes for patients managed in AFU compared to historical controls

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death in AMU</td>
<td>175/1948 (9%)</td>
<td>15/273 (5%)</td>
</tr>
<tr>
<td>Discharge from AMU</td>
<td>88/1773 (5%)</td>
<td>23/258 (9%)</td>
</tr>
<tr>
<td>Length of stay(excludes discharged &amp; deaths)</td>
<td>n=1685Mean=16.6, SD 15.9</td>
<td>n=235Mean=12.4, SD 11.9</td>
</tr>
<tr>
<td>30 day readmission rates (discharges from AMU)</td>
<td>13/88 (15%)</td>
<td>4/22 (18%)</td>
</tr>
<tr>
<td>90 day readmission rates (discharges from AMU)</td>
<td>29/88 (33%)</td>
<td>8/22 (36%)</td>
</tr>
</tbody>
</table>

Outcomes for complex older people managed in AMU (10/2008–10/2009)

<table>
<thead>
<tr>
<th>AMU (excludes ‘acute care bay’)</th>
<th>Acute Frailty Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of complex, older patients</td>
<td>1153</td>
</tr>
<tr>
<td>Mortality</td>
<td>88/1153 (8%)</td>
</tr>
<tr>
<td>Discharge rate</td>
<td>82/1065 (8%)</td>
</tr>
<tr>
<td>Length of stay(excludes discharged &amp; deaths)</td>
<td>n=983Mean=12.3, SD 14.0</td>
</tr>
<tr>
<td>30 day readmission rates (discharges from AMU)</td>
<td>20/82 (24%)</td>
</tr>
<tr>
<td>90 day readmission rates (discharges from AMU)</td>
<td>26/82 (32%)</td>
</tr>
</tbody>
</table>

Conclusions
Complex older patients managed in the acute frailty unit are nearly twice as likely to return home from the AMU and those admitted have a 4 day reduction in length of stay, without any appreciable increase in readmission rates, compared to historical controls. Compared to current in-patients, those managed in the AFU have similar discharge rates, but reduced 30 day readmission rates.
NUTRITIONAL ASSESSMENT OF ORTHOPAEDIC PATIENTS: THE SIGNIFICANCE OF BIOCHEMICAL PARAMETERS

I Basu, M Prime, C Jowett, T Davies, M Howes, B Levack

Queens Hospital, Romford, Essex

Background
Nutritional status influences surgical outcome and complication rates. NICE recommends the use of nutritional assessment tools for hospitalised patients, yet these assessment tools are often under utilised. The poor utilization of traditional nutritional assessment tools is thought to be largely due to their involved nature.

Innovation
Using biochemical factors as predictors of adverse outcomes in surgical patients is developing a growing evidence base and allows a more rapid nutritional assessment. This study investigates the use of traditional nutritional assessment in orthopaedic patients and the association between biochemical factors and scoring systems, and adverse outcomes.

Evaluation
137 hip fracture patients were investigated. Data was collected retrospectively from patient records and online biochemical databases. After excluding those with incomplete data and gross outliers, 66 patients were included in the analysis. Data was formatted in excel before being analysed in SPSS 17. Differences in mortality and length of stay were assessed using chi-squared and t-tests respectively and significance testing carried out at the 0.05 level. The average age was 82 yrs with 17 males and 49 females. Pre-op lymphocyte counts indicated that the majority of patients were nutritionally depleted pre-operatively (Mean: 1.02). However, only 2 had documented nutritional assessments. Age and lymphocyte counts were significantly correlated with length of stay (r=0.3, p=0.015, r=-0.3, p=0.038). Abnormal pre-operative lymphocyte counts were associated with increased length of stay and mortality (Normal/Abnormal LOS: 22 days / 24 days; Mortality: 13% / 33%). Abnormal pre-operative albumin levels were associated with a significant 38% increase in mortality (p=0.009). Higher ANS–Beta scores also demonstrated increased mortality and increased length of stay (0: m=30%, LOS=21days; 1: m=31% LOS=24days; 2: m=33% LOS=34days; (3: insufficient data)).

Conclusion
In conclusion traditional nutritional assessments are poorly utilised in orthopaedic patients. However biochemical assessments, which we have shown can predict adverse outcomes, could be used as more easily calculated and less time consuming alternatives.
EXPERIENCES OF END OF LIFE CARE IN OLDER PEOPLE IN CARE HOMES

C Goodman¹, S Barclay², S Iliffe³, K Froggatt⁴, H Gage⁵, J Manthorpe⁶, D Thompson¹, P Fenner⁷, R Garlick⁸, E Mathie¹, C Crang², J Wright¹, M Handley¹


Background
The Department of Health has advocated use of modified mainstream palliative care frameworks, such as the Gold Standard Framework, to improve the quality of end of life care in care homes (E Sampson, 2008, BMC Palliative Care, vol7). These frameworks require the active involvement of a person to indicate how they would prefer their death to be managed, citing place of death as a key outcome indicator of success.

Innovation
Research on end of life care in care homes often relies on proxy accounts or retrospective analysis of care notes. (C Goodman, 2009, Dementia, Vol8, No3, pp424-431). This longitudinal study tracked the care received over 12 months by 121 older people living in six (residential) care homes in 3 PCTs across the East of England. Data collection focused on care received, resources used and key episodes of ill-health. In addition, 63 of the older people were interviewed three times over one year.

Evaluation
The mean age of participating residents at baseline was 87.1 years, 47.9% had a diagnosis of dementia. During the study 17.4% died. Statistical analysis used descriptive statistics (SPSS) for basic background characteristics and NVIVO managed the qualitative data. Findings challenge the assumption the majority of residents are or want to be active in discussions surrounding their wishes. While many assumed they would live in the care home until their death, the majority deferred decision-making to relatives and care home staff. The limitations of their everyday life, paucity of opportunities for in-depth conversations and control in everyday decision making were more significant issues.

Conclusions
Findings suggest alternative approaches need to be developed to complement existing frameworks and support care home and NHS staff to address the individual’s priorities alongside service preoccupations about avoidance of unnecessary hospitalisations, place of death or interventions that may unhelpfully prolong the dying process.
INCLUDING A PHARMACIST IN THE PARKINSON’S DISEASE CLINIC

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¹. Pharmacy Department, Royal Cornwall Hospitals Trust, 2. Prescribing Department, Cornwall & Isles of Scilly Primary Care Trust, 3. Falmouth Community Hospital

Background
Patients with Parkinson’s disease (PD) present with a range of motor and non-motor symptoms. Appropriate drug treatment may involve polypharmacy. Regular specialist review of drug regimes can be undertaken by a geriatrician, neurologist, or PD Nurse Specialist (PDNS). Pharmacists can also contribute to the review of medication regimes in PD. We have evaluated the effectiveness of a pharmacist working in a dedicated PD outpatient clinic.

Innovation
Two pharmacists undertook specialist training in Parkinson’s disease (Parkinson’s Disease Masterclass or Diploma in Parkinson’s disease). Following a period of supervision and mentorship, each was included in a Parkinson’s Disease outpatient clinic team, alongside a consultant geriatrician and PDNS.

Evaluation
1) Clinic notes of 37 patients were reviewed. Interventions made by the pharmacist are listed below.

- New problem identified: Concordance problems – 8
  Adverse medication effects – 6
  Medication interaction – 3
  Postural hypotension/falls risk – 6
- Medication adjusted: PD medication – 19
  Other medication – 12
- Referred to another professional (eg physiotherapist, speech and language therapist) – 10

Including a Pharmacist in the Parkinson’s Disease
- Counselling: Medications – 12
  Sleep hygiene – 4
  Driving - 3
  Diet, exercise – 3
- Diagnostic test ordered - 4

1) Patients completed a brief questionnaire. All patients reported that they were satisfied with the service provided by the pharmacist.

Conclusions
A pharmacist with appropriate training can work successfully alongside other specialists in a PD outpatient clinic. Pharmacists reviewed drug regimes and counselled patients about their medication, but were also able to identify other common clinical problems such as postural hypotension. Patients valued the advice given by the pharmacist about their medications.
CARING FOR CARERS: STOCKPORT CARE HOMES EDUCATION PROGRAMME

A Wardle¹, M Dattachaudhuri², T Chattopadhyay², P Ngoma², S Krishnamoorthy²

¹. Quality & Contracts Dept, Stockport Social Services, Stockport MB C, 2. Dept Of Medicine For Older People Division Of Medicine Stepping Hill Hospital Stockport Nhs Foundation Trust Poplar Grove, Stockport

Background
Stockport has about 50,000 older people(65+). A significant number of them live in Care Homes(CH). Management of Older people in CH requires some basic understanding and knowledge of staff. Stockport CH currently have no structured regular education programme for their staff. There is a need for raising awareness and knowledge of staff about care of older people in CH.

Innovation
Introduction of a structured educational programme in Stockport care homes to improve knowledge of staff in comprehensive assessment and management of older people.

Implementation
- Liaison with Social Services and Care-Home Managers for signing up to the programme.
- Production of the 2 broad modules:
  - General Modules: 1-8 composed of: First impression; Communication; General assessment; Recognition of deterioration; Bowel and bladder function; Medication for older people; Teamwork; Nutrition
  - Disease-Specific Modules. 1-9 composed of:
    - Recognition of stroke; Suspecting heart attack; Dealing with Diabetes Suspicion of Pneumonia; Falls; Confusion; Parkinson’s Disease; Infection control; Care of the dying
- Duration of the course:
  - Second Course to be completed on 31st March 2010.
- Evaluation:
  - Evaluation of candidate by knowledge-based assessment through Multiple Choice Questions
  - Evaluation course- feedback through anonymous structured LIKERT style questionnaires.
  - All participants rated this programme highly by indicating “strongly agreed/agreed” to all 7 questions
  - All 18 participants except one took an exit examination and passed

Conclusion
Structured educational programme in Care Homes can increase knowledge base of Care-Home staff, provide an opportunity for better management of older people and stimulate personal development of staff. Rating of the education programme by participants was high. Greater Manchester Cardiac and Stroke Network have already expressed an interest to roll out this education programme to all care Care Homes staff across Greater Manchester.
EYE’DENTIFYING CORRECTABLE IMPAIRED VISION IN PATIENTS UNDERGOING ELECTIVE LOWER LIMB ARTHROPLASTY SURGERY

J Sandhu, K Yin Chan, P Roberts

University Hospital of North Staffordshire

Background
A desire to improve safe and independent mobilisation of patient’s in hospital having undergone lower limb arthroplasty surgery is an important issue. These patients have increased risk of falls and injury from reduced postural stability. A superimposed visual impairment is a contributing factor not previously investigated in this cohort.

Innovation
To incorporate an assessment of visual status, by way of clinical assessment and historical enquiry.

Two hundred and sixteen consecutive patients admitted for elective total hip or knee arthroplasty surgery over a six month period had their visual acuities and visual fields assessed by a single optometrist. Visual acuity was measured using a LogMAR visual acuity chart. Measurements were repeated in patients with visual acuity less than 6/12 in either eye, using a pinhole occluder to provide an estimate of acuity corrected for refractive error. Visual field defects were screened for by confrontational testing. Date of last eye examination and subjective condition of spectacles was recorded.

Evaluation
200 patients completed the study, 118 females aged 71.8 (7.5) yrs [mean (SD)] and 82 males aged 68.3 (8.8) yrs. Of these 113 patients (68 female) had undergone hip replacement and 87 (50 female) knee replacement.

Period since last eye examination was 29.7 (26.2) months. 31 (16%) patients did not have their spectacles present, 22 (11%) had spectacles in poor condition. 44 patients (22%) had impaired visual acuity (<6/18), of these 19 (43%) did not have their spectacles present, and 10 (23%) had spectacles in poor condition. Five (2.5%) patients had visual field defects.

Conclusions
The prevalence of impaired visual acuity (<6/18) was 22% and visual fields 2.5%. Over 50% of visual acuity impairment was correctable. We suggest preoperative assessment of these patients should include enquiry about spectacles and their condition.
THE RATIONALE USE OF CALCIUM AND VITAMIN D SUPPLEMENTS

J F McCann, A Gbadebo, K X Yeoh, T Jones, E Martinayate, H Graham

Department of Elderly Medicine, Royal Preston Hospital, Preston

Background
We have previously described our dietary calcium calculator PresCAT, available online at, www.prestonhipday.org.uk. From this we developed a calcium/vitamin D care pathway. In this paper, we aimed to assess it over a 12-month period, in our nurse-led osteoporosis clinic.

Innovation
The care pathway was as follows. Those on calcium/vitamin D supplements (CDSs) were checked with PresCAT. If dietary calcium intake (DCI) was adequate, (>700mg), a medical review was arranged, to discuss of the CDS. Those not taking CDSs and scoring > 700mg DCI, were not studied further. Any between 400-700mg, were given dietary advice. Compliance was then checked using PresCAT, at 4 and 12 weeks. At a DCI <400mg, a CDS was prescribed.

Evaluation
The patients n=151, (age 78± 9SD, 45(30%) male), were consecutively identified. 52/151 (34%) were on CDSs, of whom 34 were already taking adequate DCI. Of the 98 not on a CDS, 83 (85%), scored >700mg DCI. The remaining 15/98 (15%) were in the range 400-700mg DCI and were given dietary advice, with PresCAT re-assessment at weeks 4 and 12. 12/15 attended at week 4, of who all now had adequate DCI. At the final PresCAT at week 12, only 6/15 returned, with 5 remaining replete.

Conclusions
Using PresCAT with our care pathway, the clinic nurse could make rational decisions regarding the use of dietary advice and CDSs. Over half taking CDSs, had adequate DCI and could stop them subject to medical review and vitamin D status. For those not on a CDS, the DCI was adequate in 90% and in the range (400-700mg) in the rest. Those in this group attending for dietary advice demonstrated good retention for 12 weeks. The disappointing default rate however, indicated the need for a back-up strategy here.

Our pathway was modified accordingly.
LEAN THINKING – A CRASH DIET OR THE ROUTE TO FITNESS? THE ACUTE CARE OF THE ELDERLY (ACE) WARD EXPERIENCE

M Taylor, A J Weatherburn

Department for the Care of the Elderly, Blackpool Fylde and Wyre Hospitals NHS Foundation Trust

Background
Simple, focused interventions are becoming popular as tools for change in the NHS. Some of these tools are based upon methods which were intended to be part of an ongoing management system, such as “Lean Thinking”. Lean involves mapping the process, and identifying beneficial changes to smooth flow and eliminate waste.

Innovation
Taylor M, Anderton S and Weatherburn A (Age and Aging, (2009) 38 (3): iii26.) described using Lean Thinking in the ACE environment, and showed short term improvements to Length of Stay (LOS), through simple, focused interventions. The changes made affected the ward environment and multi-disciplinary team working. To study whether the previously demonstrated immediate effect of these changes was genuine and sustained we compared data for the 6 months following implementation with the same 6 month period a year earlier (control) and the same 6 months a year later.

Evaluation
The data shows an initial, statistically significant, mean reduction in LOS of 0.95 days, which increased to 1.42 days 1 year later. This was not accompanied with a significant increase in death rate, nor 28 day Readmission rate.

Conclusions
The changes that followed the Lean Thinking exercise lead to an immediate and sustained improvement in LOS, without deterioration death rates or readmission rates. Simple, focused interventions can make a sustained improvement to the patient journey and could be used widely in geriatric clinical practice.

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Immediate Post Lean</th>
<th>1 year Post Lean</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>990</td>
<td>1261</td>
<td>1282</td>
</tr>
<tr>
<td>Mean LOS (days)(95% Confidence interval) [p, t test]</td>
<td>9.09 (8.59-9.60) [0.&lt;0.01]</td>
<td>8.14 (7.68-8.61) [0.&lt;0.01]</td>
<td>7.67 (7.30-8.03) [&lt;0.001]</td>
</tr>
<tr>
<td>Median LOS (days)[p, Wilcoxon-Mann-Whitney Test]</td>
<td>7 [6 [&lt;0.001)]</td>
<td>6 [&lt;0.001]</td>
<td>6 [&lt;0.001]</td>
</tr>
<tr>
<td>In-Patient Mortality % [p, χ2 test]</td>
<td>10.6 [0.65]</td>
<td>9.4</td>
<td>9.8</td>
</tr>
<tr>
<td>28 day Readmission Rate % [p, χ2 test ]</td>
<td>11.5 [0.60]</td>
<td>13.3</td>
<td>12.3</td>
</tr>
</tbody>
</table>
DEVELOPMENT OF A GERIATRIC MEDICINE EMERGENCY DEPARTMENT LIAISON SERVICE

K M Tan, L O’Keeffe, S Feeney, M Crowe, G Hughes, D O’Shea

Department of Medicine for the Elderly, St. Vincent’s University Hospital, Dublin 4, Ireland

Background
The number of older adults attending Emergency Departments (ED) continues to rise with increased life expectancy. Current facilities and environment in EDs are frequently inadequate to assess complex geriatric medicine (GM) patients.

Innovation
A GM ED liaison service was developed for our 479 bed university hospital, with 3 consultant and 2 registrar-led sessions/week to improve assessment, treatment and follow-up of older patients. Appropriate patients were selected by senior members of the ED team. Physiotherapy, social work and occupational therapy assessments are available where needed.

Evaluation
To date, 178 patients were reviewed with average age of 83.2 +/- 6.9 of whom 18% were nursing home (NH) residents. 53% of patients were discharged from ED with appropriate treatment and follow up in the GM rapid access clinic, day hospital, subacute inpatient rehabilitation facilities, specialist or general practitioner follow-up. Eighty-three patients were admitted, 53% to the general internal medicine service (GIM), 31% to the GM service and 16% to specialist services. Limited manpower prevented GM admission of all patients. Average length of stay (LOS) of 52 patients discharged alive under GIM care (29 patients) vs GM (23 patients) was 25.7 +/- 21.3 vs 18.0 +/- 16.9 (p=0.16). We intend to evaluate representation rates at one month and 6 months as indicators of effectiveness.

Conclusion
Initial findings show approximately half of complex patients assessed did not require admission. The LOS under GM vs GIM teams appeared shorter (small sample size). There was a significant number of NH residents assessed. Developments planned include an outreach programme to NHs, a GM clinical nurse specialist in the ED and outreach programme and admission of NH patients under GM care with appropriate manpower.
MORTALITY TRENDS OVER A TWO YEAR PERIOD IN A CAMBRIDGESHIRE NURSING HOME

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1. General Practitioner, Bottisham Medical Practice, Cambridgeshire, 2. Community Geriatrician, Cambridgeshire Community Services, Princess of Wales Hospital, Ely, 3. Consultant Geriatrician, Addenbrooke’s Hospital, Cambridge

Background
The changing demography of care home residents has intensified the workload of care home and primary care staff. Whilst greater dependency levels have been implicated, increased resident turnover may better justify the need for specialist input.

Sampling Method
Data was collected between October 2007 and October 2009 from a stable eighty bedded care home (50 nursing care & 30 end stage dementia care). The same GP provides a weekly session supported monthly by a Community Geriatrician. GP records were used to establish cause and place of death, and length of nursing home stay for all residents.

Results
There were 66 deaths: 64% (42/66) due to end stage chronic disease; 23% (15/66) to advanced carcinoma and 13% (9/66) to new acute events. 83% (55/66) deaths were managed within the care home, 17% occurred in hospital. 35% (23/66) deaths occurred within three months of care home admission (from the DGH): 11/23 (48%) due to end stage chronic disease, 10/23 (43%) to carcinoma, 2/23 (9%) to a new acute event.

A snapshot of residents on 31st October 2009 showed the average length of stay to be 31 months.

Conclusions
That 35% of all deaths occurred within three months of transfer from the DGH has significant implications for both GP and care home staff, who are effectively fulfilling a hospice function. To do this well there needs to be enough time and resources allocated to allow effective end of life care. This data supports the poor prognosis of many patients discharged to a nursing home (82.5% residents died in the 2 year period). For holistic care to be provided the DGH must provide adequate communication with patient, relatives and primary care, at the point of discharge, enabling a shift in emphasis of care towards palliation where appropriate.
SURVEY OF CASE MIX AND OUTCOME AFTER CAROTID SINUS MASSAGE AND TILT TABLE TESTING BY A GERIATRICIAN AND A CARDIOLOGIST IN A UNIVERSITY TEACHING HOSPITAL

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¹. Specialist Services for Older People, 2. Department of Cardiology Royal Liverpool and Broadgreen University Hospitals, Liverpool

Background
Falls services have been developed by Geriatricians. Patients with syncope may present with unexplained falls. Carotid Sinus Massage (CSM) and Tilt-Table testing (HUTT) are widely used by Geriatricians and Cardiologists generally working independently. Syncope clinics or joint working between Cardiologists and Geriatricians using shared protocols has been recommended to ensure patients receive appropriate and effective investigation of syncope (European Society of Cardiology, European Heart Journal, 2009,30,2631-2671).

Sampling Methods
We audited consecutive patients referred for CSM and HUTT in one University Hospital ECG Department by a Consultant Cardiologist (JH) and a Consultant Geriatrician (NC). The Westminster protocol was used for Geriatrician patients, Italian for Cardiology.

Results
49 patients were assessed, 25 Cardiology, 24 from a Geriatrician. Women were more prevalent in Geriatrician referrals (75% vs. 60%); and were older, mean age 74 vs. 52 years for Cardiology patients. Cardiology referrals were from ward discharges (44%) or Neurologists (32%), for syncope. Geriatrician referrals were from General Practitioners (58%) or nurse-led falls clinic (38%), only 50% with possible syncope.

No patient had positive CSM. Seven patients had a positive HUTT without GTN (4 Cardiology, 3 Geriatrician); mean age of the positive Cardiology patients 61 years vs. 79 (Geriatrician referrals). All positive Geriatrician results were vasodepressor, 2 Cardiology patients had vasodepressor responses and 2 cardio-inhibitory, without GTN provocation. Cardiology patients proceeded to GTN provocation, 3 more were then positive (1 cardio-inhibitory response and 2 vasodepressor).

Conclusions
Referral reason and route were very different in the two groups. Cardiology patients were younger and more were male. No patient had positive CSM – despite reported prevalence of CSH of 35% in asymptomatic subjects. Although small patient numbers, it is noteworthy that cardio-inhibitory responses were only seen in Cardiology patients. Differences in case mix and outcomes suggest developing joint syncope services might increase diagnostic yield, in line with European Cardiology Society guidelines for the diagnosis and management of syncope.
DEPARTMENT OF MEDICINE FOR OLDER PEOPLE – WHAT’S IN A NAME?

D Baylis, J R G Marigold, J Adams

Department of Medicine for Older People, Southampton University Hospitals NHS Trust

Background
Despite Geriatrics being the largest medical specialty in the United Kingdom its identity lacks consistency. The name ‘geriatrics’ has become increasingly unpopular, perhaps owing to the stigma that attaches to it and because of a perception that care of frail older people is of a poor quality.

21st century geriatric medicine is a modern and dynamic specialty in its own right and in the context of a changing, commission-based NHS, needs to be appealing and competitive.

We facilitated a management process at a teaching hospital to establish views of appropriate names for the department. This formed part of a rebranding strategy, which included an evaluation of service design and marketing promotion to local commissioners in the face of increasing local competition.

Sampling methods
We performed a literature and web search to establish alternative names of departments across the world. Stakeholders including health professionals and the public were consulted prior to creating a shortlist of 10 candidate titles:

1. Traditional names
2. Names including a reference to aging, health promotion and general medicine
3. Names excluding any reference to age, with a bias towards general medicine

Selection of a name was facilitated at a consultant meeting; a vote held to decide a new title.

Results
The top names in order of preference were:

1. Ageing and Health Unit; 2. Acute care of the Elderly (ACE)
3. Medicine for Older Persons; 4. Geriatrics / Gerontology

Ageing and Health Unit at Southampton was decided to be the umbrella term with Acute Care of the Elderly, Community Health, Stroke Services Rehabilitation, Movement Disorders, Falls and Syncope, and General and Geriatric Medicine forming sub-departmental titles.

Conclusion
Worldwide, departmental names lack consistency. The Ageing and Health Unit more accurately reflects the aspirations and philosophy of geriatricians working within the department and provides a foundation for more effective marketing to NHS service
EVALUATING THE NEEDS OF OLDER PEOPLE UNDERGOING AMPUTATIONS: A SCOPING STUDY

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¹. Department of Health and Ageing, Guys and St Thomas’ Hospitals NHS Foundation Trust
². Department of Vascular Surgery, Guys and St Thomas’ Hospitals NHS Foundation Trust

Background

Individuals undergoing amputation are often elderly with multiple co-morbidities, potentially contributing to post-operative problems prolonging hospitalisation. Prolonged length of stay (LOS) impacts on physical and emotional well-being and on finances. Frameworks for re-configuration of surgical services are being explored and require systematic planning to ensure high quality holistic care is delivered.

An evaluation survey was undertaken to elicit areas for quality improvement initiatives/service re-design, and to assess the need for elderly care input.

Sampling methods: Case-note review of all patients who underwent amputation between May 2008 and May 2009 (n=40) at a major vascular unit.

<table>
<thead>
<tr>
<th>Pre-operative status</th>
<th>Median Age (range)</th>
<th>Charlson Score (range)</th>
<th>PVD</th>
<th>HTN</th>
<th>Type2DM</th>
<th>Type1DM</th>
<th>ESRF</th>
<th>Surgery</th>
<th>no. of patients (median LOS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toe amputation</td>
<td>72 (3(0-7))</td>
<td>36 (90%)</td>
<td>31 (77.5%)</td>
<td>18 (45%)</td>
<td>2 (5%)</td>
<td>4 (10%)</td>
<td></td>
<td>11 (18)</td>
<td></td>
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<tr>
<td>Below Knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>17 (47)</td>
</tr>
<tr>
<td>Through Knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 (30)</td>
</tr>
<tr>
<td>Above Knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10 (40)</td>
</tr>
<tr>
<td>Postoperative issues</td>
<td>&gt;1 UTI</td>
<td>13 (32.5%)</td>
<td></td>
<td></td>
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<tr>
<td>AKI</td>
<td>4 (10%)</td>
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<tr>
<td>Drug errors</td>
<td>7 (17.5%)</td>
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<td></td>
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<tr>
<td>Positive blood culture</td>
<td>5 (12.5%)</td>
<td></td>
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<tr>
<td>Escalation ITU/HDU</td>
<td>5 (12.5%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Positive troponin</td>
<td>4 (10%)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>MRSA</td>
<td>2 (5%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDT</td>
<td>1 (2.5%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Readmission&lt;30 days</td>
<td>7 (17.5%)</td>
<td></td>
<td></td>
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</tbody>
</table>

Results

Detailed notes review of 29 patients demonstrated incidence of in-patient falls (14%), delirium (10%), constipation (10%).

Referrals to co-specialties were multiple and fragmented, with no individual team leading on discharge planning. Discharge planning was further affected by variable rehabilitation resources according to PCT provision.

Benchmarking with CHKS demonstrated excess LOS, related to medical, surgical and discharge-planning complications.

Documentation was unstandardised, and of variable quality.

Conclusions

This is a high-risk surgical cohort, with no team leading pre-operative medical optimisation. LOS is prolonged with potentially avoidable medical complications, despite which medical input is fragmented. Geriatric medicine has a potential role in pre-operative optimisation, post-operative medical management, rehabilitation and discharge planning. This study supports the development and evaluation of co-produced quality improvement initiatives using integrated care pathways between geriatric, medical and vascular specialties.
MANAGEMENT OF ACUTE POST-STROKE BLOOD PRESSURE: A POSTAL QUESTIONNAIRE OF UK STROKE PHYSICIANS’ CURRENT CLINICAL PRACTICE

R E O’Brien¹, K R Lees¹²

¹. Acute Stroke Unit, Western Infirmary, Glasgow, 2. Division of Cardiovascular & Medical Sciences, University of Glasgow

Background
The acute management of post-stroke blood pressure (BP) remains controversial, with arguments for and against early intervention. Current clinical guidelines advise against routine early intervention. We sought to determine the current clinical practice of UK Stroke Physicians with regard to the early management of BP following acute stroke.

Sampling Methods
A postal service evaluation questionnaire was sent to the Lead Consultant for Stroke Services in Acute Stroke Units in UK hospitals. Hospitals offering Acute Stroke Units were identified by their inclusion in the 2008 Scottish Stroke Care Audit and the 2006 Royal College of Physicians Sentinel Stroke Audit. Questionnaires were addressed to named individuals where possible.

Results
259 questionnaires were posted to UK Stroke Physicians, and 33% responded. Current clinical practice with regard to acute management of BP following stroke varied considerably. A written policy for early BP management was in place in 69% of units. Approximately one third of responders intervened to lower systolic BP within the first 72 hours of acute stroke, but the majority (65%) delayed intervention by at least 7 days. Most of those who returned questionnaires would not intervene until systolic BP exceeded 180mmHg. Of those who chose to intervene, the most commonly quoted target systolic BP was 160±5mmHg, although a proportionate change from baseline was suggested in some cases. The majority (87%) of those who responded expressed interest in participating in future randomised controlled trials of acute BP intervention following stroke.

Conclusions
The current clinical practice of UK Stroke Physicians regarding acute post-stroke BP intervention is diverse. This reflects the conflicting evidence in this field and lack of clinical certainty. There appears to be interest in the stroke community for further research that aims to address this important clinical question.
MALNUTRITION IN ELDERLY PATIENTS ATTENDING A MEMORY CLINIC: PREVALENCE AND COMPARISON OF TWO SCREENING METHODS

F A Beintema¹, T Schuur², P E van Walderveen², D Z B van Asselt²

1. Dept of Psychiatry, GGZ Friesland, The Netherlands, 2. Dept of Geriatric Medicine, Medical Centre Leeuwarden, The Netherlands

Background
The prevalence of malnutrition in elderly with cognitive decline or dementia is high. At this moment there is no guideline for diagnosis and treatment.


The aim of this prospective observational study was to evaluate the prevalence of (risk of) malnutrition in elderly patients referred to a memory clinic and to determine the usefulness of the MNA-sf and SNAQ+.

Sampling methods
All patients over 65 years were included and all underwent a comprehensive geriatric assessment.

Results
We included 81 patients. According the MNA-sf 55.3% had (a risk of) malnutrition. In comparison, 19.8% had a moderate to severe malnutrition according to the SNAQ+. Of the 60 well nourished patients according the SNAQ+, 27 (45%) had a (risk of) malnutrition with the MNA-sf.

Conclusions
The prevalence of (risk of) malnutrition is higher than the only published data, of 43%, found at another Dutch memory clinic (Scheltens P. Eur J of Neurol 2009;16: S19-22). Differences in study populations, may be an explanation. By screening with the SNAQ+ we missed a large group of patients at risk for malnutrition. This could be caused by dependence of the SNAQ on the memory of patients.

Malnutrition is a big problem in elderly patients attending a memory clinic. Up to this moment there is no attention for this problem in the Dutch Dementia Guideline. Our findings show that use of the SNAQ+ is not useful for screening in this population.
THE “OLDEST OLD” IN THE LAST YEAR OF LIFE: POPULATION-BASED FINDINGS FROM ≥85-YEAR-OLD CC75C STUDY PARTICIPANTS

J Fleming¹, J Zhao¹, S Barclay¹,², M Farquhar¹,², C Brayne¹, A L Kinmonth¹,² for the Cambridge City over-75s Cohort (CC75C) study collaboration

1. Department of Public Health and Primary Care, University of Cambridge, Institute of Public Health, Cambridge, 2. General Practice & Primary Care Research Unit

Introduction
The proportion of all deaths in England and Wales occurring aged 85 or older rose from 1/5 in 1990 to almost 1/3 by 2006. The implications for end-of-life care provision are largely unknown.

Methods
Prospective data collected from CC75C study respondents <1 year before death aged ≥85 (n=321) were analysed retrospectively to characterise very old people in their final year. To inform policy and planning, we compared physical health, disability, self-rated health and cognitive status of people dying in their late 80s with those aged ≥90.

Results
Cognitive and functional impairments were generally markedly higher for those who die in their nineties or beyond - predominantly women - than for those who die earlier. These “oldest old” also suffered poorer physical health. Despite this and regardless of age or proximity to death, the majority rated their health positively.

Conclusions
As numbers of people living over 90 rise, so will the need for support to people dying in extreme old age. The study provides new data, identifying high levels of functional and cognitive disability in the year before death in very old age. The mismatch between self-perceptions of health and functional/cognitive limitations suggest these vulnerable elders may not seek help from which they could benefit. Proxy information is important to represent the frailest elderly. These findings have major policy, planning and care implications for end-of-life care for the oldest old.
USING THE ENDURANCE SHUTTLE WALK TEST IN OLDER PEOPLE – A FEASIBILITY STUDY

L A Burton, M D Witham, D Sumukadas, A D Struthers, M E T McMurdo

Ageing and Health, Division of Medical Sciences, University of Dundee, Ninewells Hospital and Medical School

Introduction
The six minute walk test is an established measure of submaximal exercise capacity in older people, but lacks responsiveness to change. The endurance shuttle walk test has been used as a more responsive submaximal test in patients with lung disease. We assessed the feasibility of performing the endurance shuttle walk test in older people.

Methods
Cross-sectional comparative study of community dwelling older people aged over 65 years. Participants had self-reported difficulties in activities of daily living and were taking part in a larger ongoing clinical trial. Participants undertook both walk tests at the same visit.

Results
44 participants were included. Mean age was 75.4 years, 23/44 (52%) were male and 10/44 (23%) used walking aids. All participants completed the six minute walk and were divided into three groups according to distance walked in the six minute walk test: slow (<200m), medium (200-400m) and fast (>400m). 5/8 (63%) of participants in the slow group could not perform the endurance walk. All participants in the medium and fast groups completed the endurance walk; 8/15 (53%) of participants in the fast group and 1/21 (5%) of participants in the medium group reached the ceiling distance in the endurance walk test.

Conclusion
The usefulness of the endurance shuttle walk test is limited by ceiling effects in fitter patients and is too demanding for participants with a baseline six minute walk distance of <200m.
THE ACCEPTABILITY OF GRIP STRENGTH ASSESSMENT IN FOUR HEALTH AND SOCIAL CARE SETTINGS

J Sparkes, J Ritchie, J Butchart, S E Salomone, K Jameson, A A Sayer, H C Roberts

1. Academic Geriatric Medicine, MRC Epidemiology Resource Centre, University of Southampton, Medicine for Older People, Southampton University Hospitals NHS Trust

Introduction
Grip strength has been used to characterise sarcopenia in community dwelling older people participating in research. It is not used in routine clinical practice in the

Methods
Grip strength was assessed three times in each hand on participants in a series of clinical settings as follows: in-patient rehabilitation (n=100), out-patient rehabilitation (n=47), Parkinson’s disease (PD) clinic (n=57), three local care homes (n=44). Within one week of assessment, a purposive sample of 20 participants consented to a semi-structured interview about their experience of grip testing. The interview was recorded, transcribed and analysed on a thematic basis.

Results
20 participants with a Mini Mental State Examination of >20 were interviewed as shown below.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Number of interviewees (M:F)</th>
<th>Median Age (Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-patient</td>
<td>6 (4:2)</td>
<td>89 (83 - 92)</td>
</tr>
<tr>
<td>Out-patient</td>
<td>2 (0:2)</td>
<td>83 (79 – 86)</td>
</tr>
<tr>
<td>Parkinson’s</td>
<td>8 (5:3)</td>
<td>74 (63 – 79)</td>
</tr>
<tr>
<td>Nursing Home</td>
<td>4 (1:3)</td>
<td>85 (81 – 91)</td>
</tr>
</tbody>
</table>

Participants found grip strength testing straightforward. All squeezed their hardest and were prepared to have the test repeated. Six participants (inpatients, PD) felt the dynamometer would be heavy if unsupported. No-one reported grip strength testing to be painful or uncomfortable. Two participants (inpatient & PD) thought it would become tiring after multiple attempts. Participants variously felt their first or last attempts were better and all except two felt their dominant hand was stronger. Only one participant (inpatient) associated grip strength with general muscle strength. Most welcomed routine assessment as an opportunity to improve their health but two (with PD) commented that confirming increasing weakness might be worrying.

Conclusions
Participants from a range of settings found grip strength assessment acceptable. This supports the use of grip strength testing in clinical practice.
A RELIABLE METHOD TO MEASURE CROSS-SECTIONAL AREA OF NECK MUSCLES INCLUDED DURING ROUTINE MRI BRAIN VOLUME ACQUISITIONS IN OLDER ADULTS

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Introduction

Sarcopenia is an important feature of aging. It is reliably measured by MR determination of cross-sectional areas (CSA) of large skeletal muscles. Cranial neck muscles are imaged as part of routine MRI brain volume acquisitions. We sought to establish a reliable method for measuring neck muscles CSAs from routine brain MRIs.

Material and Methods

Volumetric T1-weighted images were acquired at 1.5 Tesla (isotropic 1.3mm voxels). CSAs of 1) trapezius, splenius capitis, semispinalis capitis as a group, 2) obliquus capitis inferior and 3) sternocleidomastoid (SCM) were measured bilaterally in the mid-C2 transverse plane of 40 community-resident volunteers aged 72 years, independently by two raters on three occasions.

Results

37 scans were of adequate quality to allow measurement. Mean difference between raters was 0.3% (95% CI -1.5, 2.0%) of mean CSA. CSA intraclass correlation coefficients between raters were: 0.99 (95% confidence intervals 0.98-0.995) for trapezius, splenius and semispinalis combined; 0.92 (95% C.I. 0.85-0.96) for obliquus; and 0.92 (95% C.I. 0.85-0.96) for sternocleidomastoid. CSAs all correlated highly significantly with each other (p<.001). The first principal component explained 72.2% of total CSA variance for the three muscles.

Conclusion

Reliable measurement of cranial neck muscle CSA is feasible from routine MRI brain volume acquisitions. The method will facilitate investigation of relationships between sarcopenia and brain aging. The high proportion of shared variance indicates that an extracted principal component is likely to be a useful measure of sarcopenia.
SHOULDER PATHOLOGY AND ACROMIOHUMERAL DISTANCE IN THE ELDERLY

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Introduction
Restriction of movement in the shoulder joint is common in elderly patients, leads to dependence in functional tasks and is frequently under-reported. Rotator cuff disease is a frequent cause of these problems, and physiotherapy and / or surgery may help prevent functional decline, if early diagnosis is made. We wished to assess the prevalence of shoulder pain and restriction in older patients; and to assess usefulness of the acromio-humeral distance measurement on plain radiograph, which supports rotator cuff degeneration a causative factor.

Methods
We assessed active and passive range of shoulder movements, pain score, functional task ability (washing, dressing, feeding, grooming) and reviewed medical history on all in-patients across three elderly care wards as a convenience sample. All were admitted as an emergency within the previous month. The assessment was part of usual clinical practice. Sixty-four patients were available, of whom 13 were excluded due to poor cognition (n=10) or being too unwell (n=3). Radiographs were reviewed for evidence of rotator cuff degeneration (acromio-humeral distance of <6mm).

Results
Twenty four (47%) patients had either pain or restricted range of movement in one or both shoulder. Only 8 of these (33%) had a known relevant diagnosis or recognition of this disability in their medical history. None had known rotator cuff disease. Seven of 24 x-rays in the pain or restriction group (29%) had an acromio-humeral distance of <6mm, compared to 4 of 30 (13%) x-rays in those without pain or restriction; this difference was not significant (p=0.14).

Conclusions
This confirms the very high prevalence of shoulder joint dysfunction in elderly patients and under-diagnosis of disorders of this joint. We did not find acromio-humeral distance measurement a useful diagnostic tool in this group. Dedicated clinical assessment should be incorporated into routine geriatric assessment to allow early therapeutic intervention.
SYMPTOMATIC CAROTID SINUS HYPERSENSITIVITY IS ASSOCIATED WITH ENHANCED CARDIAC SYMPATHETIC INNERVATION

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Introduction
Carotid sinus hypersensitivity (CSH) is a condition commonly associated with syncope and unexplained falls in older individuals, but its underlying pathophysiological process remains poorly understood. We evaluated cardiac sympathetic innervation in symptomatic patients with CSH and asymptomatic control subjects using metaiodobenzylguanidine (MIBG) myocardial scintigraphy.

Method
Symptomatic CSH subjects (n=21) were recruited from consecutive patients diagnosed with CSH at our specialist unit. Asymptomatic control participants with (n=12) and without (n=9) CSH recruited from a community cohort of older people. Following an intravenous injection of 123I-MIBG, the heart to mediastinal uptake ratio (H:M) were determined for early and late uptake at 20 minutes and 3 hours after injection using planar scintigraphy.

Results
The symptomatic CSH group had significantly higher early H:M (estimated mean difference, B=0.40; 95% confidence interval, CI=0.13 to 0.67, p=0.005) and late H:M (B=0.32; 95%CI=0.03 to 0.62, p=0.032) compared to the non-CSH control group. There was, however, no significant difference in early H:M (B=0.18; 95%CI=-0.123,0.47; p=0.236) or late H:M (B=0.15; 95%CI=-0.17,0.48; p=0.351) between the asymptomatic CSH group and non-CSH controls.

Conclusion
Cardiac sympathetic neuronal activity is increased in individuals with symptomatic CSH but not those with asymptomatic CSH. This was an unexpected finding, as the asystolic response in CSH is vagally-mediated, while the hypotensive response was thought to be due to a reduced sympathetic response.
THE RELATIONSHIP BETWEEN POSTURAL BLOOD PRESSURE CHANGES AND AUTONOMIC AND ARTERIAL FUNCTION

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Background
Postural hypotension is an important cause of falls. The causes of age-related changes after orthostatic challenge are unclear. Autonomic dysfunction and arterial stiffness have been implicated, but no study has explored the role of endothelial function. The study measured the association of endothelial function and postural systolic pressure (SBP) change.

Methods
51 healthy volunteers (29 female) aged 65-75y were recruited. Each underwent supine and erect SBP measurements on a tilt table using Finometer Pro. Autonomic function was measured by resting heart rate variability (RMSSD). Arterial stiffness was measured by carotid-femoral pulse wave velocity using SphygmoCor. Endothelial function was measured by the ratio of the fall in augmentation index after administration of salbutamol and GTN (a validated measure of endothelial function). The correlations between these measures and SBP change 3 minutes post-tilt was assessed using Pearson’s coefficient and multivariate regression analysis to correct for potential confounders (including age, sex and height).

Results
Mean lying BP was 145/78. Mean postural SBP change was +7.8 (SD 13.3) mmHg.

Correlations with the outcome measures were:
Autonomic function (r=0.24, p=0.09)
Arterial stiffness (r=-0.11, p=0.44)
Endothelial function (r=0.28, p=0.04)

Multivariate regression analysis confirmed endothelial function was the only factor independently correlated with SBP change.

Conclusion
Poorer endothelial function is associated with postural hypotension in healthy older people. Endothelial dysfunction is at least as important a contributor to age-related postural hypotension as autonomic dysfunction.
AUTONOMIC AND ARTERIAL FUNCTION IN ORTHOSTATIC HYPERTENSION

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Background
Orthostatic hypertension (a rise in systolic blood pressure =>20mmHg on assuming upright posture) is an underappreciated and poorly understood condition. It has previously been associated with cerebrovascular ischaemia. This study compared endothelial and autonomic function in those with and without orthostatic hypertension.

Methods
51 healthy volunteers (29 female) aged 65-75y were recruited. Each underwent supine and erect SBP measurements on a tilt table using Finometer Pro. Autonomic function was measured by resting heart rate variability (RMSSD). Arterial stiffness was measured by carotid-femoral pulse wave velocity using SphygmoCor. Endothelial function was measured by the ratio of the fall in augmentation index after administration of salbutamol and GTN (a validated measure of endothelial function). Differences between those with and without orthostatic hypertension were assessed using Mann-Whitney U test.

Results
The prevalence of orthostatic hypertension was 21.6% (95%CI 10.3%-32.9%)

Conclusion
Orthostatic hypertension is common in healthy older people and was not associated with endothelial or autonomic dysfunction. Instead, the trend was towards an association with markers of better vascular and autonomic health.
DOES KNOWLEDGE OF CARDIOVASCULAR RISK AS CALCULATED BY B-TYPE NATRIURETIC PEPTIDE LEVEL INFLUENCE INVESTIGATION AND MANAGEMENT OF OLDER PEOPLE?

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Introduction
Cardiovascular disease is a major cause of death and disability in older people, but is often suboptimally managed. B-type natriuretic peptide is a powerful marker of cardiovascular risk in older people even in the absence of heart failure. We tested whether knowledge of cardiovascular risk as shown by B-type natriuretic peptide level could influence investigation and management of cardiovascular risk in older people.

Methods
Randomised, double-blind controlled trial. Patients attending the Dundee Medicine for the Elderly Clinic were recruited over a seven-month period. Baseline medical history, blood pressure and full blood count, estimated glomerular filtration rate, glucose and total cholesterol.

Patients were randomised into an interventional or control group. Patients in the intervention group had their 3-year risk of death derived from BNP level placed in the clinic notes. On discharge from clinic, data was collected on newly organised echocardiography, medication recommendations/changes and most recent blood pressure. Information was collected by an observer blinded to the intervention group.

Results
53 patients (27 interventions, 26 controls) were enrolled in 7 months. Mean age was 80 years; 25/53 (47%) were male. Mean blood pressure was 146/79 and the median BNP value was 65 pg/ml.

There were no significant between-group differences for change in blood pressure between baseline and follow up (-10.5/-7.5 for intervention, -7.8/-6.1 for control, p=0.76). There was no difference in the number of echocardiograms requested (4/27 vs 1/25, p=0.2, Fishers test), new cardiovascular medications prescribed (0.41 per person vs 0.40 per person, p=0.97), cardiovascular medications discontinued (0.15 per person vs 0.20 per person, p=0.67) or proportion with a change in cardiovascular medications (13/27 vs 10/25, p=0.55).

Conclusions
Providing information on the risk of death based on BNP levels did not lead to a change in clinician behaviour in managing cardiovascular disease in older people.
PREDICT FRAILTY PROGRESSION WITH CARDIOVASCULAR AND PULMONARY DISEASES IN OLDER INSTITUTIONALISED MEN

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Center for Geriatrics and Gerontology, Department of Family Medicine, Taipei Veterans General Hospital, Taipei, Taiwan

Introduction
Frailty is a dynamic process that may change over time in older adults. Identifying the risk factors of frailty progression is essential to early recognition of high-risk individuals. The objective of the study is to determine the predictive values of biomarkers and comorbidity for frailty in the older institutionalised men.

Methods
We recruited residents aged 65 years or older from a veterans care home in 2007. All participants were men. Frailty status was assessed at baseline and repeated 1 year later. Frail participants met at least three of the following criteria: weight loss, exhaustion, slow walking speed, and weak grip; intermediate participants met one or two criteria, and non-frail participants met none. Physical activity domain was not included in the frailty criteria because of generally sedentary lifestyle in the care home. Participants with frailty at baseline and with acute illness were excluded.

Results
Fifty four (36.5%) participants deteriorated to greater frailty status while five (3.4%) improved after one year. Multiple logistic regression revealed increased risk of frailty progression in baseline cardiovascular disease (odds ratio: 2.50 (95% CI, 1.08-5.78)), chronic obstructive pulmonary disease (odds ratio: 3.06 (95% CI, 1.00-9.29)) and higher body mass index (odds ratio: 1.14 (95% CI, 1.01-1.28)). Baseline serum markers of nutrition and renal function, diabetes, hypertension, and cancer showed no relation to the frailty progression.

Conclusions
This prospective study suggested that in institutionalised older men, cardiovascular disease, chronic obstructive pulmonary disease and higher BMI were the significant predictors of progression to frailty.
STROKE RISK STRATIFICATION IN ATRIAL FIBRILLATION IN OVER 65 YEAR OLDS - CHADS2 VERSUS NICE STROKE RISK STRATIFICATION

M T O' Neill, S Dasgupta, S Choudhury

Countess of Chester Hospital

Introduction
Atrial Fibrillation (AF) is associated with a 5-fold increased risk of stroke. CHADS2 is a widely accepted tool readily used to guide appropriate antithrombotic therapy (ATT) 1 i.e. score = 0 (low risk and aspirin only advised), score = 1 (moderate risk and aspirin or warfarin advised), score ≥ 2 (high risk and warfarin advised). NICE stroke risk stratification (SRS)2 algorithm provides similar guidance. We sought to expose a difference in risk stratification when both tools were applied to a general medical inpatient group.

Methods
We retrospectively reviewed case notes of 81 patients admitted between April 2008 and February 2009. We also searched Meditech notes. CHADS2 score and NICE SRS were determined for each patient and ATT advise compared with actual practice.

Results
76 case notes were included (new onset AF was excluded). 48 (63%) were female and 28 (37%) male. Age range was 65-97. Average age 76.9.

CHADS2 Score 0 (n = 5)
All patients in this group had moderate risk score under NICE SRS

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<tr>
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<tr>
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<tr>
<td>Antiplatelet - warfarin</td>
<td>0</td>
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</table>

CHADS2 Score ≥ 2 (n = 50)

<table>
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<td>contraindication to warfarin</td>
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<tr>
<td>Antiplatelet - warfarin</td>
<td>10</td>
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</tbody>
</table>

CHADS2 Score 1 ( n = 21 )

<table>
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<tr>
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<th>NICE</th>
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<tr>
<td>Antiplatelet - no</td>
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<td>2</td>
<td>0</td>
</tr>
<tr>
<td>contraindication to warfarin</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Conclusion
15 of 76 (20 %) patients had different risk category depending on which schema used. In all 15 cases the NICE SRS algorithm resulted in a higher risk than CHADS2 guidance. Age and heart failure accounted for most differences.

References:
2. NICE Guideline 36
COMPARISON OF CLINIC BLOOD PRESSURE MEASUREMENT (CBPM) VERSUS AMBULATORY BLOOD PRESSURE MEASUREMENT (ABPM) IN PATIENTS ATTENDING A SYNOPE CLINIC

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Introduction
The presence of orthostatic hypotension (OH) is a common cause of syncope in older adults and can often be linked to causative medications. ABPM provides a more accurate assessment of blood pressure control and may allow for informed rationalisation of medications. We wanted to compare CBPM versus ABPM in patients attending a syncope clinic and to evaluate the role of ABPM.

Methods
Patients attending the syncope clinic over the previous 18 months, who had a 24 hour ABP were identified. Initial CBPM, mean 24 hour ABP, daytime and nocturnal mean ABP and dipper status were recorded. Additional investigations, final diagnosis, medication and management were also noted.

Results
27 patients with a mean age of 72 years (range 19-92) were included. 74% female. Average number of medications was 3.7. 67% had a lower mean 24 hour ABP than CBPM. 24 hour mean systolic ABPM was 15 mmHg (9.9%) lower than CBPM (138 versus 153 mmHg respectively, t = 2.60, 52 df, 2p = 0.01). The mean 24 hour diastolic ABPM was 5 mmHg (6.0%) lower than CBPM (76.6 versus 81.4 mmHg respectively, t = 1.23, 52 df, 2p = 0.2; NS). 18 patients were hypertensive at CBPM (BP>140/90) according to British Hypertension Society Guidelines however on ABPM 28% of those were normotensive (BP<125/80). 15 patients (55.6%) were non-dippers. 14 (51.9%) patients were diagnosed with OH and 9 (33.3%) with neurally mediated syncope (NMS). 10 (37%) patients had anti-hypertensive medication withdrawn following ABPM.

Conclusions
The majority of patients attending the syncope clinic who had ABPM, had a diagnosis of OH or NMS. In one third of patients anti-hypertensive medications were stopped following ABPM. ABPM is a useful investigation in the assessment of syncope, in particular those with OH and NMS, as it provides additional diagnostic information to guide medication changes.
AGE-RELATED CHANGES IN AMBULATORY BLOOD PRESSURE PARAMETERS (ALLIED IRISH BANK STUDY)

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Introduction
Observational and prospective studies of casual blood pressure have shown that systolic pressures continue to rise throughout the normal lifespan, whilst diastolic pressures plateau around the age of 55 years and decrease thereafter, thus creating a widened pulse pressure in older subjects. High pulse pressure has been identified as a better independent predictor of future morbid cardiovascular events in older men and women than either systolic or diastolic pressures alone. In contrast little is known about the changes in ambulatory blood pressure (ABP) over time.

This study aims to characterise the natural history of ABP parameters in a community-dwelling healthy population.

Methods
The initial phase I AIB study group contained 815 subjects and described ambulatory BP profiles of both men and women in a large healthy population. 432 subjects were followed up for this phase II study with an average follow up interval of 7.7 years.

Results
- Daytime systolic BP rose similarly in both males and females in all age-groups.
- Daytime diastolic BP rose in the first three age categories, but in subjects aged 50 or over at baseline diastolic BP declined.
- The annual increment in pulse pressure for those over 50 years at baseline was seven times that of those under 40 years (p<0.0005)
- Night-time systolic pressures increased most dramatically in the older age groups (p<0.0002).
- Night-time diastolic BP rose in all groups.
- Night-time pulse pressure fell in younger subjects but increased greatly in those over 50 years (p<0.0001).

Conclusions
This is one of the first studies to chart the natural history of ABP parameters over time. Night time pressures seem to change more acutely in the elderly population. This time period has been shown to correlate with outcome and we feel future studies are warranted to look at better 24 hour BP control in the elderly.
INNOVATIONS IN TEACHING UNDERGRADUATES ABOUT GERIATRIC MEDICINE AND AGEING – RESULTS FROM THE UK NATIONAL SURVEY OF TEACHING IN AGEING AND GERIATRIC MEDICINE

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Introduction
This survey set out to identify innovations in teaching of ageing and geriatric medicine delivered to medical undergraduates in the UK.

Methods
An electronic questionnaire which asked respondents to report innovations in teaching of which they were particularly proud was sent to all 31 UK medical schools.

Results
28 schools agreed to participate and full responses were received from 17. 13 of these reported innovations including Computer Aided Learning Packages (in stroke and the International Classification of Function), electronic case libraries, other uses of technology (disability simulation exercises), student selected components (in institutional care, therapeutics, gerontology, osteoporosis and movement disorders), multi-professional teaching (in ethics, advanced directives, confusion, dignity, therapeutics, rehabilitation and nutrition) and integration of ageing themes into wider curricular structures (longitudinal themes, compulsory assessments in core competencies).

Conclusions
These data reveal a number of innovations in undergraduate teaching of ageing and geriatric medicine within the UK. Work should now focus on how to disseminate current innovations and co-operate at a national level to develop future teaching interventions.
TEACHING NEW DOGS OLD TRICKS: A SHORT INTERACTIVE LECTURE CAN HAVE A LASTING EFFECT ON JUNIOR DOCTORS KNOWLEDGE OF DELIRIUM

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Introduction
A recent national survey of 784 UK trainee doctors demonstrated low levels of knowledge about the diagnosis and management of delirium, with only 33% reporting adequate training in the topic (Davis and MacLullich, Age and Ageing, 2009, 38(5), pp 559-563). We set out to evaluate whether an interactive lecture using electronic keypads could have a lasting effect on junior doctors knowledge of delirium.

Method
A 45 minute lecture was developed, using the national delirium survey as a template, to cover epidemiology, diagnosis and management of delirium. Electronic keypads were used to maximise interactivity and focus learning around key topics. The lecture was delivered on separate occasions to 35 foundation and 46 specialty trainee doctors. Doctors undertook a short multiple choice knowledge test one week before, immediately after and 6-weeks after the teaching. Responses to questions were analysed collectively and by the sub-domains of epidemiology, diagnosis and management.

Results
There was no difference in performance between F2 and ST doctors. Mean score at pre-testing was 18.39/33, compared to 25.10/33 immediately after teaching (p<0.01; student t-test). This improvement in performance was maintained at 6 weeks and was present for all sub-domains. The improvement in performance was most marked for questions about epidemiology. Mean score pre-test for this domain was 1.97/10 and post test was 6.57/10, however this had deteriorated to 3.0/10 at 6 week follow-up (p<0.01).

Conclusion
A short interactive lecture focussing on key aspects of delirium can have a lasting effect on junior doctors’ knowledge. This effect is less marked for questions about epidemiology. Similar teaching should be delivered as part of all foundation programmes.
TRAINING IN ELDER ABUSE AND ADULT PROTECTION: THE EXPERIENCE OF HIGHER SPECIALIST TRAINEES (SPRs) IN GERIATRIC MEDICINE (GM) IN THE UNITED KINGDOM

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Introduction
Trainees in GM should feel confident in their management of Elder Abuse (EA). Previous work has demonstrated deficiencies in quantity and quality of post-graduate training in a single Deanery. In this study, the current provision of EA training in five geographically different regions of the UK was assessed.

Methods
A questionnaire survey was delivered to SpRs in 5 postgraduate Deaneries in the UK. A Likert scale was used for respondents to judge the quantity and quality of training they had received. They were also asked whether they felt adequately prepared to deal with this issue.

Results
112 SpRs responded (78.9% response rate). 92.0% rated ‘very low’ or ‘low’ on the 5-point scale for quantity of training. 79.5% rated ‘very low’ or ‘low’ for the quality of training. This was consistent across all years of training, with no significant difference between more experienced (Yr 3-5) SpRs (p=0.97 quantity, p=0.50 quality). 62.5% (n=16) of final year SpRs reported feeling inadequately prepared for managing such cases, with the remaining 37.5% unsure.

Conclusions
The results suggest that the provision and quality of training for SpRs in how best to diagnose and manage EA is poor across the UK. Those trainees approaching Consultant appointments felt ill-prepared. A national re-evaluation of how this training is delivered, perhaps with a structured approach and closer interface with the competency-based training curriculum, should be the way forward.
MENTORING OF NEWLY APPOINTED CONSULTANTS: A QUALITATIVE STUDY

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Introduction
The transition from specialist trainee to consultant can be extremely stressful and demanding. It may be helpful to have a mentor assigned for advice and support. Previous studies have reported a range of benefits including enhancing confidence, reducing stress and feeling in control. The Royal Colleges recommend formal mentoring schemes for newly appointed consultants.

Methods
Semi-structured, face-to-face interviews were conducted with ten recently appointed consultants in geriatric medicine. The transcripts were individually examined by four co-investigators and then discussed in order to agree upon a coding framework. The data was analysed for recurring themes or patterned ways of describing experiences. All comments relating to mentors were examined together.

Results
Only one interviewee had a formal mentor assigned on taking up a consultant post. Of those that did not, many stated that they felt very well supported by consultant colleagues within and outside their own specialty. One reported to “always have colleagues who are there to help.”

Often those without a mentor chose to consult different doctors about different issues, not necessarily from within their own trust or specialty.

The consensus opinion was that mentors should not be forced upon individuals but rather selected by personal affinity –“someone you get on well with.”

Conclusions
1. Formal mentoring schemes are not common in the North West. New consultants prefer a flexible and informal arrangement.

2. Newly appointed consultants in geriatric medicine feel well supported by their consultant colleagues.

3. New consultants want to choose their own mentor and would prefer to have more than one individual to turn to.
UK BURDEN OF HERPES ZOSTER IN SECONDARY CARE (2007)
I Power1, X Bresse2, A Mannan3, C Morgan4


Introduction
There are few hospital data on the burden of herpes zoster (HZ). This study aimed to determine the UK in-patient burden of HZ for patients aged 50 years and above.

Methods
A one year retrospective analysis (October 2006 to September 2007) of all HZ related admissions for England, Wales, Northern Ireland and Scotland was conducted using the Capse Healthcare Knowledge Systems (CHKS) database. All admissions related to HZ (ICD-10 codes B020-B029) were selected. In-patient activity was coded according to NHS reference costs.

Results
A total of 5,297 admissions with any HZ diagnosis were identified. 2,239 patients had a primary diagnosis of HZ: mean age was 75.9 (sd 11.5), mean length of stay was 9.9 days (sd 14.8), 91.6% were emergency admissions, 16.3% had post-herpetic neuralgia (PHN), 2.9% of admissions resulted in death of discharge, 324 HZ-related readmissions occurred in the 12 months post-discharge. For admissions with any HZ diagnosis, 5,259 admissions could be costed. Mean cost per HZ stay was £2,542 (sd £3,214) with a total cost of £13,368,069. For admissions with a primary diagnosis of HZ, mean cost was £1,977 (sd £2,031) with a total of £4,428,200. £1,056,636 (23.9%) represented an excess generated by an extra length of stay.

Conclusion
The burden of HZ within secondary care in the UK is substantial and generates significant costs. HZ and PHN prevention by vaccination is one way to reduce this burden.
LONG-TERM FOLLOW-UP OF THE PROSPER STUDY COHORT: A FEASIBILITY STUDY

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1. Academic Section of Geriatrics, Cardiovascular and Medical Sciences, Faculty of Medicine, University of Glasgow. 2. Robertson Centre for Biostatistics, University of Glasgow

Background
Statins may protect against cognitive decline in older age, by reducing the risk of cerebrovascular disease and Alzheimer’s. However the Prospective Study of Pravastatin in the Elderly at Risk (PROSPER) study showed no cognitive benefits (subjects aged 70-82-years) over 3.2 years of treatment. However this does not exclude the possibility of longer-term post-study benefits. We aimed to determine the feasibility of determining longer-term cognitive and functional outcome of PROSPER participants.

Methods
We performed a pilot study of a random sample of 300 of the 2,520 Scottish PROSPER recruits, 7 years after completion of the original study. The general practitioner (GP) was contacted by letter asking them to confirm the patient was alive and suitable for contact. Telephone interview with the patient included the modified Telephone Interview of Cognitive Status (TICSm), Barthel index and short Instrumental Activities of Daily Living (IADL) questionnaire. Dementia was accepted with a GP diagnosis or TICSm score <21/40.

Results
Of 300 subjects, 132 were alive, 135 were dead and 33 untraceable. Information on cognitive status was available for 91 (75%) of known survivors and functional status for 81 (61%); 28/91 (31%) fulfilled criteria for incident dementia. Barthel declined by 1.0 points (20-point scale) and IADL by 1.7 points (14-point scale) over the 10 years from baseline. There were no significant differences between placebo and pravastatin groups in any of these long-term outcomes.

Conclusions
We found that it was feasible to follow-up cognitive function and ADL in the majority of elderly survivors from the PROSPER study using GP contact and telephone follow-up. Major cognitive impairment and decline in ADL was commonly seen in survivors, with no evidence of benefit from pravastatin. It is intended that this study is extended to include the whole PROSPER cohort.
Comparing Osteoporotic Fracture Prevention Recommendations Using FRAX/NOGG with Those Based on BMD Measurements in a Day Hospital Setting

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Introduction
FRAX (Fracture Risk Assessment Tool) and associated NOGG (National Osteoporosis Guideline Group) Guidelines are new web-based tools which guide decisions on assessment and treatment to prevent osteoporotic fractures. This study compared decisions based on FRAX/NOGG with Bone Mineral Density (BMD) measurements.

Methods
FRAX/NOGG was applied to consecutive day hospital patients who had BMD assessment. Where NOGG guidance recommended BMD assessment, FRAX/NOGG was repeated including femoral neck T-score. Osteoporosis was defined as T-score ≤ -2.5 at lumbar spine or femoral neck. It was assumed that bisphosphonates (or equivalent) would be the recommended treatment.

Results
67 patients, mean age 81 years (sd 8), were studied. 47 (70%) were female, 49 (73%) had a history of falls, 23 (34%) had a previous low trauma fracture. Osteoporosis was confirmed in 25 (37%). NOGG guidance recommended lifestyle advice in 34 (51%), BMD assessment in 29 (43%), and treatment without BMD scanning in 4 (6%). Within these 3 groups osteoporosis was confirmed in 10, 14, and 1 patients respectively. Repeating FRAX/NOGG in the 29 subjects for whom BMD assessment was advised recommended lifestyle advice in 23 and treatment in 6. Treatment was recommended in 10 patients using NOGG guidance, of whom 5 (50%) had osteoporosis. NOGG guidance did not recommend treatment for 20 (80%) patients with osteoporosis and did not recommend BMD scans in 10 (40%) patients with osteoporosis. The difference between those treated using BMD criteria (25/67) and those with osteoporosis treated using NOGG guidance (5/67) was statistically significant (Chi-squared 15.5 p<0.001), as was the difference between those treated by the two methods (BMD 25/67 and FRAX/NOGG 10/67, Chi-squared 7.58, p=0.006).

Conclusion
Following FRAX/NOGG guidance in this day hospital setting would have led to the majority of patients with osteoporosis not receiving treatment with bisphosphonates and bisphosphate treatment being recommended in patients without osteoporosis.
EMERGENCY RE-ATTENDANCE AND RE-ADMISSION FOLLOWING HIP FRACTURE

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Background
There is a known high readmission rate following hip fracture repair, but unplanned Accident & Emergency (A&E) reattendances are less well-documented. We wished to study both A&E reattendances and readmission rates following hip fracture, and examine contributing factors.

Sampling methods
423 consecutive patients discharged from our hospital following neck of femur fracture were included. Median age 82yrs [range 18-101y], 64% female. Data was collected prospectively from telephone clinics, hospital and GP records. Outcome was first emergency readmission to hospital or first A&E attendance, within 120 days of index admission.

Results
Ten were lost to follow-up; 27 had died by 120 days (6.5%), but their interim readmission data was included. Seventy (16.9%) were readmitted and a further 31 (7.5%) had attended A+E without readmission. 60% of readmissions/A&E attendances occurred within 30 days. Leading readmission causes were falls (31.4%), respiratory (17.1%), orthopaedic, neurological, infective (each 12.9%). Falls (41.9%) was also the commonest reason to attend A+E without readmission, and orthopaedic, respiratory, suspected deep vein thrombosis (12.9% each). Readmission rates increased across 4 age bands (12% <65 yrs vs. 32% >85yrs), but independent predictors of readmission/A+E attendance (n=101) on logistic regression were: index admission ASA grade ≥3 (AOR 2.5; 95% CI 1.3-4.8), COPD (AOR 2.2 95% CI 1.1-4.1), dementia (AOR 2.64; 95% CI 1.1-6.4), reduced mobility pre-fracture (AOR 1.96; CI 1.1-3.5), post-operative blood transfusion (AOR 2.5; 95% CI 1.2-5.1) and discharge to rehabilitation unit (vs. home) (AOR 2.9; 95% CI 1.6-5.5). Older age (>80yrs), type of surgery, and post-operative cardiorespiratory complications were not associated.

Conclusion
The majority of emergency reattendances and readmissions following hip fracture are due to further falls or respiratory infection. Those more likely to be reattendees have greater co-morbidities, and require bed-based rehabilitation, rather than older age per se. Targeting such patients post-discharge for monitoring might improve readmission rates.
RECURRENT FALLS AND SIGNIFICANT INJURY ARE COMMON IN NON-ALCOHOLIC FATTY LIVER DISEASE


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Introduction
As the incidence of non-alcoholic fatty liver disease (NAFLD) increases we face the resultant sequelae. Falls, and subsequent injury have been noted in other chronic liver diseases, but never in NAFLD. Given the number of risk factors for falls seen in NAFLD it was hypothesized that falls would be common.

Methods
200 consecutive patients attending a NAFLD clinic completed a self-reported falls and injury tool for the local service development program. Healthy, age and sex-matched, community controls were available for comparison (n=96). A representative NAFLD sample (n=23) underwent multidisciplinary assessment, based on the NICE falls guidelines, including autonomic nervous system assessment, diabetes assessment, muscle strength, gait and balance.

Results
Recurrent fallers (≥2 per year) with NAFLD were significantly more common than in the control group (25% and 8%, P=0.001). Rates of single falls did not differ (43%, 48%). Injuries were significantly more common in NAFLD (P=0.009), including emergency services (25% vs 3%, P<0.001), fractures (22% vs 1%, P<0.001) and hospital admission (11% vs 0%, P<0.001).

Dysautonomic symptoms were more severe in recurrent fallers (5.3±4.7), declining in single fallers (4.1±4.0) and least in non-fallers (0.3±0.7, P=0.04). Fatigue was significantly greater in fallers than non-fallers (59.3±33.3, 28.0±24.9, P=0.03). Hand-grip strength was stronger in non-fallers than fallers (28.5±13.1, 17.7±9.1, P=0.029). Gait speed and proximal muscle strength were significantly poorer through non-fallers, single fallers and recurrent fallers (P=0.015 for both measures). Falls and the aforementioned associations were unrelated to the presence of diabetes.

Conclusion
People with NAFLD who fall, are doing so recurrently and significantly more commonly than age-matched controls. The result is widespread, significant injury. The associations with falling are symptoms of autonomic dysfunction, muscle strength and walking speed. Each of these is modifiable with a multidisciplinary approach. Early recognition and intervention of NAFLD fallers is imperative to prevent significant morbidity.
FUNCTIONAL IMPAIRMENT IS SIGNIFICANT IN CHRONIC LIVER DISEASE

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Introduction
It is being recognised increasingly, that older people with CLD experience a significant symptomatic burden including fatigue, pain, memory loss, postural dizziness and falls. Functional impairment (FI) may be expected in severe CLD but severe symptoms occur with even mild disease. We aimed to identify modifiable factors associated with FI in older people with CLD.

Methods
61 participants with CLD (primary biliary cirrhosis, non-alcoholic fatty liver, liver transplant) attended the multidisciplinary assessment service development program. Recruitment was via the local liver patient support group and liver clinic. Participants >60 years underwent assessment: gait and balance (Tinetti), cognition (MMSE) and FI (PROMIS-HAQ). Symptom assessment addressed pain, fatigue, well-being (PROMIS-HAQ) fear of falling (FOF, Falls Efficacy Scale International) and postural dizziness (Orthostatic Grading Scale).

Results
Age 70 [66-74], albumin 42 [38-45], alkaline phosphatase 124 [89-209], bilirubin 9 [7-12], alanine aminotransferase 37 [27-55]. 90% had at least mild FI and 29% experienced ‘much difficulty’. FI was unrelated to age, disease severity and cognition. FI associated with balance (-0.731, P<0.001), gait (-0.741, P<0.001), FOF (0.765, P<0.001), pain (0.746, P<0.001), well-being (0.768, P<0.001), fatigue (0.706, P<0.001) and postural dizziness (0.631, P=0.896).

Regression revealed 2 independent associations with FI: FOF (β=0.451, P=0.004, 95%CI 0.254, 1.189), balance (β=-0.37, P=0.048, 95%CI -3.058, -0.12).

Discussion
The symptomatic burden experienced by older people with CLD is unrelated to age and disease severity; as clinicians we must recognise that those with mild CLD may experience debilitating symptoms/impairment. FI is common with one third of our cohort experiencing ‘much difficulty’ with functioning. Almost all of the CLD symptoms correlated with impairment, with FOF and balance showing independent associations. Fortunately both of these associations are modifiable with physiotherapy and occupational therapy. In order to improve quality of life in older people with CLD clinicians must make more use of therapists.
EMERGENCY ADMISSIONS FROM CARE-HOMES: CASE CONTROL STUDY

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Introduction
We sought to determine the clinical characteristics and outcomes of unscheduled hospital admissions from care-homes.

Methods
Prospective case-control study of consecutive hospital admissions from care-homes to a central urban hospital. Cases were matched to controls by age (+/- 1 year), gender, admission ward and admission date. The spread of data suggested a non-parametric approach and Chi-square or Mann-Whitney testing were used as appropriate for comparative analyses.

Results
Over a three-month period there were 114 care-home admissions representing 80 patients (82 medical ward; 17 orthopaedic; 15 surgical). Severity of presenting illness as described by MEWS scoring was equivalent for cases and controls (median MEWS-case: 1 [IQR:1-3]; median MEWS-control: 1 [IQR:0-3]). Care-home admissions and controls had similar inpatient mortality (14% versus 15% [p=0.84]) and duration of stay (median care-home:5 days [IQR:1-10] versus median control 5 days [IQR:1-11] [p=0.73]). There were a greater number of readmissions of patients from care-homes compared to controls (26% versus 3% [p<0.0001]). Given the large number of readmissions, we performed a post-hoc logistic regression with readmission as dependant variable. We could identify no significant clinical, demographic or laboratory predictors of readmission.

Conclusion
People from care-homes admitted for unscheduled hospital care have similar outcomes in terms of mortality and duration of stay compared to non-care-home patients, however risk of readmission is substantially higher.
THE INFLUENCE OF AGE ON OUTCOME FOR ADMISSIONS TO AN ACUTE MEDICAL ASSESSMENT UNIT

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Introduction
There is a lack of outcome information with respect to older health service users. The purpose of this study was to examine 30-day in-hospital mortality and its predictors in all elderly patients admitted as a medical emergency to our hospital.

Methods
All patients admitted between 2002 and 2008 were studied, linking the clinical, administrative, laboratory and mortality data. Significant univariate predictors of outcome, including co-morbidity and illness severity score, were entered into a multivariate logistic regression model, adjusting the univariate estimates of the effect of age on in-hospital mortality.

Results
We admitted 23,114 consecutive acute medical admissions between 2002-2008; 30-day in-hospital mortality was 20.7% in the over 75 age category versus 4.5% in those younger. The unadjusted OR for a 30-day in-hospital mortality in the over 75’s of 5.21 (95% CI: 4.73, 5.73) fell to 4.69 (95% CI: 4.04, 5.44) when adjusted for outcome predictors excluding acute illness severity and 2.93 (95% CI 2.50, 3.42) when acute illness severity was added as a covariate.

Conclusion
Acute illness severity and not co-morbidity drives outcome in older patients. Service planning for acute elderly care should be based on effective disease management programmes but recognise the contribution of acute illness severity to outcome when conditions deteriorate.
**DO PATIENTS AT THE END OF OUR WARD ROUNDS GET THE SAME CARE AS THOSE AT THE BEGINNING?**

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**Introduction**

“Ward-rounds” remain a cornerstone of hospital practice. An association between ward-round documentation and care has been described. It has also been shown that patients assessed early in ward-rounds have more time spent in multidisciplinary discussion. We hypothesised that process of care would differ for patients seen at beginning and end of acute geriatric ward-rounds.

**Methods**

Our Assessment Unit comprises 70 beds and admits patients >65 years with multiple co-morbidities/complex needs. We recorded the order that patients were assessed in during weekly consultant ward-rounds and retrospectively derived number of words in the case-sheet entry and number of interventions requested that day. Associations were described using Kruskal-Wallis and rank correlation. Comparisons of the first/last patients assessed used Mann-Whitney and chi-square tests.

**Results**

Over one month data collected included 120 ward-round entries, representing 67 patients assessed by 4 consultants. Number of words written and number of investigations requested differed for patients seen early and late in ward-round (table). Kruskal-Wallis testing confirmed change in number of words written (p<0.0001) and investigations ordered (p<0.0001) across the ward-round with rank correlation suggesting an inverse association (rho=-0.34 for words; -0.29 for investigations).

<table>
<thead>
<tr>
<th></th>
<th>First 3 patients</th>
<th>Last 3 patients</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words (n) (median (range))</td>
<td>45 (14–189)</td>
<td>34 (3-36)</td>
<td>0.004</td>
</tr>
<tr>
<td>Investigations (n) (median (range))</td>
<td>5 (0–8)</td>
<td>4 (0-5)</td>
<td>0.005</td>
</tr>
</tbody>
</table>

Markers of case complexity (medication number, Modified Early Warning Score, serum albumin/CRP, length of admission and number of previous assessments) were not significantly different between those seen at start and end of ward-round.

**Conclusions**

We demonstrated a difference in process of care that appears to relate to the order patients are seen in ward-rounds and is not explained by case complexity. We have not assessed clinical outcomes, but would suggest that clinicians alternate the start and endpoint of their ward-round to avoid any potential care inequities.
SYSTEMATIC COMPREHENSIVE GERIATRIC ASSESSMENT IN OLDER HOSPITALISED PATIENTS AT HIGH AND LOW RISK FOR FUNCTIONAL DECLINE

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Background
Preventing functional decline has become an important focus of care in older hospitalised patients. As not all patients benefit from interventions, a multistage selection procedure has been proposed, consisting of risk assessment and a systematic comprehensive geriatric assessment (CGA). Data supporting this selection procedure are lacking.

Methods
This multicentre prospective cohort study was conducted in three hospitals in the Netherlands. All acutely admitted patients of 65 years and older who were hospitalised for at least 48 hours received a systematic CGA, consisting of 20 conditions frequently met in older patients. A risk assessment was applied to differentiate between patients at high and low risk for functional decline. Functional decline was defined as a loss of one point on the KATZ ADL index score three months after hospital admission compared to premorbid functioning, two weeks prior to hospital admission.

Results
Overall, 639 patients were included with a mean age of 78 years (SD 8). Patients had a mean of six geriatric conditions at hospital admission. In total, 72% of patients were at high risk for functional decline. These patients had more geriatric conditions (mean 7.5 [SD 2.5]) compared to those who were at low risk for functional decline (mean 3.4 [SD 1.7, p<0.001]). In patients at high risk for functional decline, five conditions were significantly associated with functional decline: presence of an in-dwelling urinary catheter, incontinence, good vision, high perceived burden of caregiver and a high score on the risk assessment instrument.

Conclusion
Geriatric conditions were highly prevalent in acutely hospitalised patients. Risk assessment reveals the most vulnerable patients, often presenting with geriatric syndromes. Five conditions were significantly associated with functional decline and could be subject for intervention.
UNDERSTANDING ETHICAL AND LEGAL DILEMMAS IN OLDER PATIENTS

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Background
Clinicians are often required to make critical decisions with ethical and legal dimensions. 60% of in-patients in NHS hospitals are elderly¹. A substantial percentage of medical inpatients lack capacity. A working knowledge of ethics and law applicable to vulnerable elderly patients is therefore essential. Our questionnaire sets out to test this.

Sampling Methods
A link to an on-line survey was published in the British Geriatrics Society (BGS) Newsletter and e-mailed to regional secretaries with a request to cascade to members. All doctors working in the medical division at one Trust were also invited to participate.

Results
178 doctors completed the survey. 62.9% (112/178) were Consultant Physicians. 75.8% (135/178) were Geriatricians.
82% (146/178) and 96.1% (171/178) made appropriate decisions regarding resuscitation and confidentiality issues respectively. 90.4% (161/178) would correctly respect autonomy in a Jehovah’s Witness.
24.7% (44/178) wrongly believe verbal advanced refusals of life saving treatment are legally binding.
28.7% (51/178) and 15.2% (27/178) inappropriately appointed Independent Mental Capacity Advocates (IMCAs) and a further 31.5% (56/178) failed to appoint an IMCA when appropriate.
33.7% (60/178) were unaware that withdrawal of nutrition from those in persistent vegetative state (PVS) required referral to the courts.

Conclusions
Resuscitation orders, confidentiality issues and decisions regarding autonomy are well understood. Advanced directives, the IMCAs role and decisions in PVS patients are poorly understood indicating that understanding of the Mental Capacity Act is not universal. There is scope for further practical training in rare but important conditions such as PVS; and more importantly in the content of the Mental Capacity Act and its application in vulnerable older patients.

References
WHAT IS THE BENEFIT OF PERFORMING NEURO-IMAGING IN THE ELDERLY STROKE PATIENT?

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Introduction/Aims
Increasing advances in brain-imaging technology have resulted in a substantial increase in the amount of diagnostic information that can be obtained after an acute stroke with consequently better diagnosis, acute treatment and secondary prevention.

In the elderly patient it has often been considered inappropriate to perform extensive investigation with extensive investigation targeted at younger stroke patients.

We aimed to assess the clinical effect of newer imaging modalities on common management decisions in elderly patients with suspected cerebrovascular disease and the tolerability of these tests in over-75s.

Methods
Retrospective review of all patients aged >75-years old admitted to the acute stroke unit over a 3-month period to the Acute Stroke Unit of a hybrid local/tertiary DME/neurology service with access to neuro-imaging with CT-Angiography and MRI.

Results
63 patients >75 years old were admitted during the study period with median (IQR) age 82 (79-86). 98.4% (n= 62) of these patients had a contrast CT brain scan performed, 22.2%(n=14) had Diffusion-Weighted cranial MRI and 47.6% (n=30) had a Carotid/vertebral/ Cranial CT-angiogram or MR-angiogram.

59% of those who had MRI or CT or MR-Angiography had an unexpected or significant finding impacting on a management decision, most commonly branch-vessel or carotid artery occlusion. The frequency of performing MRI and CT or MRA performed varied from 55% in 75-80s, 71% in 81-85s to 41% in those over 85 years.

The frequency of unexpected or significant findings was highest in patients over 80 and was 47% in those 75-80, 70% in 81-85s and 66% in patients over 85 years.

Conclusions
Older patients had ready access to advanced neuro-imaging which was well tolerated. and, particularly in the sub set of those over 80, frequently yielded radiological findings which impacted on management. These data suggest it is worthwhile performing MRI, and CTA in the elderly who present with acute stroke symptoms.
RECRUITING PATIENTS WITH AMNESTIC MILD COGNITIVE IMPAIRMENT FOR A RANDOMISED CONTROLLED CLINICAL INTERVENTION TRIAL

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Introduction
Patients with amnestic mild cognitive impairment (aMCI) are at high risk of transitioning to Alzheimer’s dementia (AD). Disease-modifying agents for Alzheimer’s Disease may soon be available and of most benefit to those with early AD or aMCI. Some studies have signalled the challenges with recruitment of subjects with aMCI\textsuperscript{1,2}. We recruited for a double-blind randomised controlled (RCT) trial examining electrophysiological (ERP) response to a month of donepezil versus placebo in patients with aMCI. Inclusion criteria included age 55 to 85 years and consensus diagnosis\textsuperscript{3}. Exclusion criteria were based on the presence of conditions that would interfere with tolerance of the medication or interpretation of ERP results.

Methods
Subjects were diagnosed with aMCI based on consensus diagnosis at our memory clinic. Telephone contact was made to assess interest in participation, for explanation of the participant information and scheduling. Subjects were invited to attend for baseline screening which consisted of informed consent, history and examination, ECG, mood scoring and neuropsychological battery (WMS-III).

Results
Of the 295 subjects diagnosed with aMCI in a 2.5 year period, 282 were excluded prescreening as follows: medically excluded (n=85, 30%), refused to participate in research (n=78, n=28%), involved in other studies (n=70, 25%), on excluding medication (12%) and other reasons (5%). Of the 13 patients screened, 5 failed medically and 2 passed neuropsychological tests. Only 4 were eligible.

Conclusions
A majority of patients were medically unsuitable for this study. Large numbers refused participation in research for no specific reason. These factors should be considered in planning future clinical trials involving this patient group.

References
SUBJECTIVE MEMORY COMPLAINTS IN HEALTHY OLDER PEOPLE: CORRELATION WITH NEUROPSYCHOLOGICAL PROFILES AND AFFECTIVE DISORDERS

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Introduction
As Alzheimer’s disease becomes more prevalent, research focus is on earlier identification. Subjective memory complaints (SMC) are common among older people but their significance remains controversial. We aimed to assess a sample of community dwelling older people and look for common characteristics that may explain the complex nature of SMC.

Methods
Healthy older people between 55 and 90 years were recruited. Medical assessments and neuropsychological tests from the Consortium to Establish a Registry for Alzheimer's disease (http://cerad.mc.duke.edu) were performed. SMC was assessed by asking: Do you feel like your memory or thinking is becoming worse? 1=no, 2=yes, but this does not worry me, 3=yes and this worries me. We categorised answers 2 or 3 as having SMC. MRI images were acquired on a 3.0 Tesla (3T) scanner.

Results
96 subjects were included. 44 (45.8%) denied memory complaints and acted as controls. 52 reported SMC (54.2%). The 2 groups were well matched in terms of age, sex and education. A higher proportion had a family history of dementia in the SMC group (51.9% vs. 40%) but this was not significant (p = 0.240). There was a significant association between SMC and previous history of psychiatric illness (depression and anxiety) (p=0.0352), but not current Geriatric Depression Scale scores (p= 0.1284) or benzodiazepine/anti-depressant use (p=0.2823). Neuropsychological profiles were not significantly different. There was a trend towards lower scores on Word List Recall in the SMC group but this was not significant (p=0.0587). The proportion of APOE 4 allele carriers was higher in the SMC group (31% vs 20%) but not significantly so (p = 0.2906).

Conclusions
SMC are common among healthy older people and associated with a past history of psychiatric illness in our sample. A longitudinal study is planned to evaluate the relationship of SMC to future cognitive decline.
WHAT IS THE EVIDENCE FOR THE ROLE OF OESTROGEN IN THE PREVENTION OF RECURRENT URINARY TRACT INFECTIONS IN ELDERLY FEMALE PATIENTS? AN EVIDENCE BASED REVIEW

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Background
Urinary tract infection (UTI) is the most common bacterial infection in women. 10-15% of women over 60 have frequent recurrent episodes of urinary infection with increasing frequency of recurrence with age post-menopausally.

Declining oestrogen levels post menopause causes urogenital atrophy which can be effectively treated by topical and oral oestrogen therapy. Oestogen deficiency also results in alteration in vaginal flora and gram-negative faecal colonisation which together with atrophic urogenital tissue change predisposes to ascending urinary tract infections. It is proposed that oestrogen therapy can restore the normal premenopausal vaginal flora, acidic pH, improve urogenital atrophy, prolaspe and cystocele and thus reduce the recurrence rate of UTIs in post-menopausal women.

Methods
A literature search was performed of MEDLINE, EMBASE, Pubmed and CENTRAL for Randomised Controlled Trials with primary outcome recurrence of UTI in post-menopausal women for oestrogen versus placebo or other intervention.

Results
5 clinical trials and additionally 2 relevant meta-analyses were identified. Oestrogen cream was shown to reduce recurrence of UTI (p<0.001) as was oestrogen pessary (p=0.008). Oral oestrogen was less effective and benefit was shown in one small trial only with no trend towards benefit with oral oestrogen on meta-analysis. (RR 1.08, 95% CI 0.88 to 1.33). On direct comparison with antibiotic prophylaxis, patients receiving antibiotics had significantly fewer episodes of symptomatic and asymptomatic bacteruria- 0.6 episodes per woman per year versus 1.6 episodes in those treated with oestrogen.

Conclusion
Oral oestrogen did not reduce recurrence of UTI and had systemic side effects. There was evidence to support the use of local oestrogen in the form of a pessary or cream which was generally well tolerated but local oestrogen was not shown to be more effective than oral antibiotic prophylaxis. Local oestrogen administration, therefore, may have a role where antibiotic therapy cannot be tolerated.
CHRONIC KIDNEY DISEASE AND OLDER ADULTS: INVESTIGATING THE POTENTIAL REFERRAL BURDEN

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Introduction
UK guidelines recommend that adults with stage IV and V chronic kidney disease (CKD) should be referred to renal services. The prevalence of unidentified CKD in the elderly is potentially high. Primary care services have a key role in identifying such patients, however, recognition and referral from secondary care is probably underutilised. Similarly, the volume of work that may be generated by such referrals from secondary care is unknown. The aim of this study was to determine this potential referral burden.

Methods
Consecutive elderly patients (79 years-of-age or older) admitted to an acute geriatric assessment unit during one calendar month were studied. Only subjects with a measurement of eGFR on discharge were analysed so as to best represent baseline renal function. Cases with stage IV or V CKD were reviewed collaboratively by a geriatrician and a nephrologist. Consensus opinion on the appropriateness of speciality referral was then reached.

Results
252 patients were admitted with an average age 85 years. 190/252 (75.4%) patients were living independently. 96/252 (38%) acute admissions had an eGFR on discharge. Of these, stage II/III CKD was predominant, accounting for 69/96 (71.9%). 8/96 (8.3%) had stage IV/V CKD. 5/8 (62.5%) were deemed suitable for referral to renal services. Referral was deemed inappropriate in 3/8 (37.5%) due to malignancy, dementia and dependency.

Conclusions
Cases of CKD in older adults identified in secondary care should not pose a significant burden on renal services. By extrapolating our data, institutions with a similar catchment population (216,000 adults) can expect to refer approximately 100 older adults to renal services annually. Referral can be streamlined when additional consideration is given to performance status and comorbidity. In all cases a patient centred, individualised approach is paramount.
DIFFERENCES IN THE HAEMATOLOGICAL PROFILE OF HEALTHY 70 YEAR OLD MEN AND WOMEN

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Background
Reference ranges are available for different blood cell counts. These ranges treat each cell type independently and do not consider possible correlations between cell types.

Methods
Participants were identified from the Community Health Index as survivors of the 1947 Scottish Mental Survey, who were resident in Lothian (potential n=3,810). Those who consented were invited to attend a Clinical Research Facility where, amongst other assessments, blood was taken for full blood count. First we described cell count data and bivariate correlations. Next we performed principal components analysis to identify common factors. Finally we performed confirmatory factor analysis to evaluate suitable models explaining relationships between cell counts in men and women.

Results
We examined blood cell counts in 1029 community-resident people with mean age 69.5 (67.6-71.3) years. We determined normal ranges for each cell type using Q-Q plots which showed that these ranges were significantly different between men and women for all cell types except basophils. We identified three principal components explaining around 60% of total variance of cell counts. Varimax rotation indicated that these could be considered as erythropoietic, leukopoietic and thrombopoietic factors.

Conclusions
First, normal ranges for haematological indices should be sex-specific; at present this only pertains to erythrocytes. Second, differences between individuals across a range of blood cell counts can be explained to a considerable extent by three major components, but these components are different in men and women.
HOW READABLE IS PATIENT ORIENTATED PARKINSON’S DISEASE INFORMATION ON THE INTERNET?

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Background
Patients increasingly use the Internet to access health information. Inadequate health literacy is common in older patients. Parkinson’s disease (PD) patients may also experience specific disease related reading comprehension deficits. Guidelines recommend patient orientated information should be written at below the 6th grade level. Previous studies of printed and Internet patient orientated information regarding other medical conditions have demonstrated poor levels of readability. We aimed to assess the readability characteristics of patient orientated Internet PD information.

Methods
The 100 highest ranked patient orientated PD information webpages were identified using Google. Full text content was extracted and article readability determined in Word 2007 using the Flesch-Kincaid Grade Level (FKGL) and Flesch Reading Ease (FRE) formulae.

Results

<table>
<thead>
<tr>
<th>Flesch-Kincaid Grade Level</th>
<th>Articles</th>
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<tr>
<td>4th - 6th Grade (Max. Grade)</td>
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<tr>
<td>6th - 9th Grade</td>
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<tr>
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4% of webpage articles had FKGL grades below the recommended maximum 6th grade level. Mean FKGL 12.1 (95%CI 11.5 - 12.7). 82% of articles rated as difficult to very difficult to read by FRE, 2% rated as easy to read. Mean FRE reading ease rating - difficult; mean FRE score 37.1 (95%CI 33.9 - 40.2). No significant correlation was observed between readability and article length r=0.004, p=0.53 or search engine ranking r=0.07, p=0.76. Readability levels were similar in commercial and non-commercial websites, mean FKGL 11.5 vs 12.6 p=0.25.

Conclusions
The majority of patient orientated PD information websites exceed recommended maximum levels of reading difficulty and are beyond the reading abilities of most older patients. In this sample no significant associations were demonstrated between readability and ranking, article length or commercial nature of websites. Internet patient orientated PD resources need major revision in terms of readability to comply with guidelines and to be comprehensible to the average older patient.
DEVELOPMENT OF A SWAHILI SPEECH ASSESSMENT TOOL FOR NEUROLOGICAL DISORDERS: PILOT RESULTS IN PARKINSON’S DISEASE PATIENTS AND CONTROLS

N Miller¹, O Msuya², G Mshana³, C Dotchin⁴,⁵, R Walker⁴

Introduction

Assessing speech in neurological disorders, specifically adapting assessments across languages and cultures, is complex. Simple translation is not acceptable. The material must be adapted to the phonetic and linguistic characteristics of the target language and culture. We describe the development and pilot testing of a Swahili speech evaluation protocol. For illustration we discuss intelligibility and articulatory accuracy sections in people with Parkinson’s disease (PwPD) and controls.

Methods

The design and content of the protocol was developed by a UK Speech and Language Therapist in cooperation with a native Swahili speaker (GM). A Tanzanian PD Nurse Specialist (OM) was trained in using the tool. PwPD (n=26) identified through a prevalence survey (1), and unaffected, similar aged community-based controls (n=14), were assessed at home. Participants were asked to say 25 Swahili words from a list. This was audio-recorded and analysed (blinded) in the UK. Expert listeners (Tanzanian medical students) tried to identify each word. Each correctly identified word scored 1 point. Participants were also asked to repeat “pataka” as many times as possible in 5 seconds to assess articulatory accuracy.

Results

The whole tool was acceptable to patients, relatives and interviewers and took around 20 minutes to complete. Single word intelligibility was compared between patients and controls. On average listeners identified 79% of words correctly for controls, compared to 64% for patients (p=0.03). For articulatory accuracy, controls were able to complete “pataka” correctly significantly more times than patients (p<0.001).

Conclusions

We have discussed the development of a Swahili speech evaluation protocol, focussing on intelligibility and accuracy sections. The protocol is ready to use and in this pilot study detected significant differences in intelligibility and accuracy between PwPD and controls. Whilst items on which to measure change were derived from local input, further qualitative assessment is needed to ensure culture-specific validity.
THE PREDICT STUDY: HEALTH PROFESSIONALS’ VIEWS OF OLDER PEOPLE’S PARTICIPATION IN CLINICAL TRIALS

P Crome¹, F Lally¹, E Topinková², A M Clarfield², A Cherubini², V Lesauskaite², C M Hertogh², Szczerbinska², G Prada², J Salva², J Sinclair-Cohen³, G H Mills¹

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Introduction
The PREDICT Study (www.predictue.org) confirms that older people and those with co-morbidity are excluded unjustifiably from clinical trials. This conclusion is based on a systematic review of published studies and review of clinical trials databases. We now report the views of health professionals from 9 EU countries: CZ, IL, IT, LT, NL, PL, RO, SP & GB.

Methods
A piloted questionnaire using a 6 point Likert scale and free text was completed by 507 professionals comprising: GPs, geriatricians, researchers, ethicists, nurses and industry physicians. The questions explored the impact of the present situation, possible reasons for under-representation and potential methods of improving participation.

Results
All specialties agreed that under-representation caused difficulties for prescribers (79%) and patients (73%) and exclusion on age grounds alone was unjustified (87%). However, even with no specified upper age limit it was believed (80%) that older people and those with co-morbidity would still not be recruited due to perceived high rates of polypharmacy and comorbidity. Some inter-country differences emerged. All but LT and RO agreed that present arrangements for clinical trials were unsatisfactory. Views from LT were evenly divided whilst RO thought that they were satisfactory. Most respondents agreed that clinical trial regulation needs alteration with the exception of those from IL & LT. Suggested solutions included making inclusion of older people obligatory, pre-defining specific numbers of older people in trials and improving access and follow-up.

Conclusion
Although some inter-national and inter-professional differences were apparent in a few of the responses, there was general consensus across countries and professions that the present arrangements for clinical trials needed reform.

The results of this questionnaire together with other results from the PREDICT study will be used to write a Charter aimed to improve this situation.
CEREBROSPINAL FLUID (CSF) BIOMARKERS IN DELIRIUM: A SYSTEMATIC REVIEW

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Introduction
Delirium is a common and serious acute neuropsychiatric syndrome. The pathophysiology is incompletely understood. Examining CSF is potentially highly informative; however these studies are difficult to perform in this often frail and cognitively impaired group. It is therefore important to systematically review previous studies to prevent duplication and to inform future work. We aimed to (1) identify all studies of CSF examination in delirium, (2) draw any conclusions on delirium pathophysiology and (3) identify important areas of future work.

Methods
Studies were identified using a comprehensive textword and MeSH-based electronic search of MEDLINE, EMBASE, PsycINFO, Web of Science and the EBM reviews database. Bibliographies were hand-searched and forward citation searches were performed. Included studies met DSM or ICD diagnostic criteria. Case reports and studies of Delirium Tremens and Hepatic Encephalopathy were excluded.

Results
1,119 citations were screened, 26 articles retrieved for analysis and ten articles were suitable for inclusion, which examined 10 biomarkers. A total of 206 patients were studied, 99 with delirium and 107 without, and the overall age range was 15-88. No studies had formally assessed prior cognition. No two studies examined the same biomarkers and no clear pattern of findings emerged. Significant results included: lower somatostatin and β-endorphin, increased serotonin metabolites and IL-6 in delirium; high acetylcholinesterase predicted poor outcome. One study in patients with delirium largely secondary to CNS infection reported increased dopamine metabolites associated with psychotic features.

Conclusions
No clear conclusions on delirium pathophysiology could be drawn from these studies, which examined a wide range of potential biomarkers of delirium. However, the studies provide useful preliminary data which should be taken into account in further studies examining CSF in delirium. Future studies should use an estimate of prior cognition to reduce potential confounding from dementia and should use larger sample sizes.
IDENTIFICATION OF DELIRIUM ON THE POST-TAKE WARD ROUND: THE IMPACT OF A GERIATRICIAN

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Introduction
Delirium is common in acute admissions in elderly patients (10-31%). Early recognition optimises management and improves outcomes. Until July 2009 Salford Royal Hospital offered a separate on-call service to older adults (>79 years of age). Following unanticipated service redevelopment in August 2009, an unselected on-call service temporarily existed without any input from the Consultant Geriatricians. This created a unique opportunity to examine differences in the rates of identification of delirium between the two working patterns.

Methods
Retrospective case-note analysis examined all admission clerkings and their corresponding post-take ward rounds (PTWRs) by Geriatricians in a 25 day period in April/May 2009. Admissions and PTWRs of older adults (>79 years of age) by non-Geriatricians over a similar 25 day period in August/September were also scrutinised. A non-parametric Wilcoxon Rank test was applied to the results with a 2-tailed significance level set at p<0.05.

Results
In the April/May cohort 13/206 (6.3%) had delirium identified by the admitting junior doctor. This increased to 30/206 (14.6%) following a Geriatrician PTWR (p=0.006). In August/September 10/172 (5.8%) had delirium according to the admitting junior doctor, increasing to 15/172 (8.7%) with a non-Geriatrician PTWR (p=0.30).

Conclusions
The presence of a Geriatrician on the PTWR was associated with a statistically significant increase in the identification of delirium compared with the junior’s admission assessment. The observed increase following a non-Geriatrician PTWR was not significant. The loss of a Geriatrician from the acute admission PTWR would appear to be associated with a lower rate of diagnosis of delirium. The rate also dropped to a level below that reported by the literature. This work emphasises the contribution Geriatricians have to supporting acute medical services. It also emphasises the role they play in the education of non-Geriatricians and junior doctors in areas such as the identification and management of delirium.
CAREGIVER BURDEN AND NEEDS OF DEMENTIA CAREGIVERS IN THAILAND: A CROSS-SECTIONAL STUDY

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Introduction
Only a few investigators have studied the burden of dementia caregivers in Asian countries. The perceptions of family responsibility and resources (coping, outlook on life and social support) vary among countries and are perceivably high in Asian countries. These cultural differences may affect caregiver burden. We sought to identify the burdens of Thai dementia caregivers and to determine the services that could support them in this function.

Methods
We surveyed 88 dementia caregivers attending “Caregiver day”. The questionnaire contained Caregiver Burden Inventory. The answers range from “not at all descriptive” (zero) to “very descriptive” (4). We also explored baseline characteristics of caregivers and care recipients as well as caregiver’s needs of supporting system.

Results
There was 82% response rate. Responses in time-dependence burden distributed almost equally in the five possible scales. In developmental and physical burden, caregivers rate scores mainly from 0-2. The scores in social and emotional burden ranged mainly between 0-1. Dependency in basic activities of daily livings correlated with higher caregiver burden (odd ratio 7.48, 95% confidence interval 1.42-39.53, P = 0.02), while sex and kinship did not. The top three caregiver’s needs were 1) caregiver education and training, 2) hotlines for urgent consultation with physicians and 3) special system in a hospital provided for dementia patients to have a rapid access to see a doctor.

Conclusion
Caring for dementia patients can lead to high caregiver burden, particularly those caring for dependent patients. There was a discrepancy in physical and developmental burden compared to social and emotional burden. Culture, relationship quality and resources (coping, outlook on life and social support) might be contributing factors of this difference.
DO OLDER STROKE PATIENTS PRESENT EARLIER FOLLOWING THE FAST STROKE AWARENESS CAMPAIGN?

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Stroke Unit, University Hospital Aintree

Background
Delayed presentation results in many stroke patients being ineligible for thrombolysis. The national FAST campaign (launched by the department of health in February 2009) aims to educate the public to quickly recognise the symptoms of stroke and seek medical care promptly. We aimed to investigate stroke onset to presentation times in the pre and post-FAST periods.

Method
Retrospective study of an urban UK teaching hospital stroke register. Onset to presentation times for consecutive stroke patients aged over 65yrs with confirmed onset times, presenting within 48hrs of stroke between February 2007 and October 2009 were compared. Data dichotomised into pre and post-FAST groups for analysis.

Results
394 patients, 84 post-FAST, 44% male, mean age 77.6 (SD 7.47). No significant differences in age (p=0.69) or sex (p=0.71) demonstrated in pre and post-FAST groups. Significantly shorter presentation times were observed in older stroke patients presenting post-FAST, mean pre-FAST presentation time 7.31hrs (95%CI 6.40 - 8.23), mean post-FAST presentation time 5.33hrs (95%CI 3.78 - 6.89), p=0.01. Patients presenting post-FAST were significantly more likely to present within the thrombolysis time window OR 1.733 (95%CI 1.049 - 2.863) p=0.03.

Conclusion
In our sample older stroke patients presenting after the introduction of the FAST campaign presented significantly earlier and were significantly more likely to present within the thrombolysis time window. Our data suggests that FAST campaign has been effective in reducing time from onset to presentation in older stroke patients. Larger studies are needed to confirm the national efficacy and cost effectiveness of the FAST campaign.
A CROSS-SECTIONAL STUDY OF QUALITY OF LIFE IN STROKE SURVIVORS IN RURAL NORTHERN TANZANIA

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Introduction
The aim of this study was to evaluate changes to, and predictors of, quality of life (QOL) in a cohort of stroke survivors from a stroke incidence study in rural northern Tanzania.

Methods
The study cohort was compared to an age and sex matched control group from the same rural district within a cross-sectional design. Patients and controls were asked a series of questions relating to their QOL using the World Health Organisation Quality of Life screening tool (WHOQOL-BREF), levels of anxiety and depression (HAD scale) and demographic characteristics (e.g. age, sex, education, abode). Patients were further assessed for cognitive function using the Community Screening Instrument for Dementia (CSI-D) tool, Barthel index, modified Rankin scale, socioeconomic status, drug history, social history and past medical history. Patients’ carers were assessed for anxiety and depression and asked to complete an informant cognitive function questionnaire on the patient.

Results
Patients (n = 58) were found to have significantly lower QOL than controls (n = 58) in all 6 domains. Gender, socioeconomic status, cognitive function and time elapsed since stroke were not associated with QOL. Older patients and those with more impaired motor function and disability (Barthel Index, modified Rankin score) had significantly poorer physical health related QOL. Greater anxiety and depression, reduced muscle power and less involvement in social events were significantly correlated (p < 0.05) with lower physical and psychological health related QOL

Conclusions
QOL in stroke survivors is worse than age and sex matched controls and is associated with levels of physical disability, anxiety, depression and social interaction. Demographic factors appear to be much less important.
The Association Between Atrial Fibrillation and Cognitive Function: A Systematic Review

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1. The University of Edinburgh, Edinburgh, 2. Western General Hospital, Crewe Road, Edinburgh, 3. Royal Infirmary, Little France Crescent, Edinburgh

Introduction
Cognitive impairment is a major public health problem. Atrial fibrillation (AF) is the commonest cardiac arrhythmia. It is possible that AF increases the risk of cognitive impairment through 'silent' cerebral infarcts or chronic cerebral hypoperfusion. A previous systematic review [1] found no consistent evidence of a significant association between atrial fibrillation and cognitive impairment. The present review aimed to update this previous review, to determine whether there is an association between AF and cognition.

Method
Related literature from January 2000 to July 2009 was reviewed. The following databases were searched: Embase, Medline, CINAHL, PsycINFO and The Cochrane Library. Search strategies duplicated those used in the previous review. Any study providing data on the association between AF and cognitive function was included. These were analysed along with the ten studies retrieved from the original literature search up to 2000 [1].

Results
Twenty-six articles published up to 2009 were found, comprising 7408 individuals with AF and 42655 without. Sixteen studies reported a significant positive relationship between AF and cognitive decline on at least one of the cognitive measures used. One longitudinal study found a significant association at 5 years follow-up, but not 10 and a further study found that cognitively impaired individuals were less likely than controls to have AF. Eight studies found no association.

Conclusions
The addition of research published since 2000 appears to strengthen the evidence for an association between AF and cognitive decline, which was described as inconclusive in the original review.
A REVIEW OF STROKE OUTCOME INDICATORS MEASURED USING SELF OR PROXY-ADMINISTERED POSTAL SURVEYS

E Teale, A Forster, J Young

*Academic Unit of Elderly Care & Rehabilitation, Bradford Institute for Health Research, Bradford*

**Scope**
Collecting patient data by postal survey after stroke eliminates observer bias and offers a cost-effective alternative to face-to-face interviewing. Many stroke studies have used postal data collection techniques, though the instruments used have variable or unproven validity, reliability and acceptability in stroke populations. A systematic review of the literature was conducted to identify generic and stroke specific instruments used in quantitative stroke studies collecting patient outcomes data in any domain by self or proxy administered postal survey. Further scrutiny of the literature was then conducted to investigate the evidence to support the psychometric properties of these instruments.

**Search Methods**
The Cochrane Stroke Group’s highly sensitive search strategy for identification of stroke trials was combined with search terms to describe outcomes, methodology, survey type, measurement scale, collection and reporting methods. The strategy was used in MEDLINE and modified for other databases.

Cross-referencing of relevant retrieved articles and systematic reviews was used as a quality measure to ensure potentially relevant studies had not been overlooked. Specific hand searching was not performed.

**Results**
Initial searches identified 61 reports in which 36 different stroke outcomes had been collected by post. Examination of the literature describing the psychometric properties of these instruments identified only three (Frenchay Activities Index, Subjective Index of Physical and Social Outcome and EuroQoL) for which there is acceptable evidence of validity, postal reliability, acceptability, responsiveness and proxy reliability. Two instruments (Nottingham Extended Activities of Daily Living and London Handicap Score) lack evidence to support proxy reliability but have otherwise acceptable properties.

**Conclusions**
Validity of research findings is dependent on the instruments used to measure outcomes. Many stroke studies that are based on postal outcome methods are using unreliable measures. A ‘shortlist’ of valid, reliable candidate instruments to measure stroke outcomes by post has been systematically identified.
Introduction
Benefit from intravenous thrombolysis for acute ischaemic stroke diminishes with time. Pre-hospital and in-hospital factors contribute to treatment delays, but their impact is difficult to quantify. Using routinely collected audit data for the Safe Implementation of Thrombolysis in Stroke – International Stroke Thrombolysis Register (SITS-ISTR), we aimed to determine whether there was a difference in time from onset-to-treatment (OTT) for those patients presenting directly to our service compared with those who required inter-hospital transfer, and to identify the impact of any delays.

Methods
Our acute stroke unit (ASU) offers 24-hour access to intravenous thrombolysis for acute ischaemic stroke and accepts referrals from surrounding hospitals. We collected audit data for all patients presenting to our ASU who received thrombolytic treatment as part of routine clinical care. Patients were considered as two groups: directly admitted patients and those requiring transfer from surrounding hospitals. We used widely accessible software to estimate the distance patients travelled to hospital.

Results
257 patients were included, a third of whom were transferred from other hospitals. Median OTT was 170 minutes, and median door-to-needle (DTN) time was 76 minutes. OTT was shorter in patients admitted directly (154 minutes versus 176 minutes, p<0.001), but DTN time was less in patients transferred from other hospitals with prior notification (53 minutes versus 88 minutes, p=0.001). Median distance travelled for patients from other units was approximately 0.5 mile further than if they had been admitted directly to the treating hospital.

Conclusions
Assessment of stroke patients at a local hospital before transfer for thrombolysis can delay treatment by up to 1 hour. Prior notification of patients to the thrombolysis centre may save up to 30 minutes. By restructuring services to reduce delays, significant improvements in patient outcome may be possible. Repeated audit following service re-structuring will be required.
USING Pedometers TO PROMOTE PHYSICAL ACTIVITY IN PATIENTS AFTER STROKE: A PILOT STUDY

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Introduction
Levels of physical activity after stroke are low. In sedentary older people, pedometers plus systematic advice have led to increases in physical activity. Our aim was to determine the feasibility and accuracy of pedometers in measuring step count in people after stroke.

Methods
We recruited mobile stroke patients nearing discharge from six stroke units. One pedometer was applied around the neck and one above each hip. Patients performed a short bout of activity including sitting for 10 seconds(s), standing 10s and walking 20s followed by a 6 minute walk. Video recordings were made to determine ‘gold standard’ step count. We asked patients about acceptability of pedometers and invited them to take the pedometers home for a week’s trial.

Results
Currently 14 patients (including 6 hemiparetic patients) have been recruited. Six patients completed the 6 minute walk, taking between 446 and 630 "gold standard" steps, with a mean walking speed of 0.89m/s. Overall, the 18 pedometers detected 96.3% of steps. The remaining 8 patients completed walks between 2 minutes 30s and 4 minutes 30s, taking between 186 and 401 steps. Four of these patients had gait speeds of above 0.54m/s; the pedometers detected 70% of steps. In the four patients who walked slower than 0.45m/s, the pedometers detected only 12% of steps. Similar results were found in the short bouts of activity. 9/14 patients stated that they would use a pedometer as part of further trials. Six patients agreed to take pedometers home for a week’s trial, three declined and five will be approached shortly before discharge.

Conclusions
Pedometers appear feasible in patients after stroke. Accuracy depended on gait speed, with accuracy dropping substantially when gait speed was below 0.45m/s. The presence of a hemiparesis seemed not to influence accuracy. Recruitment is ongoing, with a target of 50 patients.
INTRODUCTION
Disturbances in myocardial rhythms are common in acute stroke patients. Disturbances in the autonomic function may be revealed by examining heart rate variability (HRV), giving insight into the neural regulation of myocardial function via sympathetic and parasympathetic nervous systems. Previous studies showed that accelerated idioventricular rhythm (AIVR) during myocardial reperfusion is preceded by increased low frequency (LF) sympathetic, and decreased high frequency (HF) parasympathetic heart rate variability (HRV), and by increased LF/HF HRV ratio. The aim of this study was to examine the associations between disturbed myocardial function and HRV in acute stroke patients.

METHODS
Acute ischaemic stroke patients not on any antiarrhythmic drugs, admitted to the Royal Sussex County Hospital (Brighton) over a 12 months period were recruited to the study. All patients underwent 24 hour ambulatory ECG and BP monitoring (Triolter monitoring system, Novacor, France) within 24 hours of symptom onset.

RESULTS
Sixty patients were included with an average age of 72 (SD 3) years, 24% males. We found a 46% of HF and 54% LF HRV. Increased LF/HF HRV ratio positively correlated with the degree of arrhythmic events observed; specifically ventricular premature beats (r=0.27, p=0.036) and accelerated idioventricular rhythm (r=0.39, p=0.002).

CONCLUSIONS
These findings illustrate that disturbances in the autonomic regulation of myocardial function in acute stroke patients may predict arrhythmic disturbances in these patients.
# Platform Presentations

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ELDERLY PATIENTS WITH LONG-STANDING TYPE 2 DIABETES CAN DEVELOP ABSOLUTE INSULIN DEFICIENCY

S V Hope¹,², M Shepherd¹, B Shields¹, R E J Besser¹, T McDonald¹,², B Knight¹, A Hattersley¹

1. Peninsula NIHR Clinical Research Facility (University of Exeter), Peninsula Medical School, Exeter, 2 Royal Devon & Exeter NHS Foundation Trust

Introduction
The prevalence of Type 2 Diabetes (T2D) in the elderly population is increasing, with many requiring insulin for glycaemic control. It is unclear whether the progressive beta-cell failure found in T2D can result in total insulin deficiency as in Type 1 Diabetes (T1D), with the resulting risk of diabetic ketoacidosis and severe hypoglycaemia. This may need different treatment from the majority of patients with T2D who have endogenous insulin production. Recent work in Exeter has developed Urinary C-Peptide Creatinine Ratio (UCPCR) as a non-invasive, stable measure of endogenous insulin production utilising a single urine sample. We aimed to assess if total insulin deficiency, measured by UCPCR, occurs in T2D.

Methods
130 insulin-treated subjects aged over 70 years (median(IQR): 75(73,80)yrs) provided a 2hr post-prandial urine sample. UCPCR was measured. Absolute insulin deficiency is defined by UCPCR <0.2nmol/mmol.

Results
27/130(21%) had absolute insulin deficiency. 8/27 were diagnosed<=40yrs (median (IQR) age of diagnosis: 27(19,33)yrs), and had a clinical course consistent with T1D. Of those diagnosed with diabetes at >40yrs old, 19/119(16%) were insulin deficient. Duration of diabetes was significantly longer in those with insulin deficiency (median 20vs14yrs, p=0.02). There was no difference between those with insulin deficiency versus those with endogenous insulin production (UCPCR>0.2) for: age of diagnosis (median 59vs62yrs, p= 0.2), BMI (28vs29, p=0.8), HbA1c (7.7vs8.0, p=0.4), time to insulin from diagnosis (36vs60months, p=0.6), or number taking oral hypoglycaemic agents (OHA) (6/19vs51/100, p=0.1).

Conclusions
16% of elderly insulin-treated patients diagnosed >40yrs were insulin deficient. They had diabetes for longer than those with significant endogenous insulin production, but there were no other clinical differences. Identifying insulin deficiency in elderly patients is important as their treatment requirements will differ. 32% of insulin-deficient patients were being treated with potentially unnecessary OHAs. UCPCR may have a valuable role in aiding management of elderly diabetic patients.
POST-STROKE CASE-FATALITY WITHIN AN INCIDENT POPULATION IN RURAL TANZANIA

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Introduction
The aim of this study was to establish post-stroke case-fatality rates, and predictors of mortality, within an incident stroke population in rural Tanzania.

Design
Stroke cases, established by a 3-year incidence study, were followed-up until over a period of 3-6 years post-stroke. Demographic data, social, medical and drug history at time of stroke were recorded. In addition all participants underwent a post-stoke medical assessment and examination which involved recording blood pressure, pulse rate, cardiac auscultatory findings, height and weight, physical function (Barthel index, modified Rankin scale) neurological status (communication, swallowing, vision, muscle activity, sensation), echocardiogram, chest x-ray and computerised tomography (CT) scan.

Results
By 3-6 years follow-up of 147 incident stroke cases, 95 (64.6%) had died. For 83 cases, including all those who died within the first 4 weeks, cause of death was recorded as stroke. Sixteen (10.9%) died within 7 days, 33 (22.4%) within 4 weeks, 64 (43.5%) within one year and 86 (58.5%) within 3 years of incident stroke. The main predictors of case-fatality at both 28 days and 3 years were measures of neurological recovery from stroke such as swallowing impairment, speech, incontinence, muscle power and functional ability (Barthel Index). By Cox regression analysis the strongest independent predictors of mortality at 28 days were a history of smoking and swallowing impairment. Three-year mortality was predicted by ECG evidence of atrial fibrillation on post-stroke examination and swallowing impairment.

Conclusions
This is the first published study of post-stroke mortality from an incident stroke population in sub-Saharan Africa (SSA). The case-fatality rate was slightly greater than seen in developed countries. Mortality is predicted by the various motor impairments resulting from the incident stroke. Improving post-stroke care may help to reduce stroke case-fatality in SSA.
SEASONAL VARIATION IN BLOOD PRESSURES IN THE HYPERTENSION IN THE VERY ELDERLY TRIAL (HYVET)

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¹Imperial College, London, ²London School of Hygiene and Tropical Medicine, London

Introduction
Seasonal variation in blood pressure (BP); with higher recordings in winter and greater seasonal variations in the elderly have been reported. Two studies have reported on participants aged 80 or over with conflicting results. One study reporting significant seasonal variation in BP, the other reporting none. We investigated seasonal variation in BP in the HYpertension in the Very Elderly Trial (HYVET).

Methods
HYVET was a randomised, double blind, placebo controlled trial investigating whether to treat hypertension in those aged eighty or over (n=3845). BP’s were measured every 3 months in the first year, and every 6 months in subsequent years. At each visit the average of two measurements was taken, both sitting and standing. A linear mixed model was used to assess seasonal variation, controlling for treatment group.

Results
There were 24,859 BP measurements taken. BP’s were significantly higher in winter compared to spring, summer and autumn (p<0.001), except for standing systolic BP where autumn was not significantly different from winter (p=0.297). The mean summer-winter difference in sitting BP was 1.7/1.2mmHg and in standing BP was 1.8/1.1mmHg.

Conclusions
BP varied with the seasons in those aged 80 or over; increasing during the winter months. The average seasonal difference was modest but extreme differences may require more care when treating patients with anti-hypertensive medication in the summer months, when BP will be lower, and in winter when BP will be higher.
IS FATIGUE AFTER STROKE ASSOCIATED WITH PHYSICAL DE-CONDITIONING?

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Introduction
The aetiology of fatigue after stroke is unknown. We hypothesised that fatigue after stroke is associated with physical deconditioning. Our aim was to determine the relationship between a measure of fatigue and two indices of physical fitness, lower limb extensor power (LLEP) and walking economy.

Methods
Data were collected from 66 stroke patients (36 men, mean age 71.0 years, SD 9.9) during the baseline assessments prior to randomisation to exercise training or relaxation. Fatigue was assessed by vitality (VIT) score of the SF-36 version 2. LLEP of the unaffected limb was measured using a Nottingham Power Rig. Walking economy was calculated by measuring oxygen consumption (VO2 mL·kg·m⁻¹) during walking at a comfortable speed. Bivariate analyses were performed relating VIT with the indices of fitness. Multiple regression analyses were also performed and included age, gender and either SF-36 emotional role function or SF-36 mental health, as predictors of VIT.

Results
Walking economy was not significantly related to VIT (R= -0.024, p=0.86, n=60). LLEP was positively related to VIT in bivariate analysis (R=0.38, p=0.003, n=58). After correcting for age, gender, SF-36 emotional role function, LLEP remained a significant predictor of VIT.

Conclusions
We found an association between fatigue and reduced LLEP. If a larger study confirmed these findings, it would support the need to develop and test interventions to increase LLEP as a treatment for fatigue after stroke.
DEVELOPMENT AND VALIDATION OF A SHORT SCREENING INSTRUMENT TO PREDICT FUNCTIONAL DECLINE IN OLDER HOSPITALISED PATIENTS: IDENTIFICATION OF SENIORS AT RISK - HOSPITALISED PATIENTS

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Introduction

Functional decline after acute hospital admission is experienced by 30% to 60% of older patients leading to a decline in health-related quality of life and decreased autonomy. It is associated with increased risk of hospital readmission, nursing home placement, and mortality. Prevention could start with identification of patients at risk. Objective of the study is to develop a brief screening instrument to assess the risk of functional decline in older hospitalised patients.

Methods

A multicentre prospective cohort study in two university and one general hospital was executed. Included were patients aged 65 years and older acutely admitted to internal medicine departments. At baseline data for development of the predictive model were assessed: demographic data, functional, cognitive and physical status. At follow up, three months later functional status was measured again. Functional decline was defined as a decline of at least one point on the Katz ADL index at follow up compared to baseline functional status. The model was developed in five steps: imputation of missing values, univariate analysis, multivariate logistic regression, recalibration (shrinkage of betas) and validation (1000 sample bootstrap).

Results

Included were 639 patients. Patients who were not able to demonstrate functional decline (deceased patients) were excluded from the development and validation part of the study. Result: 492 patients in the development study, mean age 77.8 years, 44.4% male, 34.6% suffered functional decline. The Identification of Seniors At Risk - Hospitalised Patients could accurately predict functional decline using only four items: needing assistance in Instrumental Activities of Daily Living on a regular base, using a walking aid, needing assistance for traveling, and not pursuing education after age 14. The AUC was 0.71 (95% CI 0.66-0.76).

Conclusion

The ISAR-HP is a brief and easy-to-use screening instrument to identify older patients at risk for functional decline following hospitalisation.
THE ABCD2 SCORE AS PREDICTOR OF SHORT AND LONG TERM OUTCOMES FOLLOWING STROKE – COHORT STUDY

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Introduction
The ABCD2 score uses clinical variables (age; blood-pressure; clinical features; duration of event and diabetes) to predict early stroke risk following transient ischaemic attack (TIA). Certain variables included in the scale may be associated with outcomes. We hypothesised that ABCD2 would be associated with short and long-term outcomes following stroke.

Methods
Our University Hospital Stroke-Unit admits all patients with suspected stroke from an urban population of 220,000. Comprehensive clinical and investigation details are prospectively recorded in the West Glasgow Stroke Registry, with group adjudication of all clinical data. ABCD2 scores were calculated retrospectively from this database. Outcomes were described using admission NIH Stroke Scale (NIHSS) and time spent in own home at 90-days following stroke (“Home-Time”). Data were not normally distributed so associations with ABCD2 were described using Kruskal-Wallis and rank correlation.

Results
Data were collated for patients admitted between August 1993 and January 2006 inclusive. ABCD2 scores were derived for 1337 ischaemic stroke patients: median age 72 (range:22-96); 645 (48%) males; median admission systolic BP 156mmHg (range:70-213mmHg); median ABCD2:6 (range:2-7). Kruskal-Wallis testing confirmed change in NIHSS (p<0.0001) and Home-time (p<0.0001) with increasing ABCD2. A significant (p<0.0001) linear correlation was demonstrated between ABCD2 score, NIHSS (p=0.20) and Home-Time (p=-0.22).

Conclusion
There is a relationship between ABCD2 and stroke outcomes. We have demonstrated further potential utility of the ABCD2 scale beyond estimating short-term prognosis in TIA.
NON-SPECIFIC INCIDENTAL RISE IN CARDIAC TROPOIN I (cTnI) AND ACUTE
CORONARY SYNDROME CARRY THE SAME MORTALITY RISK

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Background
Non-specific incidental finding of raised cTnI level is not uncommon in older patients. Under such circumstances, the importance of cTnI test makes it difficult to ignore, yet there is no current consensus as to the prognostic or indeed diagnostic significance of such a result in older people.

Methods
A prospective study was conducted over 6 weeks period in 2004 and patients followed up to end 2006 to examine the longer term outcome for older people who were admitted to a UK teaching hospital with a positive troponin I (>=4mcg/L).

Results
N= 237 (55.3% male), aged 65-100 years (mean 81.0 years, median 81 years) met the study criteria. 131 deaths (55%, all-cause mortality) occurred during a total follow-up period of 185 person years. There was no significant difference between the survival of those with an incidental cTnI rise <0.10 compared to those diagnosed with acute coronary syndrome (ACS), (p=0.841). However, an incidental rise >=0.10 was associated with a worse outcome compared to an ACS (p=0.011), and this could be extrapolated to mainly involve those where cTnI>0.50. Additionally, non-ACS patients with incidental rise and <80 years of age demonstrated an inferior outcome to those with ACS (p=0.03), a pattern not seen in those aged >80 years (p=0.233).

Conclusion
An incidental cTnI rise is a poor prognostic sign in elders. The outcome of an incidental cTnI rise in older patients is comparable to that of someone having had an acute ischaemic myocardial event, and worse if they are in the younger part of the age spectrum. This study supports a lower threshold for active investigation in this high-risk group of patients.
ARE WE GOOD AT CONVERTING PRESENTATIONS AT THE BRITISH GERIATRICS SOCIETY INTO PEER REVIEW PUBLICATIONS?

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Introduction
In 2009 a Cochrane collaboration¹ assessed the number of full publications that had initially been presented in abstract format. Concern is expressed that data only published in abstract form is not available for the wider population, is less likely to be reported if the results are negative and the methodology is often not fully available to others wishing to replicate such studies.

Methods
To compare British Geriatrics Society meetings from 1987, 1997 and 2007 to assess the number of presentations and posters that were subsequently published as full papers within 24 months and in which journals.

Programmes and abstract books from the three years in question were hand searched and then abstracts were sought through Pubmed. Abstracts were scrutinised to ensure that the data contained within them was consistent with that presented at the BGS meeting and subsequent site of publication noted.

Results

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<th>Year</th>
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<td>Oral presentation</td>
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<td>% of published dealing with Geriatric Giants</td>
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Conclusion
Across the 20 years there have been a consistent number of papers published from the initial presentations. Oral presentations are more likely to be published as full papers. Only a small fraction of finally published papers are pertinent to the Giants of Geriatric Medicine. We must encourage all presenters at future BGS meetings to attempt to publish data in peer reviewed journals in order to improve the care of older people.

1. Full publication of results initially presented in abstracts. The Cochrane Library 2009
IMPACT OF ABNORMAL CIRCADIAN BLOOD PRESSURE ON OUTCOME IN THE OLDER ADULT: DUBLIN OUTCOME STUDY

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Introduction
Studies have shown ambulatory blood pressure measurement (ABPM) a more accurate predictor of cardiovascular risk than clinic blood pressure measurement (CBPM), and night-time blood pressure (BP) a better predictor than daytime BP. How abnormal circadian blood pressure profiles relate to outcome in the older population remains to be fully elucidated. We studied the predictive value of abnormalities in nocturnal dipping and morning surge in systolic blood pressure (SBP) in a large cohort of older referred hypertensive patients.

Methods
At baseline, when not on antihypertensive medication, 2,794 patients (1,187 male, mean age 72.7 years) underwent ambulatory BP monitoring. Using a computerised national registry of death mortality outcome was ascertained. After a mean follow-up of 4.6 years there were 356 cardiovascular deaths. Morning surge was calculated as the difference between pre-wakening SBP and the morning average and nocturnal dipping the percentage difference between night and day SBP mean.

Results
In a Cox proportional-hazard model morning surge was an independent predictor of cardiovascular mortality. After adjustment for sex, age, smoking history, diabetes, previous cardiovascular events, BMI, and mean daytime SBP the corresponding HRs were 1.12(1.07-1.16), 1.09(0.99-1.22) and 1.14(1.08-1.20) respectively. In another Cox model percentage decline in nighttime systolic blood pressure was an independent predictor of cardiovascular mortality after similar adjustments. For each 5% decrease in the decline in nocturnal systolic pressure the adjusted hazard rates (HR) were 1.10(1.04-1.15), 1.16(1.06-1.27) and 1.06(1.00-1.13) for cardiovascular, stroke and cardiac mortality respectively. Compared to those with normal dipping status (> 10%<20% decline, n= 920) those with reverse dipping (< 0% decline, n=564) had an adjusted HR of 1.60(1.25-2.01), 2.65(1.72-4.03) and 1.32(1.01-1.78) for cardiovascular, stroke and cardiac mortality respectively.

Conclusions
Increased morning surge and reduced nocturnal dipping are significant predictors of cardiovascular mortality in older individuals and suggests potential for chronotherapy in this age group.
ARE WE TEACHING OUR STUDENTS WHAT THEY NEED TO KNOW ABOUT AGEING? – RESULTS FROM THE UK NATIONAL SURVEY OF UNDERGRADUATE TEACHING IN AGEING AND GERIATRIC MEDICINE

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Introduction
This survey set out to evaluate what aspects of ageing and geriatric medicine are taught and examined at UK medical schools.

Methods
An electronic questionnaire was developed incorporating 21 learning objectives taken from the BGS undergraduate curriculum which had previously been mapped to Tomorrow’s Doctors. All 31 UK medical schools were invited to participate.

Results
28 schools agreed to participate and full responses were received from 17. 8/21 learning objectives were taught in every responding school: dementia, delirium, falls, incontinence, parkinsonism, stroke, polypharmacy and ethics. However, there were no learning outcomes that were assessed in every school. Not all teaching was formal: there was teaching about pressure ulcers in 14/17 schools but this was formally taught in only 7. Clinical topics where teaching was least commonly reported included elder abuse and terminology and classification of health (in 8/17 and 2/17 schools respectively). Only 9/17 schools reported teaching in social ageing, 7/17 in cellular ageing and 9/17 in the physiology of ageing.

Conclusions
There are deficiencies in the comprehensiveness of UK undergraduate teaching and examination of ageing and geriatric medicine. The failure to teach comprehensively on elder abuse and pressure sores is of particular concern.
A PROSPECTIVE CASE-CONTROL STUDY OF FREQUENCY DOMAIN HEART RATE VARIABILITY IN CAROTID SINUS HYPERSENSITIVITY AND CAROTID SINUS SYNDROME

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Introduction
Carotid sinus hypersensitivity (CSH) is associated with syncope and unexplained falls in older people. A recent postmortem study has found neuropathological substrate within medullary autonomic nuclei of patients with carotid sinus syndrome (CSS). We conducted a case-control study of heart rate variability in CSH to determine the autonomic profile of individuals with CSH.

Methods
Symptomatic participants (n=22) were recruited from patients diagnosed with CSS at a specialist falls and syncope investigations unit. Age-matched asymptomatic controls with CSH (n=18) and without CSH (n=14) were recruited from a community cohort investigated with CSM. Continuous ECG recordings during 10 minutes’ supine rest during normal breathing. Power spectral densities were calculated for low frequency (LF:0.04-0.15Hz) and high frequency (HF:0.15-0.40Hz) heart rate variability (HRV) using the autoregressive method.

Results
There were baseline differences in heart rate between the symptomatic CSS group (74.8±9.7bpm), the asymptomatic CSH (66.7±8.4bpm) and non-CSH control (63.4±12.7bpm) groups (p=0.004). Normalized values for LF-HRV was significantly higher in both symptomatic CSS (63.1 vs 50.1, p=0.049) and asymptomatic CSH (61.5 vs 50.1,p=0.026) groups than in non-CSH controls following adjustment for age differences. Normalized HF-HRV was not significantly different for the symptomatic CSS group vs non-CSH controls (36.9 vs 49.9,p=0.051) but significantly different for the asymptomatic CSH group vs non-CSH controls (38.5 vs 49.9,p=0.027) again adjusted for differences in age. The above differences were no longer statistically significant once adjusted for baseline differences in heart rate.

Conclusion
Our results suggest that CSH irrespective of symptoms is associated with increased resting sympathetic activity and sympathovagal balance. This increase insympathetic activity appears to be accounted for by an increase in resting heart rate.
AMPUTATORY HEART RATE PREDICTS BOTH CARDIOVASCULAR AND NON-CARDIOVASCULAR MORTALITY IN OLDER ADULTS

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Background
Increased heart rate has been shown to be associated with an increased risk of mortality from cardiovascular diseases in some studies, but not in others. The majority of these have used clinic rather than ambulatory measures of heart. Increased heart rate has also been linked to non-cardiovascular causes of death. We studied the predictive value of ambulatory heart rate in a large cohort of referred older hypertensive patients.

Methods
At baseline, when not on antihypertensive medication, 2,794 patients over 65 years old (1,187 male, mean age 72.7 years) underwent ambulatory BP monitoring. Using a computerised national registry of death mortality outcome was ascertained. After a mean follow-up of 4.6 years there were 356 cardiovascular and 222 non-cardiovascular deaths.

Results
In a Cox proportional-hazard model heart rate was an independent predictor of cardiovascular and non-cardiovascular mortality. The resultant adjusted (adjusted for sex, age, smoking history, diabetes, previous cardiovascular events, BMI, and mean 24-hour systolic blood pressure) relative hazard rates (RHR) for a 10 beats per minute increase in mean daytime, nighttime and 24-hour heart rate was 1.10(1.01-1.19), 1.21(1.10-1.33) and 1.17(1.06-1.28) respectively for cardiovascular death. The corresponding adjusted RHR for non-cardiovascular death was 1.08(0.97-1.20), 1.21(1.08-1.37) and 1.16(1.03-1.31).

Conclusions
Increased heart rate is a significant if non-specific predictor of mortality independent of other risk factors in individuals with hypertension. In particular, nighttime heart rate seems to be the strongest predictor of risk.