OLDER PEOPLE ASSESSMENT AND LIAISON SERVICE (OPAL) - IMPACT IN PATIENTS ADMITTED TO MEDICAL ASSESSMENT UNIT (MAU) AT ASHFORD AND ST PETER’S NHS TRUST

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Care of the Elderly, Ashford and St Peter’s NHS Foundation Trust

Introduction

Elderly patients are frequent users of our emergency pathway. These patients do not have a comprehensive geriatric assessment (CGA) and have high re-admission rates and length of stay (LOS).

The Trust’s vision was to ensure that every “older person” gets the high quality care and treatment to meet their needs. This will be delivered through a model of care based on the “Silver Book”.

Intervention

The OPAL team was set up in Oct 2013 and is based in MAU 8am-6pm. It involves early CGA (2hrs during the day and 14hrs at night) by a geriatrician, nurse, therapist, dietitian and pharmacist. All patients >85 and patients >75 with 3 or more frailty triggers are seen.

Improvement

During the 1st 6 months, 1148 patients (over 85s) were seen with average age 88yrs. Conversion from MAU to ward was 81.2% compared to 90% previously (Oct 12-March 13). LOS has reduced from 10.1 to 9.1 days. This is significant as each bed costs the Trust £260, potential saving of £300,000. We have reduced readmissions from 20.7% to 15.3%. This equates to 62 patients with potential saving of £150,0001.

Two audits pre OPAL (Aug 2013) of 18 patients and post OPAL (May 2014) of 23 patients has shown the following:

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

Discussion

Early CGA in MAU is cost effective and reduces conversions from MAU to ward, LOS and readmissions. Stakeholder engagement and robust project management is required to successfully implement the service.

1 Non-elective in-patient stays (long stays) £2465 - PSSRU data
A CONSULTANT DELIVERED POST TAKE WARD ROUND (PTWR) CHECKLIST PROVIDES SUSTAINABILITY AND IMPROVEMENT FOR CARDIOPULMONARY RESUSCITATION (CPR) AND CEILING OF CARE (COC) DECISION-MAKING ON THE HYPERACUTE STROKE UNIT (HASU)

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Evidence-base
An audit of CPR and CoC decision making at our institution demonstrated poor practice within Geriatric Medicine, with no improvements since 2006 despite development of a clear pathway. The National Confidential Enquiry into Patient Outcome and Death report (Time to Intervene, 2012) highlighted the need to make such decisions early and regularly. A PTWR CoC checklist was piloted on our HASU. A post intervention audit was performed which showed an overall improvement in CPR and CoC decision making. The PTWR checklist was integrated into the admission clerking proforma following the post intervention audit. To assess the intervention sustainability, our audit was undertaken seven months later.

Change Strategies
Retrospective data was collected from clinical notes following introduction of a PTWR checklist. Doctors were educated at local induction regarding completion of the checklist. Initial post-intervention audit was completed two months later (25/01/13 to 27/03/13). Our sustainability audit was completed seven months following the post intervention audit (22/10/13 to 24/12/13)

Change effects
Initial post-intervention audit: n=136 patients (mean age 74 years). Sustainability audit : n= 40 (mean age 75 years)

The PTWR checklist was completed in 61% (83/136) of patients in the original audit. Sustainability audit 63% (31/49).There was an increase in the number of CPR decisions (62% versus 77.5%). Patients having a decision made <24 hours, 80% versus 81%

Sustainability was maintained in documentation of CoC (73/85 versus 27/31) 86% versus 87%

There was no significant difference in the reason for DNACPR decisions, or documentation of discussions with patient and/or next of kin.

Conclusion
Following introduction of the PTWR checklist, sustained improvement was demonstrated in decision making for CPR within 24 hours and when documenting CoC. This has become embedded into normal practice, with junior doctors’ induction an ongoing educational intervention. Documentation of discussions around DNACPR could be further improved.
### PARACETAMOL PRESCRIBING WITHIN A FRAIL, MALNOURISHED, NURSING HOME POPULATION

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2. Nursing home service, University Hospital South Manchester  
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#### Background
Paracetamol is the most commonly used antipyretic and analgesic in the world (Claridge, L.C. et al, *BMJ*, 2010, 341, c6764). Whilst paracetamol metabolism is not significantly altered in the healthy, older person, it may be impaired in frailty and severe ill health.

Risk factors for hepatotoxicity include malnourishment. A recent study suggested that 38.7% of nursing home residents were at risk of malnutrition and 19.4% were malnourished (Verbrugghe, M. et al, *Clinical Nutrition*, 2013, 32(3), 438-443).

The nursing home service proactively reviews nursing residents in 9 care homes in south Manchester. A significant proportion of residents are underweight. At the time studied, 20% of residents weighed less than 50kg and 6% weighed less than 40kg.

Recent changes to intravenous paracetamol suggest a maximal daily dose of 60mg/kg. Concern has subsequently been raised regarding patients receiving oral paracetamol who are underweight and therefore at risk of hepatotoxicity.

#### Change strategies
The prescriptions of all underweight patients within the nursing home service were reviewed.

These findings were presented, along with the results of the first loop audit results to the directorate. A formal guideline was developed suggesting appropriate paracetamol dosing and disseminated amongst the directorate. A letter was sent around to the general practitioners informing them of risks of inadvertent hepatotoxicity and the rationale for dose adjustment.

#### Change effects
Pre intervention, 14% of those patients who were underweight were prescribed excessive paracetamol (41/250). Of the 51 patients who were underweight, 75% of these were prescribed excessive paracetamol. Post intervention only 8% of the nursing home population were prescribed excessive paracetamol (21/250).

#### Conclusion
Although an improvement there was still a significant proportion of nursing home residents prescribed excessive paracetamol. We have demonstrated that with appropriate education and guidance we can improve compliance with prescribing guidelines.
CLINICAL QUALITY

GERIATRICIAN REVIEW OF OLDER PATIENTS UNDERGOING EMERGENCY OR ELECTIVE SURGERY: DOES IT IMPROVE OUTCOMES?

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². Department of Vascular surgery, University Hospital South Manchester

Background
Topic: Increasing numbers of older patients are undergoing emergency and elective surgery. Publications, such as the NCEPOD report ‘an age old problem’, highlight the need for regular input from Care of the Elderly Physicians to surgical patients.

University Hospital South Manchester (UHSM) receives tertiary referrals for complex, vascular surgical problems. Often these patients are elderly with a combination of medical, cognitive and social issues.

Intervention
Regular, geriatrician input was provided to the vascular surgical wards at UHSM. This consisted of 12 hours per week for one month. A board round was performed, discussing all patients (pre and post-operative), to identify those aged over 65 who would benefit most from geriatrician input. Those identified underwent a comprehensive Geriatric assessment.

Data collected included diagnosis, rationalisation of medication, identification of frailty, delay to operation, length of stay and discharge destination. Members of staff were also surveyed to establish whether they felt the service was useful. These data was compared against a matched, non-random, control group of patients.

Improvement
Feedback suggested that doctors and nurses felt the service was useful and should be continued permanently.

Geriatrician input improved identification of frailty and other medical diagnoses. 70% of patients had their medications rationalised following comprehensive geriatric assessment versus 0% in the control group. Other benefits included cancelling of unnecessary tests and rationalisation of medications. Involvement of a Geriatrician reduced the time from operation to discharge from hospital by an average of 6.5 days.

Discussion
Geriatrician input improves identification of geriatric syndromes, their *sequelae* and reduces length of stay. Geriatricians are familiar in dealing with patients with multiple co-morbidities and complex social circumstances. Further resources are required in order to set up regular Geriatrician input to all surgical wards supported by a multidisciplinary team of allied health professionals.
GET IT ON TIME: AN AUDIT CYCLE ON THE MANAGEMENT OF PARKINSON’S DISEASE AT RUSSELLS HALL HOSPITAL, DUDLEY GROUP OF HOSPITALS

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Evidence-base
Parkinson’s disease is a progressive neurological condition resulting from degeneration of the basal ganglia and subsequent lack of dopamine availability. One in three people with Parkinson’s disease are admitted to hospital each year with patients often on a complex medication regime. In 2010 the National Patient Safety Agency listed Parkinson’s medications as ‘critical medicines’ meaning that omission or delay was a patient safety incident.

An audit was carried out at Russells Hall Hospital in October 2012 of 34 patients with Parkinson’s disease. 55.8% of patients had medications accurately recorded on admission, with only 8.8% having specific times recorded. 12% received all of their Parkinson’s medications on time with patients missing an average of 7.6 drugs. A staff survey showed that from a list of drugs containing eight Parkinson’s medications, an average of only 4.5 were recognised.

Change Strategies
A hospital campaign was launched involving pharmacy, nurses and managers in promoting the importance of Parkinson’s disease. Notices on the intranet, promotional posters and ‘get it on time stickers’ were used. A Parkinson’s Disease nurse was appointed and educational sessions were carried out.

Change Effects
A re-audit done in February 2014 showed that 96.7% had a medication regime accurately recorded on admission with 35.5% having specific times recorded. 38% of patients had all of their medications administered on time with patients missing an average of 5.1 drugs. 93.5% of patients were reviewed by the Parkinson’s nurse during admission and 71.7% of drug cards used had a ‘Get it on Time’ sticker. Staff members were able to identify an average of 6.6 Parkinson’s medications from a list containing eight.

Conclusion
Marked improvement has been seen in medicine management of Parkinson’s following the changes implemented. Recommendations have been made for further improvement which will require further audit in the future.
IMPACT OF THE ACUTE GERIATRICS SERVICE ON THE FRAIL POPULATION ADMITTED TO THE ACUTE MEDICAL UNIT AT UNIVERSITY COLLEGE LONDON HOSPITAL - AN AUDIT LOOKING AT DIFFERENCES IN OUTCOMES BETWEEN ACUTE GERIATRICS AND ACUTE MEDICINE LED CARE FOR THE OLDER PATIENT POPULATION

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Background
The last decade has seen a rise in acute hospital admissions for the older population and data collected at our site showed that 65 percent of all non-elective hospital admissions involve those above the age of 85 years. Frailty, dementia and complex old-age comorbidities means increased resources are needed to reduce rates of adverse events including longer hospital stays and higher 30-day readmission rates. Large body of evidence suggests access to geriatric service helps to minimize length of stays (LOS) and readmission rates. Within the last 18 months, the Acute Medical Unit (AMU) at University College London Hospital (UCLH) has seen an evolution in services for the geriatric population from a liaison service to a multidisciplinary acute geriatric (AG) team involving a Consultant, a Specialty Registrar (SpR), an integrated discharge team, an older adult specialist nurse, therapists and junior doctors on the AMU, who review patients at daily ward rounds and attend daily multi-disciplinary (MDT) team meetings discussing management and discharge plans for these patients.

Method
We looked at rates of admission of patients over 85 years to the AMU by analysing our local database for patients admitted between January 2014 and June 2014. We identified any differences in outcomes between Acute Geriatrics (AG) and Acute Medicine (ACM) led care for the older patient population aged 85 years and over, and the outcomes we measured include patients’ LOS, and 30-day readmission rates.

Evaluation
We identified 489 patients within the period of study, with 315 (64%) patients receiving AG input (Comprehensive Geriatric Assessment), and 174 (35%) patients under the ACM team. Out of the group receiving AG input, 76% of them received a comprehensive geriatric assessment within 48 hours. Delays in assessment were predominantly due to weekend admissions and delayed referral from other specialties. We found that 73% of patients admitted under AG were discharged within 4 days compared to 50% of patients under ACM. We also found that patients under AG care on average halved their readmission rates compared to ACM patients.

Conclusion
Our findings were in keeping with recent published observational studies, in that early input to geriatric services has led to a reduction in readmission rates and length of stays for the over 85 who have complex comorbidities, and our study was able to compare outcomes for patients receiving AG care versus ACM care respectively.
HOW MUCH DO DOCTORS KNOW ABOUT CLINICAL CODING?

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Introduction
Accurate coding is crucial for hospitals to be reimbursed for their activity under Payment by Results. Lack of clinician involvement is identified as one of the main reasons for clinical coding errors by the Audit commission (2009). They suggest educating clinicians of the implications of recording poor quality clinical information in the medical notes. We assessed the quality and accuracy of coding by clinicians, compared to that of clinical coders. We also evaluated coding knowledge amongst medical staff in our geriatric department.

Methods
Forty eight case notes were retrospectively analysed detailing the coding for diagnoses investigations and procedures. Peer review was carried out by 3 consultants detailing diagnoses, investigations and procedures missed, and then compared to that of the coders.

We surveyed the knowledge of doctors of all grades at our departmental meeting with a questionnaire (of 31 questions) before and after an educational session on clinical coding.

Results
Incorrect terminology was frequently used when documenting the diagnosis in the case notes: query was used 35 times, likely used 6 times, possible used 3 times and differential diagnosis used once. The peer review found the number of diagnoses not coded for were 61 by clinicians versus 25 by the coders. The commonest diagnoses not recorded by clinicians included: abnormalities of gait and mobility (6 times), hypotension (5 times), dorsalgia (4 times) and unspecified urinary incontinence (4 times). Urinary tract infection and urosepsis (both 3 times) were the commonest diagnoses not recorded by coders.

Before the teaching session the average score for our questionnaire was 50.2% with over two thirds of the medical staff unaware institutionalisation or homelessness could be coded for. More than three quarters of those asked did not know presumed and probable are acceptable terms. After the educational session the mean score for the questionnaire improved to 64.5%.

Conclusion
Clinical coders were good at determining the correct diagnoses, investigations and procedures documented in case notes. Inappropriate terms not coded for were used frequently by doctors. Awareness of coding knowledge can be increased by providing educational sessions shared with coding experts. The recommendation is to develop a regular multi-professional educational session and to emphasise the importance of utilising problem lists as part of comprehensive geriatric assessment.
**Evidence Base**

Constipation is common in the elderly population and is estimated to affect around 40% of people over 75 years old. It can result in numerous complications and ultimately an increased length of stay (25 days vs 16 days in our audit population). Despite being a common condition, the management and laxative preference vary significantly amongst those caring for older patients.

**Change Strategies**

Following an initial audit of bowel documentation and laxative prescribing within the department in June 2013, the authors devised a trust guideline on bowel care and laxatives in older people based on recent IMPACT guidance. This was published on the trust intranet and accessed 250 times. It was also presented to medical and nursing staff of the Older People’s Medicine department at the Norfolk and Norwich University Hospital prior to re-auditing.

**Change Effects**

<table>
<thead>
<tr>
<th>Audit Standards</th>
<th>1st Audit 2013 n= 109</th>
<th>Re-audit 2014 n=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients should have a detailed assessment of bowel function on admission</td>
<td>54%</td>
<td>96%</td>
</tr>
<tr>
<td>Patients’ bowel pattern should be recorded daily from admission</td>
<td>63%</td>
<td>61%</td>
</tr>
<tr>
<td>Laxatives should be co-prescribed with opioids in older people</td>
<td>51%</td>
<td>93%</td>
</tr>
<tr>
<td>Patients should continue their normal laxatives on admission</td>
<td>68%</td>
<td>100%</td>
</tr>
</tbody>
</table>

There was also a change in laxative preference noted (2013 - 66% senna, 28% lactulose, 6% laxido versus 2014 - 40% senna, 38% laxido, 16% lactulose, 6% docusate).

**Conclusions**

Following the publication and presentation of a trust guideline, the assessment and management of constipation in older people have significantly improved within the department. We feel trust clinical guidelines can be used to improve other areas of practice in older patients. The guideline has since been taken up across trusts in the region - published on the intranets of the Norfolk and Norwich University Hospital, James Paget University Hospital and The Queen Elizabeth Hospital.
CHANGING PRACTICE THROUGHOUT THE ACUTE MEDICAL UNIT: THE IMPACT OF AN EMBEDDED FRAILTY UNIT

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Background
Changing demographics means Acute Medical Units (AMUs) are receiving more frail older people and services need to change to meet this demand. Evidence supports multidisciplinary team (MDT) working and the employment of comprehensive geriatric assessment (CGA). Current models include geriatric medicine in-reach services and separate frailty units.

We introduced a geographically embedded frailty unit (the Comprehensive Older Person’s Evaluation ‘COPE’ zone) within our AMU, without increasing resources.

Change Strategy
Our AMU worked with a geriatric medicine in-reach service until the 12-bedded COPE zone was introduced in December 2013. We aimed to streamline patients identified as frail (presenting with falls, confusion or care home/intermediate care residents) into this zone.

MDT members include a geriatrician and acute medicine physician, as well as therapists, social worker and pharmacist. The MDT employs CGA.

AMU acute physicians, junior doctors and nursing staff rotate through the zone, enabling skills and knowledge to be shared throughout the unit.

Change Effect
We randomly selected 50 patients over 75-years who were discharged from the AMU both in September 2013 and 2014. Groups were well matched with regard to age and frailty. Length of stay on the AMU was similar (1.18 days in 2013 versus 1.15 days in 2014).

In 2013, 55% (12/22) of the frail cohort had input from the in-reach service while in 2014, 61% (14/23) were managed in the COPE zone.

Of those identified as frail, MDT input and employment of CGA were both significantly higher in the 2014 cohort (MDT 57% v 14%, RR 4.14, p=0.012, CGA: 48% v 18%, RR 2.6 p=0.054), where RR = relative risk.

30-day readmission rate was lower in the 2014 cohort (18% v 12%).

Conclusions
Embedding a frailty zone on the AMU allows good practice to be shared to benefit both staff and patients.
# Improving Falls Assessment in People with Hip Fractures

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## Topic

NICE guidelines recommend, people with hip fracture are offered a multifactorial risk assessment. People should be asked routinely whether they have fallen in the past year, frequency, context and characteristics of fall/s. This should be performed by a healthcare professional with appropriate skills and experience.

## Intervention

In 2009 we commenced a multifactorial falls assessment by trained specialist nurse with Consultant Orthogeriatrician supervision. From 2010 our hip fracture practitioner provided additional support. Work was co-ordinated to cover leave and introduced dedicated assessment in hip fracture pathway.

## Improvement

2009-2010 falls assessment was 66.6%. Additional support of hip fracture practitioner improved to 90.5% in 2010-2011. Continued improvements with monthly root cause analysis of missed cases resulted in 97% in 2011-2012 and 100% in 2012-2013. This was sustained at 100% for 2013-2014.

To assess quality of assessments we looked at 175 people with hip fractures. All had a multifactorial assessment.

Majority had at least one previous fall. 49% (86/175) had 1 fall, 25% (43/175) had 2 falls, 8.6% (15/175) had 3 falls, 1.7% (3/175) had 4 falls, 13.7% (24/175) over 5 falls

<table>
<thead>
<tr>
<th>Cause of injury</th>
<th>Number (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tripped</td>
<td>25.1% (44/175)</td>
</tr>
<tr>
<td>Unwitnessed/unexplained</td>
<td>22.3% (39/175)</td>
</tr>
<tr>
<td>Lost balance</td>
<td>22.3% (39/175)</td>
</tr>
<tr>
<td>Slipped</td>
<td>12% (21/175)</td>
</tr>
<tr>
<td>Dizzy spell</td>
<td>2.9% (5/175)</td>
</tr>
<tr>
<td>No history of fall</td>
<td>2.3% (4/175)</td>
</tr>
<tr>
<td>Collapse</td>
<td>0.6% (1/175)</td>
</tr>
<tr>
<td>Seizure</td>
<td>0.6% (1/175)</td>
</tr>
<tr>
<td>Fell out of bed</td>
<td>1.1% (2/175)</td>
</tr>
<tr>
<td>Other</td>
<td>10.9% (19/175)</td>
</tr>
</tbody>
</table>

Commonest predisposing factors: unsteady gait (75%), cognitive impairment (31%), urinary problems (12%), alcohol excess (11%), visual impairment (7.4%).

## Discussion

We introduced a system of multiple trained staff to cross cover assessments allowing us to assess all hip fracture admissions. This requires resources, flexible working and sharing of roles. We found it useful to have a dedicated person responsible with additional support. We would encourage units to examine the quality of assessments and next time we would assess the multidisciplinary intervention.
PROCESS MAPPING IN DIAGNOSING DELAYS: ACUTE STROKE IMAGING

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Introduction
Patients with suspected acute stroke need urgent brain imaging to guide decisions. We systemically looked into imaging as part of work to improve our performance.

Method
We conducted a Process Mapping exercise as well as retrospective review of timings and quality of image requests. Data was extracted from electronic hospital systems covering consecutive acute stroke admissions over a period of one month. A re-audit was conducted six months later.

Results
We identified three main steps for imaging: requesting, performing and reporting.

Of 52 confirmed acute strokes, 50% had imaging within 60 minutes and 100% within 24 hours, meeting national and local targets. Yet, we identified significant delays in different steps of the pathway. For example, only 53% had a CT scan within 30 minutes from request and in only 34% was the scan reported within 30 minutes of completion. A significant proportion of patients (48.3%) presenting within the “lysis window”, were not scanned within 60 minutes.

Following this audit, we suggested new roles for team members, which were accommodated in the new stroke pathway. For example, the radiographer alerts the radiologist upon completion of scan.

Our recommendations led to dramatic improvements with 82% of patients having a scan within 30 minutes from request. In addition, 75% of scans were reported within 30 minutes. Finally 66% of patients presenting within the “lysis window” were scanned within an hour.

Conclusion
Process mapping gave us meaningful insight into the quality of our data. It identified delays and clarified the steps needing improvement that conventional audit methods could not pick up. Individual roles and responsibilities became clear. Not every model works for every service - there are no golden rules.

We strongly encourage clinicians to engage in mapping exercises of their clinical pathways, instead of adopting “successful” models that may be susceptible to local factors.
IMPLEMENTING A MODIFIED SEVEN-DAY PHYSIOTHERAPY SERVICE FACILITATES NICE MOBILISATION STANDARD COMPLIANCE POST HIP FRACTURE, WHILST REDUCING LENGTH OF STAY AND ASSOCIATED PHYSIOTHERAPY OPERATING COSTS

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**Background**

The primary service users are those admitted with hip fractures. NICE Guidelines for Hip Fractures (2011) recommend that patients be offered mobilisation strategies on the first post-operative day by physiotherapists. Prior to this practice development, a weekday physiotherapy service with half-day Sunday cover was provided. This baseline service was only partially compliant with NICE Guidance.

**Innovation**
A modified seven day therapy service was implemented to improve the quality of patient care and facilitate compliance with NICE Guidelines. The weekday service was reconfigured in collaboration with Occupational Therapy to provide comprehensive therapy cover for hip fracture patients throughout the entire week. Post implementation, all hip fracture patients are offered physiotherapy mobilisation on the first post-operative day, seven days per week.

**Evaluation**
A service evaluation was completed for 18 weeks prior and post implementation of the seven-day service. This improved service was immediately compliant with NICE Guidance. Hip fracture average length of stay (ALOS) subsequently reduced from 12.06 days (N= 30, SD 6.02) to 8.66 days (N= 54, SD 5.42). This new service has resulted in a £750 p.a. reduction on physiotherapy operating costs.

**Conclusions**
The implementation of a modified seven-day physiotherapy service has facilitated compliance with NICE Guidance and reduced ALOS both hip fractures and other service users. This practice development resulted in improved continuity of care and reduced operating costs. Although these initial results are encouraging, this improvement is likely to be multi-factorial, and further analysis will be performed to establish possible influences on ALOS.
MANAGEMENT OF ELDERLY PATIENTS WITH UNINTENTIONAL WEIGHT LOSS IN SECONDARY CARE

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Background
Unintentional weight loss is a common symptom in the elderly, occurring in up to 20% of over 65s (Alibhai, Greenwood and Payette, CMAJ, 2005; 172: 773-780). To date there are no published guidelines on the management of such patients, although a 2011 BMJ article reviewing the literature on this topic presents one suggested approach (McMinn, Steel and Bowman, BMJ; 2011: 342-).

Sampling Methods
We surveyed the practice at our Trust, reviewing clinic letters for all new patients referred with unintentional weight loss to geriatric outpatient service between January 2012 and December 2013. We noted all aspects of documented history and examination, investigations requested and the reasoning for these, management options utilised, length of follow up and cause identified for weight loss.

Results
45 people were identified with an average age of 82 years (23 male, 22 female). Excluding blood testing, the most common investigation requested was a CT scan with 27% (12/45) having a CT thorax and 47% (21/45) having a CT abdomen/pelvis. Of these 50% and 29% respectively were performed without additional clinical reasoning, none of which yielded a positive diagnosis. Where an additional clinical feature was recorded, 40% (6/15) identified a cause for weight loss. Just under half of cases had no identifiable cause (22%) or ‘social factors’ (22%) as the primary reason weight loss. 11% (5/45) were diagnosed with malignancy.

Conclusions
Unexplained weight loss is a common referral to geriatric outpatient clinics and with no evidence based guidelines available the approach to investigation/management varies depending on the clinician. Although a small survey sample, blind investigation in these patients does not increase the chance of a positive diagnosis, therefore investigation should be symptom directed. In this population ‘social’ factors resulting in weight loss are common therefore accurate questioning regarding diet, social circumstances, cognition and mood is vital.
DEVELOPMENT OF A DEMENTIA INTRANET PAGE TO RAISE AWARENESS OF DEMENTIA WITHIN A LARGE TEACHING HOSPITAL

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2. ST5 Old Age Psychiatry, Leeds & York Partnership NHS Foundation Trust
3. Clinical nurse educator, LTHT
4. Project nurse, LTHT
5. Consultant geriatrician and Dementia Lead LTHT

Topic
People with dementia use approximately 25% of general adult hospital beds, so most NHS staff will come into contact with and provide care for this patient group and their carers. Staff members are required to have both a knowledge and understanding of dementia and the ability to provide person centred care.

Over the past year LTHT has received feedback that dementia services could be improved. We undertook a quality improvement project to design a website to provide more detailed information about dementia, which would be accessible to all hospital staff and include updates on national and local guidance and information about new LTHT initiatives.

Intervention
We established a multidisciplinary ‘task and finish’ group to establish a Dementia Intranet site, reporting to LTHT’s Dementia Strategy Committee.

This group reviewed existing guidelines, care plans & Dementia CQUIN, sought the views of expert colleagues, drafted content based on acquired knowledge and best practice guidance, sought feedback and assisted technical development of the website. The site was launched on 19 May 2014 and is kept up to date.

Improvement
The site has regular hits and awareness of it is increasing across all staff groups. The site has received positive feedback and many staff have commented that it has improved their knowledge and awareness of dementia. We intend to obtain more formalised feedback which will help us develop the website further.

Discussion
This project has improved staff awareness of dementia helped empower them to deliver high quality person centred care. It has also helped facilitate better support of carers.

The biggest challenge is keeping the site up to date particularly as developments in dementia care are happening on a regular basis.

We would strongly recommend general hospitals develop a dementia intranet site, it has proved an invaluable means of improving dementia care in our Trust.
THE MORTALITY OF PATIENTS ADMITTED WITH HIP FRACTURE AND CONSOLIDATION ON CHEST RADIOGRAPH

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². Department of General Surgery, Scunthorpe General Hospital, Scunthorpe
³. Department of Geriatric Medicine, Northern General Hospital, Sheffield

Background
Clinical observation within our department has shown that community acquired pneumonia (CAP) is a common co-occurring finding in patients presenting with a neck of femur fracture (NOF). Anecdotally, it has been noted that CAP at admission may be associated with mortality in this group. Our department uses the Nottingham Hip Fracture Score (NHFS) is used to predict 30 day mortality. It takes into account chronic respiratory disease but not acute infections.

Sampling methods
All patients admitted with fractured neck of femur during December 2013 – April 2014 were identified from the National Hip Fracture Database (NHFD). Patients already in hospital, those with pathological fractures and those below the age of 70 were excluded. In the remaining group, admission chest radiographs were reviewed to identify those with radiological evidence of possible acute lung infection. NHFS and in-hospital mortality were identified from the NHFD.

Results
From a total of 171 patients, 13 (7.6%) died during admission. Of these 13 patients, 6 (46%) were found to have consolidation suggestive of CAP on admission radiograph. In the surviving group, only 13 (8.2%) had admission radiograph suggestive of CAP. Fishers exact test showed a highly significant difference between the two groups (p=0.0027). Further analysis showed that as predictor of mortality, consolidation on admission radiograph had a sensitivity of 0.26 (.11-.48), and specificity of 0.95 (0.9-0.97). Positive likelihood ratio of death was 5.55 (2.04-15.06). Specificity remained high in high risk groups (NHFS >4) at 0.96 (0.89-0.99) as well as low risk groups (NHFS<4) at 0.9 (0.8-0.98).

Conclusion
For the elderly NOF population, a radiograph suggestive of CAP at admission is associated with significantly increased mortality. This highly specific but poorly sensitive predictor of mortality may aid clinicians in estimating patient outcomes. Prompt assessment and treatment of these patients is recommended.
INTRODUCTION OF A POST TAKE WARD ROUND CHECKLIST STICKER ON A GERIATRICS ASSESSMENT UNIT

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Background
Hospital care of older adults with frailty is complex. The post-take ward round (PTWR) is a key moment at which this complexity can be managed. However, in the busy environment of an acute take it can be difficult to be consistently systematic and address all the points suggested by the joint college guidelines on the ward round. Checklist methodology was applied in an attempt to improve consistency and documentation within a Geriatric Assessment Unit.

Innovation
A checklist containing 12 items deemed essential to an effective PTWR was developed in the form of a sticker to be placed in the patient’s clinical record. The sticker acts as a prompt and allows any uncompleted task to be allocated to a specific team member for completion at the end of the PTWR.

Evaluation
Pre-intervention data were collected by direct observation over a four week period on the PTWR. Consideration of checklist items was assessed prior to sticker introduction and senior clinicians were blind to the contents. The checklist was then introduced to three consultant teams. Post-intervention data were collected over a three week period. Hypothesis testing for proportions was carried out using the Chi-squared test.

Data were collected from six PTWR covering 41 patients pre-intervention and seven PTWR covering 44 patients post-intervention. Comparison data collected on selected checklist items pre- and post-intervention are shown in Table 1.

Table 1. Proportion of people seen on post-take ward round in whom each checklist item was considered before and after introduction of sticker.

<table>
<thead>
<tr>
<th>Item</th>
<th>Pre-intervention (%)</th>
<th>Post-intervention (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECG reviewed</td>
<td>63.4</td>
<td>88.6 *(p&lt;0.05)</td>
</tr>
<tr>
<td>Catheter/Cannula requirement</td>
<td>14.6</td>
<td>81.8 *(p&lt;0.01)</td>
</tr>
<tr>
<td>Patient aware of plan</td>
<td>63.4</td>
<td>86.4 *(p&lt;0.05)</td>
</tr>
<tr>
<td>Anticipatory Care plan</td>
<td>9.8</td>
<td>63.6 *(p&lt;0.01)</td>
</tr>
</tbody>
</table>

*Significant improvement following intervention p<0.05

Conclusions
The PTWR checklist sticker proved effective in increasing consideration and documentation of the items included. Ongoing work will be carried out looking at whether this improvement can be sustained or expanded on.
USING A DAILY ORTHOGERIATRIC BOARD ROUND TO REDUCE LENGTH OF STAY AND IMPROVE PATIENT FLOW

C Grout, A Rochford

Newham University Hospital, Barts Health NHS Trust

Topic
Our improvement project was undertaken on an orthogeriatric/rehabilitation ward in a busy District General Hospital in East London. The hospital serves a local population of 300,000 with high levels of social deprivation. The orthogeriatric service was introduced several years ago in accordance with blue book guidelines. Review of data and feedback from staff suggested improvement was required.

Intervention
All members of the Multi-Disciplinary Team (MDT) were surveyed and ideas for improvement generated. Other areas of improvement within the hospital were also examined. After discussion, a daily board round, used successfully in other clinical areas, was adapted and introduced. This is a 15-minute, senior led, MDT meeting which improves communication within the MDT, promotes early discharge planning and thus improves patient flow.

Improvement
Implementing a daily board round has led to a significant reduction in length of stay (LoS). Mean LoS has fallen significantly from 23.4 to 13.3 days (p=0.02). The reduced LoS has enabled patients to be admitted to the ward in a more timely fashion, helped us to meet Best Practice Tariff, and led to a tangible improvement in staff morale and team working.

Discussion
All staff agreed that improvement was required and adapting a model that was familiar from other clinical areas allowed for more ‘buy in’ from members of the MDT. Demonstrating real improvement in patient outcomes has sustained the board round. Furthermore, the MDT is now actively engaging in other quality improvement projects.

A daily board round is a simple intervention that improves information sharing and facilitates better discharge planning. There is growing evidence to suggest that this can be translated to all departments and specialities.
REDUCING NON-ATTENDANCE AT FALLS CLINICS - AN ONGOING CHALLENGE

E Capek\textsuperscript{1}, K Thomson\textsuperscript{2}, L Simpson\textsuperscript{3}, L Mitchell\textsuperscript{2}

1. Glasgow Royal Infirmary, 2. Southern General Hospital, Glasgow, 3. Gartnavel General Hospital, Glasgow

Topic
In 2011 we reviewed our Did Not Attend (DNA) rate at ‘Falls’ clinics across five hospitals in Greater Glasgow and Clyde. The mean rate was 16%, well above the national average of 10%. Non-attendance prohibits beneficial assessments and interventions and is costly to NHS Scotland.

Intervention
We implemented: Falls information leaflet sent to all patients; Telephone reminder at one site; Postal reminder at one site. In 2014 DNA rates were re-evaluated at falls clinics over 3-months. Non-attenders received telephone interviews.

Improvement

<table>
<thead>
<tr>
<th>Site and Intervention</th>
<th>DNA Rate n(%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2014</td>
</tr>
<tr>
<td>Site 1- Leaflet</td>
<td>10 (12.3%)</td>
<td>9 (11.4%)</td>
</tr>
<tr>
<td>Site 2- Leaflet</td>
<td>8 (10.9%)</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Site 3- Leaflet</td>
<td>10 (17.2%)</td>
<td>18 (19.1%)</td>
</tr>
<tr>
<td>Site 4- Leaflet+Reminder letter</td>
<td>13 (12.3%)</td>
<td>7 (19.4%)</td>
</tr>
<tr>
<td>Site 5- Leaflet+Telephone call</td>
<td>24 (31.6%)</td>
<td>11 (17.7%)</td>
</tr>
</tbody>
</table>

Table 1 - The mean DNA rate was non-significantly lower at 15% (p=0.5) (range 6.0%-19.4%). The only significant reduction occurred at the telephone reminder site.

<table>
<thead>
<tr>
<th>Reason for Non-Attendance</th>
<th>2011 n(%)</th>
<th>2014 n(%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness or inpatient</td>
<td>21 (32%)</td>
<td>26 (30.2%)</td>
<td>0.7</td>
</tr>
<tr>
<td>Appointment not received</td>
<td>18 (28%)</td>
<td>6 (8%)</td>
<td>0.008</td>
</tr>
<tr>
<td>Forgot</td>
<td>10 (15%)</td>
<td>8 (9.3%)</td>
<td>0.1</td>
</tr>
<tr>
<td>Did not want to attend</td>
<td>8 (12%)</td>
<td>18 (20.9%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Other</td>
<td>8 (12%)</td>
<td>7 (8.2%)</td>
<td>0.27</td>
</tr>
<tr>
<td>Administrative</td>
<td>-</td>
<td>8 (9.3%)</td>
<td>-</td>
</tr>
<tr>
<td>Unknown</td>
<td>-</td>
<td>13 (15%)</td>
<td>-</td>
</tr>
</tbody>
</table>

Discussion
A telephone reminder appears effective. This will be implemented across all falls clinics. Staffing resources may limit replication elsewhere. Illness and hospitalisation contribute to this frail group’s non-attendance. Clinic staff will now check if a patient has been admitted to hospital five days prior to the appointment. Despite an information leaflet a fifth of patients did not want to attend. This is an ongoing challenge. We will relay this to the community falls team to promote face-to-face education at initial screening.
PEAKFLOW1: A WHOLE SYSTEM PERFECT WEEK EXERCISE IN NORTH DERBYSHIRE

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Chesterfield Royal Hospital NHS Foundation Trust

Topic
Urgent care services in the UK face significant challenges, increased clinical demand and an ageing population (Royal College of Physicians, 2012). Patients aged over 65 years admitted as emergencies comprise 79% of those with length of stay greater than 2 weeks (E Poteliakhoff, J Thompson, 2011, King’s Fund). Optimising flow of patients on urgent care pathways can reduce waiting times and bed occupancy (Silvester et al, Age and Ageing, 2014, 43(4), 472).

Intervention
The Perfect Week is an initiative adopted by hospitals across England to rapidly improve patient flow, enhancing performance, patient safety and experience. In September 2014 a whole system 8-day Perfect Week, “Peakflow1”, was undertaken across 60 North Derbyshire health and social care organisations. In hospital a 5-point care bundle was implemented and Ward Liaison Officers (WLOs) rapidly escalated obstacles to those with authority to resolve them, allowing staff to focus on care.

Improvement
During Peakflow1, 687 patients were admitted and 765 discharged; 78 fewer patients in hospital at the end of the project than the beginning. There were more discharges on 13th September than any Saturday in the year. Complex discharges were expedited through early senior decision making, obstacle resolution and proactive approaches from CCGs and Social Services.

Discussion
Peakflow1 relied on organisational mindset change, using the idea that hospital is not a place of safety for patients who no longer require acute care. Agencies worked with shared goal and purpose. The energy for change was reflected on Social Media, #peakflow1 having estimated reach to 50685 Twitter accounts. Effective, enthusiastic and visible leadership was essential, engaging and supporting staff. Inevitably enthusiasm was greater in some areas than others. An increased number of WLOs would improve future exercises. Peakflow1 effectively facilitated discharges, challenged assumptions and expectations, and harnessed enthusiasm for change.
LIAISON GERIATRICIAN AND THERAPIST TEAM IN THE EMERGENCY DEPARTMENT FACILITATED MORE RAPID DECISION MAKING AND PROMPT DISCHARGE FOR OLDER PATIENTS WITH FRAILTY

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2. Division of Rehabilitation and Ageing, School of Medicine, University of Nottingham, UK

Topic
Nottingham University Hospitals performs poorly against its 95% 4-hour wait target for the Emergency Department (ED). At the time of commencing the intervention it had failed to achieve this for 8 consecutive months. Patients with frailty, defined as an Identifying Seniors at Risk (ISAR) score of ≥2, were identified as being at particular risk of long waits in ED. An Acute Medical Admissions Unit Geriatrician (AMUG) scheme had done little to ameliorate this because it was "downstream" of ED. We set out to explore whether moving geriatrician resource to ED would improve access to timely multidisciplinary assessment and facilitate effective decision-making for older patients with frailty.

Intervention
A consultant geriatrician and therapist from the hospital Front Door Assessment and Care Team (FACT) attended ED once weekly for 11 weeks. They stayed in ED from 09:00-13:00. The geriatrician worked through the list of all patients in ED, reviewing notes of those aged over 70 and focussing initially on those where discharge might be possible, before moving onto those where admission seemed unavoidable. All management suggestions made were initiated by the geriatrician/therapist whilst in ED.

Improvement
45 patients were seen over the 11 ED visits. The average (range) number of patients seen per visit was 4.1 (2-8), the rate increasing with repeat visits. 19 patients were discharged to home. 3 of these lived in a care home. 17 had already been scheduled for admission by ED doctors. 7 had medications stopped and 3 had ceilings of treatment instigated. 3 had community geriatrician, 1 day hospital and 1 geriatric outpatient follow-up organised. Based upon an average length of stay of 10 days, this represented a saving of 190 bed days. Thematic analysis of geriatrician clinical record entries revealed interventions focussed primarily around: management of multimorbidity, liaison with community teams, establishing continuity of care, starting discharge planning earlier and commencing end-of-life discussions.

Discussion
Assessment with a geriatrician and FACT therapist was feasible and approximated multidisciplinary comprehensive assessment. Patients were sent home who would otherwise have been admitted, with consequent bed-day savings. Anecdotally it was easier to discharge patients who had not yet crossed the hospital "threshold" than from AMU. Negotiations with commissioners are now focussing on reallocating interface geriatrician resource to deliver this service consistently throughout the week.
COLLAPSES ON BOTH SIDES OF THE CLYDE

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². Department of Geriatric Medicine, Southern General Hospital, Glasgow (SGH)

Topic
Rapid access syncope clinics have been shown to improve both diagnostic efficiency and effectiveness (RA Kenny, D O’Shea, AF Walker Age and Aging 2002; 31:272-5). A dedicated syncope outpatient service was funded in SGH in 2005, no equivalent service currently exists in the north of the city.

Intervention
From September to November 2013, all new referrals to both falls and general geriatric clinics at GGH, were screened, those describing syncope were included. These were compared with all new referrals to the SGH syncope service over the same time period. All patients were analysed using the SGH syncope proforma.

Results

<table>
<thead>
<tr>
<th></th>
<th>GGH (n=22)</th>
<th>SGH (n=21)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (years)</td>
<td>83</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>Cardiac monitor</td>
<td>76</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>carried out (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean wait (days ±</td>
<td>72 ± 33</td>
<td>14 ± 6</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>standard deviation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echocardiogram</td>
<td>48</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>carried out (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean wait (days ±</td>
<td>60 ± 40</td>
<td>9 ± 5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>standard deviation)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SGH patients had more cardiac investigations, and all monitors were 3-7 days, compared with 1 day monitors for GGH patients. Final diagnosis was documented for 90% of SGH patients compared with 57% of GGH patients. At the time of analysis 91% of patients had been discharged from the SGH service, compared with 52% from the GGH service. Resolution of symptoms was documented for 82% of SGH patients with 18% reporting partial improvement. Symptom resolution was documented in 19% of the GGH group, and partial improvement in 51%.

Discussion
This data indicates that the dedicated syncope clinic delivers faster investigations and, therefore, more timely diagnoses to patients in the south of Glasgow versus those in the north. We would like to roll this service out in GGH.
IMPLEMENTATION OF A FRAILTY SCREENING TOOL WITHIN ACUTE MEDICAL UNIT (AMU) AT SOUTHERN GENERAL HOSPITAL (SGH)

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Department of Acute Medicine/Department of Medicine for the Elderly, Southern General Hospital, Glasgow

Background
Frailty is an independent risk factor for six-month mortality (Joosten et al BMC Geriatrics 2014, 14:1) and is associated with longer hospital stays (Khandelwal et al, J Nutr Health Aging 2012 Aug;16(8):732-5). Access to comprehensive geriatric assessment (CGA) increases the likelihood of patients being alive and living independently at 12 months. (Ellis et al Cochrane Database Systematic Reviews 2011, Issue 7)

The SGH is an 840-bedded hospital due to amalgamate with three other large hospitals in 2015. Department of Medicine for the Elderly (DME) have 7-day input into the acute take within the AMU. A frailty screening tool was introduced to assess patient selection to the DME team.

Innovation
During a 28-day period we screened all patients >75 or ≥65 from a nursing/residential home using a modified tool from Healthcare Improvement Scotland (HIS). This assessed five potential areas of frailty as outlined in the evaluation section below. For scores ≥1, step two assessed exclusion criteria (e.g. clear need for alternative specialty input.)

Evaluation
146 patients were screened. 134 (91.8%) had a frailty score of ≥1 and 115 (85.9%) did not meet any exclusion criteria and were accepted for DME. Their individual frailty indicators were:

<table>
<thead>
<tr>
<th>Frailty Indicator</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polypharmacy (≥6 meds)</td>
<td>86%</td>
</tr>
<tr>
<td>Functional Impairment</td>
<td>77%</td>
</tr>
<tr>
<td>Immobility/falls</td>
<td>61%</td>
</tr>
<tr>
<td>Acute Confusion</td>
<td>48%</td>
</tr>
<tr>
<td>Nursing/residential home</td>
<td>16%</td>
</tr>
</tbody>
</table>

31 patients met exclusion criteria, 55% of these were cardiology related.

Our tool’s sensitivity was 100% and specificity 84.8%.

A further 11 patients within the 65-75 age group (non care-home residents) were identified by admissions staff with frailty or were previously known to DME. All were accepted by DME.

Conclusions
The prevalence of frailty was high using this modified HIS tool. Patients were allocated early to our DME team to facilitate CGA. Further discussions are required in the potential screening of all 65-75 year olds. This tool could be used by admissions staff for sub-specialty receiving within the amalgamated hospital.
DOES RECEIVING A COMPREHENSIVE GERIATRIC ASSESSMENT (CGA), DELIVERED BY A CONSULTANT GERIATRICIAN, ON ADMISSION TO COMMUNITY HOSPITALS (CH) REDUCE LENGTH OF STAY (LOS), AND IMPROVE PATIENT OUTCOME?

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². Department of Elderly Care, Moseley Hall Hospital

Topic
The Royal College of Physicians (RCP) have given clear guidelines regarding the importance of a Consultant delivered service for patients attending Acute hospitals. It is recommended that all patients receive a Consultant review within 14 hours, as this has been shown to reduce readmissions and mortality¹. There are no guidelines stating the time frame for review by a Consultant for admissions to CH. This can lead to delays in investigations, treatment, and increase length of stay (LOS).

Intervention
A Community Medical Assessment Unit (CMAU) was opened in October 2014 for Moseley Hall and West Heath hospitals, which are the CH linked with University Hospitals Birmingham Foundation Trust. Patients were seen at the point of admission by a junior doctor and reviewed by a Consultant Geriatrician. Data was collected for one month before and after CMAU, looking at reason for admission, time to Consultant review and LOS.

Improvement
Prior to CMAU opening data was collected on 40 patients admitted during June 2014. 18% of patients received same day CGA and 25% received CGA within 48 hours, however the longest wait until Consultant review was 10 days. After CMAU opened data was collected on 43 patients during November 2014. 77% received same day CGA and all patients received CGA within 48 hours of admission. LOS reduced from a mean of 18 days to a mean of 9 days.

Discussion
Most patients admitted to CH were admitted with reduced mobility or increased confusion. CGA on admission enables a full collateral and functional history to be obtained at that point. This focuses Multi-Disciplinary Team (MDT) input from admission. If patients require transfer to the Acute hospital, for interventions not possible in the Community setting, such as non-invasive ventilation (NIV), the decision can be made promptly. After CMAU opened 25% of patients were discharged the same day and 55% were discharged within 7 days. Prior to CMAU, the shortest LOS was 8 days with a maximum of 118 days. This intervention has reduced unnecessary hospitalisation of frail elderly patients, and made their initial assessment more streamlined.

ARE WE PROVIDING FRAIL-FRIENDLY CARE IN OUR ENGLISH EMERGENCY DEPARTMENTS?

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2. University of Leicester, UK
3. University of Sheffield, UK

Background
People aged 85+ accounted for an estimated 4.2% of first attendees to English Emergency Departments (ED) in 2009/10; 62% were admitted to hospital compared to only 22% overall (NHS Hospital Episode Statistics, data on file). This high ‘conversion rate’ reflects the clinical complexity of these patients and the challenges of assessing and managing them in a time constrained ED. The aim of this survey was to capture national information on services specifically for older people within emergency departments in England.

Methods
A database of ED clinical leads in England was created. This was used to collect information on services available to support the care of older people attending the ED between August 2012 and August 2013. The survey was administered initially by post and non-responders were contacted via email and invited to participate online using Survey Monkey.

Results
87/194 (45%) Emergency Departments in England participated. The majority of EDs (75%) have embedded speciality staff specifically for older people. However, provision was patchy in terms of skills-mix and out of hours coverage was poor. A number of EDs have direct access to community services (54%) and falls clinics (67%), but a more limited access to other services such as geriatric outpatients (20%) and frailty units (10%). Despite intervention seventy nine percent of EDs felt their department needed to develop a different approach towards the care of older people.

Conclusions
This survey is the first of its kind and was challenging to implement. This is reflected in the 45% response rate. Given the heterogeneity of care provision for older people in EDs and the majority of EDs expressing a desire to adopt a different approach to care, this survey provides the basis on which further work can be justified to understand this population’s needs and how to improve their outcomes.
PATIENT SURVEY INVESTIGATING CATERING CHOICES ON ‘CARE FOR THE ELDERLY’ WARDS

C S Mace, A Folwell, K Richards

Care of the Elderly Department, Hull Royal Hospital

Background
Elderly patients often lose weight during hospital stays. Oral intake can be diminished despite higher energy requirements. Weight loss is usually multifactorial; however we aimed to investigate if the hospital catering may contribute to this and what affect the intervention of ‘afternoon tea’ may have. The aim of this survey was to investigate patient attitudes towards current catering choices offered on the Care of the Elderly wards at Hull Royal Infirmary.

Sampling methods
100 inpatients over the age of 80 were surveyed between 25th May and 27th June at Hull Royal Infirmary. Patients either completed the survey independently, with the questions being asked by the authors or with help from family or friends. The survey consisted of 10 questions covering food choices, meal times, snack choices and free comments.

Results
83% of patients surveyed were satisfied with current food choices. 64% were unaware snacks were available. Snack choices desired included fruit, cheese and crackers and sandwiches. 62% of patients would prefer main meals in the evening. Open comments revealed general dissatisfaction with food freshness and variety. Approximately 70% would like ‘afternoon tea’ (biscuits and cake offered around 3 p.m.).

Conclusions
Overall, patients were satisfied with the current hospital catering. It appears snack availability should be advertised to patients with a greater variety offered. Patients prefer hot meals only in the evening.

Patients were open to ‘afternoon tea’. We have secured provisional funding to offer this on ‘Care of the Elderly’ wards. We plan to investigate if this intervention delivers an increase in patient satisfaction as well as objective measures.
CAN PATIENTS USE AND ACCESS THEIR CALL BELL? IMPROVING PATIENTS COMMUNICATION OF THEIR NEEDS

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2. Dept of elderly medicine, Poole General Hospital

Topic
A patient’s ability to communicate their needs is often assumed through the use of call bells. Elderly patients may be unable to use a call bell due to cognitive, visual, or physical reasons. Patient Safety First states that patients should feel confident with the use of their call bell, or an alternative means of communication must be available.

Intervention
An initial survey of 59 patients over 4 wards was completed. Patients were asked what they would do to get help if staff were unavailable, to demonstrate reaching their call bell and how they would use it.

Results were presented at the weekly departmental teaching highlighting the importance of ensuring the call bell is within reach during the ward round. The use of alternatives to call bells such as hand bells, seat alarms and moving patients to observable bays was highlighted at the ward leaders study day. A subsequent survey of 48 patients took place.

Improvement
Improvement was seen in the number of patients with normal cognition able to reach their call bell (78% from 67%). However, no improvement was seen in call bell accessibility for those with cognitive impairment still able to use one (50% unable to reach one in both surveys).

Initially, 27% had an alternative method in place when a call bell could not be used. This also did not improve following intervention (25%).

Discussion
Education measures have only improved the accessibility of call bells in those who can use them. This could be easily implemented in other hospitals.

However, priority lies with improving call bell access or other means of communication for those with cognitive impairment. Future plans include the addition of a prompt on the 48 hour nursing sheets and the purchase of more alternatives. Whether significant improvement is seen is yet unknown.
NO DECISION ABOUT ME WITHOUT ME

A Todd, A Pringle, S Keir

Department of Medicine of the Elderly, Western General Hospital, Edinburgh

Topic
Giving patients as much input as they wish into their care has always been a fundamental aspect of good medical practice and as such the Department of Health advocates shared decision making (ISBN: 13:9780101788120). Recent legal rulings highlight the willingness of the public to hold health services to account should they fail in this regard ([2014] EWCA Civ 822). We aimed to audit the introduction of an anticipatory care plan (ACP) form on both the degree of shared decision making with multi-morbid patients and their families, and the speed at which on-call teams could access this information.

Intervention
Via a series of small tests of change, we designed an ACP form that documented four key decisions concerning a patient’s critical care (Table 1). Central to the form was a box recording date of discussion with the patient or next-of-kin. We measured shared decision-making in rates of resuscitation decisions before and after the introduction of the form.

Improvement
Table 1: The ACP

<table>
<thead>
<tr>
<th>Problem/ Diagnosis</th>
<th>Initial Guidance</th>
<th>Review of decisions</th>
<th>Review of decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the patient for cardiopulmonary resuscitation?</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Should this patient receive antibiotics for a new infection?</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>For HDU/ NIV only review with view to escalation?</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>For consideration for ITU</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Comments:</td>
<td>Date of patient/ NOK discussion:</td>
<td>Consultant signature:</td>
<td></td>
</tr>
</tbody>
</table>

Results are shown in Table 2. Post ACP shared decision making rates increased by 50% and the time taken to find key information was less than 10 seconds in the majority of cases.

<table>
<thead>
<tr>
<th></th>
<th>Pre- ACP</th>
<th>Post- ACP</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNAR* discussion with the patient</td>
<td>2%</td>
<td>36%</td>
</tr>
<tr>
<td>DNAR discussion with patient’s family</td>
<td>58%</td>
<td>50%</td>
</tr>
<tr>
<td>DNAR discussion with patient and/or family</td>
<td>60%</td>
<td>90% (some discussed with both)</td>
</tr>
<tr>
<td>Time to find all key information in casenotes</td>
<td>42% took 5-10 minutes</td>
<td>22% took over 20 minutes</td>
</tr>
</tbody>
</table>

*Do not attempt resuscitation (DNAR)

Discussion
The introduction of an ACP form encouraged shared decision making and facilitated out-of-hour assessments. The presence of the form provided a forcing function that triggered more discussions.
A SURVEY OF THE HEALTHCARE PROFESSIONAL’S OPINIONS TO EMERGENCY HEALTHCARE PLANNING IN PRIMARY AND SECONDARY CARE, TO HELP GUIDE IMPLEMENTATION OF THESE CARE PLANS IN ELDERLY CARE

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_Elderly care department, County Durham and Darlington Foundation Trust_

**Topic**
Emergency healthcare plans (EHCPs) provide a means of documenting and communicating individualised patient centred treatment decisions. It is an advisory document and can be used in patients without capacity providing the decisions are in accordance with best interest principles of the mental capacity act. In our department we aim to use EHCPs to provide individualised care for appropriate elderly patients and as such we have surveyed staff in primary and secondary care likely to be involved with these EHCPs to identify the opinions and barriers to implementation.

**Intervention**
We used an eleven question survey with a Likert scale focusing on patient care, staff workload, patient opinion, communication and opinion regarding reducing emergency admissions. These surveys were disseminated in medical wards in two acute hospitals, handed out at secondary and primary care meetings locally over a 3 month period.

**Improvement / Results**
We received 120 completed surveys, 48 from doctors, 57 by nursing staff, 5 by allied health professionals and 10 were unknowns. Ninety percent agreed EHCPs would improve patient care, with eighty-six percent and eighty seven percent agreeing it would improve communication between professionals and families respectively. Three people (2.5%) felt patient’s wouldn’t welcome EHCPs. Eighty-seven percent felt it would reduce unnecessary hospital admissions. Twenty-four replies (20%) felt they would lead to extra work. The positive support for EHCPs in our trust has resulted in their use in primary and secondary care. An on-going database to allow audit of effectiveness to improve and maintain standards of these care plans is now in place.

**Discussion**
Having identified support for these care plans we are confidently using them. We feel the opinions collected regarding EHCPs is one that will likely be replicated nationally and it will be interesting to see the effectiveness of them over time in supporting care in frail elderly patients.
AVOIDING HARM AT THE END OF LIFE: HOW GOOD ARE WE?

S Keir, A Todd, P Brooks Young

Department of Medicine of the Elderly, Western General Hospital, Edinburgh

Introduction
When someone is dying, there is no room for less than perfect care for both the person involved and their family. It is therefore critical that ward staff have the knowledge-base and skills to deliver high-standard person-centred care consistently. As part of a larger piece of work developing a process to support the delivery of key aspects of palliative care in a medical area, we wanted create a system that would enable us to know how well we were achieving this.

Methods
A tool was developed that centred on what we believed were four key process indicators: communication, symptom management, essential care and review. It was piloted across wards in the Medicine of the Elderly department at the Western General Hospital. Five sets of case notes were reviewed each month. The results were fed back at the well-attended multidisciplinary departmental morbidity and mortality meeting (M&M).

Results
Case note review took between 5 to 10 minutes each. This was aided by the recent introduction of a new care-rounding document that incorporated key aspects of personal care. With this, we were able to determine accurately whether personal care had been attended to and how often. Compliance rates for the months of July to September 2014 ranged from 97% to 100%. The graphs created were used at the M&M to both compliment staff and remind all members of the team what the key aspects of care are. They were used also to stimulate discussion around topics such as effective communication.

Conclusion
With this tool we can get an idea of how well we are delivering key aspects of person-centred care. It also provides a way of monitoring the impact of other quality improvement measures being tested in this work stream.
REDUCING PRESCRIBING ERRORS THROUGH PERSONALISED FEEDBACK

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1. Department of Medicine for the Elderly, Hull and East Yorkshire Hospitals NHS Trust
2. Pharmacy Department, Hull and East Yorkshire Hospitals NHS Trust

Topic
A common cause of patient harm is prescribing errors (Health Foundation, 2012). Traditionally interventions to reduce prescribing errors have targeted groups of prescribers, such as at induction. We aimed to improve prescribing standards by directly feeding back to the individual prescribers responsible for those errors, illustrated by examples of their own prescribing.

Intervention
All prescription charts on an elderly care ward were examined against the trust prescribing policy. We contacted all prescribers individually and where possible meet face-to-face for feedback. Otherwise they were sent written feedback with examples of their prescribing. All prescribers were given an abridged copy of the Trust’s prescribing guidelines. The doctors in our department and the Acute Assessment unit also had a group teaching session.

We re-audited in 2 months to include as many of the original prescribers as possible before they rotated. Again they received personalised feedback. We repeated this 6 monthly (2 audits per junior doctor rotation with feedback in between) a further 2 times.

Improvement
144 charts were reviewed. Over the 6 cycles there was a gradual improvement in prescribing standards. Total errors reduced from an average of 5.6 per chart to 2.2 by the final cycle.

Of particular interest, the number of errors in antibiotic prescribing (Indication/duration), dosage and route plus legibility was reduced down to zero, leaving the main errors those of correct documentation of name, GMC number, date and signature.

Results from a survey monkey questionnaire showed that 80% thought the feedback received was ‘good’ and ‘useful’ whilst 100% would welcome it again if necessary.

Discussion
Approaching individual prescribers has had a positive influence on reducing prescription errors.

We believe this approach could be replicated by other departments in the UK.

One challenge has been making time to continue the process for each new rotation of junior doctors.
FALLS AMONG HOSPITAL INPATIENTS USING HIP FRACTURE INCIDENCE TO MONITOR PATIENT SAFETY

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Falls and Fragility Fracture Audit Programme, Royal College of Physicians

Topic
Hip fracture is the commonest cause of accidental death in older people. In 2009 the National Patient Safety Agency (NPSA) identified 840 hip fractures after inpatient falls in England and Wales. A figure of 1,000 was estimated for 2013, but this still depends on the quality of critical incident reporting. We set out to develop a surveillance process using NHFD to support the NHS Outcomes Framework.

Intervention
During 2013 we used the clinical audit platform of the National Hip Fracture Database (NHFD) to collect data from all 182 trauma units in England, Wales and Northern Ireland. We identified 64,838 hip fractures in people aged over 60 – over 95% of all such fractures in these countries. We recorded each patient’s age and sex, and their mobility and residence at the time of fracture which allowed us to identify those that developed a fracture in hospital.

Improvement
In total 2,699 (4.2%) of these fractures occurred in patients who were already in hospital, with a further 450 (0.7%) in people in rehabilitation units. A very small proportion of these 3,149 in hospital fractures may have arisen without an inpatient fall, but less than 3% were pathological in origin, and many of these still presented following a fall. This annual total of 3,149 inpatient falls is three times higher than previous estimates based on critical incident reporting; providing a marker of serious inpatient falls for the NHS Outcomes Framework to use in future monitoring.

Discussion
For individual hospitals the proportion of hip fractures resulting from inpatient falls varied between 0% and 7.6% (mean 4.9%). Inter-hospital comparisons may be misleading, since acute hospitals may accept patients from multiple providers. However, we have developed online charts to provide ‘live’ inpatient hip fracture data to each unit – so they can monitor the effectiveness of local initiatives to prevent inpatient falls.
URINARY CATHETERS: IMPROVING SAFETY IN ELDERLY PATIENTS

E Mitchell¹, S Rumbold²

Department of Elderly Care, Poole Hospital NHS Foundation Trust

Evidence base
Urinary tract infections (UTI) are the second largest group of healthcare-associated infections (Health Protection Agency, 2011, www.gov.uk). A single UTI incurs a cost of approximately £1327 and leads to 6 extra bed days (National Audit Office, 2004, www.nao.org.uk). The majority of UTI can be traced to indwelling catheters; the longer the catheter remains in situ, the greater the risk of UTI (NCGC, 2003, www.nice.org.uk). Elderly patients have intrinsic vulnerabilities associated with greater morbidity and mortality as a result of inappropriate use of catheters.

Change strategies
Change strategies, supported by infection control and a continence steering group, included education of frontline staff and a clearly identifiable sticker to prompt careful consideration of catheters. This sticker highlighted appropriate residual volumes, encouraged staff to document a plan for catheter removal and requested for catheters to be prescribed on drug charts. These strategies aimed to reflect guidance published by the National Institute for Health and Care Excellence (NICE).

Change effects
When a catheter sticker was used (37%, 16/43), there was clearer documentation regarding catheter removal (50%, 8/16) compared with when a sticker was not used (11%, 3/27). The commonest reason for insertion remained urinary retention (44%, 19/43). Residual volume was greater than 400 millilitres in 68% (13/19), an improvement compared with preliminary data collection. Catheter-associated UTI occurred in 10% (5/52); in 80% of these a catheter sticker had not been used. When stickers were used, catheters were prescribed onto drug charts in 19% (3/16) cases.

Conclusions
Whilst compliance with the use of catheter stickers could be improved, their implementation has led to a more thorough consideration of urinary catheterisation and prompted earlier catheter removal. Further education sessions are being provided to ensure rotating teams are aware of the pertinent issues to promote the safe clinical practice our patients deserve.
A JOINT PHYSICIAN AND PHARMACIST APPROACH TO RATIONALISING MEDICATIONS PRESCRIBED TO FRAIL OLDER PEOPLE ADMITTED TO THE ACUTE FRAILTY UNIT AT CHESTERFIELD ROYAL HOSPITAL

J Russell, R Agus, M Shepherd, A Lewis, K Shakespeare

Chesterfield Royal Hospital NHS Foundation Trust

Topic
The Silver Book identifies Polypharmacy as one of six Geriatric Giants, advising any acute crisis in a frail older person necessitates structured medication review. Pharmaceutical trials have excluded frail older people and prescribing may be extrapolated from data from dissimilar populations: patients accumulate drugs for individual comorbidities. Problems can arise from altered pharmacokinetics and pharmacodynamics causing harm from drug interactions and adverse drug reactions (ADR), leading to hospital admissions. The majority of ADRs causing admission are predictable and potentially avoidable (Routledge PA, O’Mahony MS, Woodhouse KW, 2004, British Journal of Clinical Pharmacology, 57, 121).

Intervention
Recognising the importance of Polypharmacy, from inception our Acute Frailty Unit has had a dedicated clinical pharmacist prescriber. The pharmacist uses a Medicines Optimisation model, attending daily MDT ward rounds, working with the physician to undertake bedside medications review, prompting therapy rationalisation and reducing inappropriate prescribing. Enhanced communication with primary care is a key feature.

Improvement
In the first full month of implementation, every patient had a complex medications review, mean 0.88 medications per patient stopped, (69 patients, 61 drugs, 33% antihypertensives, 16% sedatives), 2.1 short-term started (146 drugs, 38% analgesia, 25% laxatives), and 1.3 long-term started (92 drugs, 32% bone protection, 16% haematinics).

Discussion
This model allows provision of a patient-centred approach to medications management for frail older patients, stopping inappropriate drugs and commencing only those appropriate to their clinical presentation. Competing demands on the time of a single pharmacist between ward rounds and processing discharge prescriptions are challenging; initially part time, this 20-bedded unit now requires full time input. Larger units would require more pharmacy time. Close collaborative working between the pharmacist and physician is essential for success. No baseline measurements were made on this unit prior to implementation, if repeating the process this would enhance the assessment of resulting change.
IN-PATIENT FALLS MANAGEMENT - MAKING A DIFFERENCE

L Tazerout, C Lee

Department of Elderly Care, Kingston Hospital, Galsworthy Road, KT2 7QB

Introduction
Falls are the most frequently reported inpatient safety incident. In one year, over 200,000 falls were reported from 470 NHS organisations, almost 1000 resulting in major harm or death. NICE recommends a multifactorial approach to the assessment and prevention of falls. Baseline measurements on one Elderly Care ward showed that 0% of high risk patients had postural blood pressure measurements at any point in their inpatient stay, although most had cognitive screening and medication review.

Innovation
We designed a bright yellow sticker, to be attached to every inpatient’s notes, to prompt all doctors and multi-disciplinary staff to perform basic falls assessments: postural blood pressure measurement, delirium assessment, medication review and bone health assessments. We used the ‘Plan Do Study Act’ paradigm for quality improvement, with six PDSA cycles from 1st July to 15th September. Data was collected from the sticker in the patients’ notes. Before cycle five, all patient records became electronic, and there was a change of junior doctor staff. The stickers were placed on the computer workstations instead, and new doctors educated.

Evaluation
79 patients were assessed (mean age of 84.6 years). The sticker was being used in 100% of patients by Cycle 4. Postural BP measurements improved from 0 to 64% (peak), but dropped to 32% by cycle 6. Bone health, delirium, and medication assessments remained high.

Conclusions
Preventing inpatient falls is complex. Effectively embedding change in practice involves education, change in attitude (i.e. whose responsibility is it to check postural BP?), and change in culture. Junior doctors, nurses and MDT staff reported increased confidence with falls prevention strategies. Assessments declined in Cycle 5 due to the new intake of doctors and the new computer system. This highlights the difficulty of sustaining service improvements in an environment where there is a high turnover of staff.
REDUCING DURATION OF TIME URINARY CATHETER REMAIN IN-SITU BY PRESCRIBED REVIEW OF NEED FOR CATHETERISATION AT 48 HOURS

S J Blows, D C Kelsey, C Hettiaratchi

Dept. of Medicine for the Elderly, Barnet General Hospital

Background
Urinary catheters are over inserted at the start of a patient’s hospital admission. Urinary Catheters can have a negative effect on older patient’s outcome ranging from increased incidence of delirium and hospital acquired infection to adverse patient experience by delaying discharge from acute hospital units. Local guidelines suggest that a decision regarding the on-going need for urinary catheterisation is documented in the medical notes at 48 hours post insertion. Our quality improvement project set out to review our compliance with the aforementioned guidance and to find an innovation to improve this compliance.

Innovation
We made it the responsibly of all doctors on our ward to prescribe a review of “the need for urinary catheter” on the drug chart at 48 hours either post insertion or post coming to our base ward with a urinary catheter in situ. This was done by weekly lectures and posters on the ward to 'enforce' prescription. At 48 hours the prescription will remind the doctor to review the need for catheter and make a decision about the need (and whether the catheter is to remain in situ) and have it documented in the patients notes, the prescription is also signed by the clinician making the decision.

Evaluation
Prior to our innovation we surveyed 84 patients on 2 care of the elderly wards we found 7% of urinary catheters were reviewed at 48 hours post insertion. Following our innovation we again surveyed 84 patients found that 72% of catheters were reviewed at 48 hours. This in turn lead to removal of urinary catheters in 36%

Conclusions
We have demonstrated by the simple intervention of prescribing review of urinary catheter at 48 hours we have reduced the length of time patients have catheters in situ and thus improved patient experience/outcome.
**IMPACT OF COGNITIVE IMPAIRMENT ON INPATIENT FALLS IN SINGLE ROOM SETTING AND ITS ADVERSE OUTCOMES**

J Okeke¹, C Edwards², I Singh³

1. University Hospital of Wales, Cardiff
2. Royal Gwent Hospital, Newport (ABUHB Wales)
3. Ysbyty Ystrad Fawr, Caerphilly (ABUHB Wales)

**Introduction**

Dementia is associated with increased risk of falls; furthermore single rooms are associated with higher risk of inpatient falls (IF). Hospitals are facing increasingly ageing population, of whom one-third could have cognitive impairment (CI). The aim of this study is to determine the prevalence of cognitive impairment amongst inpatient-fallers and compare adverse outcomes between in-patient fallers with and without CI.

**Methods**

This is a retrospective observational study based on analysis of two-year (Nov, 2011-Oct, 2013) standard inpatient falls incident data (Datixweb) in an extended general hospital with 100% single beds. Information on CI was extracted from clinical work station, clinic/GP letters and coding. CI was defined on basis of case notes recording of dementia, CI, chronic confusion, functional impairment due to memory problems or MMSE/MoCA < 25. Unidentifiable patients were excluded.

**Results**

<table>
<thead>
<tr>
<th></th>
<th>Cognitive Impairment (CI)</th>
<th>No Cognitive Impairment (NCI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients % (n) Falls incidents</td>
<td>35.8 (242) 814</td>
<td>64.2 (434) 797</td>
<td></td>
</tr>
<tr>
<td>Mean Age (yrs)</td>
<td>84.24±7.44 57 (138)</td>
<td>80.21±11.05 48.2 (209)</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Female % (n)</td>
<td>57 (138)</td>
<td>48.2 (209)</td>
<td></td>
</tr>
<tr>
<td>Mean falls/in-patient faller</td>
<td>3.36±4.00</td>
<td>1.84±1.46</td>
<td>p&lt;0.0001</td>
</tr>
<tr>
<td>Discharge destination</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own Home % (n)</td>
<td>39.7 (96)</td>
<td>61 (265)</td>
<td>p=0.0001</td>
</tr>
<tr>
<td>New Care Home% (n)</td>
<td>23.6 (57)</td>
<td>11.1 (48)</td>
<td>p=0.0001</td>
</tr>
<tr>
<td>Inpatient Death% (n)</td>
<td>14 (34)</td>
<td>19.8 (86)</td>
<td>p=0.142</td>
</tr>
<tr>
<td>Injury</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Fracture% (n)</td>
<td>95 (230)</td>
<td>95.8 (416)</td>
<td>p=0.17</td>
</tr>
<tr>
<td>Hip Fracture% (n)</td>
<td>2.9 (7)</td>
<td>1.4 (6)</td>
<td>p=0.58</td>
</tr>
<tr>
<td>Non-Hip Fracture% (n)</td>
<td>2.1 (5)</td>
<td>2.8 (12)</td>
<td></td>
</tr>
<tr>
<td>Length of stay (days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>50.68±40.49</td>
<td>37.92±37.81</td>
<td>p=0.0001</td>
</tr>
</tbody>
</table>

**Conclusion**

In-patient fallers with CI have significantly higher incidence of inpatient falls and adverse outcomes including discharge to a new care home and prolonged length of stay when compared to in-patient fallers with NCI. We acknowledge the study’s weakness that there are no outcome data for patients with CI who did not fall in the hospital. Prompt identification of dementia patients and falls risk assessment could prevent associated adverse outcomes.
A MULTIDISCIPLINARY APPROACH TO COMPLEX BONE HEALTH ISSUES IN ORTHOGERIATRIC PRACTICE

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Topic
Osteoporosis is a common, debilitating condition affecting many frail elderly patients, leading to an estimated 180,000 fragility fractures per year in the UK. Correct treatment of fragility fractures has been shown to reduce the incidence of and mortality associated with further fractures. The introduction of newer treatments has made treatment rationale more complex.

Intervention
We held a monthly multidisciplinary bone health meeting to discuss the management of patients with complex bone health problems. The MDT consisted of: orthogeriatric team, rheumatology and acute and community specialist nurses in osteoporosis. Initially all referrals were from the orthogeriatric unit.

From March 2013 to October 2014, 113 patients were discussed. 104(92%) had sustained a fractured neck of femur (NOF), 3 atypical femoral fractures and 4 vertebral fractures. 79% were female. 54% were previously undiagnosed and untreated. 63% were between 75-90yrs of age, 21% were <75yrs and 16% were >90yrs. 67% patients were Vitamin D deplete (<50nmol).

MDT referral was made because of: fracture on antiresorptive treatment for >2 years(43%), gastrointestinal complications(30%), renal disease(14%), compliance concerns(10%) and dental/jaw issues(4% patients).

Improvement
The MDT discussion has led to initiation or change in treatment for all but 3 patients. In 58% the recommendation was to improve Vitamin D. The treatments recommended were: Denosumab(25%), intravenous Bisphosphonate(20%), oral Bisphosphonate(11.5%) and Teriparatide(5.3%). In comparison to the 20 month period immediately prior to the MDT was set up, more NOF patients were referred for DXA(8% vs 2.3%) and a follow up review (7% vs 0.66%).

Discussion
The service utilises pre-existing community osteoporosis treatment networks which have been established over many years. MDT discussion has increased the treatment options available to orthogeriatric patients. The relationship with rheumatology has provided access to Zolendronic acid and Teriparatide. The link-up with rheumatology and the osteoporosis specialist nurses has allowed seamless community follow up for treatments such as Denosumab. The ability to continue some of these services is under threat from proposed health service reorganisation.

We have increased the use of the injectable treatments which has implications for the delivery of that service. We believe the MDT can improve quality of care for our patients and encourage referrals from other disciplines. The input of a renal physician would further strengthen the service due to the prevalence of renal disease seen in the MDT.
A PRE-OPERATIVE TAILORED ADVICE SERVICE FOR PATIENTS WITH PARKINSON’S DISEASE UNDERGOING ELECTIVE SURGERY AT CHESTERFIELD ROYAL HOSPITAL

J Russell, N Offord, R Abeyratne, R Genever
Chesterfield Royal Hospital NHS Foundation Trust

Topic
Surgery for people with Parkinson’s disease confers risks beyond the operation itself, which may be condition or medication-related. Missing usual medications due to prolonged fasting or poor post-operative absorption can result in deterioration, immobility or Neuroleptic Malignant-Like Syndrome, while post-operative complications, length of stay and mortality are increased (KA Brennan, RW Genever, BMJ, 2010, 341, 990).

Intervention
A pre-operative advice service was developed using a proforma devised by a Movement Disorders Consultant, after discussion with pre-assessment clinic staff. The proforma is completed in the pre-assessment clinic then emailed to the specialist, who adds tailored advice and returns it electronically, copying in relevant members of the surgical team. Since 2009 advice has been sought for 81 patients.

Improvement
This tailored advice service mitigates the individual risks to people with Parkinson’s disease undergoing elective surgery; by raising awareness of potential problems in advance, including risk of delirium (11/81), and advising on how to follow, as closely as possible, the patient’s usual medication regimen. In 73/81 advice was given for patients to take their usual medication pre-operatively, regardless of Nil by Mouth status. In 13/81, it was highlighted medication needed to be available in theatre or recovery for prompt post-operative administration of medication.

Discussion
This simple intervention was neither challenging nor time-consuming to implement for a single Specialist in a District General Hospital, with estimated average time spend of ten minutes per referral. Enthusiastic interdisciplinary working is key for successful realisation of the service. Rapid electronic access to clinic letters and discharge summaries is critical for the process to be effective and efficient. If starting again, a period of baseline measurement prior to implementation would facilitate measuring the effects of change.
REDUCING INAPPROPRIATE ANTIPSYCHOTIC PRESCRIBING IN PATIENTS WITH BEHAVIOURAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA - CAN THIS BE ACHIEVED?

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Department of Clinical Gerontology, King's College Hospital NHS Foundation Trust

Topic
Up to 90% of people with dementia may experience behavioural and psychological symptoms of dementia (BPSD) during the course of their condition. The evidence base for using antipsychotic drugs for BPSD is limited and their use is associated with significant morbidity and mortality. The UK Department of Health (DOH) has made it a national priority to reduce inappropriate antipsychotic use in dementia (DOH report, 2009, 2013).

Intervention
Since 2011 our Dementia and Delirium team has implemented mandatory training for all trust staff including doctors, nurses and allied health care professionals. The training focused on teaching staff to diagnose dementia and delirium, and to implement patient-centred non-pharmacological management of challenging behaviour. Any prescribed antipsychotics were reviewed regularly. We screened electronic drug charts and medical records of adult inpatients and applied an algorithm modified from Oborne et al (CA Oborne. Age and Ageing 2002;31:435-439) to determine appropriateness of each antipsychotic prescription.

Improvement
The proportion of patients having antipsychotics initiated in hospital was reduced from 67.5% in 2011 (n=77) to 38.5% in 2013 (n=91). Similarly, there was a reduction in antipsychotic use for challenging behaviour from 36% in 2011 to 11% in 2013 (Table 1). However, the quality of objective documentation and quantitative documentation of the challenging behaviour did not improve. Dementia and/or delirium were clearly documented as the cause of the challenging behaviour in 56% of these patients in 2013.

Table 1. Use of antipsychotics for challenging behaviour

<table>
<thead>
<tr>
<th></th>
<th>2011(n=29)</th>
<th>2012(n=17)</th>
<th>2013(n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% with objective documentation</td>
<td>100%</td>
<td>88%</td>
<td>70%</td>
</tr>
<tr>
<td>% with quantitative documentation</td>
<td>66%</td>
<td>82%</td>
<td>70%</td>
</tr>
<tr>
<td>% for whom antipsychotics prescribed</td>
<td>36%</td>
<td>17%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Discussion
Input from a specialist team who offer advice and training on non-pharmacological management of BPSD has helped to reduce inappropriate antipsychotic prescribing. With electronic prescribing it is possible to monitor appropriateness of inpatient antipsychotic use.
DIRECT-REFERRAL PATHWAYS BETWEEN SOCIAL WORKERS AND COMMUNITY GERIATRICIANS IDENTIFIED UNMET HEALTHCARE NEED IN COMMUNITY DWELLING OLDER PATIENTS WITH FRAILTY

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2. Division of Rehabilitation and Ageing, Medical School, University of Nottingham, Nottingham, UK
3. The Community Programme, Nottingham University Hospitals, Nottingham, UK

Topic
Lack of Comprehensive Geriatric Assessment at the point of unexplained deterioration in the community has been recognised as a shortcoming in existing UK healthcare provision. Consultation with local social work teams suggested that access to a community geriatrician (CG) at point of initial social work referral might help modify subsequent deterioration. We set out to explore whether a direct referral pathway between social work and CG would change patient outcomes.

Intervention
A senior social worker within the Broxtowe Adult Social Care team was asked to identify clients presenting with functional deterioration not explained by social or environmental factors and refer these patients to CG. All referrals were then visited by the CG at home for comprehensive assessment and commencement of investigation, management or onward referral as appropriate.

Improvement
31 patients were seen in 6 months. 27/31 were seen by CG, the remainder being admitted to hospital before review. All had their medical management altered. 17 and 24 had drugs stopped and started respectively. A mean of 2.2 and 1.7 drugs were stopped and started respectively, the net result being 16 fewer prescriptions. Advice focused on psychiatric problems and falls in 15 and 8 cases respectively. Other common problems were pain, parkinsonism and incontinence. In 7 patients the CG advocated against long-term placement, with the patient remaining at home, in 2 cases the CG supported placement into care home with a full care plan.

Onward referral was made to another service in 14 cases. All were community services apart from 2 referrals to hospital outpatient rehabilitation, one for salivary botox and one for a respiratory opinion. End-of-life care was initiated in 3 patients.

Three main categories of patients were identified: not known to healthcare despite multiple medical problems; known to healthcare but recent decline not recognised as health-related; and being actively managed by healthcare teams.

Discussion
Unmet medical need was consistently identified throughout the trial. A subsequent scoping exercise, reviewing the weekly caseload for adult social care, suggested up to 100 such cases might be identified by social work teams in the area covered by one CG. The next iteration will consider using band 7 care coordinator to triage these social work direct-referrals as part of the unplanned admissions directed enhanced service (DES) scheme.
THE IMPACT OF A SYSTEMATIC NURSE TRAINING PROGRAMME ON FALLS RISK ASSESSMENT AND FALLS INCIDENCE: A STUDY BASED IN A 100% SINGLE-ROOM ELDERLY CARE ENVIRONMENT

J Okeke¹, Z Subhan¹, C Twine², T Edwards³, K Morgan⁴, I Singh⁵

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2. Advanced Nurse Practitioner, Ysbyty Ystrad Fawr, Caerphilly, Wales
3. Hospital Manager, Ysbyty Ystrad Fawr, Caerphilly, Wales
4. Ward manager, Ysbyty Ystrad Fawr, Caerphilly, Wales
5. Consultant Geriatrician, Department of Geriatric Medicine, Ysbyty Ystrad Fawr, Caerphilly, Wales

Topic
Falls in hospital account for almost two-fifths of the patient safety incidents reported to the National Reporting and Learning System. More than 200,000 falls/year including 900 severe incidents of patient harm and 90 deaths have been reported on NHS wards. The extra cost of caring for patients who have suffered a fall amounts to an estimated £2.4 billion/year. Healthcare staff has been advised to assume that all patients aged 65 years and older and all those over 50 who have had a stroke, or who suffer from dementia, vision or hearing problems are at risk of a fall.

Intervention
Regular formal nurse training on the use of a multifactorial falls risk assessment (FRA) tool was commenced in April 2013. Nurses’ training was done every 3 months in different wards and included review on NICE guidance on falls, FRA tool and cognitive assessment. In-patient falls data were retrieved from the standard incident report monitoring system (DATIX) from November 2011 to May 2014 to assess the impact of the nurse training package on falls reduction.

Improvement
The pre-training assessment revealed inadequate assessment and low completion rates of the FRA tool. Subsequent, post training assessments showed improvement in compliance with all aspects of FRA, with particular improvements in cognitive and environment hazard assessment, and osteoporosis risk. The results are presented in the table.

Concurrently with nurses training, actual fall incidence fell significantly from baseline of 17.12 ±3.60 to 11.15±2.30 (p<0.001,CI=3.65–8.27) over last 12 months. This is in a high risk, 100% single room environment where high falls incidence had been reported previously (16.79/1000 patient-bed-days).

Latest actual falls rate as of may 2014 was 9.1/1000 patient-bed-days, despite 100% single rooms. This shows a falls incidence approximating national benchmark for all type of patient accommodation in community hospital/intermediate care provision (8.6/1000 patient-bed-days).

Discussion
Nurse training programme on falls risk assessment improves nurse knowledge of falls risk, and actual completion of falls risk proformas. This is especially in areas of cognition, environmental hazard, osteoporosis risk. This is accompanied by a statistically and clinically reduction in actual incidence of in-patient falls.
COMMUNICATION OF DNACPR DECISIONS - ARE WE COMPLIANT WITH THE LAW?

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Introduction
All available national and local guidance recommends patient/relative (NOK) involvement when clinical teams make a Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) decision. This became a legal requirement for doctors in June 2014 due to the landmark verdict from the English Court of Appeal in the case of Janet Tracey against Addenbrooke’s Hospital.

Method
Within our acute Medicine for the Elderly department, prevalence audits to assess patient/NOK involvement in DNACPR decisions in February 2013 and March 2014 failed to show improvements despite education with various methods of reminders for clinical teams to action appropriate communications (reminder stickers, reminder DNACPR box on daily multidisciplinary boardround handover sheets). Since August 2014, we assigned Foundation Year 1 doctors (FY1s) as champions in this area. Their task was to ensure whenever a DNACPR form is placed in patient notes, the decision is reviewed and communicated to patient/NOK by an appropriately skilled clinical team member. A repeat prevalence audit was then repeated to assess patient/NOK involvement and senior endorsement in November 2014.

Results

<table>
<thead>
<tr>
<th></th>
<th>Feb 2013</th>
<th>Mar 2014</th>
<th>Nov 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total DNACPR forms</td>
<td>46/90 51%</td>
<td>22/84 26%</td>
<td>27/84 32%</td>
</tr>
<tr>
<td>Capacity present</td>
<td>12/46 26%</td>
<td>10/22 45%</td>
<td>17/27 63%</td>
</tr>
<tr>
<td>Patient involvement</td>
<td>8/46 17%</td>
<td>2/22 9%</td>
<td>16/27 59%*</td>
</tr>
<tr>
<td>Patient+/NOK involvement</td>
<td>31/46 67%</td>
<td>15/22 68%</td>
<td>26/27 96%</td>
</tr>
<tr>
<td>No patient/NOK involvement</td>
<td>15/46 33%</td>
<td>7/22 32%</td>
<td>1/27 4%</td>
</tr>
<tr>
<td>Consultant endorsed</td>
<td>39/46 85%</td>
<td>11/22 50%</td>
<td>21/27 78%</td>
</tr>
<tr>
<td>(remainder endorsed by registrars)</td>
<td></td>
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*One patient was not involved due to “excess psychological harm”.

The FY1 role dramatically improved patient/NOK involvement in DNACPR decisions. Coincidentally, the proportion of patients thought to have capacity to participate in this decision also increased.

Conclusions
We showed that implementation of FY1s’ targeted role to champion proper communication of DNACPR decisions is a valid method of achieving required legal and professional standards by clinical teams in a busy acute hospital environment.
COMPREHENSIVE INDEX OF FRAILTY: A MULTI-DIMENSIONAL CONSTRUCT FROM THE HONG KONG CENTENARIAN STUDY

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Introduction
Frailty is a global epidemiological and clinical phenomenon that can lead to poor long-term outcome. A better understanding of its components is essential for future developments of management strategies. We sought to assess the incremental validity of a new Comprehensive Index of Frailty over Frailty Index in predicting self-rated health and functional dependency amongst the oldest-old adults.

Methods
We conducted a cross-sectional community-based centenarian study. A quota sampling method was used to recruit a geographically representative sample of 124 community-dwelling Chinese near- and centenarians. Two validated instruments (Chinese Longitudinal Healthy Longevity Survey and Elderly Health Centre questionnaire) were administered through face-to-face interviews. Frailty was first assessed using a 32-item Frailty Index (FI-32). Then a new Comprehensive Index of Frailty (CIF) was constructed by adding 12 more items in the psychological, social/family, environmental and economic domains to the FI-32. Hierarchical multiple regression was used to explore whether the new CIF provided significant additional predictive power for self-rated health and instrumental activities of daily living (IADL) dependency.

Results
Mean age was 97.7 (SD 2.3) years, range 95 to 108 years, and 74.2% were female. Using the Frailty Index for reference, 16% of our participants were non-frail, 59% were pre-frail, and 25% were frail. Frailty according to FI-32 significantly predicted self-rated health and IADL dependency beyond the effect of age and gender. Inclusion of the new CIF into the regression models provided significant additional predictive power beyond FI-32 on self-rated health, but not IADL dependency.

Conclusions
Psychological, social/family, environmental and economic factors are essential elements of a frailty assessment tool. Our result supports the concept that a comprehensive model of frailty should be a multi-dimensional and multi-disciplinary construct. Future studies should validate this construct in different settings and age groups, using our new Comprehensive Index of Frailty.
THE DIVERSITY OF A GROUP OF COMMUNITY DWELLING EXERCISE STUDY PARTICIPANTS WHEN CLASSIFIED BY EWGSOP CRITERIA FOR SARCOPENIA AND SARCOPENIC OBESITY

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Introduction
Prevalence of sarcopenia increases with age. Sarcopenia subtypes are defined by the European Working Group of Sarcopenia in Older People (EWGSOP), based on presence/absence of low muscle mass, plus/minus low muscle strength or low performance.

Methods
Participants are over 65 years, independently mobile, community dwelling, enrolled in a twelve month study evaluating exercise. Baseline assessments included dual energy Xray absorptiometry (DXA) body composition (BC) analysis, grip strength (dynamometer) and gait speed (10 metre walk test). BC provided appendicular lean mass/height\textsuperscript{2} (aLM/ht\textsuperscript{2}) and percentage body fat. Data evaluated per EWGSOP guidelines, using cut offs: aLM/ht\textsuperscript{2} of <5.67 (women) <7.26 (men); grip strength of <20 (women), <30 (men); and gait speed <1m/s for both. Low grip strength and gait speed, with normal aLM/ht\textsuperscript{2} were classified as “weak,” to differentiate them from normal. Prescaropenics had only low aLM/ht\textsuperscript{2}, sarcopenics had low aLM/ht\textsuperscript{2} plus one abnormal level in one of the other parameters, and severe sarcopenics had abnormal levels in all parameters. Obesity was defined by DXA BC percentage fat of >40% (women), >28% (men).

Results
39 participants were evaluated: 32 women, 7 men; average age 75.9 years (67-90); and average MoCA 25.5. EWGSOP classification of the women: 9 normal; 2 presarcopenia; 2 presarcopenic obesity; 1 sarcopenia; 1 severe sarcopenia; 1 severe sarcopenic obesity; 3 sarcopenic obesity; 10 obese; 1 normal “weak”; 2 obese “weak”, for a total of 32. Of the 7 men: 2 normal; 1 sarcopenia; 3 sarcopenic obesity; and 1 obese. The subgroups were comparable for age. Baseline BMI was 27.5 (18.8 – 37.5) and BMI did not discriminate the body types.

Conclusions
In these independently living, highly functioning Seniors, there was a surprising diversity of body composition. BMI alone was of limited use in classifying body type. The EWGSOP classification is useful to stratify an outwardly homogenous group of Seniors.
FRACTURE RISK PREDICTION AND TREATMENT THRESHOLDS USING FRAX, GARVAN AND QFRACTURE IN AN OSTEOPOROSIS CLINIC POPULATION

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Introduction
Fracture prediction tools are increasingly used in osteoporosis treatment decisions. FRAX, Garvan and QFracture are the most common web based ones used. It is unknown if these tools would identify the same patients for treatment. The aim of this study was to compare these tools with each other in individual patients.

Method
We applied these 3 tools to women consecutively attending osteoporosis clinics and calculated their 10 year major osteoporotic and hip fracture risk, utilising a 20% intervention threshold to determine treatment. We also compared the 20% intervention threshold of FRAX (FRAX-20) with National Osteoporosis Guideline Group (NOGG) guidelines (age related threshold).

Results
100 women (mean age= 70.1; SD=11.3 years) were studied. Compared with FRAX, Garvan overestimated major osteoporotic fracture risk by 2-fold [41.5%(95%CI=31.8-51.2) versus 18.7%(95%CI=11.1-26.3)], and hip fracture by nearly 4-fold [24.7%(95%CI=16.2-33.2) versus 7.1%(95%CI= 2.1-12.1)]. With QFracture and FRAX the risk of major osteoporotic fracture was similar [22.4%(95%CI=14.2-13.6) versus 18.7%(95%CI=11.1-26.3)], while hip fracture risk was twice as high [16.8%(95%CI=9.5-24.1) versus 7.1%(95%CI= 2.1-12.1)]. FRAX-20, Garvan and QFracture recommended treatment in 38%, 75% and 40% respectively. There was discordance, with 26% of patients being recommended for treatment by all 3 tools, and 24% not recommended treatment by all tools. FRAX-20 would treat 12 patients that NOGG would not treat, and NOGG would treat 20 patients that FRAX-20 would not treat.

Discussion
There were important differences in fracture prediction between tools. Concordance was poor, with only 50% agreement for treatment or non-treatment. Misclassification on treatment decisions was also a problem when comparing FRAX-20 with NOGG. Although NICE recommends using either FRAX or QFracture in assessing a patient’s 10 year fracture risk, it is important to note that risk estimates and treatment decisions can vary depending on which tool and guidelines are used.
INTRODUCTION
Falls prevention exercise programmes can reduce fall incidence, and also include some strengthening exercises suggested to load bone. This study compared BMD changes in good adherers with home (Otago Exercise Programme, OEP) and group (Falls Exercise Management, FaME) falls prevention exercise programmes with usual care in older people to determine whether these interventions can improve bone strength.

METHODS
Men and women aged over 65 years were recruited through primary care and randomised by practice to OEP, FaME or usual care. Bone mineral density (BMD) was measured by dual X-ray absorptiometry prior to randomisation and following the 24 week intervention. Monthly diaries were used to identify OEP and FAME participants who had completed at least 75% of prescribed exercise. Comparisons between treatment arms were made using linear regression models, adjusted for baseline values, gender, medication use and comorbidities.

RESULTS
Intention to treat analysis showed no differences in BMD changes between the three groups. 29 of the 77 OEP participants and 27 of the 95 FaME participants were classified as good adherers and compared to 117 usual care participants. Femoral neck BMD changes did not differ between treatment arms, with mean effect sizes in OEP and FaME adherers relative to usual care arms being 0.000 and +0.001 g/cm^2 respectively (P = 0.98 and 0.86). Effect sizes for section modulus were -4.5 and -10.4 mm^3 in OEP and FaME respectively (P=0.63 and 0.27). There were no significant effects at other skeletal sites.

CONCLUSION
The OEP and FaME programmes did not influence bone mineral density even in older people that reported good adherence with the prescribed interventions. Falls prevention programmes have an important role in preventing fractures by preventing falls, but to increase bone strength, programmes may need to incorporate exercise that exerts higher strains on bone and/or have a longer duration.
EFFECTS OF AGEING AND VITAMIN D DEFICIENCY ON VITAMIN D RECEPTOR (VDR) EXPRESSION IN HUMAN SKELETAL MUSCLE

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2. School of Life Sciences, University of Nottingham

Introduction
It is postulated that lower vitamin D (VitD) levels in older people reduces vitamin D receptor (VDR) expression in skeletal muscle; resulting in reduced muscle strength, function and ultimately falls. This study aims to examine the relationship between ageing, VitD levels and VDR expression in human skeletal muscle.

Methods
3 groups were studied [8 young participants aged 18-25 years, 8 older VitD sufficient participants aged ≥65 years (25-OH-D3 ≥50nmol/L) and 10 older VitD insufficient participants (<50nmol/L)]. The ‘young’ sample was a convenience sample. A muscle biopsy of their thigh (vastus lateralis muscle) was performed. Real time quantitative PCR relative to α-actin was used to measure the expression of VDR and its target genes (myostatin, Sirt1, PPARα and PPARδ). VDR protein content was measured using western blotting.

Results
Hypovitaminosis D was prevalent in young participants (median 16nmol/L; range 12-97nmol/L), but it was not statistically different from the insufficient older participants (p=0.14). Older participants had higher expression of VDR and PPARδ mRNA compared with younger participants (p=0.01). There was higher Sirt1 mRNA expression (p=0.00) and a tendency towards higher PPARα expression (p=0.07) in the older sufficient group compared to the younger group. There was no difference in skeletal muscle myostatin gene between groups. When the young participants were compared with the older insufficient group, levels of VDR mRNA and PPARδ were still higher in the older group. Circulating 25-OH-D3 levels did not appear to affect gene expression. Western blotting was unsuccessful in detecting VDR protein despite using 2 different VDR antibodies.

Conclusion
Higher VDR mRNA and target gene expression levels were seen in both older sufficient and insufficient group compared to the younger group. Higher VDR mRNA was seen in the older insufficient participants compared with the younger participants despite no statistical difference in VitD levels. This suggests that VitD levels do not influence upregulation of VDR expression.
COMPARISON OF NEUROMUSCULAR ELECTRICAL STIMULATION AND COMPRESSION STOCKINGS IN HEALTHY OLDER PEOPLE WITH ORTHOSTATIC HYPOTENSION DURING ACTIVE AND PASSIVE ORTHOSTATIC CHALLENGES - A RANDOMISED CROSSOVER STUDY

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9. Graduate Entry Medical School, University of Limerick, Ireland

Introduction
We hypothesised that neuromuscular electrical stimulation (NMES) may prevent blood pressure (BP) reductions in older subjects with OH. We aimed to test this novel hypothesis comparing the effects of elastic compression stockings (ECS) and NMES during active and passive orthostatic challenges. A secondary objective was to investigate the effect of NMES on subject tolerance.

Methods
40 community dwelling subjects over 65 years with known OH were recruited. A randomised cross-over design was used incorporating two protocols (Head-Up Tilt, Active Stand) each comprising of three 180 second interventions (control, ECS, NMES). The order of intervention was randomised. NMES was applied using custom built, two channel stimulator (Duo-STIM) muscle stimulator applied to the soleus muscle on each leg. Class 3 thigh length ECS were used. Continuous phasic BP was monitored using Finometer® Pro Device and popliteal venous blood flow response recorded by ultrasound. Tolerability was assessed using a 100 mm non-hatched visual analogue scale following set-up and after each protocol followed by a short questionnaire.

Results
38 participants completed both protocols. Mean age was 74.5 years (SD 3.96, range 71 to 90). 27 (71%) were female. Pairwise comparisons demonstrated significantly lower reductions in mean change in systolic BP in the NMES group (-21.1mmHg, -26.9 mmHg) compared to control (-28.8mmHg, -31.5 mmHg) in both protocols respectively (p=0.01 and p=0.03). There was no significant difference in systolic BP between ECS (-21.6mmHg, -32.2mmHg) and NMES in each protocol. Peak systolic velocity and venous blood flow were significantly increased in the NMES group in comparison to ECS and in control in both protocols (p<0.001). Median rating of pain on a scale of 0 to 100 at the start of the study was 16 (min=1, max=68) representing mild levels of pain on average. Median rating of pain at the end of the study was 7.5 (min=1, max=60). Rating of pain reduced by 6 on average (min change= -46, max change=21). 36 (95%) considered NMES an acceptable form of treatment. (63%) rated NMES as very comfortable or comfortable with the rest of the subjects describing it as bearable.

Conclusion
NMES is as effective as ECS in attenuating systolic BP reductions in older community dwelling subjects with OH during passive and active orthostatic challenges and is well tolerated.
VITAMIN K STATUS AND MARKERS OF VASCULAR FUNCTION IN OLDER PEOPLE WITH ORTHOSTATIC HYPOTENSION

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Introduction
Orthostatic hypotension in older people is common but difficult to treat. Vitamin K is required for the function of matrix gla protein (a powerful inhibitor of vascular calcification) so might exert beneficial effects on vascular health. We investigated differences in vitamin K status and vascular function in patients with orthostatic hypotension compared to those without.

Methods
Community dwelling men and women aged ≥65 years were recruited into a case control study. Exclusion criteria were taking warfarin, being unable to consent or stand unaided. Participants were allocated to orthostatic hypotension or control groups depending on the presence of symptomatic orthostatic hypotension (drop in systolic blood pressure ≥20mmHg or diastolic blood pressure ≥10mmHg). Vascular function was assessed by flow mediated dilatation, carotid compliance, carotid intima-media thickness, pulse wave velocity and augmentation index. Fasting blood was obtained to determine desphospho-uncarboxylated matrix gla protein (dp-ucMGP), vitamin K1 and vitamin D levels.

Results
49 participants (24 with orthostatic hypotension, 25 control) were recruited. Mean age was 75.7 years and 29 (59%) were women. Mean (SD) dp-ucMGP levels were not significantly different between the orthostatic hypotension and control groups (816 (311.4) pmol/L, 815 (555.7) pmol/L respectively, p=0.99). Mean vitamin K1 levels were non-significantly lower in the orthostatic hypotension group (122 v 261 pg/ml, p=0.07). Flow mediated dilatation (6.8% v 5.5%, p=0.40), pulse wave velocity (7.8 m/s v 8.0 m/s, p=0.73), augmentation index (34.5% v 36.4%, p=0.51), carotid intima-media thickness (0.79 mm v 0.75 mm, p=0.39), carotid compliance (0.054 mm2/mmHg v 0.052 mm2/mmHg, p=0.86) and vitamin D levels (50 nmol/L v 50 nmol/L, p=0.97) were not significantly different between the orthostatic hypotension and control groups.

Conclusions
Vitamin K status, vitamin D levels, and markers of vascular function were no different in those with orthostatic hypotension compared to control participants.
HYPERTENSION IS LESS LIKELY TO BE TREATED IN THOSE WITH LOWER MMSE SCORES. PRELIMINARY DATA FROM THE HIND (HYPERTENSION IN DEMENTIA) STUDY

T J Welsh, A L Gordon, J R Gladman

Division of Rehabilitation and Ageing, University of Nottingham

Introduction
The benefit-risk ratio of antihypertensive treatment in patients with dementia (PwD) is uncertain. It is not clear whether current practice in this group tends to adhere to or deviate from generic guidelines. Against this background we set out to describe the treatment of hypertension in PwD.

Methods

Results
Data from 118 participants with hypertension and dementia (documented in GP records) were available for analysis: 64 (54%) female; mean age 81; 99 (84%) resident in their own homes, 18 (15%) in residential homes and 1 (1%) in nursing homes. They reported falls at a rate of 2.1 per year, and their mean MMSE was 21/30. The majority (94, 80%) were taking ≥1 antihypertensive (mean 1.2). ACEi/ARBs were most commonly taken (59, 50%), then CCBs (40, 34%), diuretics (24, 20%), alpha blockers (9, 8%) and beta-blockers (8, 7%). 77 (65%) had a blood pressure of <140/90. 12, 10.5% had significant orthostatic hypotension. Those taking antihypertensives had a higher MMSE than those not taking them (22 vs 15, p<0.001) but there was no significant difference in blood pressure between those prescribed and not prescribed an antihypertensive (139/76 vs 132/78).

Conclusions
Hypertension was treated in most cases and target blood pressure achieved in two thirds. Those not prescribed antihypertensives were more cognitively impaired than those with prescriptions. Blood pressure did not differ significantly between these groups.
HYPERTENSION IS LESS LIKELY TO BE TREATED IN THOSE WITH LOWER MMSE SCORES. PRELIMINARY DATA FROM THE HIND (HYPERTENSION IN DEMENTIA) STUDY

T J Welsh, A L Gordon, J R Gladman

Division of Rehabilitation and Ageing, University of Nottingham

Introduction
Care home residents are typically frail, dependent and cognitively impaired. The balance of benefits and harms of the treatment of hypertension in this group are uncertain. To establish what is already known about how hypertension is treated in care home residents, we conducted a systematic review of the prevalence of hypertension in care home residents, its treatment, change in treatment over time and the achievement of blood pressure (BP) control.

Method
The PubMed, Cochrane, Embase and PsychINFO databases were searched for observational studies involving care home residents with a diagnosis of hypertension. Abstracts and titles were then reviewed with eligible articles read in full. Bibliographies were examined for further relevant studies. The final selection of studies was then analysed and appraised.

Results
Sixteen articles were included in the final analysis. Half were studies conducted in the USA. The prevalence of hypertension in care home residents was 35% (range 16%-71%). 72% of these were on at least one antihypertensive (mean 1.5 antihypertensives per individual), with diuretics being the most common. The prevalence of hypertension was greater in more recent studies (p=0.002). ACEi/ARBs (p=0.006), diuretics (p=0.028) and β-blockers (p=0.05) were prescribed more frequently in recent studies. The number of antihypertensives prescribed per patient was higher (R²=0.740, p=0.014) whilst fewer patients achieved target BP (R²=0.438, p=0.106) in more recent studies.

Conclusion
Hypertension is common in care home residents and is commonly treated with antihypertensive drugs, which were prescribed more frequently in more recent studies but with no better BP control. These studies indicate a tendency towards increasing poly-pharmacy over time – with associated risk of adverse events - without demonstrable benefit in terms of BP control.
SENSORY IMPAIRMENTS AND MORTALITY IN OLDER BRITISH COMMUNITY-DWELLING MEN: A 10-YEAR FOLLOW-UP STUDY

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Introduction
Sensory impairment is common in old age and associated with morbidity. However few studies have investigated the impact of sensory impairment on long-term cause-specific mortality risks in older adults. We explored the association between impairments in hearing and vision and the risk of mortality from coronary heart disease (CHD), cardiovascular disease (CVD) and all-causes over 10 years.

Methods
A socioeconomically representative cohort of 3981 men from 24 British towns was followed up from 2003 to 2013. Hearing impairment was defined by self-reported data on hearing aid use and ability to follow television at a volume acceptable to others and categorised into: could hear (no hearing impairment), could hear with aid, could not hear and no aid, and could not hear despite aid. Vision impairment was defined as not being able to recognise a friend across a road. Dual sensory impairment was defined as reporting poor vision and any of the three groups of hearing impairment. The Cox proportional hazards model was used to calculate hazard ratios (HR) with 95% confidence intervals (95% CIs) for mortality.

Results
During follow-up, 1463 deaths including 308 CHD deaths and 408 CVD deaths occurred. Men who reported not being able to hear and not using a hearing aid had increased risks of all-cause mortality (HR 1.19, 95% CI 1.01, 1.40) and CVD mortality (age-adjusted HR 1.37, 95% CI 1.02, 1.85). Vision impairment (HR 1.67, 95% CI 1.31, 2.13) and dual sensory impairment (HR 1.89, 95% CI 1.35, 2.65) were also associated with all-cause mortality, but not with CVD mortality. Only the association of vision impairment with all-cause mortality remained significant after adjustment for social class, obesity, smoking, physical inactivity, diabetes and prevalent CVD. Sensory impairments were not associated with CHD mortality.

Conclusion
Older men with hearing impairment, vision impairment and dual sensory impairment have an increased risk of all-cause mortality over 10 years. Hearing impaired older men also have an increased risk of CVD mortality. Our findings suggest that the associations between hearing impairment and mortality are explained by social class and behavioural factors, while vision impairment appears to be independently associated with all-cause mortality. Further research is warranted on the possible mechanisms of mortality in visually impaired older adults.
QUALITY OF CARE IN VERY OLD PATIENTS WITH TYPE 2 DIABETES MELLITUS: DISPARITIES BETWEEN PATIENTS MANAGED WITH LIFE STYLE INTERVENTIONS ONLY AND THOSE TREATED WITH ANTIDIABETIC MEDICATIONS

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2. Department of Primary Care and Public Health Sciences and National Institute for Health Research (NIHR) Biomedical Research Centre at Guy’s and St Thomas’ NHS Foundation Trust, King’s College London

Introduction
Considerable numbers of very old diabetic patients are managed with lifestyle interventions (LSI) without antidiabetic drugs. It was previously reported that there were some differences in management between patients with LSI and those on antidiabetic medications (Hippisley-Cox J, Pringle M. Lancet 2004;364:423-428). This study aimed to evaluate care process and achievement of intermediate outcomes in very old people with type 2 diabetes mellitus.

Methods
Eligible patients were aged 80 years old or older, diagnosed with type 2 diabetes and continuously registered more than one year on the UK Clinical Practice Research Datalink as of 1 April 2012. Nine process measures including smoking status, BMI, serum creatinine, HbA1c, blood pressure, cholesterol, eye examination, foot examination and urine protein were examined in the past one year from 1 April 2012. Target achievement of non-smoking, BMI (<30 kg/m²), HbA1c (≤7.5% or 58.5 mmol/mol), blood pressure (≤140 & ≤80 mmHg) and cholesterol (<5 mmol/L) were compared between patients with LSI only and those on antidiabetic medications, adjusted for gender, age group, duration of diabetes and patients’ general practice.

Results
A total of 34,239 patients, 11,971 with LSI and 22,268 on antidiabetic medications, were included. All the process measures were more recorded in patients on antidiabetic medications (all P<0.001). All eight processes of care, excluding eye examination, were recorded in 37% of patients with LSI and 48% of those on antidiabetic medication (P<0.001). Adjusted odds ratios for the achievement of HbA1c and BMI were 0.12 (95% CI 0.11 to 0.14, P<0.001) and 0.67 (0.63 to 0.72, P<0.001) in patients on antidiabetic medications against those with LSI, whereas those for blood pressure and cholesterol were 1.12 (1.06 to 1.18, P<0.001) and 1.51 (1.40 to 1.62, P<0.001), respectively. The proportions of non-smokers were similar in both groups (89%). Small numbers of patients achieved all of the five intermediate outcomes, and patients with LSI (36%) achieved more compared to those on antidiabetic medications (27%).

Conclusions
Patients treated with antidiabetic drugs had more favourable process of care measures and better control of blood pressure and cholesterol but had higher BMI and HbA1c values. Further research is needed to examine the associations between the control of risk factors and major complications in the patients with possibly limited life expectancy.
DOES DEMENTIA TRAINING CHANGE ATTITUDES AND COMPETENCE IN DEMENTIA CARE AMONG FOUNDATION YEAR TRAINEES? A PILOT STUDY

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Introduction
At any one time, a quarter of acute hospital beds in the UK are in use by patients with dementia. The National Dementia Audit reported a lack of appropriate dementia care, which could be due to lack of awareness, and skills among general medical trainees. This study examined if a dedicated dementia training/workshop for foundation year (FY2) trainees has any impact on knowledge and attitudes towards people with dementia.

Methods
A Consultant led structured training/workshop was delivered over 2 hours. It included an introduction to dementia and its impact of medical services; brainstorming (drawing a penny coin from memory and reflection on their experience/emotions); group work (formulating a spider diagram for essential key skills for good dementia care); a video presentation (patient/family perspective), and finally a dementia literature review. Validated tools including the 14-item Geriatric Attitude Scale (GAS) and the 17-item Sense of Competence in Dementia Care Staff (SCIDS) scale were used pre and post training to measure any changes. The GAS uses a mix of 5 positively and 9 negatively-phrased items to measure attitude. Negative items were reverse-scored to establish a total congruent score.

Results
Out of 40 FY2 who attended two training sessions, 34 completed pre and post training scales. The results are presented below:-

<table>
<thead>
<tr>
<th>Scale</th>
<th>Pre-training results</th>
<th>Post-training results</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAS +ve</td>
<td>3.87±0.61</td>
<td>3.85±0.52</td>
<td>p=0.89</td>
</tr>
<tr>
<td>GAS -ve</td>
<td>2.44±0.49</td>
<td>2.40±0.49</td>
<td>p=0.64</td>
</tr>
<tr>
<td>GAS total</td>
<td>3.66±0.43</td>
<td>3.56±0.40</td>
<td>p=0.20</td>
</tr>
<tr>
<td>SCIDS</td>
<td>2.59±0.40</td>
<td>3.08±0.50</td>
<td>P&lt;0.001</td>
</tr>
</tbody>
</table>

Previous studies have reported total mean GAS scores from 3.70 to 3.77.

Conclusions
We observed no significant change in the attitudes of foundation year 2 doctors following dementia awareness training. There was a significant improvement in the sense of competence among trainee doctors. This was a pilot project and further sessions will be undertaken for future trainees including FY1. We also propose investigating whether a similar workshop could improve attitude and competencies in undergraduate students.
THE ‘THRESHOLD CONCEPTS’ IN GERIATRIC MEDICINE

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Introduction
Elderly patients make up the largest proportion of patients in UK hospitals. To manage these patients requires a unique skill set acquired during higher training in geriatric medicine. Recent controversies have shown that at times the care elderly patients receive is lacking.

Threshold Concepts (TCs) represent a means of examining the key personal (ontological) changes which take place in becoming ‘a geriatrician’. They are the ‘jewels in the curriculum’ and are transformative moments of learning. TCs are the key concepts we need to engage others with to care for elderly patients correctly.

TCs were initially identified using both a criteria based approach (TCs are transformative, irreversible, integrative, bounded and troublesome). More recently the visualisation of knowledge structures by constructing concept maps has been used. Concepts that drive the change from a linear to networked knowledge structure are proposed as TCs.

Method
This is a qualitative study of supervisors and trainees of different levels. 12 semi structured interviews were undertaken, with consultants, and analysed with an interpretive phenomenological approach. Concept mapping of interviews was used to visualise knowledge structures to identify TCs and a questionnaire delivered to trainees, based on these, provided further data. Both methods for TC identification were employed in this study.

Results
The study shows that whilst there are a number of troublesome areas in geriatric medicine training two themes stood out as TCs. The first was the appreciation of the complexity of older patients and what this entails (encapsulating frailty, MDT working, etc.) and a new concept of ‘maternalistic’ care (active, holistic and nurturing). Both of these have large degrees of tacit knowledge, fulfil the criteria base definition of a TC and concept mapping showed they drive a networked mode of thinking.

Conclusion
Identification of these TCs in geriatric medicine can now lead to a focused analysis of postgraduate medical curriculums to ensure all doctors looking after elderly patients are exposed to these concepts. Role modelling was a key driver for the transformative change seen in junior doctors and time with a geriatrician is key. Supervisors of junior doctors should be aware that these areas may be troublesome for doctors but can lead to transformative ontological changes.
THE ROLE AND COMPETENCIES OF ADVANCED NURSE PRACTITIONERS WORKING WITH FRAIL OLDER PEOPLE: A DELPHI STUDY

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Background
Advanced Nurse Practitioners (ANPs) are experienced nurses who undertake activities traditionally performed by medical staff. There are four pillars of advanced practice: advanced clinical skills, leadership/management, education and service development/research. ANPs are starting to specialise in disciplines involved in working with frail older people. However, the role and competencies required for this have not been well defined.

This study aimed to get national consensus on the role description and essential competencies required for ANPs working with frail older people.

Methods
Initially a literature review was completed and workshops arranged with multi-professional and lay individuals to identify possible competencies and a role description.

A Delphi process was then conducted with three rounds involving a panel of 30 national experts including representation from the British Geriatric Society (BGS) Education and Training Committee, the BGS Senior Nurses and Practitioners Group, the Royal College of Nursing, Allied Health Professionals and lay representatives. Consensus was deemed reached when 70% of the panel agreed.

Results
Data was collected between July and November 2014.

The initial role description was considered both too senior and broad. Through two rounds of rewording, a role description was developed which reached 100% agreement.

31 essential competencies were agreed after round one, 41 after round two and 49 after round three. Modifications were suggested by the panel for rewording, combining and adding additional competencies. Seven competencies reached consensus as ‘not essential’ and there was no consensus on nine competencies.

Conclusion
This Delphi study has allowed for the first time a national panel of clinical experts and lay representatives to refine and agree on a set of competencies for ANPs working with frail older patients and is the first step towards ensuring consistency in the training of ANPs in geriatric medicine.
FRAILTY AND THE MICROBIOME: A TWIN STUDY

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Background
Frailty is a multi-dimensional concept, conferring reduced resistance to stressors because of depleted physiological reserve, and associated with increased risk of adverse health states. Recent research has indicated that the gut microbiome, which contains 150 times the genetic capacity of the human genome, may have lasting impact on human health (1), but its effect on frailty has received little attention. We investigated the association of the Rockwood Frailty Index (RFI) with the faecal microbiome in female twins.

Methods
RFI was calculated using 39 domains of potential health deficit in female twins. 873 individuals had microbiome data (V4 16s rRNA gene sequencing on the Illumina MiSeq platform). Quality filtering and ecological analysis was performed using QIIME. The relationship between the Operational Taxonomic Units (adjusted for gender, age, and other confounders) and RFI was assessed using a linear mixed effects model accounting for sex and family structure, using twins as individuals and co-twin control.

Results
35 results passed Bonferoni correction (p=5.05x10^-5), 164 passed FDR 1% and 328 passed FDR 5%. Of note, Faecalibacterium prausnitzii (in the top 35) was negatively associated with RFI (Beta=-0.032). This bacterium has been previously found to be significantly reduced in a small sample of very frail elderly in comparison to robust controls (2). In addition, another firmicute, Eubacterium dolichum was found to associate positively with frailty (Beta=0.032).

Discussion
Robust associations exist between the gut microbiome and frailty. Whether these associations are a consequence of frailty or implicated in its causation remains to be seen. In particular, the inverse association between the common commensal Faecalibacterium prausnitzii and frailty is of interest in view of the potentially anti-inflammatory effects of this bacterium, and evidence of a causal relationship in the development of colitis (3).

1. DOI:10.1038/nature08821
2. DOI: 10.1128/AEM.71.10.6438-6442.2005
3. DOI: 10.1016/j.mib.2013.06.003
FRAILTY, COMORBIDITY, DISABILITY AND POOR SELF-RATED HEALTH: PREVALENCE OF OVERLAPS AMONGST THE OLDEST-OLD ADULTS FROM THE HONG KONG CENTENARIAN STUDY

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Introduction
The frailty phenotype includes five characteristics: fatigue, weakness, poor endurance, physical illness and weight loss. Frailty correlates strongly with comorbidity and disability, but their interaction with self-rated health (SRH) amongst the oldest-old adults remains unclear. We examined the prevalence of overlap between frailty, comorbidity, disability and poor SRH amongst the oldest-old adults.

Methods
We conducted a cross-sectional community-based centenarian study of 124 community-dwelling Chinese near- and centenarians. We assessed four major phenomena: a) frailty using the FRAIL Questionnaire of the International Academy of Nutrition and Aging (FRAIL-IANA); b) disability using the Instrumental Activities of Daily Living; c) comorbidity using the Charlson Comorbidity Index; and d) SRH. Prevalence of individual and overlapping phenomena was examined.

Results
Mean age was 97.7 (SD 2.3) years, range 95 to 108 years, and 74.2% were female. According to FRAIL-IANA, 20% of the centenarians were non-frail, 56% were pre-frail, and 24% were frail. Of the frail centenarians, 71% had comorbidity/disability/poor SRH. 11% of the centenarians had comorbidity but didn’t have frailty, disability or poor SRH. 10% of centenarians had disability but did not have frailty, comorbidity or poor SRH. 7% of centenarians had poor SRH but did not have frailty, comorbidity nor disability. All frail centenarians had at least one of comorbidity, disability or poor SRH (or combination of these). 71% of centenarians with disability or poor SRH were not frail. 9% of the centenarians were robust with none of the four phenomena.

Conclusions
The majority of the oldest-old community-dwelling adults with disability or poor SRH were not frail, and almost one-in-ten had no significant frailty, comorbidity, disability or poor SRH. Future studies should explore the complex interactions between frailty, comorbidity, disability and poor SRH amongst nature’s extreme survivors.
DOES CHRONIC PAIN INCREASE THE RISK OF DEVELOPING FRAILTY?
RESULTS FROM THE EUROPEAN MALE AGEING STUDY

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Introduction
Frailty can be described as a clinical state where an individual is vulnerable to increased risk of adverse outcomes when exposed to stressors. The aim of this analysis was to determine whether chronic widespread pain (CWP) is associated with an increase in frailty among community-dwelling European men.

Methods
3,369 men aged 40-79 years were recruited from population registers in eight European centres for participation in the European Male Ageing Study (EMAS). Subjects were asked about the site, presence and duration of musculoskeletal pain and those with CWP were identified using established criteria. Participants also completed an interviewer-assisted questionnaire including questions about health related quality-of-life (SF-36), and depression (Beck’s Depression Inventory). A repeat assessment, using the same instruments, was undertaken a median of 4.4 years later. A frailty index (FI) comprising 39 deficits was developed at both baseline and follow-up, with the FI expressed as a ratio of the number of observed, divided by number of possible, deficits. Negative binomial regression was used to examine the association between the occurrence of CWP (predictor) and change in FI during follow-up, with the results expressed as incident rate ratios (IRR) and 95% confidence intervals (CI).

Results
A total of 2593 men, mean age 59 years (SD 10.6) contributed data to the analysis. At baseline 211 (8.1%) men reported CWP, 50% reported some pain and 41.8% reported no pain. Mean FI was 0.12 (SD 0.1) at baseline and 0.14 (SD 0.1) at follow-up. After adjustment for age, centre and baseline FI, compared to those with no pain, those with CWP had a 19% increase in FI at follow-up, indicating worsening frailty (IRR=1.19; 95% CI 1.08, 1.31). After further adjustment for body mass index and depression, the increase in FI remained significant (IRR= 1.17; 95% CI 1.07, 1.28).

Conclusions
CWP is associated with an increase in frailty index.
**CAN PARAMEDICS USE FRAX TO IDENTIFY PATIENTS AT GREATEST RISK OF FUTURE FRACTURE AMONG THOSE WHO FALL? A FEASIBILITY STUDY**

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**Background**  
The majority of fragility fractures occur in people who fall. However, only a minority of people who fall are assessed for fracture risk.

We hypothesised that paramedics attending such patients could calculate 10-year fracture risk using FRAX and, by informing their GPs, increase assessment and treatment for osteoporosis for those at highest risk of fracture.

**Methods**  
This feasibility study aimed to explore and refine issues regarding study design, recruitment, retention, sample size and acceptability to inform a future multicentre randomised control trial.

Volunteer paramedics were trained regarding osteoporosis, falls and FRAX. Patients ≥50 years who fell were attended by paramedics. Once stabilised, they (or their carers if they lacked capacity) provided verbal consent to answer FRAX questions and subsequent contact by a researcher.

Patients were formally recruited by the researcher and randomised to the intervention (FRAX calculation and advice sent to GPs) or usual care. The target recruitment was 50 participants per group.

**Results**  
23 paramedics verbally consented 175/1447 (12.1%) patients who fell over a 12 month recruitment period. 53/175 (30%) progressed to formal recruitment. The average age was 81 years (57-98), 51% women.

The median number of falls per patient reported in previous year was 3.0. Prior fragility fracture was reported by 23/53 (43%). The median FRAX risk of hip fracture was 7.6% over 10 years (>5% in 37/53 70%). 28/53 (53%) of patients were at intermediate/high risk (according to NOGG criteria). Only 9/28 had ever taken osteoporosis medication.

Qualitative work suggested that the intervention was acceptable to most patients, carers, GPs and paramedics. However, recruitment was challenging, with paramedics and patients identifying the difficulties of consent in the context of a fall. GPs highlighted the complexities of fracture prevention advice in patients with comorbidities.

**Conclusion**  
This feasibility study suggested that the intervention was acceptable, but highlighted some challenges in recruiting patients in this setting that can be addressed in future work. The calculated FRAX fracture risk was high in this patient group which supports the need for a targeted intervention.
THE CHALLENGE OF DELIVERING ‘HIGHLY CHALLENGING’ BALANCE TRAINING IN RESIDENTIAL CARE DWELLERS

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Background
Falls are a serious problem for older people with dementia living in residential care and there is limited evidence of effective preventative interventions including exercise. It is not clear whether this poor response is due to inadequate dose or whether exercise is not the optimal intervention. Highly challenging balance training carried out for >50 hours prevents falls in community dwellers.

The Prof-Cog study was a pilot cluster RCT investigating a multifactorial falls prevention intervention for older people with dementia living in residential care.

Methods
Participating care homes, including both residential and nursing homes in SE London, were randomly assigned to intervention or usual care. The intervention included dementia care mapping, comprehensive geriatric assessment, occupational therapy input and twice weekly balance training exercise.

Measures of balance, mobility, function, behaviour, mood, cognition, quality of life and falls were collected at baseline and 6 months. Adherence was documented.

Results
191 participants from 9 care homes (including both residential and nursing homes) enrolled in the trial with 103 allocated to an intervention home and 88 to usual care.

Half the participants suitable for balance exercises dropped out due to repeated refusals and actual intensity of balance exercise achieved was poor (mean 8 hours exercise over 6 months). There were no significant differences in any outcomes between intervention and control. In most measures, both groups declined equally. However, in those who were able to adhere to exercise (>33 sessions), balance did not decline (-1.61) compared to a significant deterioration in those unable to achieve 33 sessions (-5.28, P<0.001). Functional impairment (Barthel) and behaviours (NPI-NH) (OR 11.05 [95%CI2.68-45.56] and 3.91 [95%CI1.14-13.44] respectively) but not cognition (ACE-R) predicted adherence to the exercise programme.

Conclusion
It was difficult to achieve the desired intensity of exercise but in those capable of exercising effectively, deterioration in balance function was slower. Physical frailty was a greater limiting factor to participation than cognition.
PSYCHOTROPIC MEDICATIONS AND FALLS-SPECIFIC HOSPITAL ATTENDANCES

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Introduction
Psychotropic medications are known to cause falls. Although psychotropic drug use is moderately higher in care home populations (20.3% of care home residents are on antipsychotics versus 1.1% of community dwellers) (Maguire A et al. J Am Geriatr Soc 2013;61:215-221), whether the risk of falls translates to an acute hospital attendance is unclear. As part of the NIHR funded PRevention Of Falls in COGnitively impaired older adults living in residential care (PROF-COG) study, we tested the hypothesis that antipsychotics, anxiolytics, antidepressants, dementia and anti-parkinsonian medication are associated with hospital attendance.

Methods
The PROF-COG study randomized 191 care home residents who either received a screening assessment, followed by CGA and appropriate interventions based on the findings and an exercise program, or usual care.

Results
Of the 164 residents who remained in the study, there were a total of 132 hospital attendances, of which 29 were due to falls. Intervention was not associated with a reduction in hospital attendance. There were 94 attendances in the intervention group versus 38 attendances in the control group (p=0.01). Anti-parkinsonian medication was associated with an increased number of hospital attendances (β =1.90 (95% CI 0.86-2.94), p=0.004) and falls-specific attendances (β=0.86 (95% CI 0.46-1.27), p<0.001) although Parkinson’s disease itself was not. Antidepressants were also associated with an increased number of falls-specific attendances (β=0.27 (95% CI 0.06-0.48), p=0.01). Antipsychotics, anxiolytics, and dementia medication were not associated with all-cause or falls-specific acute hospital attendances.

Conclusion
To our knowledge, this is the first study which suggests an association between some psychotropic medications and hospital attendances. Specifically, the use of anti-parkinsonian and antidepressants were associated with falls-specific acute hospital attendances in our care home population. Some antidepressants are known to be associated with postural hypotension which increases the risk of falls, and use of these should be considered carefully.
PREVENTION OF FALLS IN OLDER PEOPLE WITH COGNITIVE IMPAIRMENT LIVING IN RESIDENTIAL CARE (PROF-COG) - A FEASIBILITY AND PILOT CLUSTER RANDOMISED CONTROLLED TRIAL

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Introduction
Falls are common in older people with dementia living in residential care. The ProF-Cog intervention was developed to address fall risk factors specific to residential care dwellers with dementia.

The aim of the study was to evaluate the safety, acceptability, feasibility and efficacy of the intervention using a pilot cluster randomised controlled trial.

Methods
Participating care homes in SE London were randomly assigned to intervention or usual care. The intervention included dementia care mapping (DCM), comprehensive geriatric assessment, occupational therapy input and twice weekly physiotherapy.

Outcome measures were collected at baseline and after 6 months and falls recorded using incident reports. Adherence to the interventions and adverse events were documented. Focus groups with participants and care staff were held in each intervention home.

Results
191 participants (51% of those eligible) from 9 care homes enrolled in the trial with 103 allocated to the intervention home and 88 to usual care.

The intervention was safe with only one reported fall whilst taking part in exercise. Some (4/13) of the outcome measures were not feasible as they could not be easily completed by enough participants.

Adherence to the environment, activity and DCM advice provided by the occupational therapist was moderate to good (63-81%). Adherence to exercise was poor (41%). Interview analysis suggested that pain was one limiting factor.

Feedback about the intervention from care staff and participants was mostly positive.

There were no significant differences in any outcome measures including the primary outcome; balance score ($p=0.9$) or in risk of falls ($RR=1.0; 95\% CI 0.58-2.03$). In most measures, both groups declined equally. The study was underpowered due to high intracluster correlation coefficients (0.37-0.85).

Conclusion
The intervention was safe and feasible but not clinically effective. Possible reasons for lack of clinical effect include inadequate dose and intensity of the intervention.
IMPULSIVE BEHAVIOURS PREDICT FALLS IN HOSPITAL INPATIENTS

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Background
Falls are one of the biggest causes of harm to older inpatients and their prevention remains a challenge. To date there is no reliable method of predicting who will fall in hospital.

Method
All patients admitted to three geriatric medicine wards at King’s College Hospital underwent a fall risk assessment using both STRATIFY and CAHFRIS (a screen developed for use in care homes). CAHFRIS uses seven risk factors: MMSE <17, impulsivity, poor standing balance, walking frame use, fall in the previous year and use of antidepressants and hypnotics/anxiolytics. Impulsivity was assessed with five questions: Does the patient: rush to carry out an activity without thinking about it first; sit down before getting right up to the chair/toilet/bed; attempt to stand before wheelchair brakes have been applied/walking frame placed in front of them and walk without help when asked not to. Frequency and alterability of wandering behaviour was also included.

This pilot study evaluated whether these risk factors remained predictive in the acute hospital setting.

After excluding readmissions, new patients admitted to these three wards over two 1 month periods were included. Incident reports and electronic notes were screened to detect falls during the admission.

Results
Data were collected for 165 patients with mean age 83.8 (±6.9) and 97 were female. Neither CAHFRIS nor STRATIFY scores were predictive of falling. Impulsivity was the only measure significantly associated with falling (p<0.001). As well as the combined impulsivity score, a positive answer to any impulsivity question was predictive of falling (AOR 1.7, 95%CI1.2-2.3 and OR 4.0, 95%CI1.7-9.6 respectively). The AUC (ROC) for any impulsivity was 0.69 (95%CI 0.56-0.82).

Conclusion
Stratify and CAHFRIS did not discriminate between fallers and non-fallers in patients on our wards. The next steps will be to investigate interventions to address impulsivity as a method to prevent inpatient falls. A clinical application would be the creation of an ‘impulsive bay’ within a ward with increasing staffing levels.
COGNITIVE BEHAVIORAL THERAPY AND FEAR OF FALLING

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Introduction
Parkinson's disease (PD) is a life-limiting, neurodegenerative condition. Access to palliative approaches remains limited, partly due to difficulty recognising unmet need, which would allow targeting of resources. The NAT-Parkinson's disease is a novel tool, assessing the likelihood of unmet palliative care needs in PD (score 0-2) covering patient wellbeing, carer/family wellbeing and ability of carer to care for patient. The aim is to examine the association between five patient characteristics and unmet palliative care need in PD.

Methods
The study was a \textit{post-hoc} analysis of validation data for NAT-Parkinson’s disease. Following univariate analysis, five independent variables (Hoehn and Yahr stage, age, gender, reduced mobility and formed hallucination) were selected for a logistic regression model, where the primary outcome (dependent variable) was “significant concern” of unmet palliative care need (NAT-Parkinson’s score 2) in any category. Reduced mobility was present if patients “sometimes” had difficulty walking more than 100 yards (PDQ-39 question 5). Hallucinations were present if patients experienced ‘formed hallucinations independent of environmental stimuli’ (MDS-UPDRS section 1.2).

Results
The odds of unmet needs in any category of the NAT were increased if the patient had reduced mobility (OR 17.2, p=0.01) or a greater H&Y stage (OR 3.8, p=0.04), while the odds of unmet needs were reduced by advancing age (OR 0.8, p=0.04). Using patient wellbeing only, as a secondary outcome variable, the same associations were found; H&Y stage (OR 3.89, p=0.03) reduced mobility (OR 5.8, p=0.046), while the inverse association with age was no longer statistically significant.

Conclusion
While this was a pilot study, involving post-hoc analysis of previously collected data, it suggests that important associations may exist between unmet palliative care need and patient factors such as mobility and disease stage. If true, this has implications for targeting of health resources and should be further examined in large scale, prospective research.
DISCHARGE LOCATION AFTER HIP FRACTURE - THE EFFECT OF POSTOPERATIVE COMPLICATIONS

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Introduction
Femoral neck fractures represent a large proportion of inpatient hospital days in the older population with many patients experiencing a change in the level of care that they need to function. This results in many patients being discharged to an alternative location, albeit not on a permanent basis. There is often delay in discharge due to recognising and arranging the changes needed. This results in longer length of stay. Scores have been developed to try to predict discharge to alternative location (DAL). None of these have so far taken into account the effect of post-operative complications on DAL.

Method
Our study looked at 3843 patients admitted with fractured neck of femur over a five year period (2009-2013). The mean rate of DAL over these five years was 40.33% which was consistent with the previously recorded rate by Deakin et al in 2008.

Results
In our study the DAL group had statistically more complications (45.35% vs 34.29%), than non DAL ($p < 0.001$). Analysis of patient factors and complications using multivariate Cox Regression revealed that age, living alone, AMT, COAD pre op, Chest infection, SWI, Deep Infection, Urinary Tract Infection, Renal Failure and Periprosthetic Fracture were all found to be significantly associated with DAL ($p<0.05$).

A ROC analysis of this group suggests that there is no relationship between increased number of complications per patient and the incidence of DAL.

Conclusion
In an environment of increased financial pressure on healthcare providers, the early prediction of patients requiring additional support on discharge could reduce healthcare costs and improve quality of outcomes. Our results suggest that post-operative infective complications should trigger a review of discharge planning as soon as they occur.
DELIVERING DIGNITY IN PRACTICE IN CARE FOR OLDER PEOPLE: SINGLE ROOMS OR MULTI-BEDDED WARDS? A QUALITATIVE STUDY

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Introduction
The National Health Service UK agenda on consumerism emphasizes the quality of environment, including patient accommodation with 50% or more single rooms (SR). New hospital design policies favor SR over traditional multi-bedded wards (MW) for greater privacy, personalised care and infection control. The aim of the study was to compare patient dignity and satisfaction between SR and MW.

Methods
A qualitative study consisting of a semi-structured interview using 14-questions to assess maintenance of dignity and level of patient care on two sites. Sites, Ysbyty Ystrad Fawr (YYF) with 100% SR and the Royal Gwent Hospital (RGH) with MW are under the Aneurin Bevan University Health Board (Wales, UK). Twenty-five patients aged 65 and over admitted to each site, recovering from an acute medical illness who were able to give informed consent were interviewed.

Results
Mean age of patients in YYF and RGH were 79.84±6.8 (66-93) and 79.44±7.0 (66-94) respectively. 88% patients from MW believe dignity can be maintained but only half would like to be re-admitted to MW whereas in comparison about 90% admitted to SR would prefer SR only for future hospital admissions. Patients admitted to SR not only listed higher number of advantages over MW (p=0.001), but also perceived fewer disadvantages of the SR environment (p=0.005). Though MW sample listed similar number of advantages of MW compared to SR (p=0.96) but identified more disadvantages of MW compared to SR (p=0.035). In addition, more patients in SR reported receiving a high level of care (100%), compared to MW (84%).

Conclusion
Although single rooms proved more favourable and provided enhanced dignified care for older people in this study, it is challenging to provide both patient safety and excellent quality of care in any one setting. Therefore a mixture of both single and multi-bedded wards seems more appropriate.
DIFFERENCES IN THE INVESTIGATION AND TREATMENT OF ELDERLY PATIENTS WITH CANCER WHEN COGNITIVE IMPAIRMENT IS PRESENT

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Introduction
Disparities in the diagnosis, investigation and management of cancer in the older person have unfortunately been well established (Moller et al, 2011). A review by Solomons et al (2013) indicated that there is a dearth of research investigating the possibility of even further disparity secondary to cognitive impairment. The study aimed to examine the differences in investigation and treatment of elderly patients with cancer when cognitive impairment is present.

Methods
We used data from COCOC (Comprehensive Care for Older People with Cancer), a UK hospital initiative working in partnership with The British Red Cross and Macmillan Cancer Support to improve support and access to hospital treatments and community services. Patients (n=285) included in the study had been referred to the COCOC service over a two year period with breast, lung or colorectal cancer, at any stage or type. Cognitive assessment was undertaken to establish dementia or cognitive deficits.

Results
Cognitively impaired (n=28) and unimpaired patients (n=257) were similarly matched for cancer type and stage. However, 26% of the cognitively impaired group did not have their malignancy confirmed by histopathology, as opposed to only 4.9% in the unimpaired group. Treatment aims showed significant difference as only 18% of cognitively impaired patients received potentially life-saving treatments compared to 40% in the unimpaired group ($\chi^2 (2, N=28) = 44.02, p < 0.01$). A palliative approach was undertaken in 68% of the cognitively impaired as opposed to 38% of the unimpaired patients. Surgery was undertaken in 47% of the cognitively unimpaired but only 21% in the cognitively impaired ($\chi^2 (3, N=28) = 26.628, p < 0.01$). However, most noticeable was the difference in palliative treatments, with a basic symptom management approach taken in 64% of the cognitively impaired but only 23% of the unimpaired.

Conclusion
The findings indicate a marked disparity in both investigation and treatment, and highlight the need for open and documented decision making at multidisciplinary team meeting regarding how cognitive deficits affect management options. Cancer specialists are justifiably cautious treating dementia patients, but decisions made at MDT can be based on a brief history, which may be overly influenced by the mention of comorbid dementia, or a suspicion thereof.
THE IMPACT OF COMPREHENSIVE GERIATRIC ASSESSMENT ON TOLERANCE TO CHEMOTHERAPY IN OLDER PEOPLE

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⁴. Department of Clinical Oncology, Guys & St Thomas’ NHS Foundation
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Introduction

While comorbidities are identified in routine oncology practice, intervention plans for the co-existing needs of older people receiving chemotherapy are rarely made. This study evaluates the impact of geriatrician-delivered comprehensive geriatric assessment (CGA) on chemotherapy toxicity (side effects) and tolerance for older people with cancer.

Methods

Comparative study of two cohorts of older patients with cancer undergoing chemotherapy in a London Hospital. The observational control group recruited 108 participants from October 2010 to July 2012 and received standard oncology care. The intervention group recruited 65 participants from September 2011 to February 2013 and underwent risk stratification using a patient-completed screening questionnaire; high risk patients received CGA. Impact of CGA on chemotherapy tolerance outcomes and grade 3+ toxicity rate were evaluated. Outcomes were adjusted for age, comorbidity and initial dose reductions.

Results

Intervention cohort participants undergoing CGA received mean of 6.2+/−2.6 (range 0-15) CGA intervention plans each. The intervention cohort was more likely to complete cancer treatment as planned (odds ratio (OR) 3.60 (95% CI 1.56-8.27), p=0.003) and required fewer treatment modifications (OR 0.42 (95% CI 0.21-0.85), p=0.016). Overall grade 3+ toxicity rate was 43.8% in the intervention group, 50.9% in the control (p=0.413); for gastrointestinal cancers grade 3+ toxicity rate was 39.0% intervention vs 53.1% control, p=0.535.

Conclusions

Geriatrician-led CGA was associated with better outcomes and improved chemotherapy tolerance. Standard oncology care should shift from identifying towards modifying co-existing conditions to optimise chemotherapy outcomes for older people. Embedding CGA interventions in oncology practice merits further evaluation.
ASSOCIATION OF THE CLINICAL FRAILTY SCALE (CFS) WITH HOSPITAL OUTCOMES IN A LARGE RETROSPECTIVE COHORT OF NON-ELECTIVE ADMISSIONS AGED ≥75 PRESENTING TO A TERTIARY UNIVERSITY NHS HOSPITAL

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Introduction: The 9-point Clinical Frailty Scale© (CFS) was validated in the Canadian Study of Health and Aging as a predictor of adverse outcomes in community-dwelling older people. The CFS has been less well studied in acute hospital settings. In our centre, the use of the CFS in emergency admissions of people aged ≥75 years was introduced under the Commissioning for Quality and Innovation payment framework. We retrospectively studied the association of the CFS with patient characteristics and outcomes.

Methods:
Between 01/08/2013 and 31/07/2014, there were 11271 emergency admission episodes of people aged ≥75 years (all specialties), corresponding to 7532 unique patients (first admissions); of those, 5764 had the CFS measured (by admitting team) within 72 hours of admission. The CFS was correlated with the variables in the table. Age-adjusted trend statistics were computed with multivariate linear regression (dichotomous variables) and 2-tailed partial correlation (continuous variables).

<table>
<thead>
<tr>
<th>Results:</th>
<th>CFS1 (n=90)</th>
<th>CFS2 (n=333)</th>
<th>CFS3 (n=1051)</th>
<th>CFS4 (n=1024)</th>
<th>CFS5 (n=930)</th>
<th>CFS6 (n=1276)</th>
<th>CFS7 (n=818)</th>
<th>CFS8 (n=174)</th>
<th>CFS9 (n=68)</th>
<th>Age-adjusted P for trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>80.2</td>
<td>81.0</td>
<td>81.8</td>
<td>83.7</td>
<td>85.4</td>
<td>86.7</td>
<td>86.3</td>
<td>86.6</td>
<td>84.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean Charlson Comorbidity Index</td>
<td>1.0</td>
<td>1.5</td>
<td>1.9</td>
<td>2.3</td>
<td>2.7</td>
<td>3.1</td>
<td>3.5</td>
<td>3.7</td>
<td>5.2</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>History of dementia or current cognitive concern (%)</td>
<td>2.2</td>
<td>4.8</td>
<td>6.2</td>
<td>12.5</td>
<td>21.2</td>
<td>38.2</td>
<td>50.7</td>
<td>44.8</td>
<td>25.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Mean length of stay, days</td>
<td>4.1</td>
<td>5.3</td>
<td>6.8</td>
<td>7.9</td>
<td>9.9</td>
<td>12.2</td>
<td>12.7</td>
<td>12.0</td>
<td>9.6</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Discharge from geriatric ward (%)</td>
<td>7.8</td>
<td>7.8</td>
<td>8.1</td>
<td>14.6</td>
<td>19.0</td>
<td>28.8</td>
<td>33.3</td>
<td>28.7</td>
<td>23.5</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>In-patient death (%)</td>
<td>2.2</td>
<td>1.5</td>
<td>1.8</td>
<td>2.9</td>
<td>4.4</td>
<td>6.4</td>
<td>11.0</td>
<td>24.1</td>
<td>30.9</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Readmission within 30 days (%)</td>
<td>4.4</td>
<td>7.2</td>
<td>11.4</td>
<td>13.2</td>
<td>14.5</td>
<td>15.4</td>
<td>14.4</td>
<td>9.8</td>
<td>13.2</td>
<td>0.006</td>
</tr>
</tbody>
</table>

Conclusions: The CFS was a significant predictor of outcomes of people aged ≥75 years admitted non-electively, and could serve as a practical focus to target specialist geriatric resources within the hospital.
A RETROSPECTIVE COHORT REVIEW OF TB IN OLDER PERSONS AT A LARGE TB CENTRE IN NORTH WEST LONDON: COMORBIDITIES, POLYPHARMACY AND DRUG INTOLERANCE PRESENT CHALLENGES TO DIAGNOSIS AND MANAGEMENT

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2. Imperial College School of Medicine, London
3. School of Social and Community Medicine, University of Bristol

Introduction
Changes to the immune system, higher rates of diabetes and malignancy contribute to reactivation of tuberculosis (TB) in older patients. Frailty and polypharmacy may delay investigations and complicate treatment. We investigate TB diagnosis and management in older patients at a large TB centre in North West London.

Methods
Patients aged ≥65 with TB were identified retrospectively from the London TB Register (LTBR.) Clinical, microbiological, radiological and biochemical parameters together with management details and outcomes were obtained from electronic records.

Results
129 patients (73 male, 56 female) were identified; median age: 68 (range 65-88.) Ethnicity: 52/129 (40%) Asian, 36/129 (36%) African and 14/129 (11%) were Caucasian; this compares to 56% Asian, 22% African and 5% Caucasian in the total cohort from 2002-2014 (n=3806.) 59/129 (46%) had pulmonary TB (PTB) and 70/129 (54%) had extra-pulmonary TB (EPTB); of EPTB, 21/70 (30%) had extra-thoracic lymphadenitis, 10/70 (14.2%) had gastrointestinal TB and 7/70 (10%) had TB meningitis. This compares to 45% and 55% for PTB and EPTB in the whole cohort. 58/129 (44.9%) were culture confirmed compared to 82% in the total cohort; none had resistant TB.

Associated Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin D insufficiency (&lt;50nmol/L)</td>
<td>76/129 (67%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>37/129 (28.4%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>31/129 (23.8%)</td>
</tr>
<tr>
<td>Elevated Creatinine (&gt;112 umol/L)</td>
<td>18/129 (13.9%)</td>
</tr>
<tr>
<td>ESRF (end stage renal failure)/ renal transplant</td>
<td>8/129 (6%)</td>
</tr>
<tr>
<td>Cancer</td>
<td>4/129 (3%)</td>
</tr>
<tr>
<td>≥ 3 non TB drugs (excluding analgesia/ vitamins)</td>
<td>49/129 (38%)</td>
</tr>
</tbody>
</table>

Treatment

<table>
<thead>
<tr>
<th>Regimen (n=60)</th>
<th>Count (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rifampicin, Isoniazid, Pyrazinamide, Ethambutol</td>
<td>30/60 (50%)</td>
</tr>
<tr>
<td>Moxifloxacin used (renal/ ophthalmic problems/ intolerance) 14/60 (23%) (Compared to 10.5% in total cohort)</td>
<td></td>
</tr>
<tr>
<td>Pyrazinamide omitted (intolerance/ caution)</td>
<td>5/60 (8%)</td>
</tr>
</tbody>
</table>

Conclusions
TB in older adults presents challenges in diagnosis with lower culture positive rates. Treatment also increases the pill burden (average of 10 tablets in the standard regime) with higher rates of intolerance or substitution away from standard management. They may also benefit from newer diagnostics and therapeutics.
A COMPARISON OF OUTCOMES FOR OLDER PATIENTS ADMITTED WITH ABDOMINAL PAIN UNDER THE CARE OF PHYSICIANS AND SURGEONS

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Introduction
Most patients presenting with abdominal pain (AP) are admitted on the ‘surgical take’, but some are referred to the ‘medical take’. Outcome data in the latter group are scarce. We compared the outcomes of older patients admitted with AP under the care of surgeons and physicians.

Methods
Using the ‘Doctor Foster’ database, we conducted a retrospective study of patients aged ≥65y admitted to a DGH with a primary diagnosis of AP between September 2011 and August 2014. We compared baseline demographics, Charlson score and outcomes (mortality, length of stay, readmission rates), rates of surgery (laparotomy, laparoscopy, hernia repair), imaging (CT/MRI) and endoscopy. Categorical and linear data was analysed using SPSSv.14.0 and compared using Chi Square and Mann-Whitney U tests.

Results
The table compares the acute workload of the surgical and medical takes and outcomes for patients ≥65y with AP.

<table>
<thead>
<tr>
<th></th>
<th>Medical</th>
<th>Surgical</th>
<th>P value for difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total acute admissions</td>
<td>48746</td>
<td>12477</td>
<td></td>
</tr>
<tr>
<td>No. AP patients (% total)</td>
<td>501 (1.0)</td>
<td>2883 (23.1)</td>
<td></td>
</tr>
<tr>
<td>No. AP patients ≥65y (% total)</td>
<td>181 (0.4)</td>
<td>482 (3.9)</td>
<td></td>
</tr>
<tr>
<td>Median Age (IQR), years</td>
<td>77 (71-83)</td>
<td>76 (69-82)</td>
<td></td>
</tr>
<tr>
<td>Females, (%)</td>
<td>55</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Median Charlson Score (IQR)</td>
<td>4 (0-12)</td>
<td>3 (0-8)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>No. surgery (%)</td>
<td>7 (3.9)</td>
<td>196 (40.7)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>No. deaths (%)</td>
<td>5 (2.8%)</td>
<td>10 (2.1%)</td>
<td>NS</td>
</tr>
<tr>
<td>No. 30-day readmissions (%)</td>
<td>40 (22%)</td>
<td>72 (15%)</td>
<td>NS</td>
</tr>
<tr>
<td>Median LOS, days (IQR)</td>
<td>1 (0-3)</td>
<td>2 (1-4)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Diagnostic imaging and endoscopy rates were compared: 115 (24%) surgical and 15 (8%) medical patients underwent imaging (CT/MRI); 13 (3%) surgical and 7 (4%) medical patients underwent endoscopy.

Conclusions
Patients ≥65y with AP are frequently admitted under physicians. These patients have significantly more co-morbidities, but similar mortality and readmission rates, compared to those under surgeons. Furthermore, physicians perform fewer diagnostic investigations and discharge earlier, suggesting that older surgical patients may benefit from regular geriatric input.
ACUTE KIDNEY INJURY IN THE CONTEXT OF DIARRHOEA: ARE PATIENTS TAKING ACE INHIBITORS OR ANGIOTENSIN RECEPTOR-II BLOCKERS GIVEN DISCHARGE ADVICE ON THE FUTURE USE OF THESE MEDICATIONS? CURRENT PRACTICE ACROSS THREE YORKSHIRE HOSPITAL TRUSTS

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2. Elderly care department, Mid Yorkshire Hospitals NHS Trust
3. Elderly care department, Calderdale and Huddersfield NHS Foundation Trust

Background
Acute kidney injury (AKI) affects 13-18% of patients admitted to hospital and costs the NHS £420-£620 million per year (NICE 2013). Angiotensin-converting enzyme inhibitors (ACEI) and angiotensin receptor blockers (ARB), whilst recommended for conditions such as hypertension, have nephrotoxic potential in hypovolemia. We aimed to quantify what proportion of patients admitted with gastroenteritis and AKI whilst taking these medications were given advice about the use of these drugs during future episodes of diarrhoea and how many were readmitted with gastroenteritis and AKI.

Methods
Retrospective case-note review of 316 patients over 65 discharged with diagnoses of diarrhoea or gastroenteritis and AKI or acute renal failure after 1/1/12 in three acute hospital trusts.

Results
316 sets of notes reviewed; 31 patients excluded as they didn’t have concomitant gastroenteritis and AKI or died during admission. Of the remainder, 65% (n=213) were on an ACEI or ARB. 39% (n=67) had these drugs discontinued, 11% (n=18) had their medication temporarily discontinued on discharge and 50% (n=86) of patients continued on their ACEI or ARB. None of the patients discharged on an ACEI or ARB were given advice about what to do if they develop diarrhoea in the future. 11% (n=22) of patients were readmitted with AKI and gastroenteritis, 59% (n=13) of these were still taking an ACEI or ARB.

Conclusions
After admission with AKI, an individualised decision should be made to continue or discontinue ACEI or ARBs. 50% of patients in this study continued these medications. This group of patients have at least three risk factors for further AKI; being over 65, nephrotoxic medications and having had one episode of AKI. We recommend patients and GPs are informed of ‘sick day rules’ in the case of future gastroenteritis, i.e. withholding their antihypertensives and contacting their GP early for renal function assessment.
THE ACTION FOR HEALTH WITH EXERCISE IN ALZHEIMER’S DISEASE (AHEAD) FEASIBILITY STUDY

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1. University of Central Lancashire
2. Brighton and Sussex Medical School
3. Cognitive Treatment and Research Unit, Sussex Partnership NHS Foundation Trust
4. University of Sussex
5. Centre of Dementia Studies, Sussex Partnership NHS Foundation Trust

Introduction
There has been increasing focus on improving outcomes in dementia using health-based interventions, but reports of physical and cognitive improvements with exercise in people with Alzheimer’s disease (AD) are inconsistent. Adherence to exercising is also problematic with this population. This study examined the feasibility of implementing a home-based exercise programme designed to support people with AD to incorporate exercise into their weekly routines.

Method
Fifteen participants (M age = 80.7 years; SD = 7.3; M MMSE = 23.7; SD = 2.8) with a diagnosis of AD were recruited from Memory Assessment Services in East Sussex. Each participant was assessed by an Exercise Specialist. An individualised exercise programme was designed, incorporating non-aerobic exercises of ~30 minutes duration. The exercise intervention lasted 12 weeks, supported by weekly home visits. Outcome measures included physical and cognitive functioning, and quality of life.

Results
This was a feasibility study, therefore, statistical analyses were inappropriate. Exercise adherence ranged from 1-4 times per week. There were numerical improvements in walking speed (M = 1.5 seconds), sitting to standing (M = 3.6 seconds), memory (M = 2.7 test items), attention (M = 4.3 test items) and speed of processing (M = 2.6 test items). Quality of life was rated as good or better both in people with AD and their caregivers pre- and post-intervention.

Conclusions
The study was unique in its person-centred approach to developing exercise interventions for people with AD and in including their caregivers. The tailored programmes meant that exercise could be offered to everyone, regardless of their abilities. The greatest improvement was found with more frequent exercise. Conclusions are limited by the nature and scale of the study; however, there are good indications that gentle exercise benefits people with AD.
SERUM TESTOSTERONE LEVELS RELATE TO BOTH FRAILTY AND ADL IN OCTOGENARIAN MALES: LILACS STUDY, NEW ZEALAND

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2. School of Population Health, University of Auckland, New Zealand (NZ)
3. Department of Geriatric Medicine and
4. Department of Anatomy, University of Otago, NZ
5. Auckland City Hospital, NZ
6. Deakin University, Australia

Introduction
Serum testosterone (T) levels in men decline with age. Low T levels are associated with sarcopenia and frailty in ‘younger old’ men (generally <80 years). T levels have not previously been associated with disability in older men, despite associations between T and physical function and quality of life. There is no consensus on whether older men with low T levels should receive testosterone supplementation to prevent/treat frailty. We explored associations between T levels and both frailty and disability in a cohort of octogenarian males.

Methods
All men from the LiLACS NZ study (Hayman et al. BMC Geriatr 12, 33), excluding those receiving testosterone treatment and those with prostatic carcinoma, provided blood samples and underwent clinical assessment at study commencement. Associations were examined using multivariable logistic regression models to conduct Wald’s Chi2 tests comparing subjects with the lowest quartile of total testosterone (TT) and calculated free testosterone (fT) values with those in the upper three quartiles, looking for predictors of being in the lowest quartile.

Results
Subject comprised 390 Māori and non- Māori men with mean (SD) age of 83.7 (2.0) years. Mean (SD) of TT was 17.6 (6.8) nmol/L and of fT was 225.3 (85.4) pmol/L. Low TT levels were independently associated with both frailty (Fried Score; p=0.0021) and disability (NEADL; p=0.014). TT was also associated with haemoglobin (p=0.0016), fasting glucose (p=0.038) and C-reactive protein (CRP) (p=0.01). Low fT levels were associated with Fried Score (p=0.0034) but not NEADL (p=0.07). fT was also associated with haemoglobin (p=0.0009) and CRP (p=0.04).

Conclusions
T levels are consistent with previous reports in older men. This study confirms an association between T levels with frailty in men older than 80 years. The new finding of an association between T levels and disability is particularly relevant to the debate on testosterone supplementation in older men.
SYSTEMATIC REVIEW AND META-ANALYSIS: WHAT IS THE EVIDENCE FOR ORAL IRON SUPPLEMENTATION IN TREATING ANAEMIA IN OLDER PEOPLE?

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2. Health Services Research Unit, University of Aberdeen, Aberdeen, UK

Introduction
Oral iron supplementation is used widely despite observational studies suggesting it is ineffective. Therefore, this systematic review determined if oral iron therapy is effective in elderly people with iron deficiency anaemia.

Methods
The Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) guideline was followed. MEDLINE, Embase and the Cochrane library were searched from inception up to 23rd January 2014. Only randomised controlled trials comparing oral iron with no iron supplementation or placebo and measuring the change in haemoglobin levels in elderly anaemic people were included.

Results
6163 titles were screened but only three studies (total 440 participants, mean age 70-83 years old) met the inclusion criteria, all in an orthopaedics setting. Just one showed oral iron supplementation significantly raised haemoglobin level. However, meta-analysis showed oral iron supplementation increased haemoglobin levels more than placebo or no treatment after 4-6 weeks of treatment (weighted mean difference 0.35g/dL, 95% CI 0.12-0.59, p=0.003). There were no significant differences in adverse effects, length of hospitalisation or mortality.

Conclusions
Oral iron raises haemoglobin levels in elderly people with post-operative anaemia by about 0.35g/dL after 4-6 weeks. However, only 3 studies in an orthopaedics setting met inclusion criteria. It remains unclear if the widespread practice of prescribing oral iron supplements results in tangible health benefits for older people.
THE ROLE OF CT HEAD IN DIAGNOSING INTRACRANIAL CAUSE OF DELIRIUM/ACUTE CONFUSIONAL STATE

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Introduction
Delirium is a common condition affecting up to 30% of elderly patients who have been admitted to hospital (Potter J, George J; Guideline Development Group. The prevention, diagnosis and management of delirium in older people: concise guidelines. Clin Med. 2006 May-Jun;6(3):303-8). CT scans of head are commonly requested for excluding intracranial cause, however, its routine use has been shown to be ‘unhelpful’ in such cases (Guidelines for the prevention, diagnosis and management of delirium in older people in hospital. British Geriatric Society. 2006). Use of specific indication criteria may help in preventing unnecessary CT examinations and improve CT service.

Methods
Data was obtained from Craigavon Area Hospital and retrieved from NIPAC system covering a period of 9 months (April ’10 – December ’10). Each individual CT brain request was analysed and considered for inclusion if the request form had “confusion” as a reason for referral. Exclusion criteria included patients with head injury (separated NICE guideline) and recent brain haemorrhage or surgery. The scans were labelled as ‘indicated’ as per National Guidelines and ‘non-indicated’ otherwise. Scans with new positive findings were labelled as ‘positive’.

Results
419 CT scans of head were included during the study period. 38(9.0%) scans were positive for new findings. 151 scans were ‘indicated’ according to National guidelines out of which 30(19.8%) were ‘positive’. The remaining 268 ‘non-indicated’ scans demonstrated 8 (2.9%) ‘positive’ scans. We note that out of the 8 ‘non-indicated’ ‘positive’ scans, 6 had history of either falls or cancer which if added to the indication criteria increases detection of positive findings while also increasing the number of “indicated” scans by approximately 20%. A review of images of the 2 remaining ‘positive’ ‘non-induced’ scans demonstrates high probability of associated neurology, which would eventually result in an “indicated” request.

Conclusions
A significant number (64%) of scans performed were ‘not indicated’ as per National Guidelines 2006. Using the ‘National Guidelines 2006’ for investigation of intracranial cause of delirium may result in detection of most but not all CT positive cases. Addition of ‘history of falls’ and ‘suspected metastatic disease/history of cancer’ to the indication criteria improves detection of intracranial abnormalities. This decreases the total number of CT scans carried out for investigation of acute confusion by 43.7%.
DEPRESSION, NOT LETHARGY, MODERATES THE FRAILTY-SUBJECTIVE HEALTH RELATIONSHIP AMONG CENTENARIANS

J S K Kwan1, B H P Lau2, P Martin3, K S L Cheung4

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2. Department of Psychology, HKU
3. College of Human Sciences, Iowa State University
4. Sau Po Centre on Ageing and Department of Social Work and Social Administration, HKU

Introduction
Very old people may be physically frail, but they may not necessarily experience poor subjective health after taking into account other dimensions of health, e.g. psychological well-being. We hypothesized that the frailty-subjective health relationship is moderated by depression and/or lethargy in very-old adults.

Methods
We conducted a cross-sectional community-based centenarian study of 153 Chinese near- and centenarians. We assessed a) FRAIL Questionnaire of the International Academy of Nutrition and Aging (FRAIL-IANA); b) Geriatric Depression Scale-Short Form (GDS-SF); and c) Subjective Health (1=very bad to 5=very good). Hierarchical regression was conducted to test the moderation effect of depression, adjusting for age, gender, living arrangement, socio-economic status and cognition. We then conducted another hierarchical regression analysis using only the “lethargy” items of the GDS-SF.

Results
According to FRAIL-IANA, 20% of the centenarians were non-frail, 56% were pre-frail, and 24% were frail. Mean scores (SD) for GDS-SF and Subjective Health were 2.6 (3.7) and 3.3 (0.9) respectively. Living with family (vs. living alone), favourable socio-economic status, and lower level of frailty were significant predictors of Subjective Health. The interaction term between frailty and depression was significant (β=-0.21, P=0.024), and the overall model was significant, explaining 27.7% of the variance of Subjective Health. Inspection of the simple slopes confirmed those who were less depressed had a weaker frailty-subjective health relationship. There was no significant moderation effect with only the “lethargy” items of the GDS-SF.

Conclusions
Depression, not lethargy, moderates the frailty-subjective health relationship among centenarians. Our result therefore implies that a protective psychological mechanism may enable centenarians to maintain an optimistic view of their health despite their physical frailty. Future studies should explore the psychosocial mechanisms used by oldest-old adults to cope with their frailty and daily functional constraints.
**UTILITY OF THE MINI-MENTAL STATE EXAMINATION (MMSE) FOR IDENTIFICATION OF DEMENTIA IN A LOW-LITERACY SETTING IN RURAL TANZANIA**

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**Introduction**
The Mini-Mental State Examination (MMSE) remains the most commonly used test even in low-income countries, despite known limitations in lower educational settings. This study aimed to assess utility of the MMSE in identification of dementia in a low-literacy setting in rural Tanzania.

**Methods**
Sixty older adults aged 70 and over underwent full assessment for cognitive impairment and dementia as part of a mild cognitive impairment (MCI) follow up study. A minimally adapted version of the MMSE was administered to all participants by a research nurse unaware of the outcome of the assessment. Adaptations included minor changes to orientation and recall items for the settings, and inclusion of a Swahili phrase for repetition. Dementia was diagnosed by DSM-IV criteria and MCI by international consensus criteria.

**Results**
The sample included 17 people with dementia, 29 with MCI and 14 with normal cognition. Overall educational level was low with 4/17, 7/29 and 7/14 having ever attended formal school respectively.

Median MMSE score was 12 (IQR 4.5) in dementia, 15 (IQR 5) in MCI and 19.5 (IQR 3.75) in normal cognition. Removal of all literacy-dependent items did not significantly change scores.

AUROC for dementia was 0.805 (0.69-0.92) and 0.796 (0.69-0.91) after literacy-dependent items were removed.

**Conclusion**
The MMSE did not perform well as a screening instrument for dementia in this setting, even after removal of all literacy-dependent items. A well-validated alternative is urgently needed.
ACETYLCOLINESTERASE ACTIVITY MEASUREMENT AND CLINICAL FEATURES OF DELIRIUM

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School of Immunity and Infection, University of Birmingham

Introduction
Delirium is a common acute neuropsychiatric syndrome seen in hospitalised older patients. It is associated with poor outcomes and presents with distinct motor subtypes. The pathophysiology of delirium is not well understood however cholinergic deficiency has been implicated. Reduced acetylcholinesterase (AChE) activity has been associated with delirium and inpatient mortality. We investigated the association between AChE activity with both clinical features of delirium and outcomes.

Methods
Patients aged >70 were screened for delirium on admission to hospital and those meeting DSM-IV criteria for delirium were recruited. Patients had length of delirium, delirium subtype and delirium severity recorded. Mortality and new institutionalisation were recorded at 3 month follow up. Serum AChE activity was measured using a colorimetric assay from samples collected one day after hospital admission. AChE activity was expressed as a change in absorbance measured over 5 minutes (µmol/ml/min).

Results
87 patients were recruited of whom 55 (mean age 85.5 yrs ±6.15, 51.8% female) had blood samples taken and 49 had blood samples and full outcome data. The median AChE activity for the whole sample was 1.81 µmol/µml/min (IQR 1.55). The median length of delirium was 4 days (IQR 5) and hypoactive subtype was commonest (34 patients, 62%) while 12 (22%) had the hyperactive subtype and 9 (16%) the mixed subtype. Higher AChE activity was associated with an increased likelihood of the hypoactive subtype of delirium (OR=1.77, CI 1.05-2.97, p=0.031). No association was found between acetylcholinesterase activity and outcomes, including length of delirium, severity and mortality.

Conclusion
Higher AChE activity was associated with the hypoactive subtype of delirium. Further research should examine the relationship between the cholinergic system and hypoactive delirium, as well as the potential for delirium prevention and treatment through pharmacological manipulation of the cholinergic pathway.
DEPRESSIVE SYMPTOMS PREDICT MEMORY DECLINE OVER SUBSEQUENT 4 YEARS: LONGITUDINAL ANALYSIS OF THE GUANGZHOU BIOBANK COHORT STUDY

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4. Public Health, Epidemiology and Biostatistics, University of Birmingham, UK

Introduction
Late-life depression may increase dementia risk, raising the possibility of overlapping pathophysiology and potential preventive strategies. We examined whether: a) baseline depressive symptoms predicted memory decline, and b) baseline memory function predicted mood decline, in an older Chinese cohort.

Methods
We conducted a prospective analysis based on the Guangzhou Biobank Cohort Study on 30,518 community-dwelling participants aged 50+ years with a mean follow-up period of 4.1 years. In an unselected sub-sample of 5,954 people (mean age 59.5 years, standard deviation 7.1, 75% females), we assessed baseline Geriatric Depression Score (GDS, maximum 15, higher score indicating more depressive symptoms) and a change in the Delayed 10-Word Recall Test score (DWRT, maximum 10 points, higher score indicating better memory) between baseline and follow-up. Conversely, we also assessed DWRT at baseline and a change in GDS between baseline and follow-up. Multivariate linear regression was used to assess the association between GDS and DWRT.

Results
After adjusting for age, sex, education, occupation, smoking status, alcohol use, physical activity and self-rated health, for every +1 point increase in baseline GDS, there was a significant -0.03 points (95% CI -0.05 to -0.003, P=0.02) decrease in DWRT. Further adjustment for vascular factors (systolic blood pressure, fasting glucose, low-density lipoprotein cholesterol and waist circumference) did not attenuate the association suggesting GDS was an independent predictor of worsening in DWRT score over 4 years. Conversely, after similar adjustments, baseline DWRT score was not associated with worsening in GDS over 4 years (beta-coefficient =-0.01, 95% CI -0.03 to 0.009, p=0.29).

Conclusions
In this large Chinese cohort, depressive symptoms predicted memory decline over 4 years, but not vice versa. Further interventional studies are warranted to clarify the biological and clinical implications of the association, and explore the potential benefits of treating depression in the primary prevention of memory decline.
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