Abstracts of work presented at the 2016 BGS Spring Scientific Meeting

11 - 13 May 2016
ACC, Liverpool
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3. THE RELATIONSHIP BETWEEN PREOPERATIVE FRAILTY AND OUTCOMES FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI): A SYSTEMATIC REVIEW AND META-ANALYSIS
   C Harley, A Visvanathan, A Anand, A S V Shah, J Cowell, A MacLullich, S Shenkin, N L Mills

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**HIP FRACTURE: DOES WEEK-DAY OF PRESENTATION AFFECT LENGTH OF STAY?**

A Johansen, C Boulton, V Burgon, S Rai, R Wakeman

*Falls and Fragility Fracture Audit Programme, Royal College of Physicians*

**Introduction**

NICE guideline CG124 (2011) argues that patients with hip fracture should be offered surgery on the day of, or the day following presentation. This recommendation reflects potential cost savings from reduced length of stay (LOS) achieved through early surgery. Pressures on theatre capacity across the working week might be expected to lead to variation in delay to theatre. We set out to see whether any such variation translates into effects on LOS.

**Methods**

During 2013 the National Hip Fracture Database (NHFD) collected data from all 182 trauma units in England, Wales and Northern Ireland. We identified 64,838 hip fractures in people aged >60; over 95% of all such fractures. For each patient we recorded the date and time of initial presentation, operation and discharge.

**Results**

In total 65,742 patients (97.6%) underwent surgery. On average operation took place 32.7 hours after initial presentation. This figure varied from 31.2 hours following presentation on a Sunday or Monday, up to 34.4 hours for presentation on a Friday, and 34.7 hours on a Saturday. This fluctuation in time to operation was statistically significant, but was not associated with any variation in LOS in the acute ward (15.7 days) or in hospital overall (20.6).

**Conclusions**

Patients presenting on a Friday or Saturday experience an additional wait of around three hours (8.6%) before their operation. This may reflect differences in theatre lists and staffing on the morning following presentation, and perhaps limited access to orthogeriatrician support in pre-operative work-up, but does not translate into a measurable effect on their length of stay. These results do not suggest that investment in in theatre staffing or seven day orthogeriatrician working would be justifiable simply as a means of reducing costs through reducing length of stay.
THE INCIDENCE OF HYPOTENSION IN OLDER PEOPLE ON ANTIHYPERTENSIVE TREATMENT

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Introduction
In older people anti-hypertensive medications can cause adverse effects related to hypotension. This retrospective observational study describes the incidence of hypotension in elderly patients on antihypertensives.

Methods
Data extracted from primary care databases by an automated Clinical Advisory System were analysed. Data were obtained from 29 GP surgeries including a population of approximately 200,000. Inclusion criteria were: a serum creatinine test, a BP measurement between 01/04/11 and 01/01/12, age over 70 years at first screening.

Results
11,160 patients over 70 years old were analysed, 6369 (57%) female. 128 had a systolic BP<100mmHg (89, 70% were taking anti-hypertensives), 346 people had systolic BP 100-109mmHg (223, 64% were taking anti-hypertensives), 823 people had a systolic BP of 110-119mmHg (532, 65% were taking anti-hypertensives). The patients were taking between 0 and 5 antihypertensive medications at index: 34.1% were taking an ACEI, 17.6% a diuretic, 16.4% an ARB, 13.2% a Calcium-Channel Blocker, 13% a beta-blocker, 3.9% an alpha-blocker, and 0.4% a centrally-acting antihypertensive. Kaplan-Meyer survival curves indicated reduced survival in patients with index BP<100mmHg and average (over one year prior to index) systolic BP<100mmHg; 3.4% died over the one-year of follow-up. Cox regression analysis indicated age, sex, index BP<100mmHg, index diagnoses of stroke and heart failure were significantly associated with mortality. Over one-year's follow-up, 10.6% of patients had an episode of acute kidney injury (AKI). Of the 128 patients with index systolic BP<100mmHg 30 patients (23%) had an episode of AKI in follow-up compared to 11% in those with systolic BP≥100mmHg (Chi220.9, p<0.05). Of 44 patients with average BP<100mmHg, 7(16%) had AKI in follow-up.

Conclusions
A significant number of elderly patients with hypotension remain on anti-hypertensive medication which is associated with AKI and mortality. Medication review and intervention in these patients may reduce the incidence of adverse incidents associated with hypotension.
THE RELATIONSHIP BETWEEN PREOPERATIVE FRAILTY AND OUTCOMES FOLLOWING TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI): A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background
Transcatheter aortic valve implantation (TAVI) is an increasingly common intervention for patients with aortic stenosis deemed high-risk for major cardiac surgery, but identifying those who will benefit can be challenging. Frailty reflects physiological reserve and may be a useful prognostic marker in this population. We performed a systematic review and meta-analysis of the association between frailty and outcomes after TAVI.

Methods
Five databases were searched between January 2000 and May 2015. From 2,623 articles screened, 54 were assessed for eligibility. Ten cohort studies (n=4,592) met the inclusion criteria of reporting a measure of frailty with early (≤30 days) or late (>30 days) mortality and procedural complications following TAVI as defined by the Vascular Academic Research Consortium (VARC).

Results
Frailty was associated with increased early mortality in four studies (n=1,900) (HR 2.35, 95% CI 1.78-3.09, p<0.001), and increased late mortality in seven studies (n=3159) (HR 1.63, 95% CI 1.34-1.97, p<0.001). Objective frailty tools identified an even higher risk group for late mortality (HR 2.63, 95% CI 1.87-3.70, p<0.001). Frail individuals undergoing TAVI have a mortality rate of 34 deaths per 100 patient years, compared to 19 deaths per 100 patient years in non-frail patients. There was limited reporting of VARC procedural outcomes in relation to frailty, preventing meta-analysis.

Conclusions
Frailty assessment in an already vulnerable TAVI population identifies individuals at even greater risk of poor outcomes. Use of objective frailty tools may inform patient selection, but this requires further assessment in large prospective registries.
A PROACTIVE GERIATRIC LIAISON SERVICE TO ASSESS AND MANAGE MEDICAL PROBLEMS ON OLD AGE PSYCHIATRY WARDS

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Topic
Older people with mental health problems are more likely to receive lower quality health care, inappropriate prescriptions and reduced access to services, leading to increased rates of mortality¹,²,³. The NHS mandate 2015 to 2016 emphasises the need to deliver care which is joined up and seamless for users of services⁴. Many patients with mental ill health have coexistent medical problems, yet they are often managed in ‘stand-alone’ psychiatric facilities with little input from medical specialties. We audited the impact of a ‘geriatric liaison service’ to an old age psychiatry unit in Leeds.

Intervention
We audited all patients referred to the Liaison Geriatrician from 2008 to October 2015 from the Mount Hospital Leeds which consists of 4 Old Age Psychiatry wards. Data was collected in October 2015 and included referral date, patients’ age and sex, number of referrals, reason for referral and the outcome.

Improvement
339 (142F, 197M) with a mean age 77 years (range 56-94) were referred, some more than once (range 1 - 8) making 440 referrals in total. Cardiovascular problems were the biggest group of referrals (in particular oedema, hypotension and rhythm disturbances) (34%) followed central nervous system problems (11%), respiratory (8%), gastrointestinal (8%) and infection (8%). The most common intervention was advice on treatment or investigation, very few patients needed acute admission and some unnecessary admissions were aborted by physician’s intervention. Some unusual problems were diagnosed, a spontaneous pneumothorax and primary biliary cirrhosis.

Discussion
This audit emphasises the need for a joint coordinated approach on psychiatric wards and a dedicated Geriatric Liaison service can improve care, avoid unnecessary acute admissions and repeated outpatient appointments. There are also excellent opportunities for junior staff training particularly at Foundation level. As a result of the service model, a simulation-training course is being developed for staff working on the Old Age psychiatry wards from the commonest scenarios identified by the audit. This will help to facilitate training by teaching to recognise, assess and manage common medical problems in psychiatric settings.

References
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THE BRIDPORT PROJECT - INTEGRATED COMMUNITY SERVICES FOR FRAIL, ELDERLY PATIENTS IN WEST DORSET

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Background
West Dorset has 100,000 people; 13.5% are over 75 years old. Bridport is rural, with poor transport links and is 16 miles from an acute hospital. Over the last year, the Bridport Project has sought to deliver care to elderly patients as close to home as possible.

Innovation
The Bridport Project has a number of components:

1. Use of the community hospital (CH) as an integrated care hub, supporting coordination of community teams' activities.
2. Use of CH beds as an alternative to acute admission.
3. Multidisciplinary care coordination based around primary care, with weekly virtual ward rounds at the GP practice. These are attended by GPs, a geriatrician, a psychiatrist, district nurses, physiotherapists, occupational therapists, mental health nurses and social services.
4. Teleconferenced MDTs on Mondays and Fridays to monitor and plan care over weekends.
5. Domiciliary assessment of frail, complex patients by a community geriatrician.
6. Joint domiciliary physical and mental health assessment of patients by a geriatrician and psychiatrist.
7. Appointment of Health and Social Care Coordinators to implement and administer collaborative community team working.
8. Consultant support of district nurses and community rehab teams, allowing direct referral and review of patients.
9. In-reach of district nursing teams to the community hospital, to share community knowledge of in-patients, and participate in discharge planning.
10. Colocation of social services in the community hospital.
11. Shared care record: GPs, the community teams and the CH all use SystmOne.
12. Post discharge follow-up: following discharge from the CH, patients remain under the care of the in-patient team for one week.

Evaluation
Outcomes:

i. Increased rate of step-up admissions to CH beds: 10% in Jan 2014, to 50% in August 2015
ii. 129 patients supported via the virtual ward between May-October 2015
iii. Reduced unplanned admissions for over 85s in 2015 vs 2014 (-4.4%)
iv. Reduced GP-referred unplanned admissions in 2015 vs 2014 (-26.8%)
v. Reduced unplanned admissions for respiratory and urinary tract complaints in 2015 vs 2014 (-15.7% and -22.4% respectively)

Conclusions
For elderly patients, coordinated community services, closely aligned with GPs, and with dedicated geriatrician input, can reduce unnecessary admissions, and allow more care to be delivered locally.
PROMOTING ORAL FLUID INTAKE IN HOSPITAL: THE NORTHUMBRIA ASSESSMENT OF HYDRATION

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Background
Older people in hospital are susceptible to dehydration due to pre-existing and acute health problems. There is no routinely used standardised nursing assessment to identify those patients without intravenous fluids who remain at risk of poor oral fluid intake.

Innovation
The Northumbria Assessment of Hydration (NoAH) tool was developed through a literature review and thematic analysis of interviews with nursing staff (n=55) and patients/relatives (n=11) to be a nurse-led fluid intake risk assessment and response protocol for older patients within 48 hours of hospital admission. Nurses followed three escalating grades of clinical care response including formal elicitation of drinking preferences, patient held intake charts and a regular senior nurse review according to a NoAH score from 0-10, which reflected medication, communication, visual perception, fluid consistency recommendation, orientation, mucosal appearances and ability to drink from a glass. This was deployed on 4 wards (acute, rehabilitation and stroke units) across 3 hospitals between March-July 2015.

Evaluation
Amongst 650 admissions, 143 were ineligible because the patient was already receiving intravenous fluids, a fluid restriction or palliative care. 304 NoAH tools were completed (54% low, 43% medium, 3% high risk gradings). Incompletion rate was 31%. Compared to a baseline audit of 100 patients in the same settings, increases were observed in documentation of fluid balance charts (5% vs 88%; p< 0.001), urine output charts (1% vs 83%; p< 0.001), support with hydration (11% vs 79%; p< 0.001) and discussions about hydration (5% vs 13%; p< 0.05). In post-implementation interviews staff suggested a higher score weighting for cognitive status and less emphasis on mucosal appearances.

Conclusions
A formalised oral intake score was well received in secondary care and improved relevant documentation. Next steps include promoting routine application and demonstration of reduced intravenous fluid replacement.
AGGRESSION, OLDER PEOPLE AND CARE WORKERS

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Background
Older people are significantly over-represented in incident data relating to violence and aggression in acute care. Such behaviour that is sometimes labelled as ‘challenging’ can result in poor outcomes for patients, and significant physical harm to patients and staff as well as high levels of stress for patients, relatives or carers and staff.

Method
We analysed the Datix reports filed in our trust over a 12-month period relating to violence and aggression; we excluded incidents from the Emergency Department.

Evaluation
Reviewing the data available to us showed that the majority of incidents relating to violence and aggression in the hospital where the focus of the encounter was patient harms to staff (rather than carer attacks on staff or staff on patients) were significantly biased towards those areas of the acute trust providing care for older people, 77% of incidents.

71% of incidents related to physical violence or aggression directed at staff and 35% involved verbal aggression. 22% of incidents related to physical or verbal aggression towards another patient and in 12% of cases an implement, such as a walking stick, Zimmer Frame or drip stand were used.

Conclusion
Episodes of violence and aggression directed principally towards staff working in areas providing care for older people are common and likely contribute significantly to the use of sedative medication or antipsychotics, with their associated side effects and complications.

Violence and aggression increases length of stay and has a significantly negative impact on the outcomes of care as well as the experience of care for patients, relatives and staff.

Many instances of potential violence and aggression can be mitigated by the implementation of appropriate, person-centred interventions.

Training in diversion, distraction and de-escalation as well as more technical skills such as methods of physical restraint and self-defense are not routinely taught in general hospitals.

In Doncaster and Bassetlaw Hospitals, we have developed, with our neighbouring mental health trust, a training course for frontline clinical staff which we plan to roll-out across the organisation.
THE RESPOND TRIAL: A PHASE II, RANDOMISED, DOUBLE BLIND, PLACEBO CONTROLLED TRIAL TO EVALUATE THE EFFECT OF RIVASTIGMINE ON GAIT IN PATIENTS WITH PARKINSON’S DISEASE WITH A HISTORY OF A FALL

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1 University of Bristol, 2 School of Psychology, Cardiff University, 3 Neuroscience Research Australia

Background
Falls are a frequent and serious complication of Parkinson’s disease (PD) in part related to an underlying cholinergic deficit that contributes to both gait and cognitive dysfunction. We aimed to assess whether ameliorating this deficit with the cholinesterase inhibitor rivastigmine would reduce gait variability and the frequency of falls.

Methods
This phase II randomised double blind placebo controlled trial recruited PD patients in the UK, who had fallen in the past year; were able to walk 18 metres without an aid; had no previous exposure to a cholinesterase inhibitor, and did not have dementia. Patients were randomly assigned (1:1) to rivastigmine (target dose 12mg per day) or placebo by a clinical trials unit. The primary outcome measure was step time variability, a marker of gait stability, assessed at 32 weeks employing an intention-to-treat analysis. Step-time variability was assessed in three different walking paradigms combining tasks of increasing attentional demand.

Results
Between 4th October 2012 and 28th March 2013 we randomly assigned 130 patients to rivastigmine or placebo and 120 (92.3%) completed the study. Rivastigmine improved step time variability in all three walking conditions with the most significant benefit for normal walking; ratio of geometric means in normal walking 0.72 (95% CI 0.58 to 0.88, p=0.002); simple dual task 0.79 (95% CI 0.62 to 0.99, p=0.05), and complex dual task 0.81 (95% CI 0.60 to 1.09, p=0.17). There was a 45% (95%CI 19% to 62%, p=0.002) reduction in the rate of falls per month during the treatment period. Gastrointestinal side effects were more common on rivastigmine (p<0.001) but there was no difference in serious adverse events (14 rivastigmine versus 13 placebo, respectively p=0.19).

Conclusion
Rivastigmine improved gait stability and reduced falls frequency. A future phase III study is required to confirm these results and demonstrate cost-effectiveness.
RAPID ASSESSMENT INTERFACE AND DISCHARGE (RAID-NEWPORT): SERVICE EVALUATION OF AN ENHANCED OLDER ADULT PSYCHIATRY LIAISON SERVICE

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Background
The existing Newport Older Adult Mental Health (OAMH) liaison service was unable to provide escalating needs to the older and increasingly frail patients currently being admitted to Royal Gwent Hospital (RGH). Therefore, Newport Rapid Assessment Interface Discharge (RAID) was set up to provide a prompt holistic assessment (Singh I et al. Clin Interv Aging 2013;8:1101–1108).

The objective of this study was to appraise outcome measures with this enhanced service (Tadros G et al. Psychiatrist. 2013;37:4–10).

Methods
The existing nurse led psychiatry liaison team was expanded to provide an enhanced multidisciplinary input by increasing nurse provision, introducing therapists, social worker input and a dedicated old age psychiatry consultant on weekdays between 9 am and 5 pm. Patient demographics, social care needs, co-morbidity burden (Charlson Co-morbidity Index - CCI), functional status (Barthel Index - BI) were recorded (November 2014 to February 2015). Frailty status (FI) was measured by an index (Rockwood) of accumulated deficits, giving a potential score from 0 (no deficits) to 1.0 (all 40 deficits). The outcomes were compared with the previous OAMH liaison service data over the same period in 2014 (November 2013 to February 2014). Ethical approval was not required for this service evaluation; however, all questions and forms required to carry out the study were sent to the research and development (R & D) department, to assess risks to patient identification and the health board.

Outcome/Results
The RAID has assessed 339 patients as compared to 179 by OAMH over the same period, 100% acute admissions were assessed within 4 hours and 93% in-patient referrals were attended within 24 hours target from the time referral was received by the team.

The descriptive analysis studied for 263 patients is shown below:

<table>
<thead>
<tr>
<th>Mean age-years</th>
<th>Females</th>
<th>Pre-admission BI</th>
<th>Admission BI</th>
<th>Mean CCI</th>
<th>Mean FI</th>
<th>Polypharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>82.18±8.04</td>
<td>60%</td>
<td>8.52±8.1</td>
<td>6.35±7.0</td>
<td>2.08±1.43</td>
<td>0.34±0.11</td>
<td>80%</td>
</tr>
</tbody>
</table>

The outcome analysis was done for 339 patients. The direct discharges from front door were increased by 7%. The mean LoS has fallen from 35 to 20 days in RGH and from 108 to 47 days in long-stay wards. The cost benefits were done based on the mean reduction in LOS (41.8 days) and admission reduction (2.2 days), making total annualised bed saving of 44 days.

Conclusions
Prompt mental health assessments for acutely unwell frail older people are not only cost effective but also improve clinical outcomes.
AUDIT TO EVALUATE THE ABILITY OF DIFFERENT MEMBERS OF THE MULTI-DISCIPLINARY TEAM (MDT) ACROSS ALL SPECIALITIES TO CORRECTLY GRADE PRESSURE ULCERS

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Introduction

Skin integrity is important in the management of the frail elderly patient in whom pressure ulcers are more common (Webster et al, British Medical Journal Quality and Safety, 2011, 20; 297-306). The presence of pressure ulcers increases length of stay in hospital and worsens prognosis (Fletcher, Wounds, 2012, 8; 1-4). Pressure ulcer management is extremely costly to the NHS (Bennet, Dealey, Posnett, Age and Aging, 2004, 33; 230-5) and the goal should be to prevent rather than treat.

Method

This audit assessed 150 nurse’s, doctor’s and therapist’s ability to grade pressure ulcers accurately. It looked at members of the MDT across the entire hospital in all specialities. Individuals were presented with four images of different grades of ulcer and asked to grade them. They were also asked whether they had received formal teaching on grading ulcers, their level of experience and confidence.

Results/Conclusions

Overall only 37% were graded correctly. Nursing staff were twice as likely to grade the pressure ulcer correctly when compared to doctors and therapy staff. Care of the elderly wards graded more accurately than other specialities.

Those who had been qualified longer rated themselves as more confident at grading ulcers and were more likely to grade correctly. Those who had had teaching within the last five years were three times as likely to grade accurately when compared to those who had not.

More work is required at educating the MDT to make accurate grading and therefore accurate management of ulcers routine. A new teaching programme has been designed which focuses on pressure ulcer management. Clinical documents on the trust intranet have been highlighted to give practical working examples and guidelines. The audit will be repeated to see if these interventions have improved ability.
THINK DELIRIUM! IMPROVING DELIRIUM RECOGNITION AND ASSESSMENT ON HOSPITAL ADMISSION

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Evidence base
Delirium is a common finding in hospitalised older adults and is associated with increased mortality, increased length of stay and new institutionalisation (NICE CG103 delirium: prevention, diagnosis and management). However, delirium is frequently unrecognised and poorly managed. Early recognition of delirium is crucial to implementing management strategies and improving outcomes. The aim of this audit was to improve the assessment of delirium on admission to the acute medical floor. In the baseline audit, 16% of admissions were coded with a diagnosis of delirium or confusion.

Change strategies
To generate change, three interventions were used. Multiple PDSA cycles were utilised to develop a simple screening tool based on a Confusion Assessment method (CAM) which was implemented in a sticker format in a patient’s admission documentation. This was accompanied by teaching sessions for both medical and nursing staff to encourage an MDT approach to the care of delirious patients. We also updated the Trust’s delirium guidelines to reflect latest BGS and NICE guidelines and to provide clearer guidance and ease of access to information for all staff.

Change effects
After the interventions were implemented, a re-audit was conducted on the next 100 admissions. Risk factors of delirium were present in 76% of patients, of whom 28% screened positive for active delirium. Following the interventions, recognition of delirium increased by 57%. Due to the success of the project, the screening tool was subsequently adopted into the Trust’s orthopaedic admission documentation for fractured neck of femur patients.

Conclusion
This audit demonstrates a significant improvement in the recognition of delirium in the acute hospital setting. The changes have been permanently implemented by the Trust and have spread across specialties to generate a sustainable, long-term improvement. The interventions are simple and effective, and we feel could easily be replicated in other hospitals with similar results.
POST DISCHARGE FOLLOW UP
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Background
Local clinicians felt some readmissions could be avoided by support for elderly patients in the first days after hospital discharge. The community team had met patients struggling to manage discharge medications. Physically struggling in home environment and with anxiety related to diagnosis and planned follow up. The aim was to carry out an initial pilot study to assess the type of problems encountered by patients being discharged and to evaluate the type of work force required to meet their need.

Innovation
The team consisted of a community matron and a health care assistant supported by a consultant community geriatrician. Patients over 65 discharged from elderly care ward to their own home were telephoned within 72 hours of discharge to check for any problems. If necessary a follow up home visit was arranged.

Evaluation
This pilot study involved 26 patients. In 17 problems were identified on the initial telephone check and 8 home visits were completed. The community matron sign posted patients to available services, reviewed medication and adjusted diuretics and insulin dosing. Providing an opportunity for patients and carers to discuss anxieties and air questions regarding diagnosis and treatment. Only 1 patient (3.6%) was readmitted within 30 days which is less than the national average of 6.5%.

Conclusions
This pilot was promising- suggesting readmission can be reduced with enhanced support for elderly patients on discharge from hospital. A high skill mix will be required for staff of this service which includes knowledge of local community services, non-medical prescribing skills in order to adequately review and adjust medication. There was also a need for the community matron to be able to liaise with a consultant geriatrician for advice and to be able to refer on to other community nursing services. A second larger pilot has now been started.
A SURVEY OF PATIENTS OVER 70 UNDERGOING ELECTIVE HIP SURGERY

S E Griffiths¹, B Jamjoom², H Naqvi², A Moftah²

¹ Elderly Care Department Solihull Hospital, 2 Trauma and Orthopaedics Department

Background
The local orthogeriatrician has noticed a number of patients undergoing elective hip replacement who had developed significant post-operative complications resulting in prolonged hospital stays. There is consideration into expanding the role of the orthogeriatric team to cover elective surgery. The aim of this project is to establish the needs and assess frequently experienced complications of patients to inform the development of an elective orthogeriatric service.

Sampling method
A retrospective review of 50 patients who underwent elective hip replacement in a 12 month period at Sandwell General Hospital. Medical notes and electronic records were accessed. We collected information on patient factors that we hypothesised may lead to more inpatient complications; the recorded complications that patients experienced as well as information on length of hospital stay and need for medical review post operatively.

Results
A pre-operative Haemoglobin less than 120 nearly doubled length of stay

- Taking 8 or more medications pre-operatively made medical review 10 times more likely
- Awaiting care on discharge caused significant delays in transfer of care
- Complications often caused by lack of attention to detail i.e. opiates and no laxatives

Conclusions
Knowledge gained from this project has led to the formulation of a service development plan which includes

- Developing elective orthopaedic clinic slots where patients with polypharmacy, multiple comorbidities and pre-operative anaemia can be assessed and optimised prior to surgery.
- Involvement of a orthogeriatrician in development of local protocol i.e. ensuring laxatives are prescribed alongside opiates as part of the enhanced recovery programme.
- Routine postoperative follow up by a geriatrician for higher risk elective patients.
CAN WE INFLUENCE HOSPITAL READMISSION FOR PEOPLE WITH DEMENTIA?

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Introduction
90% of people with dementia in Leeds have at least one other significant co-morbid medical problem. As a result they are at great risk of frequent admission to hospital, Public Health England has shown that the incidence of emergency admissions in people with dementia has increased by 48% since 2008/09 (National Dementia Intelligence Network briefing 2015). We have undertaken an audit to determine the health and social factors contributing to readmission in people with dementia to try and identify potential strategies to prevent avoidable admission to hospital.

Methods
We undertook a retrospective case note audit of patients aged 65 years and over with an ICD code of dementia with 4 or more emergency admissions to Leeds Teaching Hospitals in the year following an initial admission in 2013. We devised an audit tool to identify the health and social factors contributing to each admission and determine the degree of involvement of other agencies including mental health services.

Results
72 patients had 4 or more readmissions within a year. 14 patients were omitted due to some missing data. The remaining 58 patients were admitted a total of 264 times. 57% of admissions were to Elderly Medicine, the mean length of stay was 11 days (range 1-88). The majority of admissions were attributed to health (73%) rather than social factors, with falls and ‘collapse’ being the most common cause (22%). Many of these admissions were relatively ‘soft’. The vast majority of patients lived at home, only 16% of admissions were people in 24 hour care. Involvement of hospital and community mental health teams was poor and occurred in only 8% of admissions. Communication with carers was lacking, often with little evidence of an assessment of how well they were managing.

Conclusions
Contrary to our expectations people with dementia were readmitted to hospital principally for medical rather than social reasons. However given the relative paucity of admissions from care homes, their admission may be influenced by social factors or ‘risk’. Our study has also shown that links between acute hospitals and mental health teams (community and liaison) could and should be much stronger in the management of this vulnerable client group. Many admissions were for relatively ‘soft’ medical problems potentially lending themselves to ‘unplanned admission strategies’ in primary care.
REDUCING POTENTIALLY AVOIDABLE TASKS ON GERIATRIC WARDS FOR OUT OF HOURS WARD COVER

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Background
At the Royal Berkshire Hospital (RBH) tasks for junior doctors providing out of hours ward cover are listed on interactive real-time software and relayed to doctors via handheld devices. Many doctors reported that some tasks listed seemed ‘potentially avoidable’, contributing to a very high workload. We performed a retrospective analysis of data from the software pertaining to tasks listed for the four geriatric wards and nine medical wards between 08:00 and 22:00 on weekends in August and September 2014. The authors reviewed the tasks listed and divided them into ‘necessary’ and ‘potentially avoidable’ - 20% (500/2473) were ‘potentially avoidable’ most commonly: drug chart rewrites, warfarin prescriptions and antibiotic reviews.

Innovation
Two interventions were trialled on a single geriatric ward: 1) education of ward juniors plus ‘reminder stickers’ placed on drug charts on Fridays 2) nomination of a specific ward junior to review drug charts, warfarin and antibiotic prescriptions on Fridays. PDSA cycles were used to test these interventions over a six month period, first on a single geriatric ward then on all four wards.

Evaluation
Two trials of intervention one on a single ward did not affect the number of ‘potentially avoidable’ tasks. Intervention two resulted in a mean fall from 6 to 2 tasks per weekend day on a single geriatric ward. Subsequently, there was a downward trend in the number of tasks listed when trialled on all four geriatric wards. Juniors involved reported the intervention made the workload more manageable resulting in positive effects on patient care.

Conclusions
The simple intervention of nomination of a junior to review drug charts on Fridays reduced the number of tasks listed for on-call doctors without requiring additional staff or funding. In future we hope to identify any barriers to sustaining this positive effect and to scale the intervention to all wards at the RBH.
RECOGNITION AND MANAGEMENT OF SEPSIS IN THE ELDERLY

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Older Persons Unit, Guys & St. Thomas' NHS Foundation Trust

Topic

- The authors wanted to establish how effectively a large elderly care unit in a central London teaching hospital were utilising the sepsis six protocol when measured against national guidelines, and if utilisation could be improved after intervention.
- Over a month period, patients aged >65 with an infection either on presentation to A&E or de novo on the older persons unit (OPU) (n=39) were identified. Retrospective data collection was undertaken to ascertain which SIRS criteria were met; which elements of the sepsis 6 were achieved and in what timeframe. Following intervention, the audit was repeated (n=19) using the same methodology.
- Only 4 out of 39 (10.3%) older patients with sepsis had the full sepsis 6 within 1 hour.
- 18% of septic patients on OPU had a lactate measurement at any time whilst 29% of septic patients on OPU had a fluid challenge at any time.

Intervention

Teaching sessions about sepsis were delivered on the OPU, alongside sepsis awareness posters.

Improvement

- 67% of patients had a lactate measurement following intervention, a significantly higher proportion (p <0.05)
- 78% of patients had a fluid challenge at any time, a significantly higher proportion (p<0.05)

Discussion

- Simple interventions can lead to more timely administration of both lactate measurement and administration of fluid challenges.
- Interventions were simple to undertake. Posters were easily visible in the OPU doctors office from which clinicians operated, and weekly educational meetings provided an ideal opportunity to inform the MDT about the standards expected when patients present with sepsis. Without these features, the post-intervention results may not be so easy to replicate in other departments; for example in teams operating with many outliers or where there are not weekly MDT meetings for information exchange between junior doctors. Collection of data was facilitated by the department’s adoption of electronic record keeping and e-prescribing and without this performing the audit may prove more challenging.
- Further audits could seek to introduce sepsis six teaching into the departmental induction for foundation doctors and registrars, to further increase awareness of the protocol and department’s expectations for the correct management of sepsis.
MEASURING HEALTH-RELATED QUALITY OF LIFE IN HIP FRACTURE - A PILOT STUDY

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Background
NICE guidance recommends measuring health-related Quality of Life (HR-QOL) to complement traditional outcome measures in future hip fracture care research. We describe our experience piloting EQ-5D-3L in this frail inpatient population.

Sampling Methods
Over two months we asked sequential patients with hip fracture to complete EQ-5D-3L questionnaires to describe their HR-QOL before injury. Follow-up was attempted at 30 and 120 days, in person or by post. EQ-5D-3L were calculated using Euroqol value sets for the UK population (range -0.594-1.0), and self-reported health rating using EQ-VAS (range 0-100).

Results
Of 59 patients, seven were transferred and one discharged before data collection. Of the remaining 51 patients, no proxy was available in six whilst three patients were too unwell to complete a questionnaire. Five of twenty-nine 30-day, and six of fourteen 120-day questionnaires were incomplete. 14 patients died, seven within 30 days. Cognitive impairment meant that questionnaires were completed by a proxy for eight admissions, and four 30-day, and one 120-day questionnaires.

Despite intensive efforts with a motivated patient cohort we were only able to collect complete admission and 30-day follow up data for 24 patients (47%), and 8 (15%) for 120-day follow-up. However, the data we obtained were interesting: mean (standard deviation (SD)) EQ-5D-3L fell from 0.55 (0.35) on admission to 0.32 (0.32) at 30 days, rising to 0.48 (0.37) at 120 days. Equivalent EQ-VAS figures were 69.4 (18.9), 55.3 (22.6) and 65.8 (20.3) respectively.

Conclusions
The routine use of EQ-5D to measure HR-QOL proved very challenging in this group, but our results indicate health-related QOL to fall markedly after hip fracture, in some cases to below zero – a QOL ‘worse than death’ – and to remain substantially reduced even at 120 day follow-up.

<table>
<thead>
<tr>
<th>Time window</th>
<th>Mean EQ-5D-3L (SD) value</th>
<th>Mean EQVAS (SD) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission</td>
<td>0.55 (0.35)</td>
<td>69.4 (18.9)</td>
</tr>
<tr>
<td>30-day</td>
<td>0.32 (0.32)</td>
<td>55.3 (22.6)</td>
</tr>
<tr>
<td>120-day</td>
<td>0.48 (0.37)</td>
<td>65.8 (20.3)</td>
</tr>
</tbody>
</table>

Table 1: Plotting EQ5D value against time window
THE IMPACT OF INTRODUCING PROACTIVE CASE FINDING OF EMERGENCY SURGICAL PATIENTS BY A SPECIALIST NURSE

J Cross, R Bhatnagar, F E Martin

Department of Ageing and Health, St Thomas Hospital, Westminster Bridge Road, London

Introduction
Recent reports recommend early assessment and intervention by geriatricians to improve outcomes for older surgical patients. However, these recommendations are difficult to put into practice, with few units currently providing proactive care for these patients. Translation has been hampered by a reliance on traditional models of care, insufficient workforce/funding and a lack of guidance on how to identify patients requiring geriatrician input.

The problem
Older EGS patients referred to geriatric medicine inconsistently and reactively often late in pathway, when complications established.

The question
Could proactive case-finding and management in EGS be nurse-led and integrated into existing liaison services?

Intervention
Proactive early case-finding led by part-time Advanced Nurse Practitioner (ANP). Patients identified through electronic registration tagging, attendance at EGS handover and twice weekly MDT board rounds. Identified patients underwent CGA. Data collection on consecutive patients over twelve weeks.

Improvements
- Consistent identification of older EGS patients requiring CGA (n89)
- Proactive case-finding using a structured approach can be completed by an ANP in 45 minutes per day.
- CGA resulted in clear reporting of multimorbidity and frailty*
  - 82% ≥2 conditions, 43% ≥5 conditions
  - Frailty*, 52% of patients.
- Development of interdepartmental communication
- Consistent NELA data entry.
- Clearer understanding that:
  - Majority of older EGS patients don't have surgery, 54%. 24%, surgery. 21%, procedure only.
  - All deaths occurred in ‘frail’ patients.

Discussion
Pathways to identify and case manage older surgical patient can be established and delivered by an ANP. This may be an alternative to traditional geriatrician-led services. Recognition is made that pre-existing elective surgical geriatric liaison service possibly made integration of service change easier.

Further study recommended.
- Comparison of reported frailty against a validated frailty assessment tool
- Impact of early CGA on patient outcomes.

*Frailty phenotype reported by junior medical staff
**VARIATION IN CAPACITY ASSESSMENT AND ADHERENCE TO THE MENTAL CAPACITY ACT AND DEPRIVATION OF LIBERTY SAFEGUARDS ACROSS A REGION: THE WESSEX EXPERIENCE**

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¹ Queen Alexandra Hospital, Portsmouth Hospitals NHS Trust, ² Academic Geriatric Medicine, University of Southampton, ³ NIHR CLAHRC: Wessex, ⁴ University Hospitals Southampton NHS Foundation Trust

**Introduction**

The Deprivation of Liberty Safeguards (DoLS) are an amendment to the Mental Capacity Act (MCA) 2005, and apply to patients who lack capacity to consent to care and treatment and are deprived of their liberty in hospital. Recent Supreme Court rulings have clarified the circumstances in which DoLS should be in place. We carried out an audit to review adherence to these rulings across all hospitals in our region.

**Methods**

328 inpatients managed by geriatricians in 9 hospitals were randomly selected. Presence and type of cognitive impairment, any 4 stage capacity assessment and use of the MCA or DoLS were abstracted from the clinical notes. The clinical teams were asked whether they considered each patient had capacity to decide to remain in hospital. A standard data collection form was used in all hospitals and data was entered into a central system. The audit was registered in each trust and carried out over a one week period.

**Results**

188 inpatients (57%) under the care of geriatricians across the region had cognitive impairment, predominantly due to dementia (60%) or delirium (22%). For 67 of these patients (35%), there was evidence that a capacity assessment had been carried out. This proportion varied widely between trusts (10-73%). In 122 of these 188 patients (65%), the clinical team felt that the patient did not have capacity to decide to remain in hospital, yet there was evidence of the use of the MCA or DoLS in only 41 cases (39%). Again, there was wide regional variation (0-100%).

**Conclusion**

Cognitive impairment is common in our hospital inpatients. Assessment and documentation of capacity to decide to remain in hospital occurred in a minority, as did use of the MCA or DoLS. There was substantial variation between hospitals, suggesting inter-hospital education and collaboration could improve the regional situation.
 ANTICOAGULATION FOR ATRIAL FIBRILLATION IN THE ELDERLY

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Topic
The incidence of atrial fibrillation (AF) increases with age and carries with it a 5-fold increased risk of having a stroke. The most effective prevention is anticoagulation yet elderly people are often viewed as high risk and aren’t started on therapy. The first cycle of this audit included 166 current inpatients in Care of the Elderly (COTE) in Gartnavel General Hospital (GGH). Over one third (36%) of admissions had AF. Only 33% of these were on anticoagulation. 11/40 (28%) of those with AF had no decision about anticoagulation recorded. All patients had a CHADSVASC score of 2 or greater so should have been considered for anticoagulation.

Intervention
The audit findings and a review of current guidelines/evidence for managing AF (including NOACS) were presented to the GGH COTE department. A copy of the presentation was emailed to all departmental staff. An information sheet was developed for the junior doctor departmental induction handbook.

Improvement
A regular monthly audit of the COTE department in the form of ‘Plan Do Study Act’ (PDSA) cycles was implemented to monitor the effectiveness. In March the first cycle after initial intervention, 60% of those with AF were receiving anticoagulation, however during April (junior doctor changeover) this fell to 23%. Further education was implemented and 50% of patients were on anticoagulation in May. There was also increasing compliance with filling in the atrial fibrillation section on the COTE admissions proforma, rising from 39% at baseline to 71% in May.

Discussion
All new admissions to COTE departments should be assessed for atrial fibrillation and considered for anticoagulation including use of Novel Oral Anticoagulants (NOACs) as an alternative to warfarin. Having a section regarding AF in the admissions booklet is a useful prompt for discussion of anticoagulation.
**IMPROVING ANALGESIA PRESCRIBING IN PATIENTS WITH RENAL IMPAIRMENT AT BRISTOL ROYAL INFIRMARY**

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**Evidence-base**
Pain is a common presenting complaint for junior doctors admitting new patients. Acute and chronic renal impairment are common, particularly in the older population. Analgesia choice and dosing are not covered in depth by the British National Formulary (BNF). Non-steroidal anti-inflammatory drugs (NSAIDs) should be avoided. Morphine is not the preferred opioid. Doses should be adjusted at extremes of estimated glomerular filtration rate (eGFR). (R Crampton, T Beswick, UK Medicines Information, 2012; NHS Scotland Palliative Care Guidelines, 2011)

**Change Strategies**
We undertook a baseline audit of acute admissions with eGFR <60ml/min in 2014. Although NSAIDs were avoided, there was uncertainty about opioid prescribing. Anecdotally, analgesia was delayed or inadequate in patients with severe pain due to concerns about renal function.

These results prompted development of an evidence-based guideline with traffic light colours for differing degrees of renal impairment. This has been disseminated on the trust intranet, in meetings and on the wards.

**Change Effects**
On re-audit in 2015, there was 72% compliance with the new guideline, compared to 59% in retrospective analysis of the 2014 data.

No patients were prescribed NSAIDs in 2015, compared to 5% in 2014.

Morphine was avoided in 68% of patients prescribed opioids, compared to 51% in 2014. 67% of patients with eGFR 10-20ml/min had opioid doses adjusted in 2015, compared to 33% in 2014. No patients had eGFR <10ml/min in the 2015 audit.

**Conclusion**
Prescribing practice has improved following the introduction of our guideline, however there is still room for improvement. We will make the guideline more available and visible on the wards, and raise it in teaching. A targeted audit of patients with eGFR <20ml/min will allow us to capture results from those most at risk of inappropriate prescribing and raise this as a particular area of concern.
DOES THE IMPLEMENTATION OF A DELIRIUM CHECKLIST IMPROVE THE ASSESSMENT OF DELIRIUM IN OLDER PEOPLE?

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Topic
Delirium affects 20-30% of patients on medical wards. Delirium is associated with an increased length of stay, hospital associated complications and mortality. The assessment of delirium remains variable.

The aim was to establish whether Stockport NHS Foundation Trust complied with current NICE standards for Delirium.

Intervention
Sixty seven patients were audited in November 2015. The median age was 83 and median length of stay was 11 days. Twenty three (34%) had known dementia. Only 31% were assessed for delirium despite a diagnosis prevalence rate of 45%. A cognitive assessment was only completed in 24% of all patients.

The results were presented to the trust. In addition, current trainees were educated on the assessment, investigation and management of delirium. An admission delirium checklist was implemented across the department including the simple 4AT assessment tool, investigations and management.

Improvement
Following checklist implementation, an audit of 49 patients was carried out. The median age was 84 and median length of stay was 10 days. Sixteen (32%) had known dementia. The rate of delirium assessment improved from 31% to 83%. The median 4AT score was 3. The rate of cognitive assessment improved from 24% to 78%.

In patients with delirium, the assessment of hallucinations (73% vs 47%), physical functioning (100% vs 87%), social behaviour (100% vs 80%), pain (100% vs 64%), medications (95% vs 70%), dehydration (95% vs 83%), constipation (90% vs 63%) and mood (54% vs 17%) improved. A similar improvement was seen for investigations (calcium (86% vs 67%), thyroid (77% vs 53%), haematins (72% vs 47%), CTB (68% vs 63%)).

Discussion
Following the implementation of a delirium checklist, the rate of delirium assessment improved substantially. Through further change by plan/do/study/act cycles, regular education and monthly measurement of assessment rates we hope to improve compliance to 100%.
FASCIA-ILIACA BLOCK FOR FRACTURE NECK OF FEMUR PATIENTS - KEYS TO SUCCESS AND SUSTAINABILITY

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Background
All patients with fractured neck of femur (FNOF) should be routinely offered fascia-iliaca block (FIB) to optimise dynamic analgesia and reduce adverse side-effects of opioids, especially delirium (NICE 2011; London Quality Standards 2013). Before 2015, only 4% of FNOF patients admitted to Kingston hospital received FIB.

Intervention
Firstly, our Anaesthetics colleagues implemented the quality improvement project. Secondly, Orthopaedic champions intervened by preparing bespoke FIB packs and engaging key non-medical Emergency department (ED) champions (nurses and housekeeper) to ensure that ED doctors could access the packs reliably and easily. Thirdly, Orthogeriatric doctors reported successful results regularly to the rest of the multi-professional team. All departments took responsibility for FIB training.

Results
In June 2015, 60% of our patients were offered FIB. 43% were performed by anaesthetic doctors, 43% by orthopaedics, 14% by ED. On 21st July, bespoke FIB packs were supplied to ED. By September 2015, 97% of patients were offered FIB, 74% performed by ED, 19% by orthopaedics. Mean time from diagnosis to FIB dropped from 5 hrs 26 minutes (median 5hrs 12m) to 35 minutes (median 0 minutes). Improvements have been sustained. ED senior doctors now lead FIB training.

Discussion
The perceived barrier was ED – doctors were too busy to prioritise FIB. We learnt the lesson that one single intervention, in this case the reliable provision of bespoke FIB packs, enabled our ED doctors to ‘do the right thing’ effectively and efficiently. We learnt that sustainability can be achieved by a) engaging key non-medical staff to maintain stocks of FIB packs and b) frequent feedback of results, motivating team members from different professions to ‘share the vision’ and ‘encourage the heart’ (Kouzes and Posner 2012). Further refinement will include: analysis of pain scores, opioid doses, and/or opioid-related delirium before and after the implementation of FIB.
REDUCING POLYPHARMACY IN THE ELDERLY

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Background
Polypharmacy can be a burden on the ageing population and its prevalence is increasing. The current guidelines available for polypharmacy are lengthy and difficult to use (SIGN 2015; STOPP 2013).

Intervention
Our project was carried out in two sites over 12 months at Worthing (91 patients medical, elderly, surgical) and Kingston (83 patients, Orthogeriatrics). The number of medications, drug interactions, anticholinergic burden score and WHO functional score were recorded. We identified the proportion of patients whose drugs were started at hospital, stopped on discharge, and whether the indication was known.

Results
62% of people were on more than 5 medications. Results showed: PPI (45% of patients in Worthing, 38% in Kingston) antipsychotics (11% Worthing, 14% in Kingston). There was a positive correlation between number of medications and anticholinergic burden scale ($R^2 = 0.274$), number of drug interactions and anticholinergic burden scale ($R^2 = 0.311$). A prescribing checklist was devised for clerking doctors to use in both hospitals. 92% of patients were prescribed PPI pre-admission, only 25% had a known indication, 4% were stopped. 89% of patients were prescribed antipsychotics pre-admission, 56% had an indication, 23% were stopped. NSAIDs and opiates were largely started pre-admission. 37% of opiates and 67% of NSAIDS were stopped; of the NSAIDS continued, 50% were for GP review.

Discussion
In summary one checklist is not suitable to cover all specialities, for example whilst elderly patients are frequently started on opiates in Orthogeriatrics, this may be avoided on medical wards. A speciality-appropriate checklist can act as a useful aid memoir in reducing inappropriate polypharmacy.
EMOLLIENT THERAPY IN OLDER HOSPITAL IN-PATIENTS WITH DRY SKIN

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Topic
The skin is an effective barrier against infection, but an organ frequently overlooked by clinicians. Dry skin (xerosis) is a common condition in older adults which functions poorly as a barrier, causing discomfort, pruritus and consequently excoriations and skin breaks (potential entry points for infection). Therefore, the aims of this audit were to improve the quality of skin care received by elderly in-patients and to improve awareness of the importance of skin as an organ amongst healthcare professionals.

Intervention
Standards for emollient therapy for dry skin were created using SIGN 2011 guidance on the ‘Management of Atopic Eczema in Primary Care’ and the Ipswich Hospital ‘Management of Pressure Ulcers Guidance’ as there are no existing national guidelines. Data for a closed loop audit were collected prospectively and included 76 patients (39M; 37F), aged 58-99 in the audit and re-audit. Patients were examined for evidence of xerosis. Medical notes, nursing notes and drug charts were used to ascertain information regarding co-morbidities and emollient use. Departmental education was instigated and posters were distributed to educate and remind staff members.

Improvement
12% of patients had an emollient prescribed in the initial audit, improving to 66.7% when re-audited. 23.1% of patients with both dry skin and current infection had an emollient prescribed in the initial audit; this improved to 83.3%. 50% of patients with both diabetes and dry skin had a moisturiser prescribed when re-audited as compared to 0% in the initial audit.

Discussion
This audit includes a simple intervention which would allow nationwide implementation of the emollient use recommendations. Regular prescribing of emollients for dry skin will improve patient comfort and should reduce the risk of developing infections such as cellulitis. Areas for further research include measuring the impact of improved skincare and infection rates in the clinical setting.
ARE NASOGASTRIC TUBES WITH A BRIDLE A SAFE ALTERNATIVE TO A PERCUTANEOUS GASTRONOMY IN PATIENTS WITH AN ACUTE STROKE?

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Background
Up to 50% of acute stroke patients are unable to swallow on admission. Most will recover, but roughly one-third will require nasogastric (NG) feeding for a week or more. NG tubes (NGT) can remain in place for up to eight weeks, but are subject to being displaced. NICE state that “nasal bridle (NB) tubes or gastrostomy (PEG) should be the intervention of choice if it is impractical to use a NG tube”, but do not discuss which intervention is more favourable, especially for frailer patients. We wished to see if NB could be a potential alternative for those patients who aren’t eligible for a PEG.

Method
We identified dysphagic stroke patients that were eligible for NGT insertion, admitted to the stroke unit between 30/11/14 and 30/05/15. From this group we identified patients who were highlighted as likely to require long term feeding. Our outcomes were:

1. How many patients were discharged with NGT or NB vs PEG?
2. The reason why these patients were discharged with NGT/NB rather than PEG?
3. How many of these patients were re-admitted within six months with complications specific to their feeding method.

Results
From the 49 patients in the study (average age- 80), 34.6% were discharged with NGT; 24.4% with NB; 8% with PEG; and 32.6% with oral feeding. Six months post-discharge, patients with NB had their tubes removed due to expiration of the tube itself (50.4%), blockage (33%), high pH (8.3%) and displacement (8.3%). Reasons for not inserting PEG in these patients included frailty; existing diagnosis of dementia; and other significant co-morbidities.

Conclusion
We consider NB to be a good alternative to PEG insertion, as the majority of patients were able to maintain regular nutritional and medicinal intake without interruption. We hope that these results highlight a potential solution to a complex and commonly encountered problem in dysphagic stroke patients.
THE USE OF AN ELECTRONIC ALERTING SYSTEM TO SUPPORT RAPID REVIEW OF READMISSIONS

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Background
In the past, the concept of ‘hand-back’ was familiar within many hospitals – teams caring for those patients who were readmitted within a certain timescale were called upon to take-over care, this supported continuity and reduced duplication.

With the advent of more specialised medicine, shift and ward based working, the connection between clinical teams, particularly in medicine and those patients who are readmitted has become disjoined, to the extent that patients can leave hospital one day, and return the next without the original team being aware.

Method
In our organisation, the PEAKS (Patient Electronic Alert to Key-worker System) alerts have routinely been used in oncology, to monitor those patients readmitted to hospital when receiving chemotherapy treatment.

We felt that this alert could be used for our patients.

We arranged for each patient discharged from Mallard Ward, our Delirium Unit at Doncaster Royal Infirmary to be added to an electronic register which would send a text message (to the consultant) and an email to the team informing them of their attendance at ED or readmission (an alert is trigger each time a patient moves wards)

Evaluation
We have recorded the data electronically transmitted to the team. This has allowed us to identify those patients who have particularly complex needs or at times challenging behaviour and review them, whether in ED, within the clinical decision unit, on the Acute Medical Unit or once they have moved to a ward.

This has helped improve continuity of care and also acted as a useful tool to support learning as to which aspects of the discharge process have failed and which have succeeded.
IMPROVING END OF LIFE CARE IN CARE HOMES - IS IT ACHIEVABLE?

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Background
The average life expectancy of patients in care homes in the UK is 9-12 months. However, hospitals still remain the most common place of death with only 22% of deaths occurring in care homes.

The London borough of Camden has 11 care homes with a total of 533 beds managing older people with complex chronic co-morbidities.

Innovation
Our care home outreach service was set up in 2012 to provide specialist input to support general practitioners (GP) and care homes.

We conduct monthly multi-disciplinary team meetings and weekly consultant-led ward rounds with the GP. Comprehensive geriatric assessments (CGA) are completed for resident with acute clinical changes, new residents or those recently discharged from hospitals. Advance care planning is routinely undertaken as part of CGA.

Evaluation
Since 2012 this service has been piloted in the largest care home totalling 100 beds. Since initiation, unplanned Emergency Department (ED) attendances have decreased from 172 admissions in 2013, to 115 admissions in 2015 (40% reduction).

73% of resident deaths are occurring at this care home, with a 57% uptake in advanced care planning.

Conclusion
The Camden Care home Outreach service has shown a reduction of unplanned ED attendances and an increase in the uptake of advanced care planning by nearly 50%. We aim to extend this service to all care homes within Camden over the next year.
IS THERE A NEED FOR ‘SPECIALISTS’ TO BECOME ‘GENERALISTS’? A SURVEY COMPARING HOSPITAL OUTCOMES IN OLDER PATIENTS AGED OVER 75 YEARS WHO ARE MANAGED BY GENERAL PHYSICIANS VERSUS THOSE AGED OVER 80 YEARS MANAGED BY OLDER PEOPLE’S MEDICINE PHYSICIANS (OPM)

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Background
Norfolk and Norwich University Hospital increased its admission age for OPM to 80 in 2014 due to the increasing burden of an aging population. This led to the General Medical specialties taking over the care of patients aged between 75-80 years who previously would have been admitted under OPM teams. In this survey we investigated the outcomes under the new triage system.

Sampling Methods
We randomly selected 130 patients admitted under OPM or general medicine between 1/3/2014 – 31/5/2014. We analysed length of stay, adverse outcomes (death, readmission) and time to therapy review.

Results
The OPM cohort had a higher mean age (87 vs 78), percentage currently receiving care on admission (50% vs 34%) and were frailer overall (defined using Charlson’s Co-Morbidity Index and Adapted Frailty Index)

The numbers of inpatient deaths and in-hospital adverse events were similar. The average number of readmissions was higher in the general medicine group (2.4 vs. 1.9 events).

The mean time to discharge once medically fit was lower in the OPM group (3.2 vs 5.9 days) perhaps reflected by the time taken to see a physiotherapist/OT and have an MDT meeting being considerably lower in this group (p-values <0.05). The amount of patients needing an overall increase in their care was similar across both groups (33% vs 25%) and the overall length of stay was also shorter (11.8 vs 13.2 days) in the OPM group despite the increased frailty.

Conclusions
As a result of increasing numbers of complex elderly patients being admitted management of these patients is increasingly reliant on general physicians. OPM teams have an advantage of increased therapy resources and a larger majority of patients on base wards, making MDTs easier. Increased MDT working (possibly therapy led) could narrow the differences in outcomes, if increased resources for OPM consultants / teams are not forthcoming.
VERTEBRAL AUGMENTATION FOR OSTEOPOROTIC VERTEBRAL FRACTURES IN THE ‘OLDER-OLD’ PERSON: EXPERIENCE FROM A TERTIARY UK SPINAL UNIT

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Topic
Vertebral augmentation has been shown to improve pain associated with osteoporotic vertebral fractures (OVF). Its benefit in the ‘older-old’ is less certain. We aim to compare outcomes of the ‘older-old’ cohort with those from a younger cohort post-vertebral augmentation.

Intervention
A retrospective analysis of healthcare records of 25 ‘older-old’ patients (≥80 years) and 17 ‘younger’ patients (<70 years) (accounting for 19 cases) from the spinal service database on patients post-vertebral augmentation for OVF was done. Data was collected on patients’ demographic and outcome [visual analogue scale (VAS), Oswestry Disability Index (ODI), analgesic requirements and healthcare outcomes].

Results
Pertaining to patient characteristics (‘older-old’ vs ‘younger’ cohort): mean (SD) age [85.7(3.9) vs 59.5(6.3)]; female gender [72% vs. 65%]; polypharmacy [92% vs. 74%]; living in own home [88% vs. 100%]; independent pre-operative functional state [88% vs. 100%]; and use of walking aid [83% vs. 47%]. Pre-augmentation, more weak opioids were likely to be prescribed in the younger cohort [29% vs. 53%, p=0.06], but similar prescribing for strong opioids in both cohorts [50% vs. 37%, p=0.58]. Overall, improvement in pain documented formally in 10/13 (77%) cases in the ‘older-old’ cohort and 10/15 (66%) in the ‘younger’ cohort. Both cohorts demonstrated similar average pre-augmentation VAS [8 vs. 8] and ODI scores [52% vs. 59.6%]. Similar improvement in outcomes were seen in both cohorts [‘older-old’, ‘younger’: average VAS 4, 5; average ODI 35%, 47%; average weak opioid reduction by 57% and 50% respectively; average strong opioid reduction by 25% in the ‘older-old’ vs 14% increase in the ‘younger’ cohort]. 2 patients in the older group had their social care needs escalated on discharge.

Discussion
Vertebral augmentation in our ‘older-old’ cohort demonstrated improvements in pain/disability indices with a reduction in opioid prescribed. In this selected group, the benefits derived from augmentation were comparable to the benefits seen in a younger cohort.
HOSPITAL ADMISSION AND MORTALITY FROM AN ENHANCED NURSING CARE FACILITY

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¹ Royal Hospital Donnybrook, Donnybrook, Dublin 4, ² Mater Hospital, Eccles St. Dublin 7

Background
The geriatric nursing home population is vulnerable to acute illness due to advanced age, multiple comorbidities and high levels of dependency. Hospital admissions from nursing homes remain common with an annual transfer rate of 30%. Our centre provides specialist geriatrician led comprehensive geriatric assessment and advanced care planning. Similar models were described in the NHS Quality Watch Report. We evaluated our transfer rate to acute hospital and associated mortality.

Methods
The number of residents transferred to the acute hospital from our complex care unit for the period September 2013 to September 2015 was captured (n=78). The clinical indication for transfer, their length of stay and mortality was recorded. We examined the clinical notes of residents that died during this period to determine the place of death and presence of an advanced care plan.

Results
For the two year period there were a total of 37 transfer episodes.

This is a transfer rate of 23.7% per annum. The majority (57%) were transferred for acute surgical issues. The remainder were transferred for medical reasons. The mean length of stay was 6 days (range 1-18).

The median was 3 days. 91% (21/23) of residents were transferred back to our facility and 83% (19/23) were alive at 3 months. Over the same two year period, 29 residents died, with 93% (27/29) dying in the nursing home. 96% (26/27) of residents died with an advanced care plan in place.

Discussion
Our ongoing comprehensive geriatric assessment and model of care has resulted in residents with potentially treatable conditions appropriately accessing acute specialist intervention. The existence of structured and clear advanced care plans has resulted in the majority of our residents (91%) dying in the familiar surroundings of the nursing home.

2. BGS Jan 2015
LOW RATES OF PRIMARY CARE RE-ASSESSMENT OF COGNITION IN OLDER PATIENTS IDENTIFIED AS AT-RISK OF DEMENTIA DURING HOSPITAL ADMISSION

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Objectives
Routine dementia screening for older people (>75 years) hospitalised as an emergency is mandatory in England with onward referral for specialist assessment in those identified as at-risk. In the Oxford University Hospitals NHS Trust, patients have the Abbreviated Mental Test (AMT/10) and general practitioners (GPs) are informed on discharge if AMT≤8/10. We undertook an audit to determine actions taken in primary care.

Methods
Questionnaires were sent to GPs on consecutive patients aged >75 years admitted to the acute medicine service at least 6 months’ earlier who had AMT≤8/10. GPs were asked whether they had coded the low AMT score, seen the patient since discharge, done a cognitive assessment, and made a referral to a memory clinic or diagnosis of a cognitive disorder.

Results
77/198 questionnaires (39%) were returned. Six patients were deceased and 4 had transferred to another practice. In 53/67 (78%) available surviving patients, the abnormal score was recorded in the primary care notes. 12/67 (18%) had a re-assessment of cognition (GP-Cog, MMSE, 6-item-CIT, informal assessment) after which 6 (9%) were referred to a specialist clinic, 3 (4%) of whom had dementia. Reasons for lack of reassessment included patient unwell/clinically inappropriate (n=9), patient already diagnosed with dementia (n=6), no concerns expressed by patient (n=5), referral/reassessment declined by patient/family (n=1), with no reason given in the majority.

Conclusions
The primary care record was updated for the majority of patients, but few had a cognitive re-assessment in the community, probably resulting in under-diagnosis of dementia.
MAJOR TRAUMA IN THE OVER 65’S: TOO LITTLE, TOO LATE

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Introduction

Major trauma in the over 65’s accounts for over 20% of all UK major trauma, and this number is increasing. One of the problems facing this population is ‘missed injuries’ or injuries with a delayed diagnosis. Although widely recognised locally and nationally, no formal study has previously taken place to look at the size of the problem and its causation in this age group.

Method

We undertook a retrospective case note analysis, covering a 28-month period from April 2012 to August 2014, at University Hospital Southampton Major Trauma Centre. Using the TARN database, we identified and studied 282 patient’s aged 65 or older and Injury Severity Score (ISS) 15 or greater, in order to identify cases of missed injury. All cases identified were then subjected to an expert peer review panel, to decide on causation and degree of harm to the patient.

Results

We identified 67 patients (24%) who had at least one injury missed during their hospital admission. 9% of patients had up to 5 injuries missed. Of the injuries missed, the majority were spines (38%) and heads (29%), but also chest (14%), extremity (11%), pelvis (8%) and solid organ (4%). 31% of patients went on to require a surgical procedure as a result of their missed injury. Peer review demonstrated that 49% of patients experienced moderate harm, and 13% severe harm as a result of their injury being missed.

Discussion

We are missing a significant number of injuries in the over 65’s with major trauma and this is largely due to under-recognition of major trauma in this population. Older people are more likely to present with non-typical mechanisms of injury, and this coupled with stoical historians, can lead to a lower index of suspicion for serious injury. This reduces the likelihood of accessing established trauma pathways, inadequate imaging, uncoordinated care and lack of secondary and tertiary surveys. Only 31% of those admitted were discharged directly to home, reflecting the large morbidity and mortality associated with this group. Ensuring we identify and treat injuries in a timely fashion may help reduce length of stay and complication rate. Further work will now look at addressing some of the issues surrounding under-recognition and inadequate triage.
IMPROVING THE DIAGNOSIS AND RECORDING OF CLINICAL FRAILTY IN THE ACUTE HOSPITAL SETTING BY THE INTRODUCTION OF A ‘FRAILTY TAB’ ON THE ELECTRONIC DISCHARGE LETTER (EDL) TEMPLATE AT BROOMFIELD HOSPITAL-MID ESSEX HOSPITAL TRUST

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Introduction
Most patients on general geriatric wards will be frail. Our ability to recognise frailty and record it as a diagnosis is important to facilitate risk stratification and advanced care planning for those affected. This can optimise quality of care for these patients.

Broomfield Hospital is a district general hospital with 550 beds. An initial local audit revealed that only 14% of patients with a diagnosis of clinical frailty on the acute geriatric wards had this documented on the EDL. In order to improve this, a ‘frailty tab’ which prompted the input of a clinical frailty score (CFS) using the Rockwood Clinical Frailty Scale, was introduced on the EDL in July 2015.

A re-audit then aimed to investigate the improvement in recording the diagnosis of clinical frailty on the EDL.

Methods
60 patients admitted to acute geriatric wards in June 2015 (>75 years) were randomly retrospectively selected. EDL’s were analysed for a diagnosis of clinical frailty and a CFS.

Data was then collected for 60 patients discharged in October 2015 after the introduction of the frailty tab.

Results

<table>
<thead>
<tr>
<th></th>
<th>June 2015</th>
<th>October 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘CFS’ Recorded on EDL</td>
<td>0%</td>
<td>74.1%</td>
</tr>
<tr>
<td>‘CLINICAL FRAILTY’ mentioned as diagnosis</td>
<td>14%</td>
<td>74.1%</td>
</tr>
<tr>
<td>CFS&gt;5: GP notified for addition to frailty register</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

There was substantial improvement in recording the CFS after introduction of the frailty tab (0 to 74%!). It was recognised that the tab prompted the addition of the diagnosis of ‘clinical frailty’ as all patients with a CFS also had a recorded diagnosis.

Conclusion
The introduction of a ‘frailty tab’ on the EDL is a quick and effective way of improving the recording of clinical frailty (with excellent results).

This approach can be used for other diagnoses e.g. Dementia recording.

Further work is needed on the ‘frailty tab’ to ensure GPs add these patients to the local frailty register.
SUPPORTED DISCHARGE THE KEY TO REDUCING HOSPITAL EMERGENCY ATTENDANCES AND ADMISSIONS

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**Topic**
The Supported Discharge Service (SDS) at The University Hospital of South Manchester (UHSM) enables frail, older patients timely discharge with increased social and health input. The multi-disciplinary team consisting of case managers, health care support workers and therapists together with a Geriatrician led MDT aims to improve quality of life through disease self-management and increased patient independence. These together with the family/NOK support the team provide aim to reduce readmissions in a high-risk patient cohort. On service review these mainly occurred out of working hours, weekdays 9-5pm.

**Intervention**
In June 2014 SDS became a 10 hour, 7 day service. The number of ED attendances, hospital admissions and community service referrals for each patient in the 6 months pre and post being managed by the SDS were collected. All readmissions including the likelihood of avoidability were discussed. Future admission avoidance interventions were implemented or fed back to the trust.

**Improvement**
Overall the SDS reduced ED attendances by 29%, admissions by 24% with a 1 day shorter length of stay (LOS) and increased community referrals by 29% in those patients at highest risk. Specifically the readmission rate whilst on the service decreased by 36% with the extended working times.

**Discussion**
Studies have previously shown SDS do not show a reduction in readmissions but do reduce LOS (Ram et al 2004). However these were stroke or COPD specific. At UHSM we have shown a SDS can significantly reduce hospital attendances and admissions and thus financial costs. The increase in community service referral, together with the Geriatrician input and specifically trained nursing and support staff is key to providing the necessary support and advice for patients, relatives and carers. It is essential this service is available 7 days per week which may be difficult to implement with financial and workforce constraints.
WELLINGTON HOUSE, DISCHARGE TO ASSESS UNIT: A MODEL TO REDUCE HOSPITAL LENGTH OF STAY AND DISCHARGES TO 24 HOUR CARE FACILITIES?

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**Topic**

Many patients reaching the end of their acute hospital episode are unable to immediately return home due to increased frailty from deconditioning or as a consequence of acute illness. This results in extended lengths of hospital stay and discharges to 24 hour care facilities which may not always be necessary. A multi-disciplinary team approach is required to ensure acute hospital beds are freed up in a timely manner whilst allowing patients the time and appropriate service input for functional improvement, accurate assessments and for appropriate discharge decisions to be made.

**Intervention**

Wellington House is an off-site discharge to assess unit, designed to accept patients requiring care and assessment in a non-acute safe environment following hospital admission. A complete multi-disciplinary team is based on site, working closely together to ensure a holistic, patient-centred approach to care.

**Improvement**

In the 10 months since opening, the amount of patients with a hospital stay of longer than 28 days was reduced by 1.2% as these patients were transferred to Wellington House for appropriate care. Without Wellington House, an further 112 patients would have remained in acute hospital beds for a stay of longer than 28 days. When comparing with the same 10 months of the previous year, 0.4% more patients returned to their own home following discharge which equates to 40 less patients moving on to costly 24 hour care, possibly prematurely.

**Discussion**

Wellington House continues to evolve. If starting again we would aim for a dedicated full time social assessor as there can be delays in discharge due to lack of input. Replication may be limited by lack of an appropriate facility which must work as an assessment unit and practical work area for all members of the MDT whilst providing a place of safety and recovery for many frail individuals.
TO REDUCE THE BED OCCUPANCY ON A FUNCTIONAL OLD AGE WARD TO 70% WITHIN A YEAR

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Newham Centre for Mental Health, East London NHS Foundation Trust

Aims and hypothesis
To reduce the bed occupancy on Ivory Ward to 70%, within a year, by January 2016.

Background
Ivory ward’s Bed Occupancy was consistently higher than the Old Age Directorate’s and the Trust’s averages; 100% or over.

Innovation
By using evidence based information from:

1. Quality Improvement Methodology
2. The Royal College of Nursing Guidance on Discharge Planning & Managing Ward Rounds.
3. Lean management principles.

And change ideas:

1. Care pathway checklist time lined from admission
2. Daily huddles
3. Visual management of patient information
4. Guidance from a Senior Social Worker regarding placements and discharge destinations
5. Admission avoidance and discharge facilitation, through RAID and CMHT.

Evaluation
Before the initiation of the project in January 2015, the average bed occupancy on Ivory Ward was 100% or over. By June the bed occupancy was 60%, dropping further to 38% in October and to 31% in November 2015.

Conclusion
The introduction of change ideas, which were constantly reviewed and adapted, led to a dramatic reduction in the rate of bed occupancy.
UTILITY OF ELEVATED D-DIMER RESULT IN THE OVER 80

B R Drumm, A Kehoe, A Moughty

*Mater Misericordiae University Hospital, Dublin*

**Introduction**

D-Dimer results have been used in conjunction with the Wells Criteria, in cases of possible Venous Thromboembolism (VTE), due to its high sensitivity and negative predictive value. Most studies have looked at the population as a whole, with minimal investigation of its use in an older population. Previous population studies have shown positive D-Dimer frequencies of 60% in patients with suspected VTE (Wells et al. N Engl J Med 2003; 349:1227-1235).

**Methods**

We analysed all D-Dimer results sent in our Emergency Department over a six-month period (January – June 2014) in those over 79 years. Our upper limit of normal is 0.50mg/l. We analysed the numbers with positive results, and how many proceeded to have scans looking for VTE. We also looked at the six-month mortality associated with an elevated D-Dimer.

**Results**

Over the six-month period 176 D-Dimer tests were sent in those over 79. 151 (85.8%) were positive. Of the 151, 67 (44%) had scans to further evaluate for a VTE. Of these 4 were positive. The positive predictive value was 0.06. In an analysis of those aged 90 and over – all 26 patients had a positive D-Dimer, 11 had scans, 0 were positive.

The six-month mortality was 37/143 (26%) in those with elevated D-Dimers and 0/25 in those with normal D-Dimers (p = 0.004).

**Conclusion**

Our study shows that the positive predictive value in those over 79 is lower than seen in the general population – 0.06 vs. 0.14 (*Der Shakian et al, Emerg Med Int. 2010; 185453*). This, in combination with the high frequency of elevated D-Dimers in our study (85.8%), makes its relevance, as a test in this population, highly questionable. The low percentage proceeding to evaluation for VTE with a positive D-Dimer also highlights its overuse. The unit cost of a D-Dimer in our hospital is £13.38; reducing inappropriate D-Dimers could lead to a significant saving.
INNOVATIVE USE OF THE MEDICAL DAY HOSPITAL: AMBULATORY CARE FOR OLDER PEOPLE LIVING WITH FRAILTY

S Jones, M Maxwell

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**Topic**
Medical day hospitals (MDH) provide specialist multi-disciplinary outpatient services to older adults living with frailty, predominantly on an elective basis. Given the increasing numbers of older people presenting in crisis to Emergency Departments (ED), is there potential for the MDH to provide innovative services for older patients who present acutely?

**Intervention**
We hypothesised that a subset of older patients living with frailty who present to the Emergency Department (ED) could be managed within MDH instead. Patients were identified within ED by a geriatrician as being suitable for ambulatory management and were re-directed to MDH for ongoing care and multi-disciplinary input.

**Improvement**
Of the first 132 consecutive patients going through this pilot, 92% (n=121) were discharged as expected. This was not intended to be an admission prevention strategy. However, 26% (n=34) had already been planned for admission prior to transfer to MDH. The commonest presenting complaint was fall (n=75). All were seen by a geriatrician and elderly care nurse. 41% (n=54) also received same day therapy review. Of those discharged, 39% (47/121) had further input arranged by the MDH team, for example therapy input at home, social input, intermediate care and MDH clinic follow up including mental health. Ten patients (7.6%) re-attended ED with the same problem within 7 days. All but two of these were frequent fallers.

**Discussion**
This was a highly selected group of patients, making it difficult to draw broad conclusions. Furthermore, due to resourcing difficulties, only 41% of this cohort received full CGA on the day of ED attendance. Nevertheless, we have demonstrated that it is possible for a subset of older people living with frailty presenting to ED to be managed within MDH instead, enabling timely access to ongoing multi-disciplinary input at the time of crisis.
AN ENHANCED THERAPY SERVICE FOR PATIENTS WITH FRACTURED NECK OF FEMUR - SERVICE EVALUATION OF A PILOT PROJECT

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² Department for Healthcare of Older People, Nottingham University Hospitals NHS Trust

Background
900 patients present annually to Nottingham University Hospitals (NUH) NHS Trust following a fractured neck of femur (NOF). There is a reduced rehabilitation service on the trauma wards during weekends. An earlier audit demonstrated that this group did not receive rehabilitation daily and only 65% were mobilised out of bed day one post-operatively.

Intervention
A 6-month pilot project funded by NUH Charity was undertaken to deliver an enhanced and more consistent 7 day therapy service for NOF ortho-geriatric patients. The pilot team consisting of a 0.7WTE occupational therapist, 1.8WTE physiotherapist and 0.6WTE band 2 therapy assistant supported existing therapist on the trauma wards ensuring that each day had 2 therapists. A clinical pathway and standardised therapy protocol was developed to ensure patients were seen every day (often twice a day) and mobilised as soon as able over a seven day period.

Improvement
During the pilot, a total of 218 patients were assessed. On day one post-operatively, 97% of patients received a physiotherapy assessment with more patients mobilising out of bed (81%, during pilot vs 65%, pre-pilot) as per NICE guidelines for hip fractures (CG124). Length of stay was shorter (mean: 15.9 days, during pilot vs 18.8 days, pre-pilot), with patients ready for discharge on day 7. A comparable number of patients returned home (66%, during pilot vs 63%, pre-pilot). All staff, patients and carers surveyed responded positively to the service.

Conclusion
Although the pilot project was not associated with any significant changes in discharge destination or length of stay (the reduction was in keeping with a current downward trend), this is likely due to confounding factors beyond the scope of the pilot project. The enhanced therapy service offered a more consistent rehabilitation for NOF patients over seven days and delivered the quality targets as stated in the NICE guideline.
THE EFFECT OF AMBIENT LIGHTING IN ELDERLY CARE WARDS ON THE BEHAVIOURAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA: A STAFF AND CARER SURVEY

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Topic
Patients with dementia occupy an estimated 25% of hospital beds [1- NHS England. CQUIN. London: NHS England; 2014; 29-35]. This can rise to 63% in specialised geriatric wards [2- Torian L, Davidson E, Fulop G. Int Psychogeriatr. 1992;4(2):231-9]. Behavioural and psychological symptoms of dementia (BPSD) are common and are associated with increased burden and depression in caregivers [3- Ballard C, Lowery K, Powell I ‘Brien J, James I. Int Psychogeriatr. 2000;12:93-105]. Due to significant morbidity and mortality related to anti-psychotic medications, non-pharmacological attempts to treat BPSD should be considered first. Ensuring the environment is dementia friendly is an example of such a non-pharmacological intervention.

Intervention
In a pilot programme, we installed ambient lighting in a single bed cubicle on an elderly care ward. We introduced new lighting to mirror the intensity of daylight and introduced a colour-changing wall by the use of light emitting diode (LED). We collated feedback from the nursing staff and the patients’ family and carers regarding patient behaviour and possible impact of the environmental changes on BPSD.

Improvement
The results from the nurse’ survey demonstrated the cubicle was being used for patients with dementia or delirium the majority of the time (75%). When being used by patients with dementia their BPSD were either ‘slightly better’ (29%) or ‘much better’ (71%). When used for patients with delirium there was no change in behavioural symptoms.

Of the friends and family surveyed, half felt there was a big improvement in BPSD and most (83%) would rather their friend or relative was in such a room. One person felt that the symptoms were slightly worse.

Discussion
The room appeared most effective in patients with established dementia, rather than delirium. Although small this survey suggests alterations in environment could impact significantly upon BPSD. This provides promising evidence for expanding the programme and upgrading to “ambient” cubicles.
THE STARRS MODEL: VIRTUAL WARD ROUNDS LED BY GERIATRICIANS IN THE MANAGEMENT OF UNSCHEDULED HOSPITAL ADMISSIONS. A REVIEW AND COMPARISON OF ADMISSION AVOIDANCE RATES UNDER THIS MODEL IN HARROW AND BRENT

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London North West Healthcare NHS Trust, Northwick Park Hospital, Harrow, London

Topic
STARRS (Short Term Assessment, Rehabilitation and Reablement Service) is a multidisciplinary team of Geriatricians, Nurses, Therapists, Ambulance crew and social workers serving two boroughs in North London (Harrow and Brent). The service operates 12 hours a day, seven days a week. STARRS accepts and sees referrals from General Practitioners, Accidents & Emergency departments and London Ambulance Service within four hours. STARRS thereby manages unscheduled hospital admission. Virtual ward rounds are undertaken at least 4 times a week including week-ends.

We reviewed the STARRS model for Harrow and Brent over a period a 12 months.

Intervention
Data was obtained for STARRS Brent and Harrow from April 2014 to March 2015 (see Tables A&B). In total, 5,967 patients were treated.

Improvement
Overall, unscheduled hospital admission was avoided in 86.4%. The response time within 2 hours from referral was 69.5% with the remainder seen within 4 hours.

GP referrals: STARRS Harrow had significantly less admissions compared to Brent (17.8% vs. 19.8%, χ² = 5.53, p = 0.01). A&E referrals: STARRS Harrow also had significantly less admissions (3.7% vs. 8.1%, χ² = 67.3, p = 0.001). However, for LAS referrals, STARRS Brent had lower admissions but this was not significant (16% vs. 19.2%, χ² = 1.1, p = 0.29). Overall, STARRS Harrow had a significantly lower admission rates (12.0% vs. 14.7%, χ² = 14.4, p = 0.001).

Table A: Referrals and admissions for STARRS Brent

<table>
<thead>
<tr>
<th>Brent STARRS</th>
<th>GP</th>
<th>A&amp;E</th>
<th>LAS</th>
<th>Other *</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Referrals</td>
<td>1977</td>
<td>1229</td>
<td>144</td>
<td>199</td>
<td>3549</td>
</tr>
<tr>
<td>Admissions avoided</td>
<td>1585</td>
<td>1130</td>
<td>121</td>
<td>193</td>
<td>3029</td>
</tr>
<tr>
<td>No. Admitted</td>
<td>392</td>
<td>99</td>
<td>23</td>
<td>6</td>
<td>520</td>
</tr>
<tr>
<td>% Admissions</td>
<td>19.8%</td>
<td>8.1%</td>
<td>16.0%</td>
<td>3.0%</td>
<td>14.7%</td>
</tr>
<tr>
<td>%Avoided Admissions</td>
<td>80.2%</td>
<td>91.9%</td>
<td>84.0%</td>
<td>97.0%</td>
<td>85.3%</td>
</tr>
</tbody>
</table>
Table B: Referrals and admissions for STARRS Harrow

<table>
<thead>
<tr>
<th>Harrow STARRS</th>
<th>GP</th>
<th>A&amp;E</th>
<th>LAS</th>
<th>Other*</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Referrals</td>
<td>1187</td>
<td>930</td>
<td>172</td>
<td>129</td>
<td>2418</td>
</tr>
<tr>
<td>Admissions avoided</td>
<td>976</td>
<td>896</td>
<td>139</td>
<td>118</td>
<td>2129</td>
</tr>
<tr>
<td>No. admitted</td>
<td>211</td>
<td>34</td>
<td>33</td>
<td>11</td>
<td>289</td>
</tr>
<tr>
<td>% Admitted</td>
<td>17.8%</td>
<td>3.7%</td>
<td>19.2%</td>
<td>8.5%</td>
<td>12.0%</td>
</tr>
<tr>
<td>% Avoided Admissions</td>
<td>82.2%</td>
<td>96.3%</td>
<td>80.8%</td>
<td>91.5%</td>
<td>88.0%</td>
</tr>
</tbody>
</table>

*Referrals from clinics, care homes and community rehabilitation services

**Discussion**

Unscheduled hospital admission has been replicated in two slightly different populations using the same model. This approach reveals a potential method of highlighting modifiable differences thus allowing service improvements in disease management of the older person in the community.
MISSING IN THE MEDIA: CANCER AND OLDER PEOPLE
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Introduction
Cancer is a disease predominantly of older people. Prevalence rates are increasing. By 2030, there will be an estimated 21.6 million new cases per year and 70% of those with cancer will be aged ≥65\(^1\). In Ireland, the incidence rate was 440.86 per 100,000 in 2012, increasing to 2996 per 100,000 in those aged ≥75\(^2\). Despite the complex needs of older people\(^3\), gero-oncology services remain limited. We hypothesised that this may be explained in part by an ageist focus in society, which may be exacerbated by the media’s portrayal of cancer as a disease of younger people.

Methods
The term “cancer” was searched in the Irish Times and Irish Independent newspaper archives from 01 October 2014 to 01 October 2015. The mean age of individuals with cancer included in these articles and age at diagnosis were calculated.

Results
167 articles were found; 67 discussed at least one individual with cancer, 48 specified age. The mean age was 44.74 (range 9-75) years with a mean age at diagnosis of 39.87 (range 5-75) years, compared with a mean age of diagnosis of 67 in the population.

Conclusion
Cancer is frequently discussed in the media but the mean age in profiles of those affected is 27.13 years younger than the mean age at diagnosis in the population. The inclusion of studies on ageism in journalism courses may promote demographic balance in its reporting. Oncologists and geriatricians should be aware of the media’s influence on the perception of older people and examine this in an effort to improve gero-oncology services.

References
INPATIENT CONTINENCE SNAPSHOTs

H Wood , A Miller, D Karunatilake, V Morris

Care of the Elderly Department, Musgrove Park Hospital, Taunton

Topic
Improving Continence Care in Elderly Inpatients and Patients with Parkinson's Disease (PD)

Intervention 1
June 2013 - one day Continence Snapshot of Elderly Inpatients
72 Patients (aged 66-99)
Data: 82% leaked urine; 40% leaked >1 /day; 66% said it was several times/day or continually; 65% had last drink in hospital after 8pm; 93% drank caffeinated drinks; 25% patients catheterised; 3/15 catheters were for post void residuals >500ml, 1/3 of patients catheterised for constipation; 12/14 patients with sacral ulcers had urinary incontinence; 6/72 patients had Parkinson's Disease, 4 of whom had urinary incontinence, all drank caffeine.

Intervention 2
July 2015 - one day Continence Snapshot of Inpatients with Parkinson's Disease
22 patients - medical and surgical wards
Data: 81% patients asked about continence by their nurse; 4.5% patients asked about continence by a doctor; 3/22 patients catheterised on admission (all appropriately); 54% patients had urinary incontinence; 3 patients had this escalated to medical team - only 1 was referred to continence service; 75% of PD patients with identified incontinence had no assessment or management of the problem; ICIQ scores (8 patients answered): Mean score 15.3 points; Two thirds of PD patients wanted Continence Clinic input. 2 were too unwell (poor prognosis), 2 couldn't engage (severe dementia)

Improvement
Introduction of decaffeinated drinks on Elderly Care Wards; Education about catheter usage; Implementation of Pathway poster for referral to Specialist Continence Service; Education of nurses and juniors regarding continence management in elderly and PD populations; This has led to: Reduction in night time toileting and falls; 3 x increase referrals to Continence Service; Increased referral of PD patients to Continence Clinic

Discussion
Incontinence is extremely common in elderly inpatients and particularly in PD.

Avoidance of caffeine and late nights drinks is easy to implement and useful.

Nursing staff do a good job identifying incontinence, but assessment and management pathways are lacking.

Need for increased focus on Continence in PD.

Admissions are an opportunity to intervene

Patients want specialist input.
### USE OF MORTALITY PREDICTORS AND A DECISION SUPPORT TOOL TO INFLUENCE ADVANCE CARE PLANNING IN PARKINSON'S DISEASE: AN EAST KENT INITIATIVE

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**Topic**

National guidance advocates advance care planning (ACP) in patients with Parkinson's disease (PD). While PD patients are responsive to these discussions, clinicians are more reluctant for fear of causing upset (Tuck, 2014). There are recognised mortality predictors in PD namely hospitalisation (Jackson, 2014), weight loss (Goy, 2013) and frail phenotype (Chang, 2015). We suggest that identification of these mortality predictors can prompt ACP. However, it is unlikely that these prognostic cues alone will empower clinicians. Therefore a decision support tool is recommended to facilitate ACP discussions encouraging an individualised approach.

**Intervention**

An analysis of electronic patient records (n=50) was undertaken to identify the proportion of PD patients in East Kent with recognised mortality predictors. Results demonstrated 40% (n=20) of patients were found to have at least 1 mortality predictor indicating a significant proportion of East Kent population would benefit from ACP. Only 1 of 50 patients reviewed had this discussion.

A PD-specific decision-support tool (Appendix 1) was formulated to aid recognition of PD mortality predictors with suggested content for discussion including PD-specific issues such as artificial feeding and Brain Bank tissue donation.

**Improvement**

Using this tool, ACP discussions were performed during successive outpatient or domiciliary reviews, the outcome of which was communicated in writing to GPs.

Using semi-structured interviews, feedback was sought from 5 patients. Feedback was positive with recommendations for ACP discussions to occur early while patients still have capacity.

**Discussion**

In sum, ACP is essential in the management of PD patients. It creates discomfort amongst healthcare professionals who prefer to avoid discussions about death and dying. Patients, however wish for these difficult discussions to be undertaken. We suggest a patient-focused approach that uses evidence-based predictors of mortality as cues to undertake ACP discussions using a PD-specific decision support tool during successive clinical encounters.
CARDIOPULMONARY RESUSCITATION IN THE ELDERLY: DO NOT AVOID THE CONVERSATION

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**Topic**
Clinicians have a legal duty to consult patients about cardiopulmonary resuscitation (CPR) unless this would cause harmful distress (Ref. [2014] EWCA Civ 822). However, the perception that these conversations will be emotive, difficult or distressing still discourages doctors from broaching discussions.

**Intervention**
We conducted a detailed survey of a convenience sample of conversations around CPR decision-making, in 41 cases over 13 months. We recorded: discussion trigger; whether discussion was with patient or relative; decisions on CPR; any distress to the participant; if the discussion was unexpected; additional comments (analysed thematically).

28 (68%) of the discussions were held with the patient; discussions with relatives occurred for cognitively-impaired patients. Conversations were prompted by:-critical illness (10%); being at high risk of deterioration during the admission (27%); part of future planning (61%). One patient volunteered during clerking that he did not wish resuscitation.

The median time from admission to hospital to CPR discussion was 10 days (critical illness median 17 days; high risk deterioration, 4 days; future planning, 14 days).

73% patients/relatives decided they did not want CPR; 12% patients definitely wanted resuscitation; 2% (1 relative) wanted time to consider; 12% (4 patients, 1 relative) did not wish to think about CPR or make decisions.

The majority (88% of patients/relatives) were not surprised or distressed by discussing CPR.

24% of responses were “unexpected” to the doctors (10% patients requesting CPR; 10% undecided/did not want to discuss, 4% did not want CPR).

**Improvement**
The majority of conversations did not cause surprise or distress to patients and relatives; some were reassured, feeling their wishes would be respected. This demonstrates that we should not shy away from including our patients in CPR conversations and decisions.

**Discussion**
Only a small percentage of conversations occurred during critical illness; even without this prompt, patients and relatives were ready to discuss CPR. Many elderly people have firm views about their care. Doctors cannot accurately predict these, and need to involve patients/relatives directly, while maintaining a sensitive approach, avoiding causing distress.
## MEASURING THE PROCESS OF CARE OF FRAIL OLDER PATIENTS IN HOSPITAL: THE FRAIL OLDER PATIENT ADMISSION QUESTIONNAIRE (FOPAQ)

R Hyatt¹, J K Taylor¹, M Robertson¹, J Dean¹, J Finch¹, R Bedwell¹, J Youds¹, J Wood²

¹ East Lancashire Hospitals NHS Trust, ² Advancing Quality Alliance (AQuA)

### Topic

Frail older people admitted to hospital are at greater risk of adverse outcomes and prolonged length of stay. We suspected significant variations in care for this vulnerable patient group at Royal Blackburn Hospital (RBH), particularly on non-specialist wards. We therefore designed a structured questionnaire (FOPAQ) specifically for frail older hospital inpatients, addressing the process of care across the medical division.

### Intervention

The questionnaire was developed iteratively by a multidisciplinary team skilled in the management of frail older patients. The final draft was piloted on 5 inpatients to demonstrate face validity. Patients were identified using the following criteria: age >80 with any of; falls, reduced mobility, delirium/dementia, care home resident or admission from intermediate care.

Case notes were interrogated using the questionnaires, which were completed by paired members of the frailty MDT (geriatrician, ward manager, therapist and social worker).

### Improvement

50 hospital inpatients were surveyed across the medical division. 26% of patients were admitted without any apparent identifiable new medical need. 37% of patients were transferred to a ward between hours of midnight and 6am, and 26% had one or more ward transfers. There was evidence of hospital related harm in 25% of cases.

Disappointingly; only 38% had evidence of comprehensive geriatric assessment (CGA), despite 28% having specialist old age mental health needs. Clinical condition fluctuated unpredictably in 42% of cases. Only 30% were felt likely to be discharged to current level of care, with 80% requiring complex discharge team input. The MDT felt that 50% of patients were likely to be in the last year of their life.

### Discussion

FOPAQ has highlighted multiple potential areas for improvement in the care of frail older hospital inpatients in this acute trust.

The questionnaire was easy to use, and could easily used by other trusts. We feel it has accurately identified areas of poor practice in the care of frail older people and informed potential service improvement.

As a result of our findings, and other related work; the pathway of care for frail older people in acute and community settings is to be re-designed; with measures including acute frailty assessment in MAU; integrated discharge team and intensive home support service; and better access to CGA and closer working with palliative care teams either planned or already implemented.
THE INTRODUCTION OF A POST-FALL MEDICAL REVIEW: PROFORMA IN A LARGE ACADEMIC HOSPITAL

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Topic
Falls account for approximately 30% (Oliver, Healey & Haines Clin Geriatr Med (2010) 26:645) of all adverse incidents in the hospital. New NICE guidelines (Falls in Older People NICE 2015) recommend that all patients who fall in hospital should have a medical review. A medical review post-fall provides an important opportunity to identify and manage injury appropriately and prevent further falls.

Intervention
Our hospital introduced a Post-Fall Medical Review: Proforma to be completed by medical staff who reviewed a patient in the immediate post-fall period. A convenience sample of 30 people who fell in hospital before and after (total n=60) the introduction of the Proforma was selected from the adverse incident reporting system. The data collection tool comprised the following themes: history and clinical examination, injury management, and preventing further falls.

Improvement
History: There was an improvement in documenting the ‘mechanism of fall’ (30%) and in questioning patients on hip trauma (60%). Clinical Examination: There as a 65% increase in medical staff considering sepsis, delirium or dementia in the immediate post-fall period. Preventing Further Falls: There was an increase in the number of high risk medications identified (40%) and in the number of medications rationalised (45%).

Discussion
A particular challenge in the introduction of the Proforma was in educating all medical staff. The high turnover of staff throughout rotations made consistency a challenge so support from ward nursing staff was vital. Interns were supportive of its introduction as it simplified assessment, particularly during a busy call. However, consultants need to champion its use to ensure that risk factors for falling, such as medication rationalisation, are acted upon. Focus should now be on ensuring sustainability through a hospital-wide education programme and regular audits to ensure compliance.
Using WhatsApp to Improve Patient Safety on a Delirium Unit

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Background

Traditional means of communication within hospital ward settings rely on team meetings, safety huddles, newsletters and word of mouth.

Mallard Ward, a delirium unit at Doncaster Royal Infirmary has been running for the past three years and managed to provide high quality care for older people experiencing de novo delirium and cognitive exacerbations of previously diagnosed dementia secondary to acute medical illness.

In 2013 the Trust won ‘Dementia Friendly’ Trust of the Year and for the past two years has been graded internally as providing outstanding care. There have been no cases of ward acquired C. difficile since the ward opened, no hospital acquire pressure ulcer in 513 days and no complaint in over two years. In September 52 days passed without an inpatient fall.

Method

Communicating changes in ward status, root cause analyses, prompts and reminders relating to patient safety are sometimes difficult within an acute hospital ward, where people work shifts and even during the normal working day, managing to get all staff together in one place is a challenge.

We started using WhatsApp, a free application available on Apple and Android Smart Phones to communicate non-confidential information to all ward staff – including nursing, therapy, domestic, healthcare assistants and medical.

Evaluation

Since we began using the WhatsApp tool, we have seen significantly increased engagement in issues relating to the communication of patient safety issues within our unit. Common issues for communication relate to prompts concerning falls risk and environmental assessments, nutrition and hydration communications as well as providing positive feedback to staff.

Conclusion

We believe this tool provides instant communication of information, pictures, and contents of emails within a restricted group of people. It supports a cohesive sense of team identity and allows for team members to respond to changes in practice and new developments, whether they are working or at home.
IMPLEMENTATION OF A MEDICAL CHECKLIST TOOL TO IMPROVE THE QUALITY OF ELDERLY PATIENT CARE: A QUALITY IMPROVEMENT PROJECT

N Jeffery1,2, K Richards2, K Athorn2, I Morales2

1 Hull York Medical School, 2 Department of Elderly Medicine, Hull and East Yorkshire NHS Trust

Introduction
Checklists have been utilised within medical and surgical specialities as a means of improving the quality of patient care. Complex care pathways can be delivered more effectively with improved reliability and consistency. The CCCAVEDD tool is a static sequential checklist which incorporates items to be considered within the daily medical review. The purpose of the tool is to reduce the risk of nosocomial infections and in-hospital venous thromboembolism (VTE), in addition to improving communication between patients and families through early discussion of discharge planning and DNAR status.

Method
Case notes were reviewed for all admissions to the Elderly Short Stay Unit (ESSU) at Hull Royal Infirmary during a 5 day period. Use of the CCCAVEDD tool was noted in addition to the level of doctor completing the checklist. Initial results were disseminated within the department in order to highlight barriers to implementation. Following the employment of improvement measures the review was repeated.

Results
Initial analysis found only 44 (16%) of daily medical reviews had been completed using the CCCAVEDD tool. When the tool was used, only 27 (61%) cases were found to have a completed checklist. An intra-departmental discussion forum allowed the identification of barriers to implementation and the formation of improvement measures. Such measures concentrated on departmental education including; visual prompts, written information and small group tutorials. Following a second review period the number of daily reviews completed using the CCCAVEDD tool increased to 235 (82%). In cases where the checklist tool was used, it was correctly completed in 133 (57%) of cases. The grade of doctor using the tool also became more varied. Despite the positive increase in usage we can see there has been a decrease in the accurate completion of the tool. This can be attributed to a number of factors including but not limited to lack of experience and need for further education and training.

Conclusion
In summary the improvement measures implemented have increased overall usage of the CCCAVEDD tool by over 500%. The purpose of the CCCAVEDD tool is to improve patient safety and overall quality of care. Long term the department aims to demonstrate a reduction in nosocomial infections, falls and complaints surrounding DNAR decisions with continued use of the CCCAVEDD tool.
FOCUSING ON FALLS - A QUALITY IMPROVEMENT PROJECT TO IMPROVE MEDICAL ASSESSMENT FOLLOWING AN INPATIENT FALL

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Gloucestershire Royal Hospital

**Topic**
Over 240,000 inpatient falls are reported annually in England and Wales (Royal College of Physicians, 2015). The National Institute of Clinical Excellence recommend a timely medical review to identify any injuries and a Trust post-fall protocol (NICE quality standard QS86, 2015). Notes from 50 inpatient falls across the medical division were analysed locally. Results showed significant omissions in post fall assessments and practitioners told us they lacked confidence. We aimed to improve assessment of patients following a fall in hospital by standardising approach and educating assessors.

**Intervention**
We designed an assessment sticker using quality improvement methodology and provided teaching to junior doctors. We used plan-do-study-act cycles and collected feedback from staff to improve the intervention over the course of one year. Data was analysed after each version using incident reports to identify medical inpatients that had fallen.

**Improvement**
62 sets of notes were reviewed in our final cycle of data collection. 12 were excluded as there was no documented assessment. Our intervention was used in 78% of those assessed. The table below demonstrates the percentage of each component documented when a patient was assessed with and without our intervention compared to the baseline data.

<table>
<thead>
<tr>
<th>Documentation of each component of assessment</th>
<th>% At baseline</th>
<th>% Without intervention</th>
<th>% With intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>96</td>
<td>82</td>
<td>100</td>
</tr>
<tr>
<td>Observations</td>
<td>92</td>
<td>64</td>
<td>82</td>
</tr>
<tr>
<td>Head Injury</td>
<td>70</td>
<td>73</td>
<td>100</td>
</tr>
<tr>
<td>Neurological examination</td>
<td>76</td>
<td>36</td>
<td>87</td>
</tr>
<tr>
<td>Limb deformity/fracture</td>
<td>54</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>Glasgow Coma Score</td>
<td>76</td>
<td>36</td>
<td>97</td>
</tr>
<tr>
<td>Management plan</td>
<td>76</td>
<td>82</td>
<td>100</td>
</tr>
</tbody>
</table>
**Discussion**
Our intervention improved the systematic assessment of patients following an inpatient fall. We settled on an A5 sticker as the original A4 proforma was frequently filed outside the main body of notes. Our data suggests that a proportion of patients do not have any documented medical review following a fall. We intend to further educate ward staff and doctors regarding the importance of this. Support from the Trust Falls Group and engagement of ward matrons and administrative teams has been vital to our success. We will now implement the sticker trust-wide.
CLINICAL QUALITY

CLINICAL FRAILTY IS AN INDEPENDENT PREDICTOR FOR ANTICOAGULATION PRESCRIBING IN THE OLDER PERSON

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Introduction
Anticoagulation significantly reduces the risk of stroke secondary to atrial fibrillation (AF), but there is a perceived risk of adverse effects in frail patients. Guidelines recommend CHA2DS2-VASC scoring to guide selection of patients for anticoagulation, but frailty measurements are not explicitly endorsed. Our study investigated the association between the Clinical Frailty Scale (CFS) and community anticoagulant prescribing habits in patients aged 75 years and over with known AF, admitted acutely to hospital.

Methods
Data was gathered retrospectively on patients under the care of a medical team between 1st January 2014 and 31st March 2014 at a 1,000 bed tertiary hospital. Demographics, AF history, CHA2DS2-VASC and CFS scores were collected. ‘Frail’ was defined as CFS 5-8 and ‘non-frail’ as CFS 1-4. Bivariate comparisons between anticoagulated and non-anticoagulated cohorts were analysed using the Mann-Whitney U-test and the Z-test of two population proportions. Multivariate analysis based on binary logistic regression included variables found to be significant (p<0.05) in the bivariate analysis. Odds ratios were calculated for categorical data found to be significant (p<0.05) in binary logistic regression (R, version 3.1.2).

Results
416 patients with known AF were included (Table 1). 215 were not anticoagulated (51.7%) on admission. Non-anticoagulated patients were older (median age 87 (IQR7) vs 83 (IQR6), p<0.01), frailer (81.4% vs 52.2%, p <0.01) but had lower CHA2DS2-VASC scores (median 4 (IQR2) vs 5 (IQR2), p<0.01). Multivariate analysis for significant factors on bivariate analysis (age, CHA2DS2-VASC and CFS) showed all three remained independently significant (p<0.01) and that frail patients are less likely to be anticoagulated (OR 0.25 95%CI 0.16-0.39, p<0.01).

Discussion
Frailty is a strong independent predictor for anticoagulation not being prescribed. We propose that clinical frailty is an important yet unmeasured factor in decisions regarding anticoagulation in the community. Further research is required to evaluate the value of explicit frailty scoring with regards to anticoagulation decisions and patient outcomes.
<table>
<thead>
<tr>
<th></th>
<th>Known AF n=416</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not on OAC 215</td>
<td>On OAC 201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frail</td>
<td>175 (81.4%)</td>
<td>105 (52.2%)</td>
<td>p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Median Age</td>
<td>87 (IQR 7)</td>
<td>83 (IQR 6)</td>
<td>p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Median CHA2DS2-VASC</td>
<td>4 (IQR 2)</td>
<td>5 (IQR 2)</td>
<td>p&lt;0.01</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>92 (42.7%)</td>
<td>95 (47.3%)</td>
<td>p=0.36</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>147 (68.4%)</td>
<td>143 (71.1%)</td>
<td>p=0.54</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>46 (21.4%)</td>
<td>49 (24.4%)</td>
<td>p=0.47</td>
<td></td>
</tr>
<tr>
<td>Vascular disease</td>
<td>49 (22.8%)</td>
<td>53 (26.4%)</td>
<td>p=0.4</td>
<td></td>
</tr>
</tbody>
</table>
PROMOTING THE SAFE PRESCRIPTION OF 0.18% NaCl/4% Glucose After Its Introduction as a Routine Maintenance Intravenous Fluid

J Bridson, M Cowan, W Morley

Department of Medicine of the Elderly, Royal Infirmary of Edinburgh

Background
The over-use of 0.9% NaCl as a sole intravenous fluid used for routine maintenance hydration can cause harm (National Institute of Clinical Excellence (NICE) Clinical Guidance CG174: Intravenous Fluid Therapy, 2013, Section 5.1.4 pp56-58).

In August 2015 the Department of Medicine of the Elderly, Royal Infirmary of Edinburgh, started using 0.18% NaCl/4% glucose as the primary maintenance fluid for patients. For this fluid to be used, guidelines recommend that:

- Serum [Na+] should be >132 mmol/l.
- Maximum rate of infusion is 100ml/hr.

Baseline Data
Baseline data was collected during October 2015 by reviewing a total of 25 prescriptions of 0.18% NaCl/4% glucose (five wards in the department, on four separate days).

- 96% (24/25) had serum [Na+] >132 mmol/l.
- 94% (23/25) with prescribed rate <100ml/hr.

A staff questionnaire of sixteen prescribers found that:

- 25% had not received training on using the new fluid.
- 8% were not aware of a maximum rate.
- 13% did not realise serum [Na+] matters.

Interventions
1) Highlighting errors to prescribers during data collection.
2) Explaining the guidelines at the end of the questionnaire.
3) Presenting baseline data and re-explaining the guidelines to prescribers and nursing staff at departmental meetings.

Aim: 100% compliance with guidelines at re-audit.

Result
A total of 20 prescriptions were reviewed across the same wards, over three days in November 2015:

- 100% (20/20) had serum [Na+] was >132 mmol/l.
- 100% (20/20) with prescribed rate <100ml/hr.
Discussion
The benefit of multiple brief interventions is apparent here; all focused on staff education. The advantage of intervening early after introduction of this new fluid was that patient harm could be minimised, and bad prescribing habits may be less likely to evolve over time. Data will be re-audited in January after the foundation doctors change over.
COMPARISON OF OUTCOMES FOLLOWING THROMBOLYSIS IN PATIENTS WITH ATRIAL FIBRILLATION (AF) AND WITHOUT AF

A McLoughlin, D Vahidassr

Care of Elderly Department, Antrim Area Hospital, Northern Health and Social Care Trust

Introduction
Atrial Fibrillation is risk factor for ischaemic stroke. Thrombolysis is recognised treatment for acute ischaemic stroke.

Method
Retrospective case note review of received stroke thrombolysis over 1 year period.

Results
50 received stroke thrombolysis from January 2013 to January 2014.

17 recorded AF with 11 had known AF and 6 first presentation.

Mortality
AF 18% mortality by discharge compared 9% in non AF.
At 6 months AF had 24% mortality compared with 21% in non AF.

Intracerebral Bleed
AF had higher rate of intracerebral bleed post lysis with 24% in AF group compared to 6% in non AF. In AF group 60% post lysis intracerebral bleed resulted in death by discharge compared with 100% non AF.

NIHSS Presentation
AF had average NIHSS of 13 at presentation ranging from 3 to 20.
Non AF had average NIHSS at presentation of 11 ranging from 2 to 25.

Modified Rankin discharge
AF average modified Rankin 4 at discharge with 0% Rankin 0, 12% Rankin 1, 6% Rankin 2, 24% Rankin 3, 12% Rankin 4 and 28% Rankin 5 at discharge.

Non AF average modified Rankin 3 at discharge with 14% Rankin 0, 6% Rankin 1, 14% Rankin 2, 30% Rankin 3, 18% Rankin 4 and 9% Rankin 5.

Modified Rankin 6 months
AF average modified Rankin 4 at 6 months with 0% Rankin 0, 12% Rankin 1, 18% Rankin 2, 12% Rankin 3, 6% Rankin 4 and 28% Rankin 5.

Non AF average modified Rankin 3 at 6 months with 14% Rankin 0, 12% Rankin 1, 14% Rankin 2, 30% Rankin 3, 6% Rankin 4 and 3% Rankin 5.

Conclusion
AF associated with worse outcomes following thrombolysis compared to non AF. AF higher NIHSS at presentation, higher mortality rate, complications and increased level of disability by discharge and 6 months compared non AF.
# QUALITY IMPROVEMENT PROJECT TO FACILITATE THE TIMELY REVIEW OF ALENDRONATE PRESCRIBED FOR OSTEOPOROSIS IN GENERAL PRACTICE

C Nye

Gloucestershire NHS Foundation Trust and London Medical Practice

## Introduction

Current guidelines suggest that patients taking alendronate for osteoporosis should have a review at 5 years to assess their need for ongoing treatment and prevent harm from unnecessarily prolonged treatment. The long time frame means that recognising the appropriate time for review can be particularly challenging in general practice. This project aimed to assess historical and current practice and implement measures to help prompt the 5 year review.

## Retrospective audit

A retrospective audit was included to assess the management of alendronate from start to finish of treatment. Vision software was used to identify 50 patients from the practice database who had completed alendronate therapy for osteoporosis within the last 10 years and data was extracted from their records.

42% of patients had taken alendronate for over 5 years. Only 42.3% of these patients had had a review of their therapy at an appropriate time (defined as between 4 and 6 years). 19% of these patients had never had a documented review.

## Current practice audit

49 patients currently taking alendronate were identified using a Vision search. 57% of those on alendronate for over 5 years had had a review at an appropriate time. 10% had a clearly documented date of next review.

## Interventions

Changes were made to the prescribing tool on the Vision general practice software, such that a first prescription of alendronate automatically requires the practitioner to enter the 5 year review date into the prescription. This is printed on all future repeat prescriptions, to remind doctor, patient and pharmacist of the review date. Patients who were already on alendronate had their repeat prescriptions manually altered to include their review date. Patients who were identified as being overdue for review were invited in for review.

## Results

100% of patients currently taking alendronate have either a review plan in progress or a clear future date for a review. The intervention was well received by all general practitioners in the practice. This is a simple and practical way to facilitate timely review of prescriptions and could be extended to other medications.

## References

**A COMPARATIVE STUDY OF CHARACTERISTICS AND OUTCOMES FOR WEEKEND VERSUS WEEKDAY DISCHARGES IN A DISTRICT GENERAL HOSPITAL**

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**Background**
There has been insufficient research looking into the impact day of discharge has on patient mortality and readmission rates. We know that there are less hospital staff working at the weekend, but does this have an impact on safety of patient discharges? We wanted to evaluate this, given recent publication raising concerns regarding mortality outcomes for weekend discharges when compared to weekdays. At Bournemouth hospital there is a consultant led ward round for older adults over the weekend to facilitate discharges.

**Methods**
We evaluated 144 consecutive discharges of which 32 were discharged over the weekend. Weekend was defined as midnight Friday till midnight Sunday. Dependent variable was weekend discharge; independent variables were length of stay, diagnosis on discharge, co-morbidities, and discharge destination, timing consultant/physiotherapy/social worker review in relation to discharge, 30 day mortality and readmission following discharge.

**Results**
There was no significant age or gender difference between weekdays versus weekend discharges. Average length of stay was significantly higher for weekend discharges (7 days compared to 4 days, p=0.023). Diagnosis on discharge and co-morbidities had no impact on day of discharge. Significantly higher number of patients were discharged to care home over weekends (6.7% compared to 2.7% p= 0.03). Significant number of discharges over weekend had no consultant review in last 24 hours leading to discharge (45.2% vs 22.7% p=0.04). There was no significant difference in 30 day mortality (0% vs 2.9%, p=0.02) and readmission rate (9.4% vs 9.4%) for weekend discharges when compared with weekdays.

**Conclusions**
We did not find any significant difference in 30 day mortality and readmission rate for weekend discharges when compared to weekdays. We conclude that discharges over the weekends are safe in a consultant led service model.
**POOR SUBJECTIVE SLEEP QUALITY ASSOCIATES VARIABLY WITH DIFFERENT FRAILTY MEASURES IN CROSS-SECTIONAL STUDY OF COMMUNITY DWELLING OLDER PEOPLE**

O M Todd, A Heaven, E Teale, A Clegg  

*Academic Unit of Elderly Care and Rehabilitation, University of Leeds, Bradford Institute for Health Research, Bradford Teaching Hospitals NHS Foundation Trust, Bradford, UK*

**Introduction**  
Poor subjective sleep quality has been associated with phenotypic frailty and is a potential target for frailty prevention or treatment. Exhaustion and reduced day-time activity: two of the five phenotype model variables: have been associated with sleep disorder. We investigated the association between poor sleep quality and frailty using three frailty scores that varied in the weighting each gave to sleep related symptoms.

**Methods**  
Cross-sectional study design using data from participants in the Yorkshire and Humber Community Ageing Research 75+ cohort study. Self-reported subjective sleep quality was the main exposure variable. Frailty was the outcome of interest, as defined using the phenotype model, cumulative deficit frailty index, and the Edmonton Frailty Scale. We ran 3 logistic regression models, one for each frailty measure, to adjust for pertinent confounders (age, depression, and cognitive function).

**Results**  
Data from 173 patients is included. Median age was 80 years, 97 (56%) of whom were female. Frailty prevalence was 20% using the cumulative deficit frailty index with frailty defined at a value of 0.3. There was no clear association between sleep disturbance and frailty measured using the phenotypic model (OR 0.9, 95% CI 0.4 to 2.1), or the Edmonton Frailty Scale (OR 1.6, 95% CI 0.4 to 5.9). Poor sleep quality was associated with frailty as determined by the cumulative deficit frailty index (OR 3.2, 95% CI 1.2 to 8.7).

**Conclusions**  
Poor sleep quality is associated with increased frailty, measured using the cumulative deficit frailty index. There was no association between poor sleep quality and frailty using two other frailty measures. The direction and magnitude of association between poor sleep quality and frailty may be influenced by choice of frailty model, and thereby the population identified as frail by each model.
Sarcopenia and Vascular Risk in a Healthy Elderly UK Population (BRAVES Study)

A Nagy1, F Fantin2, C Morrison1, J Wright3, I Ramsay1, C Bulpitt3, M Zamboni2, C Rajkumar3

1 Brighton and Sussex University Hospitals NHS Trust, Brighton, UK, 2 Clinica Geriatrica, Ospedale Maggiore, Verona, Italy, 3 Brighton and Sussex Medical School, UK

Introduction
Sarcopenia, the loss of skeletal muscle mass and strength that occurs with advancing age1 is correlated with functional decline and frailty but little is known about its relationship with cardiovascular risk. Bioimpedence analysis (BIA) is a validated technique for measuring muscle mass, convenient for use in large cohort studies. Arterial stiffness (compliance) is an independent predictor of cardiovascular events.

Methods
The BRAVES study was designed to compare cardiovascular risk between two healthy elderly cohorts in the UK and in Italy. We used data from the UK cohort to investigate the relationship between sarcopenia and vascular compliance.

Participants were eligible if aged 65-85 years, lived within the Brighton area and had weight loss of no more than 5% in the last month. All underwent physical exam, BIA assessment of skeletal mass index (SMI) and two measures of arterial compliance. Pulse wave velocity (PWV) was measured between carotid-femoral and carotid-radial arteries and the augmentation index (AIx) derived from carotid and radial arteries. A bivariate correlation was performed.

Results
Ninety patients (64 female; 26 male) had mean age 73, mean fat free mass 46.84kg (range 34.7-74.7) and mean SMI 6.77 (range 4.84-10.09). There was a negative relationship between SMI and Radial AIx (R=0.-542, p=0.000) as well as Carotid AIx (R=-0.391, p=0.002) but not PWV. Using multiple regression to control for the effects of age and gender, SMI was independently related to radial AIx (p=.013).

Conclusions
Skeletal muscle mass index is strongly negatively correlated with augmentation index, a measure of vascular stiffness. This finding suggests that elderly patients with lower muscle mass have a less compliant aorta and hence higher cardiovascular risk. Whether sarcopenia acts as a marker for CV risk or plays an active role in cardiovascular disease progression is not yet established and deserves further investigation.

INTerventions to enhance medication adherence in older heart failure patients - a systematic review

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¹ Ageing and Health, School of Medicine, 2 School of Nursing, University of Dundee, 3 School of Psychology, NUI Galway

Introduction
While there is clear evidence that medications improve survival and reduce hospitalisation rates due to heart failure, there is also evidence that adherence to medication is sub-optimal. The aim of this systematic review was to determine the effect of interventions promoting adherence in heart failure patients.

Methods
We conducted a systematic review of randomised controlled trials searching for all-language publications in electronic databases (Medline, CINAHL, Embase, Cochrane Central Register of Controlled Trials and PsychINFO) up to the end of April 2015. Trials describing interventions intended to enhance adherence to self-administered medications in the treatment of heart failure were eligible. Two independent reviewers examined lists of retrieved articles extracting study characteristics and results for adherence. Methodological quality was examined using the Cochrane Collaboration risk of bias tool. Studies were critically reviewed and assessed for validity of their findings.

Results
We included 21 trials containing data on 4346 patients (average age 56 to 85 years). Heterogeneity of interventions and outcome measures precluded meta-analysis of results.

Medication adherence improvement was reported in 8 of 21 trials. 14 of 21 trials evaluated intensified patient care, via either direct patient contact interventions (9 trials) or telephone / tele-monitoring programs (5 trials). 5 of 9 direct patient contact interventions reported enhanced medication adherence versus 1 of 5 telephone / tele-monitoring programs.

None of the 3 trials evaluating patient education reported enhanced adherence, however while 2 of the 3 studies examining complex behavioral approaches reported enhanced adherence, a large trial involving >900 participants reported no effect. One trial solely targeting simplification of the drug regime did not find evidence of enhanced adherence.

Conclusions
While it is possible to improve medication adherence in heart failure patients, heterogeneity in both intervention techniques and measurement methodology leave us unable to identify reliable and efficacious intervention approaches. Future studies should aim to build on the methodologically stronger studies in this literature so that a cumulative set of findings can emerge.
EXCESSIVE DAYTIME SLEEPINESS IN OLDER BRITISH MEN: AN EARLY MARKER OF HEART FAILURE

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\textsuperscript{1} UCL Department of Primary Care & Population Health, UCL Medical School, Rowland Hill Street, London, NW3 2PF, UK, \textsuperscript{2} Institute of Life Sciences, Swansea University, Singleton Park, Swansea, SA2 8PP, UK, \textsuperscript{3} Population Health Research Institute, St George's University of London, Cranmer Terrace, London, SW17 0RE, UK

\textbf{Background}

Sleep disturbance is common, especially amongst older adults. The association between night-time sleep duration and cardiovascular (CV) risk factors has been extensively reported, whilst less is known about the influence of daytime sleep. We aimed to investigate the association between sleep patterns and CV risk markers in older adults including metabolic risk markers, cardiac markers and early markers of atherosclerosis [arterial stiffness and carotid intima-media thickness (CIMT)].

\textbf{Methods}

Cross sectional study of 1722 surviving men aged 71-92 examined in 2010-2012 across 24 British towns, from a prospective study initiated in 1978-1980. Participants completed a questionnaire and were invited for a physical examination. Men with a history of heart attack or heart failure (n = 251) were excluded from the analysis.

\textbf{Results}

Analysis of the data confirmed previous reports of a U-shaped association between night-time sleep duration and HbA1c, even following adjustment for confounding factors including age, BMI, physical activity and social class. Men who reported insomnia had significantly higher mean triglyceride, glucose and insulin ($p = 0.02, 0.04$ and $0.01$ in the age-adjusted model). Increasing daytime sleep duration was associated with higher fasting glucose and insulin levels which remained significant ($p = 0.02$ and $0.01$ respectively) after adjustment for prevalent diabetes. Compared to those with no daytime sleep, men with daytime sleep > 1 hour had a higher risk of having raised N-terminal pro brain natriuretic peptide (NT-proBNP) of ≥400pg/ml, the diagnostic threshold for heart failure [OR (95% CI) = 1.88 (1.15, 3.1)], reduced lung function (forced expiratory volume in 1s) and elevated von Willebrand factor (vWF), a marker of endothelial dysfunction. These patterns were not seen for night-time sleep or insomnia. Sleeping patterns were unrelated to CIMT and arterial stiffness.

\textbf{Conclusions}

Day sleep of >1 hour may be an early indicator of heart failure. Clinically, this is important in the assessment of older patients who seek medical advice for excessive daytime sleepiness, in whom indicators of heart failure should be sought and further investigations carried out if necessary.
THE INFLUENCE OF AGE AND SYSTOLIC BLOOD PRESSURE ON BLOOD PRESSURE VARIABILITY AMONG HEALTHY OLDER INDIVIDUALS

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Introduction
Blood pressure variability (BPV) has drawn increasing interest among the scientific community with an increasing body of evidence linking increased BPV with cardiovascular outcomes and mortality. Blood pressure variability is the fluctuation of blood pressure within a period of time, which can be over a very short-term (beat-to-beat) to long-term (visit-to-visit). Mean arterial blood pressure is directly correlated with 24-hour BPV and age and is associated with hypertension. However, the association between age and BPV has yet to be illustrated. Thus, this study is intended to evaluate the relationship between age and systolic blood pressure with BPV among healthy older individuals.

Method
One hundred and twenty-two healthy subjects, free from any cardiovascular disease, cerebrovascular disease, neurological disease, diabetes mellitus and cancer were selected in this study and divided into three age groups (I: 55 – 64 ys, II: 64 – 74 ys and III: 75 ys and above). Continuous beat-to-beat blood pressure signals were recorded during supine rest over ten minutes. Blood pressure variability was determined with standard deviation of real variability (SDRV).

Results
There is no significant difference in height, weight and systolic BP between age groups. Supine systolic BP was moderately positive correlated with (r = 0.281, p = 0.002) with logarithm transformed BPV but there was no significant association between age with BPV. Older individuals with higher supine systolic BP (>= 116 mmHg) are found to have significantly higher HRV (p=0.007). Systolic BP remained an independent predictor of higher BPV following adjustment for age using linear regression methods (p = 0.008).

Conclusion
This study has demonstrated that resting BPV using SDRV increases with increasing supine BP. Increasing age was not associated with higher systolic BP or increased BPV among healthy older individuals in our setting.

References:
OUTCOMES OF TREATED HYPERTENSION IN 79,376 PATIENTS AGED 80 YEARS AND OLDER: DO ATTAINED BLOOD PRESSURES PREDICT OUTCOMES?

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As part of the Ageing Well Programme of the NIHR School for Public Health Research, England

1 Epidemiology and Public Health, University of Exeter Medical School, 2 Royal Devon and Exeter NHS Foundation Trust, 3 Department of Diabetes and Vascular Medicine, University of Exeter Medical School, 4 UConn Center on Aging, University of Connecticut Health Center, USA

Introduction
The overall benefits of achieving lower blood pressures in the oldest hypertensive patients remain unclear, with little age-relevant trial evidence, variation in recommended targets and possible increases in adverse events. We aimed to estimate outcomes by attained systolic and diastolic blood pressures in an older hypertensive population free from major complicating comorbidities at baseline.

Methods
Records-based cohort analysis using the Clinical Practice Research Datalink, with 11.9 year follow-up in linked primary care, inpatient and death certificate data. Participants were aged ≥80 years, on antihypertensive medication but free of dementia, cancer, coronary heart disease, stroke, heart failure or end stage renal failure at baseline. The outcomes of interest were all-cause mortality, cardiovascular mortality, myocardial infarction, stroke, heart failure and fragility fractures.

Results
There was a U-shaped association between systolic pressure and mortality with a risk nadir at SBP=150±5mm Hg. In the 13.1% of patients with systolic pressures below 135mm Hg, mortality rates were raised (Cox Hazard Ratio 1.25 95% CI 1.19 to 1.31) equating to one extra death per 12 patients compared to the control group (SBP=150±5mm Hg). Incident heart failure rates increased below SBP 125mm Hg. Above SBP 164mm Hg stroke rates and cardiovascular mortality rose significantly. These associations were little changed by diastolic BP and there was no association between SBP and incident fragility fractures.

Conclusions
Hypertensive patients aged 80 and over without major complicating conditions experience lowest mortality risks with systolic pressures measured in routine clinical practice of close to 150mm Hg. Systolic pressures 15 or more mm Hg below target are associated with poorer outcomes in this group and guidelines on a lower limit for treated SBP are needed to trigger clinical review and minimise potential harms. This real-world data would not support intensification of blood pressure treatment targets in older adults.
DELIRIUM IN ACUTE ILLNESS IS NOT ASSOCIATED WITH HYPOTENSION OR BLOOD PRESSURE VARIABILITY: A CONSECUTIVE COHORT STUDY IN PATIENTS WITH VASCULAR DISEASE

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1 Stroke Prevention Research Unit, Nuffield Department of Clinical Neurosciences, University of Oxford, 2 Departments of General (internal) Medicine and Gerontology and the Oxford NIHR Biomedical Research Centre, John Radcliffe Hospital, Oxford

Introduction
Perioperative hypotension and blood pressure variability have been linked to increased delirium risk. Blood pressure variability is also associated with cardiovascular risk, poor outcome after stroke, and possibly with risk of dementia. In the absence of previous data, we examined blood pressure characteristics in relation to delirium in a consecutive cohort of hospitalised patients with a history of vascular disease.

Methods
The Oxford Vascular Study (OXVASC) is a longitudinal, population-based study of acute vascular events occurring with a defined population of 92,728 in Oxfordshire. All surviving OXVASC patients who had acute illness requiring assessment in secondary care over three separate periods between 2013 and 2015 were prospectively studied. Delirium was ascertained using a clerking proforma including the AMTS and Confusion Assessment Method (CAM). Blood pressure records for each case and an age and sex-matched control were manually digitised.

Results
Forty-one cases of delirium (mean±sd age=81±2 years) and an equal number of controls (mean±sd=80±5 years) were identified. There were no significant differences between those with vs without delirium in any blood pressure variable including mean±sd systolic blood pressure (SBP) on admission (148±40 vs 140±29mmHg), diastolic blood pressure (DBP) on admission (76±21 vs 69±15mmHg), maximum SBP (170±30 vs 162±23mmHg), minimum SBP (108±22 vs 105±20mmHg), SBP range (62±26 vs 58±20mmHg), DBP range (42±15 vs 37±16mmHg), SBP coefficient of variation (0.13 vs 0.13), and DBP coefficient of variation (0.16 vs 0.15). The number (%) of patients with any SBP ≥160mmHg (23 (56%) vs 25 (61%)) or any SBP <100mmHg (14 (34%) vs 18 (44%)) was also similar.

Conclusions
Hypotension and blood pressure variability were not associated with delirium in our cohort of older vascular patients with acute illness. Our preliminary findings suggest that blood pressure variability appears unlikely to play a major role in the pathogenesis of delirium.
**SCIENTIFIC RESEARCH (CARDIOVASCULAR)**

**DOES IMPAIRMENT OF DYNAMIC CEREBRAL AUTO-REGULATION EXPLAIN THE SYMPTOMS ASSOCIATED WITH CLASSICAL ORTHOSTATIC HYPOTENSION?**

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¹ The Ipswich Hospital, Ipswich, ² University of Aberdeen, ³ University of East Anglia, ⁴ Norfolk and Norwich University Hospital

**Introduction**

In older adults orthostatic hypotension (OH) is common, has increased morbidity and mortality, but is not always symptomatic. However some people have classical orthostatic symptoms without a postural fall in systemic BP. This study tested the hypothesis that impairment of dynamic cerebral auto-regulation (dCA) might explain the symptoms associated with OH.

**Methods**

Based on reproducible clinical symptoms (< 3 minutes of standing) and definition of “classical” OH (ESC, 2009), study participants were recruited into four groups: Asymptomatic No OH (control, ANo), Symptomatic No OH (SNo), Asymptomatic OH (AOH), and Symptomatic OH (SOH).

Baseline and head-up-tilt (HUT) measurements were recorded (HUT for 30 minutes or to symptom onset). Transcranial Doppler ultrasound, beat-to-beat BP, ECG and CO₂ monitored at baseline and during tilt. Baseline autonomic function, arterial stiffness, cardiac baroreceptor sensitivity (BRS) calculated. dCA (as the auto-regulatory index ARI) assessed before and during tilt.

**Results**

Groups: ANo (n=24), SNo (n=18), AOH (n=20), SOH (n=23), mean age 73.9±7.1 years. Baseline: No significant differences between the 4 groups for cardiac BRS, arterial stiffness, cerebral blood flow velocity (CBFV) or dCA in either study. HUT: falls in BP, CO₂ and CBFV, increases in HR, and fall in ARI amongst symptomatic subjects prior to the end of HUT (maximum duration or symptom onset) compared to pre-HUT ARI values which were: ANo 5.2±0.2, SNo 3.2±0.1, AOH 3.7±0.1, SOH 4.8±0.3. When comparing those who were symptomatic (n=23) versus those who were asymptomatic (n=46) during HUT, regardless of initial classification there was a significant difference in the ARI (-1.2±1.1 vs 0.7±0.9, p<0.001).

**Conclusions**

Symptoms during HUT were related to a fall in CBFV associated with impaired dynamic cerebral auto-regulation. This is the first description of abnormalities in dCA in relation to symptoms and haemodynamic changes associated with OH, although these changes can only be detected during HUT.
PREVALENCE OF FRAILTY ON ACUTE ELDERLY CARE WARDS IN A DISTRICT GENERAL HOSPITAL AND MULTI-DISCIPLINARY TEAM KNOWLEDGE OF FRAILTY

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Colchester Hospital University NHS Foundation Trust

Introduction
Frailty is a state of vulnerability and a result of aging which leads to a decline in reserve. The concept and awareness of frailty as a distinct syndrome notes a paradigm shift away from the concept of co-morbidities. How prevalent is frailty on Acute Elderly Care wards and is there an awareness of frailty amongst the multi-disciplinary team (MDT)?

Methods
We randomly assessed half the inpatients on our acute elderly care wards on one day using timed up and go, PRISMA-7 and Rockwood Frailty Scale. In addition a cross section of the MDT (doctors, nurses, therapists and social workers) working across a variety of clinical areas but exposed to frail patients answered a set of standardised questions on the definition, diagnosis and management of frailty.

Results
59 patients were assessed (M:F = 26:33), median age 86 (range 70-100). 93.2% (55/59) were frail according to one or more assessment tool (M:F = 25:30).

Of the MDT questioned (n=61) 59% (36/61) gave an appropriate definition of frailty, 26.2% (16/61) gave an inappropriate definition, 14.8% (9/61) were unable to define frailty. 70.5% (43/61) thought frailty could be formally diagnosed but only 18.6% (8/43) could name any recognised tools. 77% (47/61) thought frailty could be managed, while only 3.2% (2/61) mentioned Comprehensive Geriatric Assessment.

Conclusions
These data suggest that frailty is very common in the inpatient geriatric population while awareness of frailty amongst the MDT is poor. This highlights the need for adapting services to manage frailty in the inpatient population including education and awareness of frailty as a distinct entity.
MEDICAL STUDENTS’ ATTITUDES TOWARDS FRAILTY AND ITS CONCEPTUALISATION BEFORE AND AFTER THE “CARE OF THE OLDER PERSON” TEACHING WEEK

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¹. Pennine Acute Hospitals NHS Trust 2. University of Manchester

Introduction
There is little known about how medical students conceptualise frailty. The British Geriatrics Society undergraduate curriculum includes frailty, but not all medical schools follow this (Oakley, Pattinson, Goldberg. Age Ageing, 2014;43(4):442–7). Our aim was to investigate whether students’ understanding of frailty changed following the introduction of the ‘Care of the Older Person’ teaching week in year 4 at Manchester Medical School. This intensive week integrates small groups sessions and blended learning with clinical sessions.

Methods
Recorded, semi-structured interviews were conducted with 4th year students before and after the teaching week to identify changes in attitude towards frailty and its conceptualisation. Fifth year students (who had not had the teaching week) were interviewed as a comparison group. 21 students (10 Y4, 11 Y5) were interviewed and grounded theory was used to analyse the data. The University gave ethical approval.

Results
Fourth year students prior to the focussed teaching week, and fifth year students, did describe some clinical experience but none had had specific teaching on frailty. At this point, students conceptualised frailty simply as a consequence of ageing and associated it with negative stereotypes. Following the teaching week, the Year 4 students had a richer conceptual framework including vulnerability to illness, prolonged recovery times and the importance of rehabilitation. They also demonstrated an understanding of the tools used to recognise and manage frailty such as comprehensive geriatric assessment. There was recognition that management of frailty may be directed towards improving quality of life.

Conclusion
Fourth year students before the teaching week and 5th year students had similar simple concepts of frailty, did not recognise it as a medical entity or demonstrate an understanding of management. Specific teaching on frailty in the undergraduate curriculum improved its conceptualisation and how it is central to good quality care of frail people.
THE ROLE OF THE NURSE IN THE ASSESSMENT OF DELIRIUM IN OLDER PEOPLE IN AN ACUTE HOSPITAL SETTING: A SCOPING REVIEW

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¹ Norfolk and Norwich University Hospitals NHS Foundation Trust, Clinical Research and Trial Unit, Norwich ² University of East Anglia, School of Health Sciences, Norwich

Introduction
Delirium is a serious multifactorial syndrome causing acute brain dysfunction common in older adults admitted to hospital. This is associated with negative outcomes including significantly higher mortality rates, increased length of hospital stay and discharge to institutions. Early detection and assessment is vital to managing delirium and limiting associated negative effects. Nurses are at the centre of delirium management due to their close contact with patients. In order to understand the challenges for nurses in assessing delirium in older people we undertook a scoping review.

Methods
The framework for scoping reviews described by Arksey H and O’Malley L (International Journal of Social Research Methodology, 2005, 8, 19-32) was followed. Electronic databases Cinahl, Embase, MEDLINE, BNI and PsycINFO were searched systematically. Studies were included if they focused on older people >65 years, were based in acute medical departments, focused only on nursing assessment of delirium. We limited our search to the last 10 years and English language due to time and resources.

Results
262 articles were retrieved from the search. 116 titles and abstracts were screened by KW and confirmed with SC. 38 full text articles were assessed for eligibility. 30 articles were included in the review. Some of the main barriers to role of nurse in assessment of delirium are 1. Lack of knowledge 2. The heterogeneous presentation of the condition 3. Hypoactive delirium is particularly difficult to detect 4. Difficulties in differentiating delirium from dementia and depression 5. Lack of a baseline cognitive assessment to measure change.

Conclusions
Key recommendations are education of nurses, providing them with the correct language to communicate behavioural and cognitive changes observed in their patient could facilitate effective assessment. These observations should be guided by a delirium assessment protocol which incorporates screening for high risk patients at the point where they present to acute hospital.
DEMENTIA EDUCATION AT THE EARLY STAGES OF PROFESSIONAL TRAINING: IMPACT ON KNOWLEDGE AND ATTITUDES

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Introduction
Evidence shows that a one-quarter of general hospital inpatients is suffering from dementia. The National Dementia Audit (2012-13) reported a lack of appropriate dementia care, which could be due to lack of awareness and training. The objective of this study was to measure the impact of dedicated dementia training/workshop for medical students and foundation (FY) doctors on knowledge and attitudes towards dementia patients.

Method
A consultant led workshop was delivered lasting two hours. This comprised of an introductory talk on dementia; group work: brainstorming the necessary components required to provide good dementia care; interactive discussions: discussing simple day-to-day tasks that may be difficult for dementia patients and drawing a coin from memory and reflecting the challenges this could pose. We used the 14-item Geriatric Attitude Scale (GAS) and the 17-item Sense of Competence in Dementia Care Staff (SCIDS) scales pre and post-training to measure perceived changes in attitude to and competence in managing patients with dementia. The GAS uses a mix of 5 positively and 9 negatively phrased questions. Negative items were reverse scored to establish a total congruent score.

Results
151 year-4 medical students and foundation doctors who attended the dementia training sessions over one-year, 133 completed the pre and 127 completed post-training scales. The results are shown below:

<table>
<thead>
<tr>
<th></th>
<th>Pre-Training</th>
<th>Post-Training</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS +ve combined groups</td>
<td>3.77 ± 0.48</td>
<td>3.76 ± 0.50</td>
<td>0.94</td>
</tr>
<tr>
<td>Gas +ve F2 (n=75)</td>
<td>3.80 ± 0.52</td>
<td>3.75 ± 0.56</td>
<td>0.63</td>
</tr>
<tr>
<td>Gas +ve F1 (n=11)</td>
<td>3.56 ± 0.43</td>
<td>3.55 ± 0.52</td>
<td>0.95</td>
</tr>
<tr>
<td>Gas +ve medical students (n=47)</td>
<td>3.77 ± 0.41</td>
<td>3.81 ± 0.41</td>
<td>0.62</td>
</tr>
<tr>
<td>GAS -ve combined groups</td>
<td>2.37 ± 0.49</td>
<td>2.30 ± 0.51</td>
<td>0.28</td>
</tr>
<tr>
<td>GAS -ve FY2</td>
<td>2.38 ± 0.56</td>
<td>2.32 ± 0.57</td>
<td>0.52</td>
</tr>
<tr>
<td>GAS -ve FY1</td>
<td>2.37 ± 0.37</td>
<td>2.31 ± 0.26</td>
<td>0.66</td>
</tr>
<tr>
<td>GAS -ve medical students</td>
<td>2.34 ± 0.39</td>
<td>2.26 ± 0.46</td>
<td>0.39</td>
</tr>
<tr>
<td>GAS-Total combined groups</td>
<td>3.66 ± 0.38</td>
<td>3.71 ± 0.41</td>
<td>0.27</td>
</tr>
<tr>
<td>GAS-Total FY2</td>
<td>3.66 ± 0.44</td>
<td>3.70 ± 0.46</td>
<td>0.54</td>
</tr>
<tr>
<td>GAS-Total FY1</td>
<td>3.60 ± 0.30</td>
<td>3.64 ± 0.29</td>
<td>0.78</td>
</tr>
</tbody>
</table>
Conclusion

There was no observed significant change in attitudes, but a significant improvement in perceived competence of medical students and foundations doctors following the dementia training was seen. We propose regular systematic dementia training at the early stage of professional training to improve competencies. Whether this improves attitudes in the long term remains to be seen.

<table>
<thead>
<tr>
<th></th>
<th>GAS-TOTAL medical students</th>
<th>SCIDS-combined groups</th>
<th>SCIDS-FY2</th>
<th>SCIDS-FY1</th>
<th>SCIDS-medical students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.68 ± 0.28</td>
<td>2.42 ± 0.41</td>
<td>2.49 ± 0.42</td>
<td>2.47 ± 0.25</td>
<td>2.30 ± 0.40</td>
</tr>
<tr>
<td></td>
<td>3.75 ± 0.35</td>
<td>2.91 ± 0.46</td>
<td>3.03 ± 0.44</td>
<td>3.11 ± 0.21</td>
<td>2.78 ± 0.45</td>
</tr>
<tr>
<td></td>
<td>0.33</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>
TRAINING OF THE CLINICAL SUPPORT WORKFORCE TO CARE FOR OLDER PEOPLE IN HOSPITAL: A SURVEY OF ACUTE HOSPITAL NHS TRUSTS IN ENGLAND

C Aldus¹, F Nouri², S Sarre³, H Wharrad², J Maben³, A Arthur¹

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Introduction
Healthcare assistants (HCAs) deliver more direct patient care than registered nurses (Bach, Kessler et al., 2010, Gender, Work and Organization 19(2):205-224) but historically their training needs have been overlooked. However, concerns about hospital care for older people (Francis Report, DH, 2013) has prompted unprecedented attention on the regulation and training of this important section of the healthcare workforce (Cavendish Review, DH, 2013).

Relational aspects of care (making people feel cared about and respected) are highly valued by older patients (Bridges, Flatley et al., 2010, Int J Nurs Stud 47(1): 89-107). We have developed HCA training to improve relational aspects of care (the CHAT study: NIHR HS&DR 12/129/10) and therefore wished to understand what current training for HCAs looks like.

Methods
NHS England acute Trusts were contacted to identify key members of staff involved with HCA training to participate in a telephone survey. Respondents were asked about training processes and content; training specifically related to older people; and challenges to providing training.

Results
Of 161 Trusts, 113 (70.2%) participated. HCA induction lasted seven (sd3.2) days. Mentor support was provided in most Trusts (85.7%) and 71.7% of Trusts supported a supernumerary period for new HCAs. Although 85.5% of respondents mentioned training in dementia, only one third (32.7%) reported aspects of training that could be described as relational care and a further third (31.5%) felt their HCA training should not distinguish between the needs of older people and patients of all ages. Reported challenges in training HCAs included resource limitations, engaging ward managers and the diverse nature of the HCA workforce.

Conclusions
Despite the current focus on training the support workforce, HCA training is highly variable. Older people’s needs are addressed within HCA training, but there was little evidence that relational care is seen as a priority within that and HCA training barriers remain.
LOW VITALITY PREDICTS MORTALITY IN THE EPIC-NORFOLK POPULATION-BASED STUDY

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Background
Although vitality is a recognised dimension of health related quality of life in older age, as yet it is unknown whether low vitality is associated with mortality in middle and older age.

Methods
We analysed data from EPIC-Norfolk which recruited community dwelling participants aged 40-79 years between 1993 and 1997 and followed them up until 2013. The relationship between the Short Form-36 vitality score (SF-36 VT) at baseline and mortality from all causes, cancers and cardiovascular disease (CVD) was examined using Cox-proportional hazards model. Models controlled for possible confounding factors (age, sex, body mass index, marital status, smoking, education level, alcohol consumption, social class, depression, bodily pain and diabetes) and potential mechanisms (physical activity, haemoglobin, thyroid stimulating hormone, CRP, diet and use of β blockers).

Results
N=16,409 (43.6% men, mean age (SD) 58.8±9.2 years). During 275,485 person years of follow-up (mean 16.8), 3637 deaths occurred. After adjusting for putative confounding, the hazard ratio (HR) for all-cause mortality was HR 1.44 (1.29-1.62) among those in the bottom quartile of SF-36-VT compared with those in the top quartile. Similar results were observed for CVD related deaths but not cancer. Of all the mechanisms considered, thyroid function was most notable for attenuating the association. The risk of all-cause mortality however remained significant even after adjusting for all putative confounders and mechanisms (HR 1.24, CI 1.05-1.47).

Conclusion
Low levels of vitality are associated with excess mortality in the middle and older aged general population independently of confounding factors. Therefore, low vitality in older age demands greater evaluation and should not be regarded as a benign phenomenon.
PREVALENCE OF FRAILTY AND ITS ASSOCIATION WITH THE COMPOSITE OUTCOME OF MORTALITY AT 90-DAY AND READMISSION AT 30-DAY IN OLDER SURGICAL PATIENTS

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1 NHS Grampian, Aberdeen, 2 Cardiff University, Cardiff, 3 Manchester Royal Infirmary, Manchester, 4 Royal Alexandra Hospital, Paisley, 5 North Bristol NHS Trust, Bristol, 6 University Hospital of Wales, Cardiff, 7 University of Aberdeen, Aberdeen

Introduction
With the current demographic trends, there will be a rising number of older people presenting with acute surgical problems. While older age is associated with increased surgical mortality, the extent to which associated frailty has impact on mortality and other important outcome of readmission is less well researched. Therefore, we set out to assess if frailty predicts these outcomes of older patients presenting to hospital with surgical emergencies.

Methods
We examined the risk for mortality at 90 days or readmission at 30 days with factors of: frailty; length of hospitalisation; readmissions; polypharmacy and other potential confounders in older acute general surgical population using Older Persons Surgical Outcomes Collaboration 2013 and 2014 data. The frailty was measured using the validated 7-point Canadian study of health and ageing clinical frailty score and categorised into three groups; very fit, (1-2); frail (3-4); and very frail (5-7). Multivariable logistic regression fitting a parsimonious forward stepping approach of nested models using a likelihood ratio test (p<0.05) was performed.

Results
The 742 recruited patients had a mean age of 77.2 years (SD=8.2 years), 54% (401/742) were female. Prevalence of frailty was 31.4% (233) not frail, 39.8% (295) frail, and 28.8% (214) very frail in this unselected sample of surgical emergency admissions during the study periods. Only frailty, site and abnormal albumin included in the regression were predictive of mortality and/or readmission (MR). Compared to those not frail, those that were frail and very frail had increased odds of MR of 2.1 (95% CI 1.3-3.3; P=0.001) and 3.3 (95% CI 2.2-4.9; P<0.0001), respectively. Abnormal albumin increased the odds of MR of 56% (95% CI 1.1-2.3; P=0.019).

Conclusions
Approximately two thirds of acute surgical admissions are frail older people in the UK setting. There appear to be a clear dose response relationship between frailty, albumin and mortality and readmission in this population.
FACTORS AFFECTING 30 DAY READMISSION OF HIP FRACTURE PATIENTS DISCHARGED FROM ORTHOGERIATRIC UNIT

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Care of the Elderly Department, Pinderfields General Hospital, Wakefield

Introduction
Our aim was to identify factors that could predict readmission rates in older patients following surgical intervention. We looked at 30-day re-admission rates of older patients following hip fracture surgery.

Methods
National Hip Fracture Database (NHFD) was used to identify patients admitted to an Orthogeriatric Unit between July and December 2014. We identified patients re-admitted within 30 days of discharge using patient tracking software (Enterprise CAMIS). Patients’ clinical notes and NHFD were reviewed for factors contributing towards readmission.

Results
Of the total 257 patients, 29 were readmitted within 30 days (10 males and 19 females), with an age range 65-93 years (median 81 yrs). 93% were readmitted due to medical reasons: respiratory being the most common (44%).

Majority of patients readmitted had pre-existing cardiovascular (62%) and respiratory conditions (45%).

Patient mobility impacted on readmission: those with poor pre-fracture mobility had a higher incidence (83%); patients not mobilised on day after surgery had a 76% readmission rate. Patients discharged home had higher readmissions (41%), compared to those discharged to rehabilitation units (34%) or 24 hour care (24%). Only 1 in 3 patients returned to their usual place of residence after readmission.

Conclusion
Lack of mobility before and after surgery had a major impact on readmission rates. Pre-existing factors influencing readmission were cardiovascular and respiratory conditions. Our experience shows the incidence of 30-day readmission was 11%, which is in keeping with other studies. (1,2) Patients were less likely to be readmitted if they were in intermediate care facilities. We would recommend their use in post-operative discharge planning.

We would highly recommend regular physiotherapy-directed mobilisation and chest exercises as part of an enhanced post-operative recovery programme in older patients. Particular attention should be given to patients with pre-existing medical conditions and reduced mobility, as they seem to be more vulnerable.

References
2. M Laudicella, P Donni, P Smith. Imperial College London, February 2012
INCIDENCE AND OUTCOME OF INPATIENT FALLS IN OLDER PATIENTS WITH DEMENTIA ADMITTED TO A NEWLY BUILT 100% SINGLE-ROOM HOSPITAL ENVIRONMENT AND EXISTING SERVICE MODEL OF MULTI-BEDDED WARDS WITHIN THE SAME HEALTH BOARD: A PROSPECTIVE COMPARATIVE STUDY

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¹ Cardiff University, Cardiff, 2 Department of Geriatric Medicine, Ysbyty Ystrad Fawr, Aneurin Bevan University Health Board

Introduction
New hospital designs with single-rooms have emerged in recent years, where increased risks of falls in the single-rooms have been reported. The objective of this prospective comparative study was to measure the incidence and outcome of inpatient falls (IF) in high-risk dementia patients being treated in single-rooms and multi-bedded wards (MB-W).

Methods
100 patients with dementia were recruited across the two hospital settings in South Wales. Baseline characteristics and falls information was prospectively collected for patients treated in single-rooms at Ysbyty Ystrad Fawr Hospital and for those in MB-W at the Royal Gwent Hospital for the total length of stay (LoS).

Results
There was no significant difference between the baseline characteristics of the two cohorts as suggested by mean age, sex, functional capabilities, co-morbidity burden, polypharmacy or care needs as shown in table below.

Table: Baseline characteristics

<table>
<thead>
<tr>
<th></th>
<th>YYF (Single-rooms)</th>
<th>RGH (MB-W)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients % (n)</td>
<td>50 (50)</td>
<td>50 (50)</td>
<td>p &gt; 0.95</td>
</tr>
<tr>
<td>Mean age (years±sd)</td>
<td>83.1±18.5</td>
<td>84.5±8.4</td>
<td>p = 0.35</td>
</tr>
<tr>
<td>Female % (n)</td>
<td>54 (27/50)</td>
<td>68 (34/50)</td>
<td>p = 0.15</td>
</tr>
<tr>
<td>Barthel Index (mean±sd)</td>
<td>9.1±4.9</td>
<td>9.04±3.1</td>
<td>p = 0.90</td>
</tr>
<tr>
<td>Co-morbidity burden (mean±sd)</td>
<td>6.7±1.1</td>
<td>7.0±1.8</td>
<td>p &gt; 0.95</td>
</tr>
<tr>
<td>No of medications (mean±sd)</td>
<td>10.0±4.2</td>
<td>8.9±4.1</td>
<td>p = 0.23</td>
</tr>
<tr>
<td>Place of original residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community % (n)</td>
<td>76 (38/50)</td>
<td>76 (38/50)</td>
<td>p &gt; 0.95</td>
</tr>
<tr>
<td>Care home % (n)</td>
<td>24 (12/50)</td>
<td>24 (12/50)</td>
<td>p &gt; 0.85</td>
</tr>
</tbody>
</table>

The number of patients who sustained an IF at the two sites was similar (p=0.83). Time to first fall was not significant different at two sites (SR=12±18.6 days, MB-W=11.4±12.4 days, p=0.89). Fifty-three IF were sustained by 16 patients in SR.
compared to 23 incidents by 15 patients in MB-W. Mean IF/patient treated in SR were 3.3 (range=1-9) and this was significantly higher than those treated in MB-W (mean=1.5; range=1-3, p=0.035). There was no significant difference in clinical outcomes with regard to level of injury and mortality across the two sites. One patient sustained hip fracture at each site. The mean LoS for patients with dementia having recurrent falls in single-rooms (39.7±30.8 days) was significantly higher as compared to MB-W (21.8±17.0 days). A correlation between recurrent falls and LoS/a new care home placement was also observed.

**Conclusion:** Patients suffering from dementia are at an increased risk of recurrent IF in SR compared to MB-W. Recurrent IF are also correlated with longer LoS. There is no significant difference in terms of injury or mortality between the two settings.
AVOIDING DELAY IN SURGERY FOR HIP FRACTURE: USING THE NATIONAL HIP FRACTURE DATABASE (NHFD) TO MONITOR AND IMPROVE COMPLIANCE WITH NATIONAL GUIDELINES

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Falls and Fragility Fracture Programme, Royal College of Physicians

Introduction
The evidence linking delay in hip fracture surgery to poor outcome is complex, and published studies have shown benefits of surgery within 24 hours, within 36 hours and within 48 hours. In the UK the National Institute for Health and Care Excellence (NICE) has recommended that all patients should have surgery “on the day of, or the day following presentation”. We set out to examine current performance against these different thresholds.

Method
Since it was established in 2007 the NHFD has used prospectively recorded data on all patients with hip fracture in England, Wales, and Northern Ireland to document and improve the proportion receiving prompt surgery. In this study we used data on 64,102 patients who presented in 2014, and compared the time of their first presentation to the trauma team with the time they reached theatre for definitive surgery.

Results
Patients’ mean age was 82.7 years, 72% female. Only 2.2% were recorded as being managed conservatively. Across the country 52% went to theatre <24 hours, 75% <36 hours, and 87% <48 hours. As trauma lists largely run during the working day, the time of a patient's presentation had a major effect on whether they received early surgery. Only 20% of patients presenting at 07:00-08:00 would receive surgery <24 hours cf. nearly 70% of those presenting at 19:00-20:00. Time of presentation had a much smaller effect when a <36 or <48 hour threshold was used, but continued to be a major factor in determining whether a patient received surgery "on the day of, or that following presentation" as recommended by NICE.

Conclusions
Monitoring against national guidelines appears effective in reducing the time that patients have to wait for surgery, but for guidelines to be realistic, achievable and cost-effective they must be based on a sophisticated understanding of how clinical services are organised.
DELIVERING “BEST PRACTICE” FOR PATIENTS WITH HIP FRACTURE - DOES ORTHOGERIATRICIAN ENGAGEMENT WITH NATIONAL CLINICAL AUDIT DATA IMPROVE PERFORMANCE?

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Introduction
Since 2007 the National Hip Fracture Database (NHFD) has operationalised standards set by the British Orthopaedic Association (BOA), British Geriatrics Society (BGS) and National Institute for Health and Care Excellence (NICE). The NHFD measures performance and outcome against these standards, and uses this data to support the administration of the ‘payment by results’ programme with which NHS England has promoted investment in orthogeriatric services. We set out to examine orthogeriatricians’ engagement with the NHFD as a tool for clinical governance.

Method
We identified compliance with ‘best practice’ criteria based on the ‘Blue Book’ (BOA-BGS 2007) for all 161 hospitals in England which provide hip fracture care. We set units’ performance against the engagement of their lead clinician with the web-based clinical governance data provided at www.nhfd.co.uk up to 1st August 2015.

Results
Mean best practice tariff (BPT) attainment increased from 38% to 63% over the three years 2012-14. By 2014 units where the lead clinician was accessing NHFD data on a monthly basis were averaging 68% of BPT – significantly higher than the 57% attained in units where the lead had not accessed data for over 6 months. Consultant orthogeriatricians were NHFD lead clinician in 50 units (31%) and in 15 other units (9%) they shared this role. Such units had significantly higher BPT attainment (64% and 68% respectively) than the 54% seen in 96 units (60%) with a consultant orthopaedic surgeon as sole NHFD clinical lead (p<0.001).

Discussion
BPT attainment was >10% higher in units where NHFD data is regularly accessed. For an average hospital admitting 350 cases per year this would amount to an additional income of over £45,000. Many units should look to this figure to support further investment in orthogeriatrics to improve clinical governance and patient care.
POTENTIAL RISK FACTORS AMONG INDIVIDUALS WITH RECURRENT AND INJURIOUS FALLS RECRUITED TO THE MALAYSIAN FALLS ASSESSMENT AND INTERVENTION TRIAL (MYFAIT)

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Introduction
It has been widely accepted that falls usually occur as a results of multiple risk factors. Practice Guidelines for Prevention of Falls in Older Persons (AGS/BGS, 2011) suggest that clinical assessment remains an important part of classifying older fallers according to their risk of falls. The objective of this study was therefore to identify, using clinical evaluation, potential risk factors among individuals with recurrent and injurious falls in the preceding 12 months in a South East Asian setting.

Methods
Cases included participants aged ≥65 years old with 2 or more falls or one injurious fall in the past within the previous 12 months were recruited through the emergency department, primary care and hospital outpatient clinics in a teaching hospital in Kuala Lumpur, Malaysia. All participants were evaluated with a structured clinical history and multifaceted physical assessments including 12-lead ECG, postural blood pressure, functional reach, timed-up-and-go and visual acuity. Provisional diagnoses were made by experienced physicians. Postural blood pressure was measured using non-invasive beat-to-beat blood pressure measurements (Portapres, FMS, Amsterdam).

Results
Of the 264 patients, mean age 74.1 (6.8) years, included, 158 (60%) had abnormalities in gait and balance. Orthostatic hypotension was identified in 103 (59%). Home hazards were suspected to be present in 82 (31%), visual impairment in 65 (25%), vasovagal syncope in 61 (23%), poor footwear 53 (17%), osteoarthritis 48 (18%). Foot problems, hearing impairment, situational syncope, peripheral neuropathy, spinal problems, stroke disease, and Parkinson's disease were less common in 27 (10%), 25 (10%), 22 (8%), 18 (7%), 10 (4%), 8 (3%), and 6 (2%) respectively.

Conclusion
Our study involving individuals with recurrent and injurious falls from a multi-ethnic, urban population in a South-East Asian nation, has demonstrated similar risk factors to that reported by previous studies. Orthostatic hypotension was, however, more common in our population. Multiple risk factors can be identified using structured clinical assessments in our setting. Future work will determine the benefits of structured clinical assessments and cost-effectiveness of this approach.
CHARACTERISTICS OF FALL RECURRENT: RESULTS OF THE MALAYSIAN FALLS ASSESSMENT AND INTERVENTION TRIAL (MYFAIT)

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Introduction
Few falls studies exist in Asian developing nations. Our aim is to determine the characteristics of fall recurrence in urban, community-dwelling older adults in Malaysia.

Methods
The Malaysian Falls Assessment and Intervention Trial (MyFAIT; ISRCTN11674947) is a randomised-controlled trial evaluating the effects of multifactorial interventions on individuals 65 years and older, with two or more falls or one injurious fall in the past 12 months. Participants with dementia were excluded. Participants randomised to the intervention group received individually-tailored interventions which comprised of Otago exercises, visual correction, footwear advice, medication review, home hazards assessment and cardiovascular intervention. Control group participants received conventional care and health education. At baseline, falls history was taken. Fall recurrence was monitored prospectively using monthly fall diaries for 12 months. Fall recurrence was also assessed with retrospective recall during their follow-up assessment.

Results
Two-hundred and sixty-four fallers, 67% women, mean age of 74.1 ± 6.8 years were included for final analysis. Overall, 104 (39.4%) experienced a further fall during the 12 month follow-up period. A total of 105 and 85 falls were reported in the intervention and control groups respectively (median rate of falls=0 (0-1) vs 0 (0-1.25); p=0.828). There was no significant difference in individuals with 2 or more falls between the two groups (19% vs 24%; p=0.351). Significantly more recurrent falls were reported using monthly diaries than during retrospective recall (33% vs 21%; p=0.01).

Conclusions
Our preliminary comparison of the number of falls between intervention and control groups showed no significant differences in frequency of falls with multifaceted intervention in a middle-income South East Asian nation. The use of fall diary increases the pick-up rate of fall recurrence compared to retrospective recall in our population. Further analysis will be performed to determine compliance and health systems issues in this pragmatic study.

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Introduction
There is increasing recognition that the ageing population represents a challenge to existing surgical services. The National Confidential Enquiry into Patient Outcome and Death reports recommend that geriatricians proactively review high risk older patients undergoing surgery to improve care and reduce complications (NCEPOD 2010, 2014). Despite these recommendations, this approach has not been widely translated into practice.

Methods
A qualitative study was undertaken by conducting twelve semi-structured interviews with six surgeons and six geriatricians to explore the role of the geriatrician in the care of older surgical patients. Evaluation of the current system, the relevant skills of the geriatrician, suggested models of care and potential barriers to more integrated working formed the structure of the interviews. Data was analysed used a grounded theory approach.

Results
There was a consensus that the current system did not meet the needs of older surgical patients, delivering fragmented and reactive care. Geriatricians valued their holistic way of working but these generalist skills can overlap with other specialties, and can be viewed as “wasting” resources. A ‘joint care’ approach was the most favoured model of care. Seven participants supported a similar approach to the orthogeriatric model, but not all considered orthopaedics to be in the same category as other surgical specialties. The main obstacle preventing better integration of the two specialties was a concern that it would deskill the surgeons, narrowing their role to that of the technician. Other barriers included: loss of autonomy; lack of evidence; and a lack of recognition of the gaps in care the geriatricians would fill.

Conclusion
There is an acceptance that surgical services need to adapt to the medically complex, ageing population. Closer working practices with geriatricians was supported, however, significant human factors as well as lack of evidence to support this change are challenges which need addressing.
IMPACT OF A GERIATRICIAN LED IN REACH SERVICE FOR OLDER PERSONS ADMITTED TO GENERAL SURGICAL WARDS. PERIOPERATIVE CARE OF OLDER PEOPLE UNDERGOING SURGERY- SALFORD GENERAL SURGERY (SALFORD POPS-GS)

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Introduction
A large proportion of patients hospitalised in surgical wards are old. We aim to present the impact on length of stay (LOS) that a proactive elderly medicine liaison service can have when targeted to all patients over the age of 74-year who are admitted to surgical wards.

Methods
All patients over 74-years of age and all younger patients with markers of frailty requiring surgical admission (general surgery, colorectal or upper gastrointestinal) underwent comprehensive geriatric assessment, targeted interventions and timely discharge planning co-ordinated by 2 consultant geriatricians. Individuals remained under the care of the surgical team but received daily geriatrician input on weekdays (4 clinical programmed activities per week). There was close liaison with surgical colleagues and a weekly geriatrician led multidisciplinary team meeting.

Results
Between 9th September 2014 and 30th November 2015, 373 patients entered our study. Mean age was 81.9 years (range 70-98-years) with a female preponderance (203, 55.4%). The majority of patients were admitted as an emergency (300, 80.4% vs 73, 19.6%); 131 individuals (35.1%) underwent surgery, 101 (27.1%) a non-surgical procedure and 141 (37.8%) were managed non-invasively. Most individuals lived in their own home (345, 92.5%), were independent in basic (302, 81.4%) and instrumental (221, 59.7%) activities of daily living and mobilised with no walking aids or using a stick (262, 70.2%). Comorbidity (5.0 ±2.4 chronic conditions, range 0-14 and 95.1% two or more) and polypharmacy (8.2 ±4.3 medications on average and 139 (37.6%) taking more than 9 medications at presentation) were the norm. The commonest presenting symptoms were abdominal pain (124 patients, 35.5%), abdominal pain with vomiting (83 patients, 23.8%) and rectal bleeding/discharge (40 patients, 11.5%). Cancer (136, 36.5%), liver and biliary conditions (71, 19%) were the most common diagnoses. Median and mean LOS were 9 days and 13.2 days respectively with a range of 1-207 days.

Conclusions
The deployment of an elderly medicine liaison service appears to progressively reduce length of stay in older patients admitted to surgical wards irrespective of whether they have surgery or undergo non-invasive treatment.
DOES THE AMB SCORE IMPROVE AMBULATORY CARE DECISION MAKING FOR OLDER PATIENTS? A SERVICE EVALUATION OF AN EMERGENCY MULTIDISCIPLINARY UNIT

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**Introduction**
The Royal College of Physicians recommends the ambulatory care score (AMB Score) to aid identification of patients for ambulatory emergency care. However, its performance in terms of clinical outcomes and in patients living with frailty is unknown. Whilst expansion of ambulatory care is a national priority, there are few reports of outcomes in ambulatory care to underpin decision making.

**Methods**
We undertook a Trust approved service evaluation of our acute ambulatory care service which is focussed on older patients - the Emergency Multidisciplinary Unit (EMU). Using data collected as part of routinely provided healthcare, we determined how well the AMB score identifies patients who can be treated entirely on an ambulatory pathway i.e. patients who do not need admission in the 30 days after initial referral. We calculated measures of diagnostic accuracy including receiver operator curve (ROC) analysis.

**Results**
There were 318 new patients referred to EMU between August-October 2015. The median age was 80 years (interquartile range 67-87) and 82% were GP referrals. Of 231 patients (73%) who were initially managed on an ambulatory basis, 36 (16%) were admitted to hospital within 30 days. At the suggested cut point of 5.0, the AMB score had sensitivity 52%, specificity 89%, positive predictive value (PPV) 81%, and negative predictive value (NPV) 51% for 30-day ambulatory status. The area under the ROC curve for 30 day ambulatory status was 0.75 with an optimal cut point of 4.0 giving sensitivity 78%, specificity 61%, PPV 77%, and NPV 64%.

**Conclusions**
The AMB score did not validate well in this service evaluation and may have limited application in acute ambulatory care services, particularly for older patients. Novel tools or markers are required to safely identify older patients for acute ambulatory care.
A LIFE CHANGING DECISION: EXPLORING DIFFERENT PERSPECTIVES OF RISK IN CARE HOME DISCHARGE DECISION MAKING

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¹ School of Health in Social Science, University of Edinburgh, 2 NHS Lothian, 3 NHS Lothian / University of Edinburgh

Introduction
Discharge from acute hospital to care home is a life-changing experience which shapes the remaining years of a person’s life. Despite the importance of this event, the processes which underlie such decisions are often not clearly articulated and the differing perspectives of individual patient, family and multidisciplinary team (MDT) members are not well understood.

Methods
A retrospective case note study (n=100) was undertaken to improve understanding of this increasingly important aspect of healthcare practice. From the 100 case notes, 10 examples were selected for further, in-depth reflexive sociological analysis. Narrative accounts were developed and were subsequently thematically analysed.

Results
Data demonstrate that risk narratives pervade decision making about discharge to care home. Voices of patients struggle to be heard in the face of challenging dialogue between patient, family and MDT. Perceived societal expectations of the role of adult children in caring for elderly parents were found to interact with individual fears for that parent’s safety and a desire to uphold parental wishes regarding discharge destination. Multidisciplinary professionals and family members were noted to articulate different risks and safety concerns. These narratives reflect debates and expectations from the wider social world. The concept of a 'last chance' to be discharged home rather than to care home was found to be an important way of bridging gaps between different conceptualisations of risk and alleviating both familial and professional anxiety. Risks associated with loss of independence and the life-changing nature of care home discharge often form a tacit backdrop to the explicit articulation of more obvious challenges to personal safety and health.

Conclusions
Risk is a dominant discourse in the discharge of older people directly from acute hospital to care home. The language of risk pervades the narrative of both families and professionals, shaping discharge decision making. Societal expectations of family and professionals are influential in shaping understandings of risk in discharging older people from acute hospital. Explicit understanding of the ways in which risk, safety and personal integrity interact in care home discharge decision-making has the potential to improve care during this life-changing transition.
AN ASSOCIATION BETWEEN INCREASING AGE AND THE CLINICAL OUTCOMES OF A GERIATRICIAN-LED EMERGENCY FRAILITY UNIT (EFU) IN AN ENHANCED LOCAL GENERAL HOSPITAL

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Ysbyty Ystrad Fawr, Aneurin Bevan University Health Board

Introduction
Hospitals are increasingly admitting older people. A geriatrician-led liaison service and early comprehensive geriatric assessment (CGA) has been recommended in the medical admission units. This study aims to identify the clinical characteristics of patients who underwent CGA and evaluate the association between increasing age and the clinical outcomes of a geriatrician-led emergency frailty unit (EFU).

Methods
All patients who met the admission criteria (decompensated chronic diseases, new functional dependence, geriatric syndrome) were assessed using CGA. Demographics and outcome measures including the length of stay (LoS), inpatient mortality and 30-day readmission were recorded for all patients. Patients discharged directly from EFU were divided into two sub-groups: under 85 years and 85 or above for further sub-analysis. Ethical approval was not required for this service evaluation; however, all questions and forms required to carry out the study were sent to the research and development department, to assess risks to patient identification and the health board.

Results
603 patients were admitted through EFU over 12-months and 59% (356/603) were discharged from EFU with mean total hospital LoS of 5.05±3.56 days. There was a 1-2 days delay for admission to EFU from medical admission unit. One patient was excluded due to missing data. The baseline characteristics including age, sex, Charlson Comorbidity Index (CCI), the number of drugs and clinical frailty scale (CFS) and clinical outcomes are shown as below.

<table>
<thead>
<tr>
<th></th>
<th>All patients n=603</th>
<th>EFU (n=356)</th>
<th>Wards (n=247)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (Years)</td>
<td>83.51±8.43</td>
<td>82.77±8.34</td>
<td>84.58±8.46</td>
</tr>
<tr>
<td>Females %</td>
<td>62.3</td>
<td>62.3</td>
<td>62.2</td>
</tr>
<tr>
<td>Mean CCI</td>
<td>2.70±1.70</td>
<td>2.66±1.64</td>
<td>2.75±1.78</td>
</tr>
<tr>
<td>Mean No of drugs</td>
<td>8.50±3.93</td>
<td>8.54±4.01</td>
<td>8.44±3.83</td>
</tr>
<tr>
<td>Mean CFS</td>
<td>6.26±1.05</td>
<td>6.01±1.00</td>
<td>6.65±1.02</td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Hospital LoS (days)</td>
<td>17.80±27.28</td>
<td>5.05±3.56</td>
<td>40.48±36.09</td>
</tr>
<tr>
<td>30-day readmission rate %</td>
<td>15.7 (n=95/603)</td>
<td>19.6 (n=70/356)</td>
<td>10.16 (n=25/246)</td>
</tr>
<tr>
<td>Mean interval to re-admission (days)</td>
<td>14.0±8.5</td>
<td>14.0±8.7</td>
<td>13.0±8.0</td>
</tr>
<tr>
<td>Inpatient mortality %</td>
<td>5.3 (32/603)</td>
<td>0.28 (1/356)</td>
<td>12.5 (31/247)</td>
</tr>
</tbody>
</table>
The clinical characteristics and outcomes for those directly discharged from EFU are shown in the table below.

<table>
<thead>
<tr>
<th>Clinical Characteristics</th>
<th>Less than 85 n=194</th>
<th>85 and above N=162</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (Years)</td>
<td>76.67±6.04</td>
<td>90.08±3.32</td>
</tr>
<tr>
<td>Females %</td>
<td>52.5</td>
<td>74.5</td>
</tr>
<tr>
<td>Mean CCI</td>
<td>2.70±1.70</td>
<td>2.62±1.57</td>
</tr>
<tr>
<td>Mean No of drugs</td>
<td>8.85±4.13</td>
<td>8.17±3.84</td>
</tr>
<tr>
<td>Mean CFS</td>
<td>5.98±1.06</td>
<td>6.04±0.93</td>
</tr>
<tr>
<td>Outcome</td>
<td>Mean LoS (days)</td>
<td>5.00±3.82</td>
</tr>
<tr>
<td>30-day readmission rate %</td>
<td>19.0</td>
<td>20.3</td>
</tr>
<tr>
<td>(n=37/194)</td>
<td>(n=33/162)</td>
<td></td>
</tr>
<tr>
<td>Mean interval to re-admission (days)</td>
<td>14.0±8.85</td>
<td>14.0±8.65</td>
</tr>
</tbody>
</table>

**Conclusion**

The advancing age is not significantly associated with any unfavourable clinical outcomes in terms of LoS in an acute setting or 30-day readmission rate. Therefore, age should not be considered when making the clinical decision in discharging older people from EFU.
AN INVESTIGATION OF TWO BRIEF COGNITIVE TESTS (M@T AND TYM) FOR IDENTIFYING AMNESTIC MILD COGNITIVE IMPAIRMENT (aMCI)

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Introduction
Mild cognitive impairment (MCI), a term used to describe the transitional state between normal aging and established dementia, has been identified as a potentially effective time point at which to target interventions to prevent or slow the decline into dementia. People with amnestic MCI (aMCI), where the predominant symptom is memory impairment, have been found to be at a particularly high risk of developing Alzheimer’s disease, the most common form of dementia, and are therefore a primary focus for clinical and research interest. However, aMCI is largely unrecognised in primary care since its diagnosis depends on complex neuropsychological assessment methods not usually available in this setting. There is a need for simple and brief cognitive tests that will provide a more efficient way of identifying people with aMCI. This study investigated the validity of two candidate brief tests (the Memory Alteration Test (M@T) and Test Your Memory (TYM) test), in comparison with the widely used reference standard (based on the Petersen criteria), for identifying people with aMCI in the community.

Methods
Older people (aged ≥ 70 years) without a history of dementia were invited to participate by a study information leaflet sent by post from their general practitioner (GP) practice. Eligible participants were assessed for aMCI using a standardised, operationalised approach to the Petersen criteria, and the M@T and TYM.

Results
Both tests were quick to administer (taking less than 10 minutes) and demonstrated significant ability in discriminating between people with aMCI and controls (AUC = 0.91 for M@T and 0.80 for TYM (both at p<0.001)). M@T performed with higher sensitivity than TYM (85% vs. 63%) and similar specificity (84% vs. 87%).

Conclusions
The M@T demonstrated higher diagnostic test accuracy than TYM and could provide an efficient method for identifying people with aMCI in clinical or research settings.
COMMUNICATION WITH OLDER CHINESE PATIENTS ON ADVANCE DIRECTIVES: REAL LIFE EXPERIENCE AND PREDICTIVE FACTORS OF SUCCESSFUL ACCEPTANCE

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Background
Advance directive (AD) is based upon the principle of a patient's autonomy in making their own decisions about end-of-life care ahead of time. In Chinese culture, death is a sensitive issue, and overt reference to the end of life can be regarded as disrespectful. In this pragmatic hospital-based study of the real-life experience of communicating with older Chinese patients about AD, we examined the acceptance rate and the predictive factors for successful acceptance of the AD.

Methods
We recruited 60 Chinese patients over 65 years of age, who were medically and mentally stable with no history of active cancer or end-stage organ diseases, from the Acute Geriatric Unit at the Grantham Hospital. The geriatrician educated and interviewed the patient and their families, and used a locally-designed AD document to declare the patient's preferences, and the refusal of futile treatment in case they suffered from terminal disease, persistent vegetative state or irreversible coma. We documented baseline socio-demographic, medical, functional and cognitive factors, and the reasons for accepting or rejecting the AD. The reasons for accepting and rejecting the AD were documented.

Results
Amongst the 60 patients, 35% accepted and 65% rejected the AD. Factors that predicted AD acceptance included: higher education level (p=.046), single or widow marital status (p<.001) and poor health status (p=.028). Factors that predicted AD rejection included: independent functioning (p=.039), having children (p=.007), good social support (p=.001) and having family as the main carer (p=.008). The commonest reasons for accepting the AD were to avoid suffering (67%) and upholding quality of life above longevity (33%). Commonest reasons for rejecting the AD were the belief that their family would make the decision (67%) and nature would take its course (31%). 23% remained unfamiliar with the concept of AD and 23% were not ready to discuss or accept it.

Conclusion
Only 1-in-3 older Chinese patients accepted AD even after discussion with a geriatrician. We identified several factors that could predict acceptance and rejection, which may help to shape future policy making and clinical practice. Much more intergenerational public education on end-of-life issues is needed before AD can be widely adopted.
## Scientific Research (Neurology and Neurosciences)

### Delirium is Associated with Hospital Admission After Assessment for Ambulatory Care: A Consecutive Cohort Study from an Innovative Acute Ambulatory Unit at the Primary/Secondary Care Interface

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¹ Departments of General (internal) Medicine and Gerontology, John Radcliffe Hospital, Oxford, OX3 9DU, ² Stroke Prevention Research Unit, Nuffield Department of Clinical Neurosciences, University of Oxford

#### Introduction

Expansion of ambulatory care for older people is a national priority: preliminary data suggest that better outcomes at lower cost may be achieved when acute hospital admission is avoided. However, providing safe and effective ambulatory care in acute illness requires an understanding of the case-mix and outcomes in this patient group. We therefore determined the rates and associates of delirium (linked with illness severity and poor outcomes in hospitalized cohorts) and its impact on the need for hospital admission in a consecutive cohort of older patients seen in an ambulatory care unit.

#### Methods

The Abingdon Emergency Multidisciplinary Unit (EMU) is an award-winning innovative partnership between primary and secondary care that provides rapidly reactive care to frail complex older patients with acute medical illness in a 140,000 population in Oxfordshire. EMU patients are referred via paramedics responding to 999 or 111 calls, general practitioners or from community teams (e.g. district nursing). Consecutive new referrals to the unit from September-Dec 2015 had clinical data collected from a structured proforma including a cognitive test (AMTS) and delirium screen.

#### Results

Among 379 patients (mean/sd age=83.3/8.5 years, 227 (60%) female), 62 (16%) had delirium at initial assessment. After adjustment for age, delirium was associated with known dementia diagnosis (OR=6.6, 95% CI 3.6-12.3), previous falls (OR=2.9, 1.7-5.1), dehydration (OR=3.4,1.9-5.9), pressure sore risk (OR=5.5, 2.9-10.4), AMTS<9 (OR=17.4,7.3-14.3), infection (OR=2.4,1.4-4.2), visual impairment (OR=2.5,1.4-4.5) and admission to hospital vs ambulatory care (OR=14.6, 7.3-29.2), all p<0.001.

#### Conclusions

Rates of delirium in older patients assessed urgently in an ambulatory unit are high although lower than in acute hospital cohorts of similar age. Strong associations were seen with cognitive and physical frailty and infection as seen in previous studies, and also with failure of ambulatory care. Further studies are required to determine the drivers underlying hospital admission in this group.
THE PROGNOSTIC SIGNIFICANCE OF ANAEMIA IN THE ELDERLY

E Andah

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Introduction
Anaemia in the elderly is increasingly becoming a cause for concern as the world population of individuals aged 65 and over increases. Anaemic disorders are associated with poor prognosis in the elderly; therefore better understanding of outcomes such as mortality and hospitalisation rates could lead to the development of better treatment and management options for elderly individuals with anaemia, ensuring a better quality of life.

Methods
Electronic searches identified general population based studies that compared mortality and hospitalisation rates in the anaemic elderly with that of the non-anaemic elderly. A meta-analysis used forest plots to explore significant differences in the mortality and hospitalisation rates between the anaemic and non-anaemic elderly populations with the use of risk and hazard ratios.

Results
A meta-analysis of 14 studies with a total of 50,464 subjects and a follow up period ranging from 1.4 to 23 years were included in this study. Of these, 15.9% had anaemia according to the WHO criteria. Forest plots indicated a risk ratio of 2.29 (95% CI, 2.03 – 2.58) for mortality, and a risk ratio of 1.75 (95% CI, 1.53 – 2.02) for hospitalisation in the elderly anaemic population. These show that anaemia has a poor prognostic significance in the elderly with mortality and hospitalisation rates affected in these individuals. The results of this meta-analysis aid in determining the significance of this effect by addressing the extent of the difference in the mortality and hospitalisation rates of the anaemic elderly, compared to the non-anaemic elderly.

Conclusion
Anaemia is of prognostic significance in the elderly with increased mortality and hospitalisation rates observed in this population compared to the non-anaemic population. Early diagnosis and better treatment options for anaemic disorders in the elderly need to be developed to tackle this issue of poor prognosis.
4AT VS CAM IN DIAGNOSIS OF DELIRIUM: A JUNIOR DOCTOR’S VIEW
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Introduction
Delirium occurs frequently in older hospitalised patients with significant mortality. However, it is often under-diagnosed (Inouye, 1994), probably as a function of many evolving diagnostic tools. Confusion Assessment Method (CAM) is widely used (Wong, 2010; De, 2015), recognised by NICE as a validated tool but requires specific training to ensure validity (Inouye, 2003). The 4 A’s test (4AT) has gained more recent recognition as a brief, simple and effective tool (Bellelli, 2004). In order to raise the profile of delirium in the local Geriatric service, we compare benefits and usability of CAM and 4AT amongst junior doctors.

Method
A review of inpatient notes was performed (n=90) with “confusion” being noted in 31 cases. Patients with suspected delirium received both CAM and 4AT assessment by different junior doctor assessors with appropriate CAM training. Factors analysed included time taken and difficulty rating.

Results
The median age was 85 years. 9/31 patients were formally diagnosed with delirium at some point of the admission without documented use of a diagnostic tool. Use of the 4AT would have diagnosed delirium in 20/22 remaining patients, with a number needed to screen of 2. A paired samples T- test confirmed time to taken to perform 4AT was statistically shorter than CAM (p < 0.01) with mean times of 130s and 178s respectively. In addition, 4AT was shown to be significantly easier to perform (p<0.01) using a non-parametric approach.

Conclusion
Locally, there is little priority given to delirium in spite of its mortality burden. In order to reinforce its clinical significance amongst junior doctors, this project reviewed the use of diagnostic tools in patients with suspected delirium. Results demonstrate greater ease of use and brevity for 4AT as compared to CAM. This will influence future local policy-making and improve junior doctor education & training.
RECRUITMENT OF OLDER PEOPLE IN HOSPITAL FOR RESEARCH - CHALLENGES AND EXPERIENCE FROM A FEASIBILITY STUDY

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Introduction
Recruitment and retention of older people into research has been acknowledged to be challenging. Even more difficult is recruiting older people in acute hospitals who represent significant users of healthcare resources. As part of an ongoing feasibility study to improve physical activity in hospital, data was collected on why older people decided not to participate.

Methods
The PEDAL (Pedal Exercise During Admission to hospital) feasibility study aims to compare the use of a chair based pedal exerciser for older people (≥65 years) admitted as an emergency to hospital with standard care. Patients were spoken to by the research team using the same rehearsed approach and given a participant information sheet. If needed, they were allowed to consider participation over the next 48 hours. As part of the study aim, eligible participants not wanting to participate were asked their reason and with their consent this data recorded.

Results
Over 4 weeks, 22/38 patients (58%) that were eligible for recruitment did not provide consent. Pertaining to reasons provided: the majority, 9 (41%) patients declared a lack of interest in research; 4 (18%) cited pain restricting activity; 4 (18%) described generalised lethargy; 2 (9%) described their current acute illness as a barrier to participation; 2 (9%) did not want to use the pedal exerciser; and 4 (18%) were put off by other study components. Majority of reasons given were unrelated to the research project.

Conclusions
Older people in hospital are not keen to participate in research. Some of this is modifiable, such as raising awareness of the important contribution this cohort can have on healthcare improvement; better management of pain in hospital; and a hospital environment that is stimulating. Further qualitative work is needed to understand how we can improve participation of older people in hospital into research.
SCIENTIFIC RESEARCH (OTHER MEDICAL CONDITIONS)

HIGHER ASA GRADES, ABNORMAL RENAL FUNCTION AND CO-MORBID CARDIOPULMONARY DISEASE ASSOCIATE WITH POORER OUTCOMES IN OLDER PEOPLE UNDERGOING EMERGENCY LAPAROTOMY

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The 2015 national emergency laparotomy audit (NELA) suggested that geriatricians should help manage older people undergoing emergency laparotomy. It is, however, unclear what specific risk factors geriatricians should consider when assessing such cohorts. We used NELA data from Nottingham to consider associations between baseline characteristics and poor outcomes to help inform such decisions.

Methods
We analysed data from 270 patients over 70 years old collected routinely through NELA. We looked for associations between 20 preoperative factors and a primary outcome of death during inpatient stay using multiple univariate analyses. We used the student t-test, Mann-Whitney-U and calculated relative risks with 95% confidence intervals for parametric, non-parametric and categorical data respectively.

Results
The mean age (range) was 78.5 (70-96) years and 144/270 (53%) were female. In-hospital mortality rate was 49/270 (18%) and mean length of stay 22 days. Age was not associated with mortality. Mean American Society of Anaesthesiologists physical status (ASA) grade was 3.67 in those who died compared with 2.94 in those who survived (p<0.01).

Preoperative creatinine and urea were higher in those that died, with means of 118µmol/L versus 95.3µmol/L and 11.2mmol/L versus 8.69mmol/L respectively (p<0.05 for both). Mean baseline heart rate was 96.6 bpm in those who died compared with 88.5 bpm in survivors (p<0.01).

The relative risk (95% CI) of death in those with an abnormal ECG, signs of heart failure or respiratory disease at baseline was 1.2 (1.1-1.4), 1.2 (1.1-1.5) and 1.5 (1.1-2.0) respectively.

Conclusions
Geriatricians should consider signs of physiological decompensation at baseline to be important risk factors for post-operative decline in selecting laparotomy patients for assessment. As we collect more data on this cohort we will perform a more detailed multiple regression model to consider these associations in greater detail.
PREVALENCE AND DETERMINANTS OF FRAILTY AND ASSOCIATED CO-MORBIDITIES AMONG OLDER PEOPLE IN NEPAL

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Background
Population ageing is increasing in low income countries. Despite this, there is distinct lack of knowledge about prevalence of co-morbidities and determinants of frailty among older people in these countries.

Method
We used data from “Health and Social Care Needs Assessment Survey of the Gurkha Welfare Pensioners” conducted in 2014. Participants were age ≥ 60 years from Gorakha, Lamjung and Tanahu districts of Nepal. Face to face interviews were conducted using validate questionnaires. Demographic, socio-economic, self-reported illnesses, and symptoms were collected. Frailty was assessed using Canadian Study of Health and Ageing (CSHA) scale. Univariable and multivariable regression models were constructed to identify the determinants of frailty defined as CSHA scale ≥4.

Result
A total of 253 participants (32.0% men) were included in this study. Majority (82.2%) of the participants were from Janajati ethnic background. Men who are Ex-serviceman had higher educational attainment than women, majority of whom (95.3%) are widows of ex-serviceman who no longer alive (p<0.01). 48.5% of women lived with their sons whereas 43% of the male participants live with their wives. Women reported higher prevalence of mental health issues such as anxiety and insomnia compared with men. The prevalence of frailty was 46.2% (46.3% in men and 46.1% in women). In this population frailty was significantly associated with older age, smoking , living with son, breathing problems, unspecified pain and fatigue, poor dental health, history of falls and fracture (p<0.001 for all) after controlling for potential confounders.

Conclusion
Our study highlights the growing nature of co-morbidity burden and frailty and its determinants in low income setting. Concerted efforts should be made with regard to how best to tackle this in global scale.
PREVALENCE OF UNDIAGNOSED VERTEBRAL/FRAGILITY FRACTURES IN OLDER PEOPLE WITH PARKINSONISM

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¹ Consultant Geriatrician, Ysbyty Ystrad Fawr, 2 Specialty Doctor Aneurin Bevan University Health Board, Wales (UK)

Introduction
Patients with Parkinsonism are at a very high risk of falls leading to adverse outcomes including fragility fractures, hospital admission and institutionalisation (Dennison et al. Bone 2012;50:1288–93). Fragility fractures are under diagnosed in Parkinson’s disease (PD) and current prevalence of fragility fractures in not well studied (Genever et al Age Ageing. 2005;34:21-4). The objective of this study is to determine the prevalence of vertebral/fragility fractures in patients attending Caerphilly Movement disorder clinic to ensure people are treated to guidelines.

Methods
This is a retrospective observational study based on analysis of the existing data for all the patients attending movement disorder clinic. Information on demographics, the severity of Parkinsonism and fragility fractures was extracted electronically from the clinical workstation, clinic/GP letters and coding from July 2015 to October 2015. Ethical approval was not required for this service evaluation; however, all questions and forms required to carry out the study were sent to the research and development department, to assess risks to patient identification and the health board.

Results
384 people (mean age=76.14±9.53, 46% females) attending movement disorder clinic were studied. 78% (300/384) had parkinsonism (mean age=76.74±9.73, 42% females), 80% (240/300) had idiopathic PD. 11 % had had been diagnosed for more than 10 years. Mean Charlson’s Comorbidity Index was 1.5±1.7 at the time of initial diagnosis of Parkinsonism and majority were on polypharmacy.

The prevalence of fragility fractures was 22.6% (68/300, mean age=79.65±12.37, females=68%) and in addition 8% patients (24/300) had osteopenia reported on x-rays. Only 40% (27/68) were on appropriate treatment as per guidelines.

The site of fractures is shown as below

<table>
<thead>
<tr>
<th>Vertebral</th>
<th>Hip</th>
<th>Wrist</th>
<th>Pelvis</th>
<th>Humerus</th>
</tr>
</thead>
<tbody>
<tr>
<td>47% (32/68)</td>
<td>26.5% (18/68)</td>
<td>19% (13/68)</td>
<td>5% (3/68)</td>
<td>3% (2/68)</td>
</tr>
</tbody>
</table>

34% people (23/68) had a fracture before the diagnosis of PD. 66% (45/68) sustained fragility fracture during the course of PD with a mean lapse of 4.36±3.78 years (range=0-12 years) from initial diagnosis. The mean Hoehn & Yahr Score and mean clinical frailty score for those sustaining fragility fracture was 3.1± 0.9 and 5.9±1.5 respectively.
**Conclusion**
There is a high prevalence of undiagnosed osteoporotic fractures in patients attending movement disorder clinic and 60% do not receive evidence-based medical treatment for the underlying osteoporosis. We acknowledge relatively small sample size as study’s limitation. A further evaluation providing similar services in South Wales is currently being studied.
# SCIENTIFIC RESEARCH (PARKINSON’S DISEASE)

## DOES THE ANTICHOLINERGIC BURDEN OF DRUGS PREDICT OUTCOMES IN PEOPLE WITH PARKINSON’S DISEASE WITH A HISTORY OF A FALL?

E J Henderson¹,², N Smith², D M Gaunt¹, A D Lawrence³, M A Brodie⁴, J C T Close⁴, S R Lord⁴, Y Ben-Shlomo¹, A L Whone¹

¹University of Bristol, ²Royal United Hospital Trust, Bath, ³School of Psychology, Cardiff University, ⁴Neuroscience Research Australia

### Introduction

Anticholinergics are widely used in Parkinson’s disease (PD) patients, for indications such as tremor and urinary incontinence. Cholinergic loss contributes to cognitive dysfunction, gait disturbance and falls and therefore drugs with anticholinergic properties may exacerbate these features. We sought to determine whether the anticholinergic burden of drugs predicted outcomes in PD.

### Methods

One hundred and thirty participants were recruited to a phase II trial of rivastigmine to stabilise gait in PD (The ReSPonD trial). At baseline and 8-month follow-up, all participants underwent the following assessments: comprehensive drug history from which Levodopa Equivalence (LED) and Anticholinergic Cognitive Burden (ACB) Scale were calculated; cognition measured with the Montreal Cognitive Assessment (MoCA); disease severity with the MDS-UPDRS; functional mobility (gait speed) and gait (step time) variability were measured with a tri-axial accelerometer (McRoberts). Falls were ascertained prospectively during the 8-month period.

### Results

Approximately half (52% (n=67/130)) of participants were taking medication with anticholinergic activity at baseline. At baseline, younger age, greater disease severity, and higher LED were strongly associated with having a higher anticholinergic burden. Anticholinergic burden at baseline did not predict cognition, gait speed or variability, MDS-UPDRS or falls at follow-up. Linear regression analysis, adjusted for age, baseline LED, treatment arm and MDS-UPDRS, showed that, at follow-up, for every point increase in ACB score, LED was reduced by 34mg (95%CI -63mg to -4mg, p=0.03).

### Conclusion

The results suggest that higher anticholinergic burden score is associated, longitudinally, with lower LED. This may reflect the inability of patients with high anticholinergic burden to tolerate higher doses of dopaminergic drugs. Lack of prediction of other factors may have resulted from a type II error or insensitivity of measurement instruments. Studies with larger numbers of patients, over a longer period, could further explore the association between anticholinergic burden, cognitive decline, falls and disease severity.
ARE UK GERIATRIC TRAINEES RECEIVING ADEQUATE TRAINING IN COMMUNITY GERIATRICS?

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Background
New models of comprehensive care for older people, such as interface geriatrics, require integration of primary, secondary and community services. Adequate training is essential to manage these often frail and complex patients in the community. We sought to assess geriatric trainees’ experiences within community geriatrics (CG).

Sampling Methods
An online JRCPTB approved survey was sent, and resent, to all 588 geriatric trainees with a UK national training number during August to November 2015.

Results
Overall 47.6% (280) of trainees responded. Of respondents, 55.5% (152 Trainees) do not have a dedicated CG block during speciality training, while 46.1% (129) rated their CG training to date as very poor or poor.

Average weighting of experience and confidence in the particular aspects of CG from ST3-ST7 trainees

<table>
<thead>
<tr>
<th></th>
<th>Home visit</th>
<th>Community MDT</th>
<th>Nursing home visits</th>
<th>Medicines reconciliation</th>
<th>ACP</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>2.32</td>
<td>2.62</td>
<td>2.24</td>
<td>2.09</td>
<td>2.32</td>
<td>2.63</td>
</tr>
<tr>
<td>Confidence</td>
<td>2.41</td>
<td>2.70</td>
<td>2.50</td>
<td>2.44</td>
<td>2.61</td>
<td>2.81</td>
</tr>
</tbody>
</table>

1= very poor 2 = poor 3 = adequate 4 = good 5= excellent

ACP=Advance care planning: ICT=Intermediate care training

Of the 96 senior trainees (ST6 & ST7), 44% of respondents did not have a dedicated community block and 25% rated their training in CG to be poor or very poor. Most senior trainees reported ‘adequate ‘confidence in dealing with particular aspects of CG even if their experience is sub-optimal; this could be due to transferable skills achieved during their training.

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Senior trainees’ responses (average weighting)

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<th></th>
<th>Home visit</th>
<th>Community MDT</th>
<th>Nursing home visits</th>
<th>Medicine reconciliation</th>
<th>ACP</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>2.79</td>
<td>2.99</td>
<td>2.97</td>
<td>2.42</td>
<td>2.74</td>
<td>3.12</td>
</tr>
<tr>
<td>Confidence</td>
<td>3.03</td>
<td>3.35</td>
<td>3.00</td>
<td>2.96</td>
<td>3.17</td>
<td>3.26</td>
</tr>
</tbody>
</table>

Analysis of 92 trainees with 3 or more months of CG block

<table>
<thead>
<tr>
<th></th>
<th>Home visit</th>
<th>Community MDT</th>
<th>Nursing home visits</th>
<th>Medicine reconciliation</th>
<th>ACP</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>2.85</td>
<td>3.27</td>
<td>2.84</td>
<td>2.78</td>
<td>3.08</td>
<td>3.14</td>
</tr>
<tr>
<td>Confidence</td>
<td>2.88</td>
<td>3.30</td>
<td>3.09</td>
<td>3.09</td>
<td>3.27</td>
<td>3.05</td>
</tr>
</tbody>
</table>

Analysis of 188 trainees with < 3 months or no CG block

<table>
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<tr>
<th></th>
<th>Home visit</th>
<th>Community MDT</th>
<th>Nursing home visits</th>
<th>Medicine reconciliation</th>
<th>ACP</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experience</td>
<td>1.97</td>
<td>2.25</td>
<td>1.88</td>
<td>1.73</td>
<td>1.90</td>
<td>2.30</td>
</tr>
<tr>
<td>Confidence</td>
<td>2.12</td>
<td>2.35</td>
<td>2.16</td>
<td>2.08</td>
<td>2.25</td>
<td>2.33</td>
</tr>
</tbody>
</table>

Despite dedicated training in CG, experience of home visits, nursing home visits and medicines reconciliation are less than adequate. Perhaps the CG blocks are not sufficiently integrated to cover all aspects of CG.

**Conclusion**

This survey shows that many trainees regard current training in CG as inadequate. The geriatrics curriculum lacks detail of the training and competency requirements and risks falling behind the needs of consultants working in new care models. Dedicated CG blocks may be needed to ensure that the trainee has comprehensive exposure to all aspects of CG.

**References**

1. The King’s Fund: Leeds interface geriatrician service Oct 2014
DEVELOPMENT, INTERNAL VALIDATION AND INDEPENDENT EXTERNAL VALIDATION OF AN ELECTRONIC FRAILTY INDEX USING ROUTINE PRIMARY CARE ELECTRONIC HEALTH RECORD DATA

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Introduction
Frailty is an especially problematic expression of population ageing. International guidelines recommend routine identification of frailty to provide evidence-based treatment but currently available tools require additional resource. We report the development, internal validation and independent external validation of an electronic frailty index (eFI) using routinely available primary care electronic health record data.

Methods
Retrospective cohort study using the cumulative deficit model of frailty as our theoretical framework. The development and internal validation cohorts were established using a randomly split sample of the ResearchOne primary care database. The external validation cohort was established using The Health Improvement Network (THIN) database. Eligible participants were anonymised patients aged 65 to 95, registered with a ResearchOne or THIN practice on 14/10/2008. We ran a series of searches to identify clinical terms volume 3 (CTV3) codes to construct biologically plausible deficits. Categories of fit, mild, moderate and severe frailty were defined using population quartiles. Outcomes were one, three and five year mortality, hospitalisation and nursing home admission. Hazard ratios (HRs) were estimated using bivariate and multivariate Cox regression analyses. Discrimination was assessed using receiver operating characteristic (ROC) curves. Calibration was assessed using pseudoR2 estimates.

Results
We include data from a total of 931,541 patients. The eFI incorporates 36 deficits constructed using 2,171 CTV3 codes. Prevalence estimates were 50% fit, 35% mild frailty, 12% moderate frailty, 3% severe frailty. One year adjusted HR for mortality was 1.92 (95% CI 1.81 to 2.04) for mild frailty, 3.10 (95% CI 2.91 to 3.31) for moderate frailty and 4.52 (95% CI 4.16 to 4.91) for severe frailty. Corresponding estimates for hospitalisation were 1.93 (95% CI 1.86 to 2.01), 3.04 (95% CI 2.90 to 3.19) and 4.73 (95% CI 4.43 to 5.06), and for nursing home admission were 1.89 (95% CI 1.63 to 2.15), 3.19 (95% CI 2.73 to 3.73) and 4.76 (95% CI 2.73 to 3.73), with good to moderate discrimination but low calibration estimates. Internal validation and external validation results were closely aligned.

Conclusions
The eFI uses routine data to identify older people as fit and with mild, moderate and severe frailty, with robust predictive validity for outcomes of mortality, hospitalisation and care home admission. Routine implementation of the eFI could enable delivery of evidence-based interventions to improve outcomes for this vulnerable group.
A clusters, randomised feasibility study of the prevention of delirium (POD) programme for elderly patients admitted to hospital

Introduction
Delirium is a common consequence of acute hospital admission for older people. There is a strong evidence base, supported by single centre, proof of concept studies mainly delivered by people with expertise in delirium, for the effectiveness of multi-component interventions to prevent delirium. NICE has recommended widespread adoption by the NHS of multi-component delirium prevention interventions. We previously devised and pilot tested the Prevention of Delirium (POD) Programme prior to undertaking a feasibility trial to investigate preliminary estimates of effectiveness and to gather data to inform a future larger study.

Methods
A pragmatic, multi-centre, cluster randomised, controlled, feasibility study. Elderly care and trauma/surgical orthopaedic wards were randomised one-to-one to the POD Programme or usual care. Patients aged 65 years and over admitted to the wards were eligible. Exclusion criteria were: prevalent delirium; planned discharge within 48 hours of ward admission; not screened within 24 hours of ward admission; end of life care; outlying from another ward. Researchers screened participants in hospital daily for delirium for up to 10 days and at 30 days using the Confusion Assessment Method (CAM). Quality of life measures were undertaken by researchers at baseline and 30 days and by post at 3 months. We aimed to recruit 16 wards and 720 participants.

Results
We recruited 16 wards. 4,449 patients were screened on admission to the wards; 3,274 were eligible for the study; 713 were recruited. 5,065 CAMs were conducted (89.7% of the 5,644 expected). 24 patients (7.0%) in the intervention group and 33 (8.9%) in the control group had a positive CAM screen within 10 days of ward admission (odds ratio [95%CI]: 0.68 [0.37, 1.26]. 33 (4.6%) participants withdrew and 104 (14.6%) died.

Conclusions
Conducting a multi-centre cluster randomised trial to investigate delirium prevention in this frail, older group of patients is feasible.