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THE INTEGRATED COMMUNITY AGEING TEAM (ICAT): AN INTEGRATED MODEL OF ELDERLY CARE FOR NURSING HOME RESIDENTS IN ISLINGTON

A Samji, P O’Riordan, C Bielawski, R Law

Department of Care of the Older Person, Whittington Health NHS Trust

Background
It has been highlighted in the BGS’ “Quest for Quality” that care home residents are becoming older, frailer, and more complex. These demographic changes have made the social care model increasingly unsuitable. Compounded by withdrawal of the NHS from the care home provider sector, we have seen an increase in emergency admissions from care homes. Prior to our new service the Whittington Hospital received an average 32.5 emergency admissions per month from just 437 nursing home beds, accounting for 502 bed days per month.

Innovation
In response to a fragmented model of medical care in care homes, often punctuated by acute admissions, we developed the ICAT service. A community geriatric service led by three consultant geriatricians and a GPwSI. The service aims to provide quality, integrated care in care homes, improve communication between secondary and primary care, and reduce unnecessary hospital admissions. It does so through joint geriatrician/GP care home visits; specialist review of all residents admitted to hospital; a direct access telephone advice line; regular teleconference multidisciplinary meetings; and multidisciplinary educational workshops.

Evaluation
The service has been running for one year and now sees ~40 residents per month in care homes, and conducts 4 teleconference MDM’s per month. Since its introduction admissions to the Whittington hospital have fallen from 32.5 to 24.2 per month, with a resultant 18% reduction in bed days despite an 8% rise in length of stay.

Conclusion
The service has succeeded in delivering iterative holistic assessment of care home residents across the care continuum, improved communication and integrated working, and helped support learning and development in care homes. In doing so, it has added to the growing body of evidence that community geriatric services that deliver better integrated patient centred medical care in care homes can reduce burdensome avoidable admissions.
VITAMIN D DEFICIENCY: RELATION WITH INDEX OF MULTIPLE DEPRIVATION IN THE OVER 70S

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Introduction
There is increasing evidence concerning potential adverse consequences of low Vitamin D levels on health. We have previously shown that there is no surrogate for measuring vitamin D levels in the general population. Here we determined whether this finding was apparent in the over 70s age group. We also investigated the relation between the index of multiple deprivation (IMD) and vitamin D levels in older people.

Methods
Serum specimens with requests for 25-hydroxy Vitamin D (25-OH Vitamin D), calcium, phosphate, parathyroid hormone (PTH) and alkaline phosphatase, on the same sample at Salford Royal Hospital from November 2010 to November 2012 were analysed for 70 men and 171 women aged 70 years or more at their last birthday, excluding renal clinic attendees.

Results
The prevalence of total vitamin D insufficiency or deficiency (defined as total Vitamin D <50 nmol/L) was 57.3% overall, with men having similar prevalence to women (60.0% vs 56.1%). There was no overall trend in mean serum adjusted calcium across categories of 25-OH Vitamin D status. As expected PTH levels rose as Vitamin D levels fell: for Vitamin D ≥50 nmol/L, PTH 47.1 ng/l; Vitamin D <10nmol/L, PTH 117.6ng/L.

Even for patients with Vitamin D deficiency, a significant proportion of patients had PTH, calcium, phosphate and alkaline phosphatase levels within the laboratory normal range. For patients with Vitamin D <25 nmol/l, 62.7% had a normal PTH, 83.1% had normal serum calcium, 80.6% had normal phosphate and 85.1% had a normal serum alkaline phosphatase.

Higher Index of Multiple Deprivation (IMD) quintile (associated with greater disadvantage) was associated with a greater likelihood of having a low Vitamin D score. Each increase in IMD quintile was associated with a 22% increased risk of Vitamin D deficiency or insufficiency, in age and sex adjusted logistic regression models (OR 1.22 (1.01 – 1.47); p=0.034).

Conclusions
Although the rates of requesting of Vitamin D continue to rise, no other parameter is currently adequate for screening for Vitamin D deficiency in older people.

A higher index of multiple deprivation is associated with lower vitamin D levels in older people, with attendant implications for bone and cardiovascular health.
CEREBROSPINAL FLUID CORTISOL AND CYTOKINES IN DELIRIUM AFTER HIP FRACTURE

R J Hall¹, L O Watne², T O White¹, I Armstrong¹, J Witlox³, K Kalisvaart⁴, J R Seckl⁵, V Juliebø²,6, T B Wyller², A M J MacLullich⁵

¹ Lothian University Hospitals Trust; ² University of Oslo, Norway; ³ Medical Center Alkmaar, The Netherlands; ⁴ Kennemer Gasthuis, Haarlem, The Netherlands; ⁵ University of Edinburgh; ⁶ Oslo University Hospital, Norway

Introduction
Delirium is a serious and common condition affecting older people. The pathophysiology is incompletely understood and there are no specific treatments. Current hypotheses suggest involvement of exaggerated cortisol release in response to stressors, and a magnified central nervous system (CNS) inflammatory response to peripheral insults.

The aim of this collaborative research project was to test the hypotheses that delirium is associated with increased cortisol, increased pro-inflammatory and reduced anti-inflammatory cytokines in cerebrospinal fluid (CSF).

Methods
Participants with acute hip fracture were recruited at the Royal Infirmary of Edinburgh and Oslo University Hospital. They were assessed for delirium pre-operatively, and at regular intervals for two weeks post-operatively. CSF was collected at the spinal anaesthetic performed for their fracture repair. Cortisol was measured by Enzyme-linked immunosorbent assay, and a high-sensitivity panel of cytokines by Luminex assay (Interleukin(IL)-1β, IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-12p70, IFN-γ, GM-CSF and TNF-α). Group comparisons were with Kruskal-Wallis or Student’s t test, and logistic regression analysis was used to adjust for potential confounders.

Results
Delirium was diagnosed in 68/148 participants (46%) in the cortisol assay and 38/76 (50%) in the cytokine assay. CSF cortisol was higher in those with prevalent delirium (median 36.5 nmol/L, IQR 26.3-53.1) than incident (30.0 nmol/L (16.8-39.2)) or never delirium (27.2 nmol/L (18.8-39.3)), p=0.023. CSF cortisol level above the median was still associated with delirium after adjusting for confounders. There were no differences observed in the levels of most cytokines between groups, but IL-5 was low in those with pre-operative delirium.

Conclusions
These findings support the hypothesis that delirium is associated with exaggerated cortisol release, but provide little evidence of an exaggerated CNS inflammatory response. Prolonged high cortisol increases neuronal vulnerability to damage or death from various insults. Whether high cortisol is a cause or consequence of delirium merits further detailed investigation.
EVALUATION OF C-REACTIVE PROTEIN AS A POSSIBLE MEASURE OF BIOLOGICAL RESILIENCE IN OLDER PEOPLE

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1 Ageing and Health; 2 Dundee Epidemiology and Biostatistics Unit; 3 Health Informatics Centre; University of Dundee; 4 NMAHP Research Unit, University of Stirling

Background
Biological resilience may offer a novel construct to guide intervention in older people, but measures of resilience are required. We investigated whether patterns of change in C-reactive protein (CRP) might provide a measure of biological resilience in older people.

Methods
Analysis of prospective, routinely collected datasets containing data on hospitalization, death, clinical chemistry and comorbid disease for rehabilitation unit inpatients between 1999 and 2011. Maximum CRP response and CRP recovery indices (time and slope of CRP decay to half maximum and to <50mg/L) were derived from biochemistry data pertaining to the hospital admission immediately prior to transfer for rehabilitation. Kaplan Meier 6-month survival plots with log-rank test were conducted on quartiles of CRP recovery indices. Cox proportional hazards models were used to test univariate and multivariate predictors of 6-month mortality. Covariates included age, sex, number of medications, calcium, haemoglobin level, estimated glomerular filtration rate, and the presence of ischaemic heart disease, stroke, chronic heart failure and diabetes.

Results
4382 patients, mean age 84 years, were included in the analysis. 1769 (40%) were male and 3365 (77%) died during follow-up. Lower maximum CRP (lowest vs highest quartile: 90% vs 71% alive at 6 months; p<0.001) and longer time taken for CRP to fall to half of maximum (longest vs shortest quartile: 87% vs 83% alive at 6 months; p=0.012) were associated with better six month survival. The time for CRP to fall to half of its maximum value was the best dynamic CRP index of survival (HR 0.99 per day, 95% CI 0.98 to 1.00; p=0.004); this remained significant even after adjustment for maximum CRP level and covariates.

Conclusion
Longer time to CRP recovery is independently associated with better survival in older people; work is required to explain differences in physiology between patients with a fast and slow CRP recovery.
CORTISOL DIURNAL RHYTHM AND INFLAMMATION IN DELIRIUM AFTER HIP FRACTURE

R J Hall 1, D Davis 2, T O White 1, I Armstrong 1, J R Seckl 3, A M J MacLullich 3

1 Lothian University Hospitals Trust; 2 University College London; 3 University of Edinburgh

Introduction
Delirium is a serious and common condition affecting older people. The pathophysiology is incompletely understood and there are no specific treatments. Current hypotheses suggest involvement of exaggerated and prolonged cortisol and pro-inflammatory cytokine release in response to stressors.

This study aimed to test the hypotheses that delirium is associated with increased cortisol levels and loss of cortisol diurnal rhythm, and with increased pro-inflammatory cytokines.

Methods
Participants with acute hip fracture were recruited at the Royal Infirmary of Edinburgh. They were assessed for delirium pre-operatively, and regularly for two weeks post-operatively. Morning serum and diurnal saliva samples were collected pre-operatively and on post-operative days 4 and 10-14, with additional saliva samples on day 7. Cortisol was measured by Enzyme-linked immunosorbent assay, and a panel of cytokines by Luminex assay (Interleukin(IL)-1β, IL-1ra, IL-5, IL-6, IL-8, IL-10, MCP-1, MIP-1α, MIP-1β, and TNF-α). Group comparisons were with Mann-Whitney U test. Logistic regression modelling was used to examine the relationship between delirium and longitudinal log-transformed cortisol level and cortisol AM:PM ratio, adjusting for confounders.

Results
Delirium was diagnosed in 42/104 participants (40.4%). Serum cortisol was higher in the delirium group, and this was significant for those with active delirium on day 4. PM salivary cortisol was significantly higher in the delirium group on days 4 and 7. Morning cortisol was associated with delirium after adjusting for age, gender, illness severity, co-morbidity and dementia. The delirium group had higher levels of serum IL-1ra, IL-6, IL-8 and TNF-α, and a higher pro:anti-inflammatory ratio.

Conclusions
These findings support the hypothesis that delirium is associated with increased cortisol and attenuation of the normal nadir of cortisol diurnal rhythm, and that there is a shift towards a pro-inflammatory state. Future studies could investigate ways to attenuate this, such as the use of 11-β hydroxysteroid dehydrogenase inhibitors.
DELIRIUM: DIAGNOSIS, PREVENTION AND MANAGEMENT. A MULTIDISCIPLINARY PROBLEM WITH A MULTIDISCIPLINARY SOLUTION

R Knowles, V Laxton, E Caine, A Verran, A Uddin, R Hartley, M Wade, M Galliver, A Rahman

Croydon University Hospital

Topic
Delirium in patients in hospital is associated with longer hospital stays and increased morbidity and mortality. Our aim was to assess Croydon University Hospital’s performance against the NICE quality standards for delirium (2014).

Intervention
The entire hospital was audited over a period of two consecutive days against an audit tool based on the NICE Delirium guidelines. We identified that improvements to delirium care needed a multidisciplinary approach. The following interventions were implemented: 1) Teaching to medical, surgical and elderly care, junior doctors, healthcare assistants and nurses 2) The “Forget-Me-Not Scheme”: allowing easy identification of patients with dementia or delirium 3) ”A delirium pack” containing leaflets to ensure diagnosis and implications are properly communicated to both patient and family and 4) Re-writing hospital guidelines for delirium. The whole hospital was then reaudited after 6 months.

Improve
Both audits demonstrated a wide variation in performance across specialties, with T&O consistently achieving the highest rates of screening (50% reaudit, 42% initial, versus surgery: 9% reaudit, 0% initial). All specialties improved their assessment rate. Both audits demonstrated inconsistent assessment of risk factors and implementation of interventions. We were particularly poor at assessing perception but this improved from 1% to 20%, and polypharmacy, poor nutrition, sensory impairment and sleep disturbance were poorly addressed interventions. The use of antipsychotics/sedatives to manage delirium dropped in the reaudit (antipsychotics: 3% to 1.5%, sedatives 5% to 1.5%).

Discussion
There continues to be a wide variation in assessment, management and recognition of delirium across departments. Those including a formal assessment as part of their pro-forma more reliably met the quality standards. Educating all staff across departments is a time-consuming but effective way of improving hospital performance. Due to staff turnover, training should be on a rolling basis to ensure hospital-wide awareness and performance is maintained over time.
STROKESIM - FACILITATING INTERPROFESSIONAL LEARNING THROUGH ACUTE STROKE SIMULATION

B Edge, A Pitt Ford, T Chatten, K Kay, I Kane, N Gainsborough

Royal Sussex County Hospital, Brighton and Sussex University Hospitals

Background
Acute stroke is a medical emergency requiring effective interdisciplinry working in a time pressured atmosphere. Simulation training offers an opportunity to reproduce acute stroke calls in a ‘patient safe environment’ and improve team members’ confidence in management of hyperacute stroke.

Innovation
We arranged a pilot stroke simulation course for health professionals involved in management of acute stroke, with the aim of improving interdisciplinary team working and ultimately reducing door to needle times.

NIHSS training was completed prior to the course. Management of hyperacute stroke was discussed and an ‘ideal acute stroke call’ was demonstrated by course faculty with actors playing the role of the patient. Participants took part in acute stroke scenarios and feedback was facilitated. Pre and post course questionnaires were completed.

Evaluation
Seven health professionals attended the course (1 HCA, 2 stroke nurses, 1 A&E nurse, 2 junior doctors and 1 stroke doctor). On a scale of 0 to 10, confidence in assessing patients with acute stroke increased from an average of 3.5 to 6.3. All candidates found the course useful, with an average score of 9.2 given out of a possible 10.

Comments included ‘Going through stroke simulation in a structured way followed by an opportunity to observe the ‘ideal stroke call’ was very helpful.’ ‘I enjoyed the interprofessional working and teaching – a great learning experience’

Conclusions
Simulation training in acute stroke is an effective way to improve acute stroke management and enables interprofessional learning in a realistic yet safe setting. Following our experience and the feedback received we plan to adapt our programme and run further sessions in acute stroke management and simulation.
# SURVEY OF REFERRALS FROM A DISTRICT GENERAL HOSPITAL TO ACUTE HOSPITAL LIAISON TEAM- WHERE COULD WE IMPROVE?

C Akass, V Muthukrishnan, I Barau  
*Mental Health Services for Older People, Friarage Hospital, Northallerton*

## Aims
To study the profile of patients with mental health needs who are admitted to a district general hospital.

To study how they progress through their hospital admission.

It is very well known that patients who are admitted with confusion have a longer stay at hospital when compared to other patients.

We wanted to study their stay in more detail to understand the precise reasons. This might be different for each district hospital depending upon the resources available.

We hoped that this will enable us to address those reasons with a view to reducing length of stay and even hospital admissions, wherever possible.

## Method
We took a random sample of 45 patients above the age of 65 who were admitted to the District general hospital. We studied the date of admission, the date of referral to acute hospital liaison, age and sex profile, physical co morbidities, abbreviated mental test score at admission, recurrent admissions and input from social services.

## Results and Conclusions
- There was an average delay of 9 days between the day of admission to the district hospital and the day of referral to hospital liaison team.
- Abbreviated mental test score was recorded for 8 out of 45 patients.
- 1 out of 45 admissions came from a surgical ward.
- 17 out of 45 admissions had confusion listed as one of the reasons for admission.
- 9 out of 45 admissions had a previous hospital admission within the previous 4 months.
- 8 out of 9 re-admissions were for patients aged 80 or over.

The above data suggest the need for the liaison team to work more closely with the medical teams at the district hospital in identifying patients with confusion and referring them to the liaison team as soon as possible. The liaison team will also have to roll out education sessions on early detection of patients with confusion. A more detailed education and discussion session need to happen on the surgical wards.
LOCAL RAPID RESPONSE SERVICE: AVOIDING A&E ATTENDANCES AND HOSPITAL ADMISSIONS

C Bell, R Hartley, S Lim, E Heitz

Croydon Health Services NHS Trust

Introduction
Unplanned emergency admissions are an increasing challenge for most acute hospitals. A number of emergency response services have been developed in differing areas, variably reporting positive impacts in patient care and hospital avoidance. Here we report a rapid response service run via Croydon University Hospital NHS Trust in conjunction with community and GP services. The service comprises of nursing, therapy and administrative staff led by a community geriatrician. The service currently accepts patients from the local hospital, GPs, London ambulance service and local rapid access geriatric services. The service operates 24 hours a day, seven days a week.

Methods
Data were collected contemporaneously, as part of the referral process to the Rapid Response Team. Data collected included referral source, reason for referral and outcome of the review. Information from December 2014 to March 2015 was reviewed.

Results
Over a four month period, the rapid response team saw 543 patients. 95% of these were seen within 2 hours, on average being seen within 1 hour of referral. Of these patients, 84 (15%) were referred on to the local emergency hospital. 18 patients (3%) were referred to a step-up intermediate care bed. The remaining patients were managed at home with support from the rapid response team and other community services.

Conclusions
This rapid response service provides a proactive assessment method for people in the community reaching a point in their medical or social care which would normally lead to a crisis admission to the local acute hospital. The service is extremely responsive, being able to see most patients within two hours. Further work is required to compare the acuity of patients managed in the community by the Rapid Response Team to those admitted to the acute hospital.
REASONS FOR REFERRAL TO A LOCAL RAPID RESPONSE TEAM - APPROPRIATE, ANTICIPATABLE, AVOIDABLE

C Bell, R Hartley, S Lim, E Heitz

Croydon Health Services NHS Trust

Introduction
The local rapid response service at Croydon Health Services accepts referrals from multiple different sources including local GPs, hospital professionals, London ambulance service and the local rapid access geriatric clinics as part of reducing unnecessary hospital admissions. The majority of the people referred have complex medical and geriatric needs and the thorough assessment and integration with other community services that the rapid response team provides is essential for the successful community management of these patients.

Methods
Data were collected contemporaneously, as part of the referral process to the Rapid Response Team. Data collected included referral source, reason for referral and outcome of the review. Information from December 2014 to March 2015 was reviewed.

Results
Over a four month period, the rapid response team saw 543 patients, with 95% of these seen within 2 hours.

The majority of patients were referred by a GPs (59% - 39% from usual GP, 20% from out of hours GP). Hospital referrals accounted for 9% of referrals. Directed referrals from the ambulance service accounted for 11% of referrals.

Falls and reduced mobility accounted for the largest number of referrals (28%). Catheter related problems accounted for 21% of referrals. Chest infection represented 8.3% of referrals. Carer stress was cited as the reason for referral in 4.5% of referrals.

Conclusions
The Rapid Response Team reviews a large number of patients, who, in the absence of such a service would have required A&E attendance or admissions. The rapid review allows patients to be reviewed by a clinician in their own home, often far quicker than they would have been seen if attending A&E. Further work is required to explore the clinical differences in patients attending A&E, and those patients who are able to remain at home with support from the Rapid Response Team.
COMPREHENSIVELY EDUCATING JUNIOR DOCTORS ON DNACPR POLICY AT INDUCTION IMPROVES ACCURACY OF DNACPR FORM COMPLETION AND DOCUMENTATION OF RESUSCITATION DECISIONS

E Williams, A Gerrard, W Brown, E Shire

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Introduction
New do not attempt cardio-pulmonary resuscitation (DNACPR) forms were implemented within South Central Strategic Health Authority (SCSHA) in July 2010. SCSHA have outlined standards regarding their completion. Since 2011 completion of DNACPR forms and documentation of DNACPR decisions have been audited against these standards. Previous re-audits have not shown a significant improvement in adherence to these standards and in some cases has shown deterioration. Therefore, in 2014 a more comprehensive teaching session on the importance of the DNACPR documentation using examples of complaint cases was included in the junior doctors induction.

Methods
Data was collected in January 2014 and May 2015, before and after the junior doctors’ induction. A questionnaire based on the standards outlined by SCSHA was used. Data was collected from all medical wards at two hospital sites on a single day.

Results
74 DNACPR forms were in place in January 2014 and 83 in May 2015. There was a statistically significant improvement in the number of DNACPR decisions discussed with the patient (p<0.02). There were improvements seen in all other standards (see Table 1), in particular documented decisions and discussions in medical notes and forms being clearly timed, dated and signed, but these did not reach statistical significance (p>0.30, p>0.48 and p>0.32 respectively).

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<td>0.32</td>
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<tr>
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<td>0.30</td>
</tr>
<tr>
<td>Discussion With Patient or Relative Documented in the Notes</td>
<td>47</td>
<td>58</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Table 1. Data represented as % completion of listed SCSHA standards on DNACPR forms

Conclusions
Thorough completion of DNACPR forms and documentation of DNACPR decisions can be improved by implementing effective teaching sessions on the importance of DNACPR policy at junior doctors induction. A case based DNACPR presentation including case law will now be included regularly at induction. Improvements still need to be made. Although more decisions were discussed with patients, this still only occurred in 51% of cases. Early involvement of patients and their relatives in DNACPR decisions has the potential to reduce complaints and is part of Good Medical Practice.
IMPROVING IDENTIFICATION OF MALNUTRITION IN OLDER PATIENTS, ADMITTED ACUTELY TO HOSPITAL

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Department of Geriatric Medicine, Queen’s Hospital, Barking, Havering and Redbridge Hospitals NHS Trust

Aim
Improve identification of malnutrition, through screening and assessment of older patients on admission to hospital.

Methods
An initial audit reviewed all admissions to the acute elderly unit (AEU) prospectively over a two-week period from 8-28 July 2013 (inclusive). Bedside and medical notes, including the nutrition pathway, were examined for each patient. The pathway was a key document, requiring completion by nurses within 12 hours of admission. From this, the ‘Malnutrition Universal Screening Tool’ (MUST) score was calculated. The score determined actions. A MUST score of 2 or more, required referral to a dietician.

The data was analysed with Excel.

Interventions took place through a programme of face-to-face teaching sessions with nursing staff on each ward, along with updates for ward managers. A re-audit was carried out (prospectively) from 20 January - 2 February 2014.

Results
199 admissions were analysed over the initial audit period. The average age was 86.3 years and weight 61.9 kg. 66% of patients had weight and 28% had height, measured on admission. 55 % of patients had a MUST score calculated. MUST cannot be scored without measurement (or estimation) of height. 34% of patients had a MUST score of zero, 8.5% score of one and 13% had a MUST score of two or more. 48% of those eligible were referred to a dietician. The re-audit analysed 191 admissions, with an average age of 85.7 years and weight 61 kg. 81% had weight, and 65% had height, measured. 82% of patients had a MUST score documented. MUST scores of 2 or more were comparable in the two periods, with a higher referral rate to dieticians (74%) during re-audit.

Conclusion
Malnutrition is a cause and a consequence of disease in older patients admitted to hospital. It is often under-recognised and under-treated. Early identification of those with, and at risk of malnutrition, is vital. The initial audit demonstrated screening and provision of basic nutritional care was below standards. Weights and heights were under reported, therefore making it difficult to screen malnutrition through the MUST score. This project improved screening of malnutrition through a simple but effective programme of teaching frontline nursing staff, resulting in an increase in recording of heights and weights and subsequent MUST scoring. This helped deliver high quality care for malnourished patients, allowing early specialist interventions.
GERIATRICIAN INPUT FOR EMERGENCY GENERAL SURGICAL PATIENTS: AN AUDIT REPORT

J Hibberd, J Alegbele

Department of Care of the Older Person, Basildon and Thurrock NHS University Trust

**Topic**
An audit into the compliance of the COPES service (Care of Older People requiring Emergency Surgery) at Basildon Hospital to guidelines suggested by NCEPOD (National Confidential Enquiry into Patient Outcome and Death).

**Intervention**
Following an initial survey in 2013 a COPES proforma was devised that contained elements of a NCEPOD recommended geriatric assessment. This was implemented by a simple design process and by distributing copies of the new proforma to relevant surgical wards.

**Method**
The records of all emergency general surgical patients over the age of 78 admitted in a month both before and after the intervention were examined for evidence of review by a Geriatrician and a NCEPOD recommended assessment.

**Results**
Table showing compliance with NCEPOD assessment guidelines of geriatric surgical patients

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<th>September 2014 Seen by COPES</th>
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<td>AMT assessment</td>
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<tr>
<td>Hydration assessment</td>
<td>97%</td>
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<tr>
<td>Bowels assessment</td>
<td>88%</td>
<td>100%</td>
<td>100%</td>
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**Discussion**
Compliance with the recommendations showed a clear improvement. On primary survey compliance ranged from 36% to 96%. On second survey 100% of COPES assessments were fully compliant. Differences in compliance were noted between assessments performed by surgical and geriatric teams. For example, 6% of patients seen solely by General Surgeons were assessed for frailty compared with 100% seen by the COPES team. The data also demonstrated that adherence to Geriatrician advice varied. Only 50% of suggested blood tests and 57% of suggested imaging were carried out compared to 83% of suggested medication changes. Interestingly in August 2013 and September 2014 the number of patients studied who went on to have inpatient surgery were 7/33 (21%) and 2/46(4%) respectively.

**Conclusions**
We showed that compliance with NCEPOD recommended assessment criteria of elderly surgical patients is possible with the use of a ward round proforma. We also demonstrated that assessment of these patients is done better by a Geriatrician. Combined with the low inpatient operative rate in this cohort this raises the question if admitting these patients under surgical teams is justifiable.
HOSPITAL AT HOME - THE FIFE MODEL: AN EFFECTIVE, COST-SAVING ALTERNATIVE TO ACUTE HOSPITAL ADMISSION FOR THE FRAIL ELDERLY POPULATION

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Background
The unsustainable rise in elderly admissions has become one of the greatest challenges facing the modern NHS. Hospital based care for this group provides critical challenges in terms of cost, safety and suitability. This driver for change has led to the emergence of admission avoidance Hospital at Home (H@H) initiatives.

Innovation
H@H aims to provide consultant-led alternative to hospital admission by delivering emergency treatments including intravenous therapies and oxygen at home. Multi-disciplinary comprehensive geriatric assessment (CGA) allows coexisting functional, psychological and social needs to be rapidly addressed. Additionally, the service supports early discharge from hospital. This model endeavours to be financially and practically sustainable.

Evaluation
H@H activity increased since opening in April 2012. The service expanded from 232 patients admitted in 2012, 768 in 2013, and 1571 in 2014 with an average of 155 referrals per month. GP referrals accounted for 65% of admissions. Those aged 80-90 years dominated the caseload, with 24% of patients having pre-existing dementia. Typical conditions treated were urinary tract infections, pneumonia, congestive cardiac failure, acute kidney injury and falls. 15% of admissions had delirium. Weekly caseload peaked at 50 patients with an average length of stay of 8.6 days. This equated to a monthly average of 1097 ‘occupied bed days’, despite the service operating at 50-70% of its potential capacity. The annual saving compared to hospital admission is an estimated £1.28 million. Anecdotal evidence reveals the service is well received by patients and carers.

Conclusions
H@H provides a meaningful alternative to acute hospital admission for elderly patients. It appears to offer care that is cost-saving, safe and effective. Rising demand and workforce migration remain key challenges to maximising the service capacity. Confronting these issues will ensure H@H achieves its potential in managing acute frailty and providing patient-centred care.
INNOVATION ON THE ORTHOPAEDIC UNIT: EVALUATION OF A NEW ORTHOGERIATRIC SERVICE

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Background
Orthogeriatricians aim to optimise the care of older patients undergoing orthopaedic surgery and direct postoperative enablement, thus reducing hospital stay and improving functional outcomes. There was expansion and redesign of the service at Salford Royal Foundation Trust in August 2013 and the newly established orthogeriatric team implemented several interventions to improve quality of care and reduce length of stay for trauma patients.

Intervention
The new service included increase in the orthogeriatric consultant staff from a 0.5FTE to 2.5FTE, consolidating the service with the orthogeriatric specialist nurse.

Interventions included:

- 8am trauma MDT with the orthogeriatrician, anaesthetist and orthopaedic surgeon of the day to optimise trauma patients and reduce potential delays.
- Daily MDT board round to facilitate discharges and prioritise patients for review.
- Structured admission clerking templates for trauma patients.
- Proactive communication with patients and relatives.

Improvement
We analysed data looking at length of stay, percentage of preoperative medical reviews and quality of admission clerking. Online surveys were distributed to orthopaedic, anaesthetic, medical, allied health professionals and nursing staff with an overwhelmingly positive response to the interventions.

<table>
<thead>
<tr>
<th>Year</th>
<th>Average length of stay (All trauma admissions)</th>
<th>Number of trauma admissions</th>
</tr>
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<tbody>
<tr>
<td>August 2012-2013</td>
<td>8.97</td>
<td>1227</td>
</tr>
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<td>August 2013-2014</td>
<td>6.83</td>
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<tr>
<th>Time period</th>
<th>Hip fracture Preoperative review %</th>
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<tr>
<td>April 2012- April 2013</td>
<td>46.6% (116/249)</td>
</tr>
<tr>
<td>April 2013- April 2014</td>
<td>68.7% (195/284)</td>
</tr>
<tr>
<td>April 2014- April 2015</td>
<td>77% (227/295)</td>
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<td>1227</td>
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<tr>
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<td>31%</td>
<td>1550</td>
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</table>

<table>
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<tr>
<th>No. of clerking standards achieving &gt; 80% compliance (n=117)</th>
<th>Pre template introduction</th>
<th>Post template introduction</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>8/21</td>
<td>17/21</td>
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</table>

Discussion
Key improvements to the measures associated with the quality of care of older adults have been demonstrated with additional benefits to patient flow in all trauma patients discussed at the daily MDT board round. The changes have received positive feedback from the MDT who interact with the orthogeriatric service and can easily be adopted by other orthopaedic units.
AUDIT OF POST-OPERATIVE HAEMOGLOBIN TESTING IN FRAGILITY FRACTURE OF NECK OF FEMUR - FOURTH CYCLE

K Shah, M Almpani, L Poulton

Trauma Department, John Radcliffe Hospital, Oxford University Hospitals NHS Trust

Evidence-base
Anaemia is common in patients with fragility fractures, either prior to or as a result of surgery. Anaemia and transfusion affect post-operative recovery, and are associated with increased morbidity and mortality in the elderly.

The Association of Anaesthetists of Great Britain and Ireland (AAGBI) guidelines state that point of care analysers (e.g. Hemocue) should be used routinely at the end of surgery to assess the degree of anaemia and guide earlier blood transfusion.

Change Strategies
The first and second cycles of this audit demonstrated significant improvement in practice, achieving 85% testing immediately post-operatively, and 100% at 24 hours. Maintenance of these high standards was demonstrated with a third cycle at one year.

All patients over 65, admitted with a fragility fracture of the proximal femur in a three week period were included. Retrospective analysis of anaesthetic chart, operative chart, recovery documentation and medical notes were used.

Change Effects
Two years post-intervention, this audit cycle demonstrated continuing high levels of compliance with AAGBI guidelines.

Conclusion
The results show that this best practice has been integrated into the department, despite staffing changes. This demonstrates that even within a large, multidisciplinary Major Trauma Centre it is possible to implement and maintain high standards of geriatric care in a sustained manner.
**HOW DO WE “DO” POST-DISCHARGE CARE FOR OLDER PEOPLE?**

M S Kim¹, M J Connolly¹,², J B Broad¹, X Zhang¹, K Bloomfield¹,²

¹ Freemasons’ Department of Geriatric Medicine, University of Auckland, New Zealand; ² Waitemata District Health Board (WDHB), New Zealand

**Introduction**

Home-hospital transitions are frequent among acutely ill older people, and may be reduced (fewer readmissions) by post-discharge secondary care (PDSC). We aimed to determine the proportion of older patients receiving PDSC after acute hospitalisation and compare outcomes with those not receiving PDSC.

**Methods**

Retrospective observational study using electronic inpatient records. Participants were patients aged >75yrs who presented to a WDHB hospital emergency department (ED) and discharged from medical/surgical/geriatrics/orthopaedics wards in three 2-week periods (in September 2013, January 2014, May 2014). Proportional hazards models were used to assess associations of planning/attending PDSC with outcomes within 90-days of discharge.

**Results**

Clinical records for 1085 patients (100% of above discharges) were searched. 965 patients were eligible (43 inpatient deaths, 23 discharge letter unavailable, 54 second/further admissions). Of all discharge summaries, 42.8% indicated planned PDSC (blinded validation of 100 randomly-selected records by a different investigator yielded a kappa of 0.85). Of those with planned PDSC, 30.5% had no appointment booked. 95% of surviving appointees attended PDSC. Patients with planned PDSC were no more likely to attend ED, vs. those without planned PDSC (Hazard ratio[HR]=0.99, 95%CI=0.81, 1.22; p=0.94). However, patients actually attending PDSC were less likely to attend ED vs. those not attending (HR=0.32, 95%CI=0.24, 0.41; p<0.0001). Patients attending PDSC had lower mortality, vs. those not attending (HR=0.44, 95%CI=0.28, 0.70; p=0.0006). After excluding those discharged directly from hospital to long-term residential care (LTC), those attending PDSC were less likely to enter LTC vs. those not attending (HR=0.26, 95%CI=0.11, 0.63; p=0.003).

**Conclusions**

Older people discharged after acute hospitalisation are not receiving appropriate PDSC as they are not booked follow-up appointments despite discharge recommendations. Inappropriate PDSC planning and booking are strongly associated with undesirable outcomes, although not necessarily causal. Further research is planned to assess whether these undesirable outcomes are preventable through better discharge planning.
EVALUATION OF A STAND ALONE FRAILTY UNIT

M Whitsey, P Hanna, R Dutta, R Mildner

Department of Geriatric Medicine, Worcestershire Acute Hospitals NHS Trust

**Topic**
The British Geriatric Society’s “Silver Book” and Fit for Frailty recommends quality standards of care. Frailty Units are now functioning within Emergency Departments (ED), Medical Assessment Units (MAU) or alongside geriatric wards. Our District General Hospital does not have an acute or general geriatric service.

**Intervention**
A successful pilot In-Reach Single Comprehensive Geriatric Encounter (IRSCGE) service onto MAU lead to the creation of a 15 bedded acute frailty unit (AFU) in September 2014, independent of ED or MAU. The Bournemouth criteria were used to identify suitable patients. Patients received Consultant led comprehensive geriatric assessment, daily interventions and discharge planning along designated pathways.

**Improvement**
Data were available from 72 patients (median age 86.00, IQR 80.75 to 91.00; 61% female) who had a median Edmonton Frailty Score (EFS) of 9(IQR 6-10.3). Median numbers of co-morbidities were 4: 26% dementia; 39% falls; 69% polypharmacy; and 24% delirium. A median 3 geriatric domains were identified per patient. Advanced Care Planning occurred in 17% and 11% died during admission. 28-day readmission rate was 10.9% (8.4% Trust average). Comparisons between AFU and IRSCGE showed a trend in AFU group toward lower total LOS (median 7 vs 9, p=0.096) and 3 month mortality (29% vs 44%, p=0.068), possibly due to AFU group being statistically less old, less frail and with less delirium. However, a significantly higher proportion were discharged to their usual residence in the AFU group (63% vs 38%,p=0.021) suggesting the AFU was targeting patients who would benefit most.

**Discussion**
Our stand alone AFU, without direct links to ED or MAU, was able to deliver a new service to address frailty. Early indication is that it may be beneficial to the patients and the Trust, relative to a single-assessment in-reach service. More work is required to target patients in whom intervention will be most beneficial.
**CLINICAL QUALITY**

<table>
<thead>
<tr>
<th>NASAL BRIDLE - THE WAY TO AVOID REPEATED NASO-GASTRIC TUBE (NGT) INSERTIONS IN ACUTE STROKE PATIENTS ON NIL BY MOUTH (NBM) ORDER</th>
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<tbody>
<tr>
<td>M Datta-Chaudhuri, T Blattmann, F Mattson</td>
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**Evidence base**
Dysphagia is common in hospitalised stroke patients and can adversely affect outcome. FOOD trial showed early Naso-Gastric Tube (NGT), late Percutaneous Endoscopic Gastrostomy (PEG) insertion in dysphagic stroke on NBM was beneficial. NICE Guidelines CG68 recommends initiating tube feeding within 24hours for Stroke patients on NBM. Dislodgement of NGT is frequent, leads to interruption of food and medications administration. Nasal bridle (NB) with NGT has been shown to reduce frequency of NGT dislodgement.

**Change strategy**
First cycle of audit carried out on 20 consecutive acute stroke admitted to ASU showed frequent dislodgement of NGT without the use of NB.

Average age of patients -82 (range: 50 to 92), Male: Female - 8:12. Dysphagic stroke=11/ 20 (55%), Dysphagic stroke on NBM=7/11 (60%), Number with NGT insertion=7/ 7 (100%), average NGT insertion / patient= 9.2 (range: 4 - 17)

Strategy for improvement: Proposal submitted to the hospital management committee for the purchase of NB and training of staff for NB insertion after a presentation of the results of cycle 1 audit and raising awareness of the fact that introduction of NB will reduce the cost, make care of stroke patients safer. Proposal was accepted, training of staff completed, NB insertion introduced and 2nd cycle audit completed after 8 weeks of introduction of NB into practice. All MDT members of ASU team were involved right from the beginning of the project.

**Change Effects**
Cycle 2: audit of 21 consecutive stroke patients admitted to ASU with dysphagia on NBM showed reduction of average NGT insertion to 1.2 (range 1- 4 ) compared to cycle 1 (pre-Nasal Bridle introduction audit) ,average NGT insertion 9/patient (range 4-17).Average age, age range, male/ female distribution was similar to Cycle 1 audit. Patients in the audit cycle 2 had no complications from NB with NGT insertion except dislodgement in 3/21(14%)

**Conclusion**
NGT insertion with NB reduced average insertion significantly (average 1.2, cycle 2 compared to average insertion of 9 , cycle 1) and help maintain continuous nutrition, hydration and medication administration, thereby improving quality and safety of stroke care while reducing the overall cost from multiple insertions, reduced X-rays.

Other stroke units can use our experience to improve safety, quality while reducing cost of care in this group of stroke patients.
THE IMPLEMENTATION OF AN ONLINE DEMENTIA SCREENING TOOL AT A DISTRICT GENERAL HOSPITAL

M Ali, I Ali

Dept of Surgery, Birmingham Heartlands Hospital

Topic
Only one-third of patients with dementia are clinically diagnosed. Under-diagnosis prolongs the duration of stay in hospital which subsequently increases the rate of falls and hospital-acquired infections. Early diagnosis tailors management both in hospital and in the community. The Heart of England Foundation Trust employs an online dementia screening tool for all patients over 75 years. This tool is patient specific and generates a management pathway based on cognitive state. It must be completed within 72 hours of admission. The aim was to audit the implementation of this tool in all surgical wards at Birmingham Heartlands Hospital.

Intervention
Cycle 1 involved a retrospective audit of 76 inpatients during January 2015. This demonstrated poor compliance with the tool. The findings were presented at the surgical audit meeting and emailed to all surgical doctors. Reminders were also strategically placed in the Surgical Assessment Unit.

Improvement
Cycle 2 involved a retrospective audit of 73 inpatients one month after intervention. There was an increase in the number of completed tools from 66% to 75%, and a reduction in overdue tools from 6% to 4% (p<0.05). When an Abbreviated Mental Test Score was indicated, there was a remarkable increase in completion rates from 71% to 100% (p<0.05). Unfortunately in both cycles even when required, investigative biochemical workup was incomplete, and referrals to liaison psychiatry services were not done.

Discussion
The results demonstrate that simple interventions did increase compliance. For further improvement educating doctors would be essential, with appropriate input from dementia nurses. It would have been more beneficial to audit both medical and surgical patients to obtain a more accurate representation of compliance rates. Accuracy could have also been improved by auditing discharged patients instead of inpatients. This is because the screening tool requires feedback to general practitioners regarding newly-diagnosed dementia on discharge letters.
THE STUDY HIGHLIGHTING IN INCONSISTENCIES IN TRAINING AND EDUCATION OF STOOL ASSESSMENT

O Pathak, A Miodrag, S Stoneley, J Browning, S Ryder

Medical Continence Team, University Hospitals of Leicester, Leicester

Topic
Constipation is common in the older person. Within the University Hospitals of Leicester (UHL) there were 1005 patients with a coded diagnosis of constipation from January – March 2015. Constipation has long been the domain of the geriatrician encompassed within comprehensive geriatric assessment. However a geriatrician is informed by a stool chart. The Bristol Stool Chart (BSC) has been used to document bowel habit in UHL and amount of stool passed is documented as “+” but there is no formal measure.

We propose this creates inconsistencies in documentation of stool type and amount, impacting the accuracy of bowel monitoring and subsequent management.

Intervention
On Friday January 16th 2015, the group (medical continence team, UHL) recreated a model type 5 stool (as described by the BSC) and suggested that 100g represents “+”. This model was presented to 150 healthcare professionals within UHL. They were asked to identify type and amount.

Respondents varied from student nurses to consultants. The model was identified anywhere from a type 2 to 7. Amounts ranged from “+” to “+++++”. Only 17% correctly identified the type and amount, as suggested by the group.

Improvement
The work highlighted the inconsistencies present. The same stool sample would be documented differently by individual professionals and this would affect management. We propose this is due to paucity in training within nursing and medical programmes. This was addressed by the following initiatives:

1. Redesigned stool chart as this is the first source of information for those documenting stool. Descriptions were updated likening stool types to everyday food and clearer graphics. Amounts were standardised and suggested + = a patients fist size. Therefore: + = 1x patient fist or smaller/ ++ = 1-2x patient fist size and +++ = larger than 2x patient fists.
2. Further audit exploring patient perceptions/ barriers of bowel health management amongst healthcare workers on geriatric wards to tailor:
3. Drop-in teaching sessions.

Discussion
We aim to repeat the exercise after new stool charts have been in circulation on pilot wards. We endeavour to raise awareness / education so stool documentation becomes as standardised and hence reliable as the other “vital observations.” Work is ongoing to liaise with medical and nursing university training bodies to incorporate bowel monitoring in the undergraduate curricula.
“A GREAT FORUM FOR INTERDISCIPLINARY DISCUSSION AND REFLECTION”: LEARNING TOGETHER TO CHANGE PRACTICE ON A MIXED MEDICAL/DEMENTIA UNIT

R Winter, M Al-Jawad, C Gibson, J Carter, L Frost

Emerald Unit, Royal Sussex County Hospital, Brighton

Topic
The Emerald Unit is a ward within the Royal Sussex County Hospital which admits patients with an acute medical problem and dementia. Part of the unit manifesto is to encourage creative and innovative practice from staff and the unit holds a weekly interdisciplinary case discussion and education meeting to support this.

Intervention
The meetings aim to improve inter-disciplinary learning in order to change practice. We use a structured debrief tool with attendees from the whole multidisciplinary team (MDT). Staff are encouraged to bring a challenging case for discussion (and cake is provided). We investigated what was discussed in the meetings (by analysing the case discussion records from February to May 2015) and whether they were beneficial to the ward team (by collecting feedback from staff and patients (by analysing our interventions according to staff and case discussion records).

Improvement
Our analysis identified 6 main themes that came from the case discussions. These were:

1. Managing challenging behaviour
2. Complex discharge planning
3. Communication with carers
4. Managing falls and falls risk
5. Shared responsibility for learning
6. Accepting we make mistakes

Staff feedback was very positive. Quotes included:

“A great forum for interdisciplinary discussion and reflection” (Physiotherapist)
“The meetings help me understand what’s really going on on the ward” (Consultant)
“Certainly changes my practice” (Healthcare Assistant)

Positive changes that directly affected patient care were:

1. Combining MDT patient records into one folder
2. De-escalation plan and simulation training
3. Funding for psychiatry sessions increased
4. Improved accessibility of person-centred documents

Discussion
Our analysis shows the weekly meetings are a forum for sophisticated, reflective discussion within an inter-disciplinary group. The staff on the ward judge them to be beneficial to their practice. There have been positive changes to patient care as a result of the meetings.
PROFILE OF OLDER PATIENTS ADMITTED TO THE HIGH DEPENDENCY UNIT IN A DISTRICT HOSPITAL SETTING: A PILOT STUDY

U Clancy, O deBuyl, P Wieneke, B Carey
Bantry General Hospital, Cork, Ireland

Background
Sixty-five per cent of acute hospital bed-days are used by older people, including High Dependency Unit (HDU) beds. A small body of research has been carried out among older patients in the Intensive Care Unit setting but research regarding older patients admitted to the HDU setting is sparse. This pilot survey investigates baseline characteristics of older people admitted to the HDU, in order to better inform future healthcare planning.

Sampling Methods
This cross-sectional pilot study was carried out at a rural district general hospital. The charts of twenty consecutive patients over the age of 65 were reviewed upon admission to the High Dependency Unit. Data collected included functional status at baseline, physiological scores, length of stay, polypharmacy and mortality.

Results
Twenty patients were studied. The median age was 80 years (Interquartile Range 75-85 years). Forty percent were female; 60% were male. Prior to admission, 17 of the patients had lived at home. The median activities of daily living (Barthel) score pre-admission was 19 (IQR 15.75-20). The median instrumental activities of daily living (Lawton) score pre-admission was four (IQR 2–8). Eighty percent mobilised independently pre-admission. The median length of stay in the HDU was one day. The mean APACHE II score on admission was 12.3 (SD=5.23). The mean Charlson Comorbidity Score was 5.75. Fifty per cent (n=10) had been admitted to hospital in the preceding twelve months. In this group, the mean duration from discharge to readmission was 4.1 months. Six patients died during their hospital admission; two were discharged to nursing homes, and twelve patients were discharged home.

Conclusions
As would be expected from acute severe illness, HDU admission is associated with a functional decline. It is however reassuring to note that 12 of the 14 patients who survived HDU admission were ultimately discharged to their own homes. Further research should focus on functional status following discharge, readmission prevention tools, and predictive indicators of prognosis, as vacant HDU beds are going to become a scarce commodity as our population ages.
ROLE OF EUROPEAN SOCIETY OF CARDIOLOGY (ESC) SYNCOPE GUIDELINES IN REDUCING SYNCOPE RELATED ADMISSIONS

B R Drumm, H Cronin

Midlands Regional Hospital, Mullingar, Ireland

Topic
Syncope represents around 1% of all ED attendances (Quinn J et al, Ann Emerg Med. 2006,47(5):448-54). Owing to syncope’s wide range of pathologies, inappropriate admissions and investigations are commonplace. The European Society of Cardiology (ESC) Syncope guidelines provide a key tool to guide appropriate admissions and investigations.

Intervention
We performed a chart review of all patients admitted to a Regional Hospital over a four-week period for the work-up of syncope. By applying the ECS guidelines we evaluated the appropriateness of these admissions and the ensuing investigations. We then provided an education session on the guidelines to the admitting medical doctors and provided easy access to these guidelines while on call before re-auditing.

Improvement
During the initial chart review 44% (7/16) of admissions were inappropriate, the average length of stay for these inappropriate admissions was 2 days. Brain imaging was performed in 62.5% (10/16) of those admitted – this was inappropriate in 70% (7/10). Cardiac investigations were largely appropriate. Only 40% had lying and standing blood pressures as part of their bedside investigations. In the re-audit the ESC guidelines were complied with in 100% (10/10) of admissions. 80% had bedside lying and standing blood pressures. 50% (2/4) of the CT brains ordered in the re-audit were inappropriate.

Discussion
This audit demonstrates that the minimal cost intervention of education sessions and making the ESC guidelines easily accessible to the medical staff has the potential to reduce inappropriate syncope admissions. With an average cost of stay for non-elective inpatients of £1,542 (Department of Health, NHS Reference costs, 2014, 2013-2014:1-58) and average CT scan unit cost of £121 (National Audit Office, Report by the Comptroller and Auditor General, 2011, HC 822, 1-38), these interventions could have led to a potential reduction in spend on syncope admissions of £11,399 in this small initial sample. This is in addition to the benefits to patients of avoiding hospital admission and harm from inappropriate investigations. Further improvements in inappropriate brain imaging and use of simple bedside investigations are needed.
FRACTURE NECK OF FEMUR BEST PRACTICE TARIFF FUNDING IMPROVES PATIENT CARE

I Gunawardena, J Casson

Norfolk and Norwich University Hospital

Background
Norfolk and Norwich University Hospital (NNUH) is a busy teaching hospital with over 1000 beds and can have up to 40 patients a day triaged to Older Peoples Medicine (OPM). NNUH also admits close to 800 fracture neck of femur (NOF) patients a year.

Due to the large volume of admissions especially over weekends there could be up to 24 hour delay in patients being seen by a geriatrician on post take ward round (PTWR). This was deemed unsafe and poor quality of care. The fracture NOF patients admitted over the weekend failed on the best practice tariff (BPT) target of - all patients with fracture NOF being reviewed by a geriatrician within 72 hours of admission. This had a negative impact on the quality of care of fracture NOF patients and financial implications to the Trust.

Innovation
We proposed a service model which entailed having an extra geriatrician for 3 hours and a junior doctor for 8 hours on each weekend day. The extra funding for the above service commitment was secured against the financial gain from achieving the NOF BPT target.

Evaluation
During the six months of running this new service model we have managed to bring down the PTWR time and guaranteed a geriatrician review for OPM patients within 20 hours of admission. This has not only improved quality of care it has also improved patient flow over the weekend. The discharges over the weekend have increased from 12% to 14% and the overall departmental length of stay has gone down from 9.7 days to 9.3 days. We have improved our BPT target from 86% to 95% which equates to approximately an extra hundred thousand pounds in BPT funding to the Trust.

Conclusion
The above service development model illustrates how BPT funding can be utilised to improve overall patient care. This service model not only improved patient care for fracture NOF patients the benefits were extended to all OPM patients. This is in line with the aspirations of introducing BPT, which is ‘high quality care for all’, Lord Darzi’s NHS Next Stage Review report.
ADMISSION AVOIDANCE USING GERIATRICIAN LED VIRTUAL WARD ROUNDS IN A RAPID RESPONSE SERVICE: THE HARROW STARRS MODEL

S Levy, A Porter, A Desai, N Nallamuthu, N Shah, E Swart, L P Thum, E Chua

London North West Healthcare NHS Trust, Northwick Park Hospital, Harrow, London, HA1 3UJ

Background
STARRS (short term assessment, rehabilitation and reablement service) is a multi-disciplinary team of nurses, geriatricians and therapists serving two boroughs in North London, seven days a week. The rapid response team sees referrals from GPs, A&E or London Ambulance Service (LAS) within two hours, aiming to avoid hospital admission where possible. We sought to improve admission avoidance rates in line with the BGS 2012 Silver Book recommendations (www.bgs.org.uk).

Intervention
Virtual ward rounds, led by a geriatrician, with MDT input, were introduced in 2013. These run four times a week (including Saturdays), to facilitate rapid decision making and access to appropriate care. All cases are discussed; progress is reviewed and recorded electronically.

Improvement
Data were collected from November 2013 – April 2014 (period A) and from November 2014 - April 2015 (period B). In period A there were 1502 referrals, in period B there were 1350 referrals. In both periods, 46% of referrals were from A&E, over 40% were from GPs, 6% were from LAS, the remainder were from other sources.

Admissions to hospital from GP referrals were 18.4% in both time periods. Admissions to hospital from A&E referrals were 8.9% in period A and 2.6% in period B, a reduction of 6.3% ($\chi^2 = 106.9$, p <0.0001). Across all referrals, admissions were reduced by 2.5%, from 13.8% in period A to 11.4% in period B ($\chi^2 = 7.33$, p <0.01).

Discussion
The introduction of geriatrician led virtual ward rounds to our existing community service has led to a sustained overall reduction in admission avoidance, with the biggest change seen in referrals from A&E. This change was introduced to an existing framework, enabling straightforward implementation. Broader application of this model would require evolution of community services in line with local needs.
AUDIT TO EVALUATE THE ASSESSMENT OF SPIRITUAL NEEDS AT THE END OF LIFE, IN A DISTRICT GENERAL HOSPITAL CARE OF ELDERLY DEPARTMENT

C Dunlop, J Bechervaise

Department of Medicine for the Elderly (DoME), Worthing Hospital

Background
Addressing patients’ spiritual needs have been found to improve remaining quality of life and the ability to cope with ill health (Wynne L, Nursing Standard, 2013, 28, 2, 41-45), yet it is a factor often overlooked in end of life care (Tuck C, Scottish Journal of Healthcare Chaplaincy, 2009, 12: 2, 52-9). This audit sought to investigate if the spiritual needs of patients and their next of kin were being addressed at the end of life.

Intervention
Two loops of this audit were completed - the second cycle following an intervention of a teaching session to DoME junior doctors and a poster presentation. These included the importance of spiritual needs assessment at the end of life and issues surrounding its implementation.

Improvement
12.5% of patients that weren’t documented as ‘unable to communicate’ had their spiritual needs assessed in the baseline audit and this improved to 33% following the teaching session. 28% of next of kin had their spiritual needs assessed in the baseline audit, and this remained stable at 29% following the teaching session.

Discussion
The changes were challenging to evaluate as the term ‘spirituality’ is difficult to define and can be interpreted in different ways. Although many people would interpret it as ‘religious beliefs’, it encompasses broader concepts than this, such as core beliefs and values (Holloway, Adamson, McSherry. Department of Health, 2010). The audit results were thought to be due to barriers in assessing spiritual needs amongst the medical team, and lack of awareness that it is a part of good practice guidelines in palliative care. We tried to address these barriers through the interventions outlined above. We think this audit would be easy to replicate in a similar clinical environment. We would recommend that education regarding spiritual needs assessment is incorporated into junior doctors teaching curriculum.
SIMPLE CONTINENCE INTERVENTIONS CAN IMPROVE QUALITY OF LIFE IN PARKINSON’S DISEASE

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**Topic**

As Parkinson’s disease (PD) progresses, non-motor symptoms, such as urinary incontinence, often have more effect on quality of life than motor symptoms (Martinez-Martin P, Movement Disorders 2011; 26: 399–406). It is critical that we adequately assess these symptoms in our Parkinson review clinics. We set out to assess the feasibility and efficacy of incorporating more detailed continence assessment and management into our time-limited, district general Parkinson’s review clinic.

**Intervention**

Patients attending a monthly “complex PD” clinic were sent a simple explanatory letter along with their appointment. Those wishing to be assessed were asked to complete an Overactive Bladder Questionnaire (OAB-Q) and bladder diary prior to any intervention. A continence assessment was performed in clinic followed by an intervention. Interventions included: a change to PD medications, start or change to continence medication, referral to urology, referral to day hospital, continence specialist nurse referral or treatment of constipation. It was at the discretion of the treating consultant to choose which single or combined interventions they felt was best for each patient. Patients were followed up at 3 months. We assessed both subjective and objective improvement in incontinence using the OAB Questionnaire.

**Improvement**

13 Patients with PD, 85% male, mean age 76 were included in the study. The average time taken to assess continence in the consultation was 10 minutes. The overall clinic length was increased by 20 minutes. 92% experienced a subjective improvement in their symptoms. Continence was achieved in 46% of patients. Only 25% of patients returned their OAB-Q, all of which showed a significant improvement in their OAB-Q score.

**Discussion**

Taking a short period of time, in a routine Parkinson’s review clinic, to assess bladder function and initiate a simple intervention can significantly improve a patients’ quality of life. More patient friendly questionnaires are required for robust follow-up.
### OLDER ADULTS’ ROOM PREFERENCE IN AN ACUTE HOSPITAL SETTING: SINGLE VERSUS SHARED ACCOMMODATION

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**Objective**
The objective of the survey was to determine whether older adults would prefer to be in a single room or a room shared with other patients following admission to an acute hospital.

**Methods**
In March 2015, we surveyed inpatients on their room preference. Using a physician administered questionnaire, information was obtained from patients who agreed to participate. Patients were asked their preferred choice of room and their preferred meal location either at bedside or a common dining room with other patients. Patients in single rooms were also asked if they felt lonely in their room. Reasons for their answers were also sought.

**Results**
160 patients (80 men and 80 women) participated in the study. Mean age was 78 years (65 - 96 years) and average length of stay was 23 days (1 – 233 days). 116 (72.5%) patients were in shared rooms while 44 (27.5%) patients were in single rooms. 62% of patients in shared rooms said they would prefer shared accommodation, whereas 63.6% of patients in single rooms expressed preference for single rooms. A higher number of patients (71.6% of those in shared rooms and 52.3% of those in single rooms) preferred to have their meals at their bedside. 72.3% of patients in single rooms said they never felt lonely in their room.

**Conclusion**
The results from our survey shows that the room type patients were already exposed to was likely responsible for the marked difference in room preference. Contrary to other arguments, our report suggests that older inpatients will do well in any room they are in as long as issues regarding privacy and protected meal times are addressed.
PILOTING A LEAFLET TO IMPROVE PATIENT ENGAGEMENT WITH DO NOT ATTEMPT CARDIOPULMONARY RESUSCITATION (DNACPR) DECISIONS

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Background
This quality improvement project focuses on patient understanding and involvement in Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) decisions. We suspected that there was a paucity of information about resuscitation decisions provided to all hospital inpatients, in particular those on geriatrics wards, where levels of frailty and cognitive impairment are high, and for whom these decisions may be particularly relevant.

Intervention
We surveyed inpatients on a general male geriatric ward over a month, and found that 41% had no understanding of CPR, and 37% had a limited but incorrect understanding of it. A high proportion (69%) of patients felt that they wished to be consulted regarding their DNACPR status, and a majority (79%) did not find discussing resuscitation stressful.

Improvement
We developed a patient information leaflet to facilitate informed DNACPR discussion, which we piloted on the ward over one week. Our aim was to include all inpatients, however those with delirium, advanced dementia and severe sensory impairment were unable to participate, yielding only 6 responders out of 29 patients.

After reading our leaflet, 83% of patients understood what CPR was and 83% found the leaflet useful.

Discussion
Although our final sample size was small, we can conclude that the intervention was useful for those who were able to read and understand the leaflet. Unfortunately, the leaflet was only appropriate for a minority of patients: at the time of audit, 80% of inpatients had evidence of cognitive impairment. This study highlights the challenge of finding ways to engage older patients with cognitive impairment in DNACPR decisions, and reinforces the need for better involvement of relatives and carers. We now plan to extend the study, to assess the impact of the leaflet on relatives and carers in order to achieve this.
CAN I REACH MY WALKING AID? ASSESSMENT ON THREE ACUTE MEDICAL WARDS WITHIN A TERTIARY HOSPITAL SETTING

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Introduction
Falls within the acute hospital setting are common and cause significant morbidity and mortality. Mobility aids are used to decrease the risk of falls, however they are often left out of patients reach, resulting in people being unable to mobilise or at increased risk of falling; this impacts on dignity and safety. The purpose of the service evaluation was to identify if mobility aids are within arm’s reach on three acute medical wards at Queen Elizabeth Hospital Birmingham: a diabetes ward, an acute geriatrics ward and the Clinical Decisions Unit (CDU).

Intervention
Each ward was visited on two occasions to conduct patient observations, revealing 128 patients who required a mobility aid. On all wards, less than 50% of patients had their mobility aid within arm’s reach; on CDU, this figure was 20.5%. The intervention was a simple patient bedside poster and a weekly staff reminder at the wards’ multi-disciplinary meetings. All wards were visited on weeks one and two post-intervention.

Improvement
All wards demonstrated an improvement: the diabetes and acute geriatrics ward demonstrated a 20% improvement, CDU only a 4% improvement.

Discussion
The intervention was effective in encouraging staff, visitors and patients to leave mobility aids within arm’s reach. One negative attitude encountered, suggested that leaving aids within arm’s reach encouraged patients to mobilise unsupervised and may increase their risk of falls. Further education and changes are required to combat these attitudes. A particular challenge on CDU was that 53% of mobility aids were left at home. In this case patient interviews revealed ambulance staff advise patients to leave their mobility aid at home; direct consultation with ambulance personnel would be useful and alternative strategies may need to be trialled.
IMPROVING VERBAL COMMUNICATION BETWEEN OLDER ADULTS WITH DEMENTIA, CARE GIVERS AND THE INTER-PROFESSIONAL TEAM WITHIN THE HOSPITAL SETTING: A LITERATURE REVIEW AND QUALITATIVE ANALYSIS

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Topic
Patients with dementia may account for 25% of patients within the hospital setting, can have impaired abilities to understand and express information, plan and solve problems that may hinder their involvement in care decisions. Identifying methods that enhance relationships between the inter-professional team and patients with dementia and their caregivers during hospital admission by improved verbal communication, to support decision making, is essential. It is important for patients and their caregivers to have clarity regarding which senior clinician has overall clinical responsibility and whom to contact to discuss ongoing care.

Intervention
The aim of this review was to determine evidence that underpins best practice for improving verbal communication with patients who have dementia and inform the process of implementing best practice within the acute setting. A systematic search of the databases CINAHL, MEDLINE, Web of Science and Psyche Info of literature published between 2004 and 2014 identified eight qualitative studies meeting inclusion criteria. Thematic analysis approach was used to ascertain common or recurring concepts amongst the studies identified.

Improvement
The main themes that associated with improved outcomes were partnership working between the inter-professional team, patients and caregivers; frequent communication between the team, caregivers and patients; and structured caregiver/family meetings.

Discussion
Caregivers wish to engage collaboratively with the inter-professional team and be viewed as partners in planning care. Poor patient and carer outcomes were associated with a lack of recognition of the significance of the caregiver’s relationship with patients. Promoting good relationships between the caregivers and the inter-professional team reduced anxiety, frustration and likelihood of complaints, whilst increasing trust. Interventions that improve verbal communication between caregivers, patients and the inter-professional team can be transferable to older adults with or without dementia. Based on evidence, a feasibility study of improved communication through dedicated communication clinics was set up within our department.
IMPROVED VERBAL COMMUNICATION BETWEEN PATIENTS, THEIR CAREGIVERS AND THE INTER-PROFESSIONAL TEAM THROUGH A PROCESS OF COMMUNICATION CLINICS: A FEASIBILITY STUDY

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Background
Older people, with or without dementia, admitted to hospital risk further deterioration in their health. To promote multidisciplinary patient care and management, shared decision making between the multi-professional team, caregivers and patients is important. Previous research identified best practice themes of 1. Partnership working between the inter-professional team, patients and caregivers 2. Frequent communication and 3. Structured caregiver/family meetings to facilitate good care. To improve communication and implement best practice themes, communication clinics were set up within our department. We also introduced business cards as a way of contacting the responsible consultant or team.

Intervention
After consulting relevant stakeholders, action learning sets and focus groups an education programme for ward staff and secretaries took place to plan structured meetings on a set day of the week. Dedicated meetings on 10 patients and/or their caregivers soon after hospital admission took place between 2013 and 2014. These ‘communication clinics’ comprised the responsible clinician, clinical case manage, ward staff, a member of the therapy team if appropriate, the patient and/or caregivers.

Improvement
Discussions within the communication clinics covering both clinical and non-clinical updates as well as discharge planning were associated with better staff and caregiver morale and satisfaction. The relationships built within these clinics were associated with greater clarity of the roles of the multi-professional team, less caregiver anxiety, empowerment in decision-making processes, positive feedback and greater satisfaction from both patients and their caregivers.

Discussion
Dedicated ‘clinics’ improved verbal communication between the multi-professional teams and patients/caregivers. Business cards were associated with positive feedback. This work highlights the need to work as a partnership to plan treatment pathways and make important management decisions. Informed consent from the patient should always be obtained. Although feasible, the challenges for wider implementation of these clinics include allocating mutually convenient, dedicated times in a suitable venue.
GIVING PATIENTS A VOICE FOLLOWING A HIP FRACTURE - THE ROLE OF THE PHYSICIAN ASSOCIATE

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Topic / Introduction
Osteoporosis is a common and debilitating condition affecting many elderly and contributing to around 70,000 hip fractures per year in the UK. The national hip fracture database (NHFD) has driven huge change in the delivery of care for these patients. The NHFD strongly encourages hospitals to collect follow up information about patients following discharge. At our trust we had no reliable mechanism for collecting this information prior to this project and our levels of data collection were low.

Intervention
In September 2014 the Physician Associate working in the orthogeriatrics team at our MDT debrief meeting volunteered to start a fortnightly call back service to patients 30 days following their discharge from hospital. This data was collected and recorded on the NHFD.

Improvement
For the 8 month period from September 2014 – May 2015 time was set aside to make follow-up calls to patients. For this 8 month period the 30-day follow-up data completion rate rose from 11.7% (for the same time period in 2014-14) to 41.5% (a 255% increase).

Discussion
Due to the nature of the 30-day feature in the NHFD we have found that these calls need to be made on a weekly basis to capture patients within the appropriate time window. The data collected during the 30-day follow-up calls included mobility status, current location and if they are continuing with the bone health treatment started whilst in hospital.

There is another side to these calls though, as many patients find they have lost their voice when in hospital - the fracture affects more than just the bone – with large ongoing social knock on effects. The 30 day follow-up calls that are undertaken for the NHFD give us the essential data required but also provide a platform for patients to voice any concerns or give praise – which is fed back to the team in our monthly MDT debriefing sessions.

The follow-up calls have given us information about common questions that need to be addressed before discharge which are being collated into a new patient information leaflet. Patients appreciate the call and feel valued that we are listening to their concerns, even after their actual hospital treatment has ended.

Listening gives us the data we require but the patient gets so much more.
SAFE PRESCRIBING WITH REGARDS TO ANTHROPOMETRIC MEASUREMENT IN PEOPLE OVER 65 YEARS OF AGE

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Evidence Base
Several commonly administered drugs require the measurement of patient weight to be prescribed safely, including paracetamol, gentamicin and low molecular weight heparin. These drugs can cause harm if not prescribed correctly for patient weight. Paracetamol at the maximum adult dose (4g/24h) in low body weight patients (<50kg) has been associated with acute liver injury (Claridge et al. BMJ 2010), standard dose of prophylactic enoxaparin (40mg) causes significant rises in anti-factor Xa in low body weight patients (Rojas et al. Thromb Res 2013 132:6 pp761-764) and the pharmacokinetics of gentamicin can be altered significantly by weight and age (Hilmer et al. BJCP 2010 71:2 pp224-231).

Change Strategies
The aim of this project was to determine what proportion of patients in care of the elderly and orthopaedic wards had: weight recorded, weight available at the bedside, and weight-dependent drugs prescribed appropriately.

Following the first audit cycle, educational intervention was delivered to improve measurement and documentation of weight by nurses and prescribing by doctors. This was a presentation to nurses during “huddles” and presentations at speciality-specific educational meetings for medical staff. In addition, a new weight chart was designed and weekly weigh days were introduced on the wards.

Change Effects
At baseline 56.6% of 150 patients had a weight available at the bedside. This increased to 72% following intervention (Fisher’s Exact Test: p=0.0079).

At baseline 67% of patients under 50kg were inappropriately prescribed 1g paracetamol and 71% were inappropriately prescribed 40mg enoxaparin, falling to 50% and 40% respectively following intervention.

Conclusion
Accurate measurement and recording of patient weight is important for safe prescription of a number of commonly used drugs. We have shown simple interventions can improve safe prescribing and promote a safety culture. Future interventions proposed include investment in hoist scales for immobile patients and incorporation into ePrescribing.
THE USE OF URINARY CATHETERS IN PATIENTS OVER 65 YEARS ON CARE OF THE ELDERLY WARDS, THE ACUTE MEDICAL UNIT AND ACUTE STROKE UNIT AT NORTH MIDDLESEX UNIVERSITY HOSPITAL

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Topic
We present the findings of a completed audit cycle examining the use of urinary catheters and documentation of insertion in patients over 65 years at North Middlesex University Hospital (NMUH) in June 2014. Current evidence includes NICE guidelines on the standards of documentation for insertion of urinary catheters (NICE pathways (2012): prevention and control of healthcare-associated infections, available online). Trust guidelines at NMUH, published in 2008, also list appropriate clinical indications and standards for catheter insertion.

Intervention
In 2008, an audit was undertaken on the three care of the elderly wards, acute medical units (AMU) and acute stroke unit at NMUH, examining where catheters were being inserted, clinical indication and documentation of insertion. Following this audit, a sticker on the catheter pack was introduced to facilitate documentation of catheter insertion by healthcare professionals. The sticker included space for documenting date of insertion, clinical indication and other details.

Improvement
Data was collected for 24 patients over 65 years with urinary catheters in June 2014. Of 130 care of the elderly patients, 18.5% had a urinary catheter. The most common clinical indications were acute urinary retention and fluid balance. 96% of patients had a clear indication for catheterisation documented, compared to only 50% in 2008. The majority of patients were catheterised in A&E or AMU, with 25% of patients having long-term catheters on admission. In 2008, only half of inserted catheters had documentation of time/date of insertion and 25% the type of catheter used. In the present audit, 95% of catheters had clear documentation of these details.

Discussion
In conclusion, the majority of catheters were inserted on appropriate clinical grounds and in the acute medical settings (A&E and AMU). The introduction of a sticker on the catheter pack was an effective and simple intervention in improving the documentation of catheter insertion.
PROMOTING HARM FREE CARE ON THE ORTHOPAEDIC UNIT

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Topic
The availability of Electronic Patient Records (EPR) enables quick and remote review of patients’ results and prescriptions. The Harm Free Care (HFC) proforma was designed by the Orthogeriatric team to be completed at the end of the working week to ensure patients receive a comprehensive review thus promoting safe care and reducing adverse incidents. The areas reviewed included: blood, microbiology and radiology results, hospital acquired thrombosis prescription (HAT), medications, devices, ceiling of care and formulation of weekend handover.

Intervention
This audit was conducted on a total of 110 patients under regular review by the Orthogeriatric team admitted between 10/7/14 and 21/11/14. This was completed by 2 Consultants and a junior doctor in the form of EPR review on Fridays.

Improvement
Of the 110 patients reviewed, 109 (99%) required one or more interventions. Review of blood, microbiology and radiology results led to interventions in 13 (12%), 5 (5%) and 10 (9%) patients respectively. HAT assessment was edited in 56 (51%). Medication review in 50 (45%) patients required a medication to be stopped, started or altered. On review of devices, 29 (26%) required a device to be inserted or removed and 49 (45%) required an intervention related to catheterisation. Following review of bowel frequency, 9 (8%) required an intervention related to stopping or starting laxatives and enemas. On review of antibiotics, 55 (50%) patients required an intervention relating to course duration or escalation. Finally, 97 (88%) patients had a documented weekend handover to guide the on-call team.

Discussion
The introduction of an Orthogeriatric-led HFC Electronic Ward Round on the orthopaedic unit has resulted in significant identification of preventable errors and subsequent required interventions prior to the weekend. The formulation of a weekend handover was valued by the on-call team. We recommend that this is practised for all orthopaedic inpatients.
REDESIGNING OF THE FALLS PATHWAYS HAS LED TO A REDUCTION IN THE INCIDENCE OF HOSPITAL ACQUIRED FRACTURED NECK OF FEMUR

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Introduction
Falls and fall related injuries are common among the elderly population. They lead to personal human cost and an estimated annual healthcare cost of £2.3billion. Guidelines for inpatient falls prevention are calling for multidisciplinary approach.

Intervention
The Falls Care Bundle was redesigned. It allowed for early identification of inpatients at risk of falling, with incorporated instructions on the appropriate use of falls prevention equipment.

A falls team was developed, comprised by a consultant geriatrician and a specialist nurse. They carry out weekly ward rounds to assess complex patients at risk of or with history of recurrent falls. Referrals can be made via a designated falls bleep.

The falls reporting systems were redesigned to provide falls trends enabling development of targeted falls strategies, such as refinement of the post falls protocols for the multidisciplinary team and development of falls stickers put in the notes post fall aiming at providing clear guidance on the initial medical and nursing assessment. ‘Stop and Wait’ cards are now given to those patients likely to mobilise independently, reminding them to seek help first.

Focused audits on the appropriate use of the falls prevention equipment led to increased number of low beds, chair raisers, non-slip foot pads and one way slides. Equipment use is centralised with the falls team been responsible for its distribution, and assessment for use.

Improvement
We raised staff awareness and understanding on inpatient falls prevention and post falls management. This has allowed the implementation of targeted management systems tailored to the individual patient’s needs. This in turn has led to a sustained reduction in the hospital acquired neck of femur fractures from 7.7% in August 2013 to 1.9% in February 2015.

Discussion
The falls services utilise pre-existing falls prevention pathways and recommendations which are now refined so as to allow for a patient centred approach to falls prevention, taking into account individual patient needs and variables, and addressing them with multidisciplinary input.
A QUALITY IMPROVEMENT PROJECT IN IN-PATIENT PARKINSON’S DISEASE MEDICATION PRESCRIPTIONS AND DELIVERY

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Topic
Parkinson’s disease (PD) patients can have complex medication regimes and are frequent attenders to hospital. Missed dopaminergic therapy can cause significant harm upon admission and can subsequently prolong hospital stay. We hence set out on a quality improvement project to improve PD medication delivery.

Intervention
We prospectively audited PD medication prescriptions in March 2014 for the first 24 hours of admission. All 25 patients identified had complex or palliative stage disease and the majority (76%) had a prior dementia diagnosis. The right drug with respect to levodopa preparations, dopamine agonist and COMT inhibitors were prescribed 88%, 80% and 100% of the time respectively. The doses were accurate in 92% of prescriptions with the timings incorrect for 64% of prescriptions. Seventy-two per cent of patients had a missed dose within the first 24 hours of admission with, prescribing delays, medication availability, missed doses in A&E and nil-by mouth and the most common issues.

We delivered educational sessions in foundation doctor induction and feedback at relevant clinical governance meetings in acute and elderly care to multiple disciplines. Pharmacy input involved providing the most frequently encountered medications as stock on acutely admitting wards. Finally the launch of the new on-line PD integrated care pathway within the trust gave advice on prompt prescribing of medication and nil-by mouth guidance.

Improvement
Prospectively re-auditing in March 2015 we identified 15 patients of similar demographics. The right drug with respect to levodopa preparations, dopamine agonist and COMT inhibitors were prescribed 93%, 100% and 100% of the time respectively. The doses were accurate on 100% of prescriptions with the timings improved being incorrect for 33.3% of patients. Forty-six per cent of patients missed a dose within the first 24 hours, an improvement on the previous year.

Discussion
Through a multi-faceted approach we’ve been able to show some improvement in delivering in-patient PD medication with excellent rates of prescribing the correct drugs at the correct dose, but further work is still required to improve timings and avoid missed doses. There are often challenges in identifying accurate timings in patients with cognitive impairment in a busy acute setting however, missed doses need further focus and hopefully as the new interventions are ingrained into the current system further improvement will be observed.
SYSTEMIC INFLAMMATORY RESPONSE SYNDROME (SIRS) RATES AT EMERGENCY DEPARTMENT (ED) IN OLDER PATIENTS REVIEWED BY MEDICAL EMERGENCY TEAM

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Introduction

Little evidence is known about using SIRS criteria on ED presentation for predicting the timing of MET calls and prognostic implications after admitted to hospitals.

Aims

To determine the rates and outcomes of older patients reviewed by MET with and without SIRS in ED in relation to the timing of MET calls, mortality, change in discharge destination and hospital length of stay.

Methods

A retrospective audit of medical records of all MET call patients aged ≥75 years admitted to Maroondah Hospital for the first six months of 2014, as identified from the ICU MET call database.

Results

Of 127 older patients required MET calls during admission, 43 (34%) were identified to have SIRS in the ED and 44 (35%) had MET calls within 48 hours of admission. Overall the SIRS group had more MET calls within 48 hours of admission (48% vs 27%).

Mortality during the hospital admission was 26 (21%) and highest for the SIRS group (26% vs 18%). All deaths except two were in the post 48 hours MET call group and highest for the SIRS group (41% vs 25%). Post hospital admission, 18% of patients had a change of destination from home to aged care facility, highest in the non-SIRS population (21.4% vs 11.6%) and for the post 48 hours MET call group (23%). Furthermore, the duration of hospital stay was longest (17.5 days) in the SIRS patients with MET calls after 48 hours but shortest (6 days) in the non-SIRS group with MET call within 48 hours of admission.

Conclusion

Older patients with SIRS on ED presentation were more likely to have a MET call within 48 hours of admission and a higher mortality. Identification of patients with SIRS in ED may improve their clinical care.
A SURVEY OF HOW WELL WE TRAIN IN PD MANAGEMENT

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Background
Parkinson's Disease management is one of the core components of the Geriatric Medicine curriculum. We wanted to find out how well trained our trainees are in managing the condition. We also made a comparison of their knowledge to trainees in other specialities of GIM who also have to look after these patients. The survey gathered information about local PD services available as well.

Sampling Method
The survey was conducted at one of the West Midlands regional General Internal Medicine training days. The training day was attended by 115 trainees and 76 trainees filled the paper survey proforma.

Results
Out of the 74 trainees that filled in the survey, 28 were Geriatric Medicine trainees, 13 Gastroenterology, 11 Acute Internal Medicine, 8 respiratory, 6 Endocrine, 4 Renal, 2 Cardiology, 1 Infectious Diseases and 1 Clinical Pharmacology trainee. 93% of trainees said they saw patients with Parkinson's once or twice a week. All geriatrics trainees were aware of the 3 common drugs used in the management and 2 alternatives to use if oral route was not possible. Other specialty trainees were not that well aware of the common medications used especially when the oral route was not available.

54% said PD in their hospital was treated by Geriatricians with only 8% saying they had a PD pathway in their hospitals. 43% said it was easy to access a Parkinson's disease specialist with only 15% access to a designated ward with specialist input for complex Parkinson's disease patients. Access to Speech and language therapist was easy according to 60%.

16% said they were confident in treating Parkinson's patients. 89% agreed that more education was required.

Conclusion
Clearly more education is required and rotations should take into account the educational needs and sub-specialty interests of the trainees. It will also be helpful if GIM training days include educational sessions on the management of this important medical condition seen on call when expert help may not always be available. Trusts should also devise Parkinson's disease management pathways and guidelines which can be used by all specialties, medical or surgical, especially by junior staff out of hours.
DOES THE FRAILSAFE CHECKLIST AFFECT \textit{DO NOT RESUSCITATE (DNACPR)} OR CEILING OF TREATMENT DECISION MAKING ON CARE OF THE ELDERLY WARDS?

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\textbf{Background}

The NCEPOD “Time to Intervene” review recommended that Cardiopulmonary Resuscitation status is considered and recorded for all acute admissions at first consultant review\textsuperscript{1}. It is also recommended that a ceiling of treatment (COT) decision should be recorded. Frailsafe\textsuperscript{2} is a simple checklist designed to improve care and safety of frail older patients.

\textbf{Innovation}

Frailsafe was introduced on two care of the elderly wards in November 2014. Trainee doctors were asked to perform a ‘Check and Challenge’ using frailsafe on all new patients. We studied whether frailsafe has any impact on patients’ DNACPR status and COT. This was assessed by retrospective case note review of patients admitted to the wards in September 2014 (cycle one) and April 2015 (cycle two).

\textbf{Evaluation}

In cycle one, 104 sets of notes were obtained. 40% (42) had COT recorded and 47% (49) were DNACPR. In cycle two, 88 sets of notes were assessed. 56% (49) underwent frailsafe intervention. 41% (36) had COT recorded and 45% (40) were DNACPR. There was no statistical difference in COT (p=1.0, Fisher’s exact test) or DNACPR (p=0.88, Fisher’s exact test) between cycle one and two. In patients who were ‘frailsafe’d, 57% (28) had a COT compared to 23% (9) in the non-frailsafe group (p=0.0021, Fisher’s exact test). In the frailsafe group, 47% (23) were DNACPR compared to 41% (16) in the non-frailsafe group (p=0.67, Fisher’s exact).

\textbf{Conclusion}

Frailsafe did not affect the rate of DNACPR in patients who underwent frailsafe. The data suggest that on patients that the checklist was used, it is more likely that COT is discussed and the decision is recorded.

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IMPROVING POST-FALLS MANAGEMENT WITH A SIMPLE DOCUMENT

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Topic
Falls in hospital are the most common patient safety incidents reported in hospital trusts in England. In 2008/09, 283438 inpatient falls were reported to the National Patient Safety Agency. A significant number of falls result in death or severe or moderate injury, at an estimated cost of £15 million per annum for immediate healthcare treatment alone.

Reports show that a significant number of patients with an intracranial injury following an inpatient fall experienced some failure of aftercare leading to delays in access to investigations/surgery. Between October 2011-12, there were 1871 reported falls at Worcestershire Acute Hospitals NHS Trust - 44 resulting in serious harm.

Intervention
In addition to education, a double-sided proforma was designed by a junior doctor covering all the necessary documentation in a tick box format. This was a distinctive colour for easy visibility and was made available following a teaching session and a public launch on all the inpatient wards. This prompted medical staff to complete the proforma and therefore take the relevant history and examination so to promptly identify those with risk of serious harm as a result of the fall.

Improvement
6 and 12 months later appropriate documentation and examination improved greatly. For example, documentation of loss of consciousness improved from 27% to 67%, limb weakness from 20% to 67% and drug history from 0% to 50%. Similarly significant improvements were observed in documentation of relevant examination findings - cranial nerve examination improved from 0% to 67%, limb neurological examination from 16% to 76% and signs of basal skull fracture from 0% to 83%. However, when this proforma was not used, documentation was very poor.

Discussion
The introduction of a reminder sheet designed by junior doctors for junior doctors improved safety standards in the hospital and could have the same effect in any healthcare setting.
ATTITUDES TOWARDS COLORECTAL CANCER PROMOTIONAL MATERIALS AMONG CHINESE ELDERS: A QUALITATIVE STUDY

D Y P Leung¹, E M L Wong¹, J M T Chen¹, V W Q Lou², W K W So¹, C W H Chan¹

¹ The Chinese University of Hong Kong; ² The University of Hong Kong

Introduction
Colorectal cancer (CRC) promotion may not be easy in particular for elders because reading the CRC prevention information may evoke embarrassment, fear and anxiety towards the screening procedure and cancer diagnosis. Most of these materials were prepared in technical medical terms that elders with a lower health literacy level may find it difficult to understand, and as a result, the messages presented may not be well received. The study aims to explore attitudes towards the content of the three existing CRC promotional information among Hong Kong Chinese elders.

Methods
A convenience sample of 114 community dwelling Chinese adults aged 60 or above and cognitively intact was assigned to read one of the three promotional materials available in the community. Four open ended questions regarding the general feeling of the participants about the content of the CRC information (comfort, usefulness, understanding, and decision making of CRC screening) were asked.

Results
Similar opinions were expressed by the participants regardless of their experimental arm. Almost all the participants with lower educational level expressed some extent of fear and anxiety after the experiment, and most reported they did not understand the content while a few reported a belief of cancer fatalism. Participants with higher educational level tended to focus on the lifestyle risk factors that lead to CRC only. Most of the 45 participants suggested information regarding the CRC screening procedure and sharing of consequence of having CRC could be further provided.

Conclusions
The results suggested that the existing promotional materials might not be useful in promoting CRC screening. Education seemed to have a differential impact on the reaction to the CRC promotional materials. The information shed lights on development of CRC screening promotion for Chinese elders.
FATALISM IS NEGATIVELY ASSOCIATED WITH CANCER-RELATED INFORMATION SEEKING BEHAVIOURS AMONG CHINESE ELDERS

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The Chinese University of Hong Kong

Introduction
Effective communication in health information plays an important role in facilitating decision making including cancer prevention. The concept of fatalism is deeply rooted in Chinese culture, which is defined as a belief that health is beyond the control of an individual and depended on fate or luck. Fatalism is found to be associated with avoidance of cancer related information. It is hypothesized that fatalism is associated with information seeking behaviours negatively among Chinese elders.

Methods
A convenience sample of 223 community dwelling adults aged 60 or above and cognitively intact was recruited. Cancer related information seeking behaviours on six preventive behaviours including colonoscopy, PSA test for men, mammography for women, exercise, fruit and vegetable consumption and weight loss attempts in the past 12 months via six sources was measured by self-report. Fatalism was measured by a validated scale of three dimensions: the outcomes are appointed and not subject to change (Predestination); life events are predetermined but not the outcome (Predetermination); and the outcome of an event may still be altered by inner/external forces only (Luck). Logistic regression identified their associated factors. The study was approved by an ethical committee of the participating university.

Results
The mean age of the respondents was 77.3 years, 74.0 percent were female, and 22.0 percent had secondary education. 23.8 percent of the respondents reported had sought for at least one of the six topics. Seeking behaviours was associated significantly and negatively with age (OR=0.93, 95% CI:0.89-0.96, p<0.001) and predetermination (OR=0.68, 95%CI:0.47-0.97, p=0.035).

Conclusions
The low level of seeking behaviours for cancer related information in this elderly sample suggests a need to provide professional support to further promote effective health communication in this group. Healthcare professionals could focus their support on cancer related information to elders who are very old and believed in fatalism.
<table>
<thead>
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<th>SCIENTIFIC RESEARCH (Bones, Muscle and Rheumatology)</th>
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### SPIRONOLACTONE FOR PEOPLE AGED 70 OR OVER WITH OSTEOARTHRITIC KNEE PAIN: A PROOF OF CONCEPT TRIAL

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**Background**

Analgesia for older people with osteoarthritis is challenging, as commonly used agents have major side effects. Spironolactone, an aldosterone antagonist, has anti-inflammatory, anti-fibrotic and analgesic effects that could potentially benefit older people with osteoarthritis.

**Methods**

Parallel-group, randomised, placebo controlled, double blind trial. Community dwelling people aged 70 and over with symptomatic, radiographically proven osteoarthritis of the knee were randomised to receive 12 weeks of 25mg daily oral spironolactone or matching placebo. The primary outcome was the between-group difference in change in Western Ontario and McMaster Universities Osteoarthritis (WOMAC) pain subscale. Secondary outcomes included WOMAC stiffness and physical function subscores, health-related quality of life measured using the EQ5D score, and mechanistic markers (morning serum cortisol, serum matrix metalloproteinase 3, and urinary C-telopeptide of type II collagen). Analysis was by intention to treat, using mixed model regression adjusting for baseline values of test variables.

**Results**

421 people were assessed for eligibility, and 86 were randomised. Mean age was 77 years (SD 5); 53/86 (62%) were female. All participants completed the 12 week assessment. No significant improvement was seen in the WOMAC pain score (adjusted treatment effect 0.5 points, 95%CI -0.3 to 1.3, p=0.19). No improvement was seen in WOMAC stiffness score (0.2 points, 95%CI -0.6 to 1.1, p=0.58), WOMAC physical function score (0.0 points, 95% CI -0.7 to 0.8, p=0.98) or EQ5D score (0.04 points, 95%CI -0.04 to 0.12, p=0.34). Cortisol, matrix metalloproteinase 3, and urinary C-telopeptide of type II collagen were not significantly different between groups. More minor adverse events were noted in the spironolactone group (47 vs 32) but no increase in death or hospitalisation was evident.

**Conclusion**

Spironolactone did not improve symptoms, physical function or health-related quality of life in older people with osteoarthritis over a 12 week treatment period.
GLOBAL VARIATION IN GRIP STRENGTH: A SYSTEMATIC REVIEW AND META-ANALYSIS OF NORMATIVE DATA

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Introduction
Weak grip strength is a key component of sarcopenia and is associated with subsequent disability and mortality. We recently established life course normative data for grip strength in Great Britain, but it is unclear whether the cut-points for weak grip strength we derived are suitable for use in other settings. Our objective was to investigate differences in grip strength by world region using our British data as a reference standard.

Methods
We searched MEDLINE and EMBASE for papers reporting age- and gender-stratified normative data for grip strength. We extracted details about each study including whether a sampling frame was used for recruitment, and converted each normative data item on to a Z-score scale relative to our British centiles. We used meta-regression to pool the Z-scores and compare them by world region.

Results
Our search returned 806 abstracts and 60 met inclusion criteria. All UN regions were represented although most papers (n=43) were in developed regions. The majority of papers (n=44) had used convenience samples. We extracted 730 normative data items relating to 95,625 grip strength observations. The pattern of results was similar to that from our British centiles, both in terms of overall periods across the life course and gender differences. Normative data from developed regions were broadly similar to our British centiles whereas those from developing regions were clearly lower, with pooled Z-scores of 0.12 (95% CI: 0.07, 0.17) and -0.86 (95% CI: -0.95, -0.77), respectively.

Conclusions
We have used existing published normative data to examine differences in grip strength by world region. Normative data from developed regions were similar to that described in our British centiles, whereas those from developing regions were clearly lower. This supports the use of our British centiles and their associated cut-points in consensus definitions for sarcopenia and frailty across developed settings.
BAROREFLEX SENSITIVITY AND ARTERIAL STIFFNESS INFLUENCE ORTHOSTATIC BLOOD PRESSURE RESPONSES IN OLDER ADULTS: INSIGHTS FROM THE IRISH LONGITUDINAL STUDY ON AGEING

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Background
Orthostatic blood pressure (BP) and heart rate (HR) responses are known to be impaired in older adults. The baroreflex, a mechanoreceptor based neural reflex, is known to govern short-term blood pressure regulation. Few studies have examined the relationship between baroreflex sensitivity (BRS), arterial stiffness and orthostatic BP and HR responses at an epidemiological level. Here we address this issue.

Methods
Participants were recruited from a nationally representative cohort study. Beat-to-beat systolic BP (SBP) and diastolic BP (DBP) and heart rate (HR) responses to standing were analysed. Baroreflex sensitivity (ms/mmHg) was derived using 5 minutes of resting supine data and arterial stiffness was estimated using pulse wave velocity (PWV-m/s). Quartiles of BRS and PWV were calculated. Cross-sectional relationships between quartiles of BRS, PWV and orthostatic BP and HR recovery parameters were estimated by separate linear regression models after adjusting for age, gender, comorbidities, medications, baseline BP status. P<0.004 was assumed significant to correct for multiple testing effects.

Results
A sample of N=4269 participants had complete data sets (age 61.0 SD (0.13) years; 54.5% female). Median BRS was 5.5 ms/mmHg (IQR:3.9-7.8) and median PWV was 10.2 m/s (IQR:9.0-11.7). Increasing BRS (quartile 4 compared to quartile 1) was associated with higher initial heart rate reactivity (β = 6.26 [5.49,7.03]; P<0.001) but larger initial drops in SBP (β = -2.63 [-4.13,-1.13]; P<0.001) and DBP (β = -2.10 [-3.00,-1.19]; P<0.001). Increasing arterial stiffness was significantly associated with poorer SBP (β = -2.72 [-4.29,-1.15]; P<0.001) and DBP (-2.19 [-2.98,-1.39]; P<0.001) stabilisation after 40 seconds of standing.

Conclusion
Measures of BRS are associated with the early stages of the hemodynamic response to standing, while PWV is related to impaired BP stabilisation over the first 40 seconds after standing. Future work will explore the longitudinal implications of these findings.
Improving the Assessment of Delirium: Combining Traditional and Novel Teaching Methods

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Evidence base
Delirium is common in older adults presenting to hospital and is associated with increased mortality, length of stay and new institutionalisation (Siddiqi et al., Age and Ageing. 2006. 35:350–364). However delirium is frequently unrecognised and evidence suggests that undetected delirium is associated with poorer outcomes (Kakuma et al., J Am Geriatr Soc. 2003. 51:443-450).

The aim of this audit cycle was to improve the assessment of delirium on admission to the clinical decision unit. In the baseline audit, 172/228 older patients exhibited indicators of delirium on admission (NICE QS63. 2014) and 26/172 (15.1%) had a formal delirium assessment.

Change strategies
To generate change four novel multiple platform interventions were used. All junior doctors received a 45-60 minute teaching session on delirium. During the teaching session, doctors were signposted to novel teaching methods. The first was a smart phone ‘app’ including information and cognitive assessments (‘Confusion-delirium and dementia’ Proctor Corporation. 2014). The second was a seven minute online podcast about delirium produced by the Association for Elderly Medicine Education. Finally, the 4AT screening tool (MacLullich at al., 2014) was introduced as a sticker in the medical clerking booklets.

Change effects
Re-audit was carried out after the interventions were implemented. Indicators of delirium were present in 165/226 patients, of whom 49/165 (29.7%) had a delirium assessment. From baseline to re-audit, there was a significant increase noted in the assessment of delirium from 15.1% to 29.7% (p=0.002). Our secondary outcomes also demonstrated an improvement in the assessment of attention (59 vs. 36 patients, p=0.004).

Conclusion
This audit demonstrates a significant improvement in the diagnosis of delirium. Both traditional and novel teaching methods were integrated to deliver high-quality teaching and engage the audience.

The interventions reflect the new trust guidelines and have been taken up by the trust on a permanent basis.
BI-DIRECTIONAL INTERACTION BETWEEN HYPOGLYCEMIA AND COGNITIVE IMPAIRMENT IN ELDERLY PATIENTS WITH DIABETES MELLITUS: SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction
Diabetes and Dementia are major disease processes, affecting millions of people worldwide.

Recent research suggests a bi-directional relationship between hypoglycaemia in older patients with Diabetes Mellitus (DM) and cognitive impairment/dementia. However, owing to the considerable uncertainty whether hypoglycaemic episodes cause dementia, or vice versa, we aimed to systematically review the evidence (no LREC approval required).

Methods
In March 2015, we searched MEDLINE and EMBASE for English language studies published in the last 10 years. We also checked the bibliographies of included studies and review articles. Selection criteria: Age > 55 years receiving glucose lowering agents. Outcomes: association between hypoglycaemia and cognitive impairment or dementia. YKL and KM performed study screening and data extraction. For the assessment of study validity, we checked the methods used in recording hypoglycaemic episodes and determining cognitive decline, as well as adjustment for confounding factors. We pooled odds ratios (OR) using random effects meta-analysis (inverse variance method) and assessed heterogeneity with I².

Results
After screening 1175 citations, we included 10 studies (535317 participants) from diverse geographical locations (North America, Europe, Asia). All studies evaluated patients with Type II DM, who were receiving insulin and/or oral agents.

Only five studies used medical records for diagnosing hypoglycaemia. Cognitive impairment/dementia was diagnosed through a diverse variety of cognitive tests.

All studies used multivariable models to adjust for confounding.

Nine studies were included in the meta-analysis.

Significantly elevated risk of dementia in those with hypoglycaemia (4 studies) – pooled OR 1.69 (1.31, 2.19).

Significantly greater likelihood of hypoglycaemia in patients with existing cognitive decline (5 studies) – pooled OR 1.61 (1.25, 2.06).

Conclusions
We have demonstrated a bi-directional relationship between hypoglycaemia and dementia in older people with Type II DM.

Pragmatic blood glucose targets and rigorous monitoring of hypoglycaemia are required in older patients with pre-existing cognitive decline whose condition may be worsened by recurrent hypoglycaemia.
SHOULD WE INTEGRATE THE HUMANITIES INTO THE DELIVERY OF GERIATRIC MEDICINE? A SURVEY OF TRAINING PROGRAMME DIRECTORS

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1 Salford Royal Foundation Trust; 2 Royal Oldham Hospital

Background
Care and compassion have been scrutinised by the Francis Report and popular press. Doctors must be able to understand patients’ experience and this may be fostered using the humanities. However, the medical humanities have tended to exist only on the periphery of most post-graduate programmes (Macnoughton, J Eval Clin Pract, 2011 17(5), 927- 932).

In the UK, postgraduate training is delivered at a regional level by 16 deaneries and significant variability exists. We wished to explore the use of the humanities within geriatric medicine training and attitudes towards its role within postgraduate teaching.

Sampling Methods
A survey was sent by e-mail to sixteen national training programme directors (TPDs) in Geriatric Medicine. Three questions were asked regarding: the role of the humanities in their training programme, methods used in delivery and attitudes towards their integration.

Results
12/16 TPDs responded. One deanery had interwoven the humanities throughout their training programme and included ethnography and research based learning. Four deaneries did not use the humanities formally but did use arts and philosophy based material within lectures or workshops.

The majority of responders cited that formal “prescribed” integration would not be favourable due to reasons such as: “a full curriculum,” “lack of expertise” and inappropriate placement within formal training. One respondent cited the humanities formed part of “the unwritten curriculum of life” and should not be regulated within formalised training.

Conclusions
The majority of deaneries in the UK do not formally integrate the medical humanities into their teaching programme but there are examples of educators utilising arts based teaching methods opportunistically.

The proposition of integrating the humanities more formally is met with trepidation in relation to time pressures, expertise and appropriate placement within formal teaching. There is enthusiasm amongst TPDs around exploring the use of humanities based teaching methods in more depth.
NOVEL METHODS IN TEACHING OF MULTIDISCIPLINARY GERIATRIC MEDICINE

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Introduction
A multidisciplinary approach to Geriatric medicine is imperative in ensuring optimum patient care. At undergraduate and junior doctor level, individuals rarely understand the multiple roles within a multidisciplinary team. The authors aimed to increase knowledge and raise awareness towards these roles with design of an interactive, case-based teaching session.

Methods
The designed session incorporated the use of a volunteer and multiple props and was facilitated by a Consultant Geriatric physician. The volunteer took on the role of an elderly patient and was instructed to undertake multiple timed-tasks with varying impairments applied. A repeat of these tasks was then undertaken with certain impairments lifted, likening the resolved impairments to the role of physiotherapists, occupational therapy, and other disciplines utilised within the multidisciplinary team.

Results
Participants were asked to rate the teaching session on content, structure, presentation, and overall quality score. 100% percent of participants strongly agreed that the teaching session was of high quality, as too did they strongly agree that the content of the session was at an appropriate level.

Conclusions
This method of teaching offers both a visual and audible representation that promotes the development of effective relationships among health care professionals. Despite resounding positivity for this unique method of teaching, participant feedback emphasised that improvements were possible with future attendance of multidisciplinary team members at the session. Generally, this innovative educational session offers a novel and cost effective method of increasing and improving inter-professional understanding through a practical method that participants find informative and enjoyable.
# Trainees’ Perceptions of Expert Patient Dementia Teaching

R Parikh\(^1,2\), K Wardle\(^2,3\)

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## Introduction

Wykurz and Kelly (BMJ 2002; 325: 818) assert that patients as teachers enhances skill acquisition, builds confidence and generates insights including attitudinal change. During the development of the Psychiatry of Old Age Module (MSc Geriatric Medicine, Salford University) we wished to challenge learners with an expert patient session on dementia.

## Methods

The “Educators” (a group of expert dementia patients) delivered an interactive 90 minute session. This included their experience of initial diagnosis, subsequent treatment, and perceptions of doctors (and allied professions) throughout their journey.

Learners were asked to reflect on the session immediately afterwards and complete an end-of-course questionnaire. The latter included the statement: "meeting the educators changed my clinical approach when explaining the diagnosis of dementia to a patient for the first time". Learners were asked to mark their agreement using a Likert scale and then explain their answer.

## Results

Immediate positive reflections included:

- I’ve never had such a session with real patients and it was quite inspiring and very interesting.
- I can honestly say I feel a better doctor from listening.
- Wonderful to see people not patients.

However, others were less sure:

- For some reason I felt uneasy, maybe because I didn’t know their background or what they knew of their progression.

End-of-course questionnaire

20 trainees agreed with the statement, 2 were neutral and 1 disagreed.

Comments included:

- Meeting the actual dementia patients and their experiences around the time of diagnosis was helpful and eye-opening.
- Very interesting to hear what it’s like being on receiving end of diagnosis. Perhaps softened my approach.

## Conclusions

The comments do indicate that insights and attitudes changed and that the session was both inspiring and valuable. Hints at practice change emerge: follow-up is required to see if there was a reported sustained change. The unease recorded by one participant merits further exploration.
EMBEDDING MANAGEMENT AND LEADERSHIP INTO CLINICAL SUBJECT TEACHING: WHAT DO TRAINEES THINK?

R Parikh¹,², K Wardle²,³

1 Royal Oldham Hospital; 2 School of Health Sciences, Salford University; 3 Salford Royal Foundation Trust

Introduction
Doctors are expected to lead. The capacity to influence organisations alongside an ability to plan (and importantly deliver) innovative services is vital for the contemporary NHS. Thus, during the design of the 10 day Psychiatry of Old Age Module (MSc Geriatric Medicine, Salford University) we embedded leadership and management into the programme.

Methods
We organised two half-day sessions that focused on service management and leadership.

The first was delivered by a Medical Director of Psychiatric Trust and the Nursing Director of an Acute Trust. Current service organisation and management priorities were considered along with the impact of NHS reforms (including commissioning).

The second was facilitated by a psychiatrist who implemented a new liaison service. Trainees were challenged to devise an innovative service and “pitch” their idea.

These sessions were complemented by other topics including: delirium reduction in the acute hospital, mental health law, safeguarding adults and NICE’s evaluation of dementia drugs.

Questionnaires after individual sessions and at the end of the programme were used to explore trainees’ perceptions of the utility of the course.

Results
Immediate feedback
Trainees reported they better understood managerial challenges and the financial complexity of developing a business case after the targeted half days. One trainee reflected that exploration of real business plans would aid trainees’ understanding.

End-of-programme feedback
Comments included:

- More confident in dealing with NHS related management issues
- Awareness of the wider implications of the ageing population and the effect this will have on further provision/developing new services.
- Some more teaching on economic aspects ... would be helpful

Conclusions
Trainees recognised the utility of the management orientated aspects of the programme. We will further develop the business case aspect: trainees need to be confident they will be able to formulate plans that translate the best available evidence into services that meet patients’ needs.
THE OBESITY PARADOX AND ADVANCING AGE: EVIDENCE FROM ELECTRONIC MEDICAL RECORDS OF OVER 900,000 PRIMARY CARE OLDER UK PATIENTS


*University of Exeter Medical School*

**Introduction**

There is controversy over whether being obese is a risk or protective factor for older adults (65 years and older). In midlife, obesity is clearly associated with increased risk of dying. However, in older people the evidence is less clear to the point that obesity has often been associated with better outcomes. To investigate this phenomenon, called “the obesity paradox”, we estimated the association between body mass index (BMI) as a measure of adiposity and mortality accounting for confounders in a very large database of electronic medical records from older patients. The recent availability of these sources of big data which include unprecedented amounts of medical information might help shed new light on this controversial phenomenon.

**Methods**

We used primary care electronic medical records from the Clinical Practice Research Datalink (CPRD). BMI (kg/m²) was categorised using the WHO classification [underweight (<18.5), normal weight (18.5 to <25.0), overweight (25.0 to <30.0), and obesity class 1 (30.0 to <35.0), class 2 (35.0 to <40.0), and class 3 (≥40.0)]. Death dates were obtained from the Office of National Statistics. Data were analysed by age groups using Cox regressions adjusted for relevant confounders.

**Results**

The study sample included 939,994 patients (54% females, age range 60-110). After adjusting for age, gender, alcohol consumption, smoking history and socio-economic status, patients with class 1 obesity were paradoxically less likely to die than normal weight patients in all age groups (e.g. 65 to 69: HR 0.86, 95%CI 0.84-0.89; 70-74: 0.84, 0.82-0.86). However, when patients with recent weight loss, with frailty or conditions associated with weight loss were excluded this protective effect of obesity was reversed.

**Conclusions**

Obesity is associated with excess mortality in older groups of patients. The obesity paradox of older age is substantially explained by the concomitant presence of conditions associated with weight loss.
TOTAL VERSUS LONG-TERM RECEIPT OF HIGH RISK MEDICATIONS IN THE OLDER UK POPULATION

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Introduction
Drug prescribing has risen significantly over the last decade (Duerden M, Avery T, Payne R; The King’s Fund, 2013) particularly in older people. Higher prescribing rates increase the risk of high risk medications (HRM). We investigated trends and correlates of total and long-term HRM prescribing in a sample of UK primary care older patients to help harm reduction efforts.

Methods
We studied patients 65 years or older, registered with UK general practices contributing to the Clinical Practice Research Datalink. HRM was defined using 2012 American Geriatrics Society Beers Criteria (2012 Beers Criteria Update Expert Panel; J Am Geriatr Soc 2012; 60: 616-631). The prevalence of patients receiving total (at least once per year) and long-term (all quarters) HRM was assessed for the three fiscal years 2003/04, 2007/08 and 2011/12.

Results
The final sample included 13,900 people from 504 UK practices. While the proportion of people receiving ten or more drugs increased sharply from 2003/4 (16.4%) to 2011/12 (24.6%) (p<0.001) the prevalence of total and long-term HRM remained stable over time.

Approximately, a third of people 65 and older were exposed to HRM, but only half of the total HRM prevalence was long-term (total=38.4% [95% CI: 36.3, 40.5]; long-term=17.4% [15.9, 19.9] in 2011/12). Long-term but not total HRM exposure was associated with older ages (85 years or over). Women and people with higher polypharmacy burden were at greater of HRM risk. Deprivation status was not associated with HRM. Ten drugs/drug classes accounted for most of HRM prescribing in 2011/12.

Conclusions
While polypharmacy rates have increased dramatically, HRM rates for older UK people remain stable over time. Women and the oldest old are at greater risk. Reducing or optimising the use of a limited number of drugs could dramatically reduce HRM in older patients in the UK.
Early return to own home after hip fracture is not unsafe - evidence from the national hip fracture database

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Introduction
Swedish patients discharged within 10 days of hip fracture appear to be at increased risk of dying [Nordström et al. BMJ 2015;350:h696]. This finding has led to concern - given recent success in reducing length of stay after this injury. We set out to examine the observation’s relevance to NHS patients.

Method

Results
During 2013, data on 65,535 people indicated higher risk 30 day mortality for those discharged before 10 days (2.7% cf. 1.4%) - with 104 'excess deaths' in this group. However, we addressed confounding factors by examining mortality among people admitted from their own home who successfully returned there. Those discharged home before 10 days actually showed lower mortality (0.4% cf. 0.6%).

The appearance of 'excess deaths' was entirely accounted for by other patient subgroups. A third (32) were people admitted from their own home and discharged to care in an acute hospital, rehabilitation unit or hospice. Half (51) occurred in people admitted from care homes who returned there within 10 days. The remainder were in people admitted from home but discharged to care homes.

Discussion
Patients discharged to care homes before 10 days were at increased risk, but this is a complex group of individuals. The small absolute numbers of deaths do not justify cautioning against allowing people to return to their care home when the patient, their family and the multidisciplinary team agree this is appropriate.
THE ASSESSMENT OF FRAILTY IN ACUTE HOSPITALS: A COMPARISON OF THE FRIED FRAILTY SCORE, THE FRAIL SCALE AND GRIP STRENGTH MEASUREMENT

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Introduction
Frailty is common in older acute medical inpatients and is associated with increased mortality. The Fried frailty score is well validated, but includes items that can be time-consuming in a clinical setting. The recently developed FRAIL scale is a 5 point self-reported instrument that is easy to administer and has been validated in community populations. Grip strength measurement has been reported as a single marker of frailty and is quick to perform. We explored the agreement of these three measures in assessing frailty in older acute medical inpatients.

Methods
The prevalence of frailty was assessed in patients over 70 years in 3 acute medical wards of one hospital. Scores ≥ 3/5 on the Fried and FRAIL scales were categorised as frail and the GS cut-off values used in the Fried score were also used to categorise participants as frail/non-frail. The measure of agreement was described using Cohen’s Kappa.

Results
87 patients (62 men, mean age 84 years) were recruited. 71 (82%) patients were identified as frail by one or more instrument. Low GS categorised the most participants as frail (79%), and the FRAIL scale categorised the least as frail (28%). Agreement between Fried and FRAIL scales was fair (K = 0.324), between FRAIL scale and GS was poor (K = 0.108) and between Fried and GS was moderate (K = 0.559).

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<th>FRAIL scale</th>
<th>GS</th>
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<td>Frail</td>
<td>52 (60%)</td>
<td>24 (28%)</td>
<td>69 (79%)</td>
</tr>
<tr>
<td>Not frail</td>
<td>35 (40%)</td>
<td>63 (72%)</td>
<td>18 (21%)</td>
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</table>

Table 1: Prevalence of frailty according to 3 different instruments

Conclusions
Frailty was common in these older inpatients, but the prevalence varied considerably depending upon the instrument used. Agreement between instruments was moderate at best. Therefore, caution needs to be applied when comparing studies utilising different instruments to measure frailty.
THE IMPACT OF A NATIONAL CLINICIAN-LED AUDIT INITIATIVE ON CARE AND MORTALITY AFTER HIP FRACTURE IN ENGLAND: AN EXTERNAL EVALUATION USING TIME TRENDS IN NON-AUDIT DATA

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Introduction
Hip fracture is the most common serious injury of older people. The UK National Hip Fracture Database (NHFD) was launched in 2007 as a national collaborative, clinician-led audit initiative to improve the quality of hip fracture care, but has not yet been externally evaluated.

Methods
We used routinely collected non-audit data on 471,590 older people (aged ≥ 60 years) admitted with a hip fracture to National Health Service (NHS) hospitals in England between 2003 and 2011. The main variables of interest were the use of early surgery (on day of admission, or day after) and mortality at 30 days from admission. We compared time trends in the periods 2003-2007 and 2007-2011 (before and after the launch of the NHFD), using Poisson regression models to adjust for demographic changes.

Results
The number of hospitals participating in the NHFD increased from 11 in 2007 to 175 in 2011. From 2007 to 2011, the rate of early surgery increased from 54.5% to 71.3%, whereas the rate had remained stable over the period 2003-2007. 30-day mortality fell from 10.9% to 8.5%, compared to a small reduction from 11.5% to 10.9% previously. The annual relative reduction in adjusted 30-day mortality was 1.8% per year in the period 2003-2007, compared to 7.6% per year over 2007-2011 (P value <0.001 for the difference).

Conclusions
The launch of a national clinician-led audit initiative was associated with substantial improvements in care and survival of older people with hip fracture in England.
### ROCK AND ROLL AIN’T NOISE POLLUTION – DOES TV AND RADIO HAVE AN ADVERSE EFFECT ON HOSPITAL INPATIENTS?

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#### Introduction

Hospitals can be noisy, disruptive places, not conducive with environments of rest and rehabilitation that patients require. The World Health Organization (WHO) guideline recommended values for continuous background noise in hospital patient rooms are 35 decibels during the day and 30 decibels at night. However hospital ward noise levels may reach levels as high as 85 decibels. What are the primary sources of background noise at ward level and does this adversely affect patients’ hospital experience?

#### Methods

Measurements on the true sound level by means of a decimetre were recorded on 3 wards (an acute medical, an acute geriatric medicine, and a rehabilitation ward). Environmental sources of noise were documented. Following this, surveys of patient and staff attitudes to noise levels and their environment were obtained.

#### Results

From eighty measurements the average reading was 65.5 dB (Range: 51-84 decibels). Wards that had the greatest number of communal media devices happened to be the quietest wards (average of 65 dB). Acute medical wards without any communal television or radio produced the highest sound level readings (up to 84 dB).

Of the 50 patients surveyed, average age 77.2 (39-92), 78% had a positive or neutral impression of noise levels in their room. However it was noted that 52% were unaware who selected what was playing on the media devices and 72% were found to be either immobile or require assistance in mobility.

#### Conclusions

Noise levels reached excessive levels on the wards assessed. The findings reflect that the most significant noise generated on wards is not from media devices. Patients tended to look at media devices positively, however their freedom to choose what was playing on these devices was restricted by immobility.

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COLD HARD CASH: THE CLINICAL ASSESSMENT OF STEREOGNOSIS USING COINS AND OTHER OBJECTS

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Introduction
Stereoagnosis is the ability to recognise and identify an object using only the sense of touch, and is tested during assessment of tactile discrimination during the neurological exam. The main objective of this study was to establish how tactile discrimination in an elderly population differs from a young population. The secondary aim was to determine what item should be employed when testing for astereognosis.

Methods
We tested 80 ‘normal’ people with no known conditions causing interference with tactile sensation; with equal gender and age distribution (under and over 65). Both dominant and non-dominant hands were tested. Tests were carried out using a key, a ring, a button, a paperclip and various euro currency coins.

Results
No statistically significant differences were found between genders or between dominant and non-dominant hands. Discrimination between ages was apparent, with the younger group performing better than the older, in particular when it came to testing fine discrimination using coins. (p < 0.002) There was no major discrimination between the common objects except for the paper clip, with several subjects from the older group unable to correctly identify it. (p = 0.00001) The key was the most commonly identified object.

Conclusion
We determined that the key is the most suitable object to use when testing for astereognosis, as it was the most frequently identified item amongst the 80 subjects. Other findings indicate that tactile discrimination does not differ with age, gender or dominant versus non-dominant hand.

Finally, this study suggests that while there were no differences in the ability of older or younger people to identify everyday objects by touch alone, fine tactile discrimination does deteriorate with age, as there was a significant difference in the ability to distinguish between different coins, despite intentional design of the euro coins to facilitate differentiation without visual input.
A REVIEW OF THE ASSESSMENT AND MANAGEMENT OF CHRONIC PAIN IN LEICESTER CARE HOME PATIENTS AND ITS RELATIONSHIP WITH BEHAVIOURAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA

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Introduction
Chronic pain is often under diagnosed and inadequately managed in the elderly, particularly in care home residents, many of whom may have dementia with associated psycho-behavioural disturbance. Studies have shown a link between effective pain management and improvement in behavioural symptoms of dementia.

Methods
As part of routine practice, we carried out a Comprehensive Geriatric Assessment with a focus on pain prevalence and management in 105 patients in Leicester City Care Homes. Patients were assessed for undiagnosed pain and behavioural disturbance, and pain therapy was optimised. After a minimum of three months, we looked at pain scores, behaviour and other health outcomes for these patients.

Results
The majority of patients (72%) were known to have chronic pain yet 31% had uncontrolled pain; only 5 of the 22 care homes involved routinely used pain tools. 86% of patients had a dementia diagnosis, with two-thirds of these patients also having BPSD (behavioural and psychological symptoms of dementia). Approximately 10% of patients showed a possible link between increased BPSD and pain.

At follow-up, 16 patients had received treatment intervention. 94% of these patients had reduced pain, and there was an 89% improvement in BPSD. The number of both hospital admissions and falls were reduced. All care homes visited at follow-up showed an improvement in pain assessment.

Conclusions
Chronic pain is poorly assessed and managed in care home residents, where there is a high burden of dementia. Providing education for care homes on the importance of managing pain resulted in significant improvements in pain assessment. Effective management of pain can reduce pain scores and may lead to an improvement in BPSD and better health outcomes for patients, including a reduction in unscheduled hospital admissions.
RELIABILITY OF AUTONOMIC FUNCTION TESTS IN OLDER ADULTS: IMPLICATIONS FOR CLINICAL PRACTICE AND RESEARCH

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Introduction
Orthostatic blood pressure (BP) responses are used clinically to identify individuals at risk of syncope and unexplained falls. Traditionally, oscillometric BP (OBP) measurement is used, but sensitive continuous beat-to-beat BP tests (CBP) are now available. These tests are subject to unknown measurement error and day-to-day variation within individuals. We describe the reliability of blood pressure responses to standing comparing OBP and CBP methodologies.

Methods
A random sample of community dwelling adults from the SHARE study took part in repeat health assessments based at the TILDA study. Factors tested included reliability, time of day (am/pm) and inter-observer effects. At each visit, an active stand and sit-stand test were performed using CBP and OBP approaches. Within person variability, intra-class correlation coefficients (ICC), time of day and rater effects were estimated via mixed effects models.

Results
Data from N=130 individuals were analysed. OBP measures of BP had an ICC of 0.69, while CBP at baseline, 30, 60, 90, 120 seconds post stand had ICC’s of 0.67, 0.64, 0.63, 0.66, 0.73 respectively. Observer differences existed between estimates of supine CBP (140.6mmHg vs. 144.8mmHg; P<0.05) and CBP at 90 (138.1mmHg vs. 144.4mmHg; P<0.05) and 120 seconds (138.1mmHg vs. 144.5mmHg; P<0.05) respectively. No significant differences were noted between time of day for CBP and OBP measures. Within person variability for OBP was 9.5 to 13.1mmHg and for CBP 12 to 15.3mmHg.

Conclusion
OBP and CBP measurements during standing have good to moderate reliability. Time of day did not affect tests while significant rater effects for CBP were detected. Based on this data population studies can perform active stand tests at any time of the day thereby improving efficiency of test scheduling. Steps to maximise signal quality should be considered via training, protocol and analysis refinements.
SMOKING AS A PREDICTOR OF FRAILITY: A SYSTEMATIC REVIEW

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Introduction
Evidence on longitudinal associations between smoking and frailty is scarce. The objective of this study was to systematically review the literature on smoking as a predictor of frailty changes among community-dwelling middle-aged and older population.

Methods
A systematic search was performed using three electronic databases: MEDLINE, Embase and Scopus for studies published from 2000 through May 2015. Reference lists of relevant articles, articles shown as related citations in PubMed and articles citing the included studies in Google Scholar were also reviewed. Studies were included if they were prospective observational studies investigating smoking status as a predictor and subsequent changes in frailty, defined by validated criteria among community-dwelling general population aged 50 or older. A standardised data collection tool was used to extract data. Methodological quality was examined using the Newcastle-Ottawa Scale for cohort studies.

Results
A total of 1,020 studies were identified and systematically reviewed for their titles, abstracts and full-text to assess their eligibilities. Five studies met inclusion criteria and were included in this review. These studies were critically reviewed and assessed for validity of their findings. Despite different methodologies and frailty criteria used, four of the five studies consistently showed baseline smoking was significantly associated with developing frailty or worsening frailty status at follow-up. Although not significant, the other study showed the same trend in male smokers. It is of note that most of the estimate measures were either unadjusted or only adjusted for a limited number of important covariates.

Conclusions
This systematic review provides the evidence of smoking as a predictor of worsening frailty status in community-dwelling population. Smoking cessation may potentially be beneficial for preventing or reversing frailty.
ADVERSE DRUG REACTIONS LEADING TO HOSPITAL ADMISSIONS

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Introduction
It is estimated that 6–7% of hospital admissions are due to adverse drug reactions (ADRs), around half of these are thought to be preventable. [Pirmohamed et al. BMJ 2004; 329:15]. The risk of ADRs increases with age and the number of drugs. The aims of this audit were to; identify the magnitude of the problem within the trust, to identify the common medications leading to hospitalisation and to find a way to reduce these admissions.

Method
Data was collected on the Medical Assessment Unit over 23 days. The pharmacist screened 272 patients for ADRs using the medical notes, drug charts and blood results. Details of each case were documented, collated and results analysed in Microsoft Excel. Each case later had medical notes and discharged summaries scrutinised by a consultant geriatrician and pharmacist to determine whether this was an ADR related admission.

Results
Of the 272 patients screened 22 (8%) were admitted with an ADR, 19 of the patients had two or more contributing drugs. There were 14 different groups of causative drugs identified. ACE inhibitors or angiotensin receptor blockers (ARB) were the most common; contributing to 15 (68%) admissions, 14 of these were in combination with other culpable medication and in 9 cases this was a diuretic. Hyponatremia was the most common ADR displayed in 10 patients, 6 of these were on one or more diuretics.

Conclusions
This demonstrated that admissions related to ADRs are an issue within the trust. In many cases the admission was due to more than one drug, highlighting that polypharmacy is a factor. Particular groups of drugs such as ACE inhibitors, ARBs and diuretics have been identified as being the common causes of ADRs leading to hospital admissions. Combinations of these medication groups have also been highlighted as being an issue.
EVALUATION OF GDF-15 AS A CANDIDATE BIOMARKER FOR HEALTH AND VASCULAR FUNCTION IN OLDER PATIENTS WITH HYPERTENSION

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Background
Growth differentiation factor-15 (GDF-15) has been associated with multiple disease states, and may play a part in the response to tissue injury across multiple organ systems. As such, GDF-15 may have utility as a global biomarker of disease or damage response, and hence prognosis, in older people. We aimed to correlate baseline GDF-15 levels with baseline and longitudinal measures of physical, psychological and vascular function in a group of older patients with hypertension.

Methods
We analysed stored blood samples taken from patients enrolled in the VitDISH randomized controlled trial of vitamin D supplementation for isolated systolic hypertension. Patients were aged 70 and over, with isolated systolic hypertension and serum 25-hydroxyvitamin D levels of <75nmol/L. GDF-15 was measured in stored baseline samples using a commercially available ELISA assay. GDF-15 levels were correlated with outcome data from the baseline and 12-month assessments, including measures of physical function, depression and vascular function.

Results
147 individuals were included, mean age 76.8 (SD 4.7) years. 77 (52%) were male and mean baseline GDF-15 level was 430 (SD 175) pg/mL. Baseline GDF-15 levels showed significant univariate associations with age, male sex, cholesterol, depression score, 6 minute walk distance, diabetes mellitus and ischaemic heart disease (all p<0.05). Linear regression showed baseline GDF-15 remained significantly associated only with age (beta=0.29, p<0.001) in multivariate analysis. GDF-15 levels were significantly associated with baseline 6-minute walk distance in models excluding age (beta=-0.29, p=0.001). Baseline GDF-15 levels correlated significantly with 12-month changes in LDL cholesterol (r=0.06, p=0.049) and 6-minute walk distance (r=-0.23, p=0.009). No significant correlations were seen with baseline arterial stiffness, baseline endothelial function or 12 month changes in these vascular markers.

Conclusion
Baseline GDF-15 may be associated with walk distance and predicts decline in walk distance, but is not associated with vascular function in older patients with hypertension.
POST STROKE FATIGUE AND VITAMIN D DEFICIENCY

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Introduction
Fatigue is a common complaint amongst stroke survivors. As yet, little is known about its aetiology and about possible alleviating therapeutic approaches. This study is aimed at determining the prevalence and associates of vitamin D deficiency, a likely predisposing factor of post stroke fatigue, amongst stroke survivors presenting with fatigue and to report on the impact of vitamin D supplementation on fatigue symptoms post stroke.

Methods
Records of 58 consecutive stroke survivors with post stroke fatigue who had their vitamin D levels checked at presentation were reviewed and analysed. Vitamin D values below 30nmol/l were reported as deficient, values between 30-50nmol/l as insufficient and values above 50nmol/l as vitamin D replete. Comparison between proportions was assessed using Pearson Chi Square and Fishers Exact tests. All statistical analyses were carried out using the statistical package STATA.

Results
A total of 58 stroke survivors (mean age 75.8 years [SD12.5], age range 37-94 years) with post stroke fatigue were included in this study. The majority of the patients were females (56.9%), aged over 75 years (65.5%), lived with a partner/relative (72.4%), were ambulant at presentation (53.4%) and had modified rankin scores (MRS) of <4(79.3%). The over-all prevalence of vitamin D deficiency/insufficiency was 74.5% while the prevalence amongst ambulant survivors was 77.4%. There were no statistically significant difference in proportions of vitamin D deficient survivors with post stroke fatigue by age, gender, mobility status, MRS, stroke type or severity. There was significant improvement in fatigue symptoms amongst those treated for whom data was available.

Conclusion
Our results, though preliminary indicate a high prevalence of low vitamin D amongst stroke survivors with fatigue and especially amongst ambulant survivors where such deficiencies are unexpected; as well as improvement in fatigue symptoms following correction. If these findings are replicated in a longitudinal randomised study with a larger sample size, this can open treatment options and possibly improve the quality of life of survivors with fatigue after stroke.
**ARE TOO MANY PATIENTS GREATER THAN 80 YEARS OLD WITH NON-VALVULAR ATRIAL FIBRILLATION EXPOSED TO UNDUE BLEEDING RISK FROM WARFARIN?**

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**Introduction**
The European Society of Cardiology Guidelines for the management of atrial fibrillation 2012 state that patients with non-valvular atrial fibrillation (NVAF) with a CHA2DS2-VASc score ≥1 are to receive effective stroke prevention therapy. This includes either warfarin therapy, with an INR between 2–3, or one of the novel oral anticoagulants. Anticoagulation needs to balance the risk of stroke against the risk of major bleeding. Stroke prevention with warfarin is only effective where the individual mean time in target therapeutic range (TTR) is approximately greater than 70%. We hypothesised that many older patients over 80 years of age may be exposed to greater risk of bleeding than benefits from warfarin as they are not in the TTR ≥70%.

**Method**
Retrospective analysis was carried out of patients treated with warfarin for NVAF in the community in a London district general hospital in a 1 year period from March 2014 to March 2015. Therapeutic range was determined as an International Normalised Ratio (INR) of >1.9 but < 3.4.

**Results**
INR results were obtained from 112 consecutive patients, 65 females (mean age 86.8) and 47 males (mean age 85.1). In the female cohort (n=65), 27.8% vs 72.2% were within TTR ($\chi^2 = 64.2$, $p<0.0001$). In the male cohort, 12.5% Vs 87.5% were within TTR ($\chi^2 = 234$, $p<0.0001$). Females were more likely to be within TTR compared to males 27.8% Vs 12.8% ($\chi^2 = 14.3$, $p=0.002$). Overall, only 21.4% Vs 78.6% of patients were within TTR >70% ($\chi^2 = 230$, $p<0.0001$).

**Conclusion**
Anticoagulation control with warfarin for patients greater than 80 years old with NVAF in this study is extremely poor especially for males. Careful consideration should be taken on commencing warfarin treatment in this group of patients.
USING LINKED HEALTH AND SOCIAL CARE DATA TO VALIDATE THE INDICATOR OF RELATIVE NEED (IoRN) TOOL

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Background
The Indicator of Relative Need (IoRN) tool is widely used by health and social care services in Scotland to record client dependency. Services wishing to use the IoRN to predict future care needs and risk of events such as death, hospitalization and care home admission require external validation of the tool for these purposes. Using linked health and social care data provides a novel method of externally validating the IoRN for these uses.

Methods
Clients aged 65 and over who underwent IoRN assessment by Dundee Social Work department over a 5 year period (2008-2012) were included in this analysis. Routinely collected health and social care data from NHS Tayside and Dundee Social work department were probabilistically linked via the Health Informatics Centre at the University of Dundee. Cox regression analysis was used to test the association between categories of dependency on the IoRN score and risk of death, hospitalisation and care home admission. Analyses were adjusted for age, sex number and length of stays in hospital.

Results
1732 individuals were included in the analysis; mean age 81 years. 1214 (70%) were female and 144 (8%) died during a mean follow-up period of 2.5 years. The adjusted hazard ratio for death in the most dependent category compared to the least dependent category was 5.9 (95% CI, 2.0 to 17.0); for care home admission ratio was 7.2 (95% CI, 4.4 to 12.0) and for hospital admission 1.1 (95% CI, 0.5 to 2.6). The mean number of allocated hours of care 6 months after assessment was higher in the most dependent group compared to the least dependent group (5.6 hrs. vs 1.4 hrs., p=0.005)

Conclusion
IoRN category is associated with risk of death, care home admission and future need for care, but does not provide additional information to predict future hospital admission.
IDENTIFICATION AND QUANTIFICATION OF MORPHOLOGICAL CHANGES IN SKELETAL MUSCLE FIBRES OF COMMUNITY DWELLING OLDER MEN: FINDINGS FROM THE HERTFORDSHIRE SARCOPENIA STUDY (HSS)

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Introduction
Sarcopenia, the loss of skeletal muscle mass and function with age, is a leading cause of morbidity and mortality. Although the causes are multifactorial, little is known about underlying cellular mechanisms. Identification of histological changes in sarcopenic muscle may provide essential information regarding potential management strategies. The objective of this study was to identify and analyse morphological changes in skeletal muscle fibres in older men.

Methods
Vastus lateralis muscle biopsies taken from 95 community dwelling healthy men aged 68-76 (mean age 72) were sectioned and stained for type II fibres. Image analysis was used to determine fibre area, fibre diameter, fibre proportions and number of internalised nuclei. Markers of fibre size and variability termed atrophy factors (AF) and hypertrophy factors (HF) were calculated.

Results
Each sample contained a mean (SD) of 115.6 (49.7) fibres, mean fibre counts for type I and type II were, 48.0 (24) and 67.7 (36.9) respectively. Mean fibre area was 6056.0 μm² (1713.8 μm²) for type I fibres and 4816.1 μm² (1527.5μm²) for type II fibres. Mean fibre diameters were 73.4 μm² (10.3 μm) and 63.1 μm² (10.5μm) for type I and type II fibres respectively. An average of 1.6% of type I fibres and 1.8% of type II fibres contained internalised nuclei. Type I fibres had a mean AF of 41.0 (77.8) and HF of 676.3 (508.8). Type II fibres had a mean AF of 147.8 (174.0) and HF of 333.2 (385.3).

Conclusions
Observed atrophy of type II fibres suggests a predilection for preferential pathological change in type II fibres. The next steps are to apply the EWGSOP algorithm to the HSS sample to determine the relationship between morphological and pathological changes and sarcopenia. The methodological findings of this study can now be applied to future studies that also include women.
Higher Levels of Apomorphine and Rotigotine Prescribing Spend Reduce the Total Healthcare Costs for Parkinson’s Patients

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Background
Parkinson’s affects around 100,000 patients in the UK with significant impact on quality of life and health and social care needs, economic burden is estimated at over £2 billion / year. It is a long term condition with onset in older age with median age of patients 78 years. Patients are initially treated with oral levodopa and/or dopamine agonist and other adjuncts that improve both the quality of life and reduce the patients need for health and social care. However over time other more resource intensive delivery methods may be needed including pumps, pens and patches, these are currently limited to the most severely affected patients (1% - 5%).

Methods
In Parkinson’s diagnosis, severity, therapy and outcomes are not consistently measured or published. Using the annual 7,990 GP practice age profiles, primary care prescribing data and Hospital Episode Statistical data over 3 years 2011-12 to 2013-14, we investigated at GP practice level correlations between prescribing mix including Apomorphine injections and Rotigotine patches, against diagnosed Parkinson’s patients need for secondary health care including admission, outpatient and accident & emergency.

Results
27% of the most severe patients consume 80% of the secondary care resources of which 85% comes from emergency admissions. For the 13% of GP practices prescribing Apomorphine injections to 900 full year equivalent patients each year, these Parkinson’s patients incur lower overall secondary care cost sufficient to more than cover the medicine acquisition costs. Specifically the average secondary care cost was £4822 per overall Parkinson patient year compared with an average secondary care cost for practices not using Apomorphine of £5434 per overall Parkinson patient year. The average cost of Apomorphine was £322 per overall Parkinson patient year. For the 36% of GP practices prescribing Rotigotine patches to 4,500 full year equivalent patients each year; secondary care cost for Rotigotine was £4957 per overall Parkinson patient year at average cost for patches of £185 per overall Parkinson’s patient year.

Conclusion
While recognising there may be confounding factors, this analysis indicates that increased prescribing of these therapies for Parkinson’s could provide a net reduction in overall healthcare costs and potential gains in patient quality of life and reductions in social care required.
INTRODUCING GAIT SPEED TO ASSESS FRAILTY OUTCOMES IN DAY HOSPITAL PATIENTS

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**Topic**

There is evidence to suggest that multidisciplinary interventions can have a positive impact on frailty (Cameron et al 2013) and exercise is an important component of frailty intervention (Theou et al 2011). This project looked at whether patients referred to day hospital (DH) were frail and if so, whether usual DH care including physiotherapy could achieve similar outcomes to those within the evidence base.

**Intervention**

It is usual physiotherapy practice to measure both physical performance and quality of life pre and post DH attendance, but these have not been used specifically to define frailty. This project aimed to shift the emphasis with routine outcome measurement (gait speed) towards assessing frailty and rehabilitation outcomes linked to frailty.

**Improvement**

‘Fit for Frailty’ (FFF) (BGS 2014) suggests using gait speed as one simple measure of frailty with a speed of <0.8 m/s indicative of frailty. Changes in gait speed in DH patients discharged over a 6 month period were benchmarked against:

a) The <0.8 m/s suggested in FFF: 95% of DH patients were defined as frail on assessment and 76% frail on discharge

b) Pereira et al (2010) who found that 21% had gait speed improved by >0.2m/s following DH intervention. In our project 43% of patients improved gait speed by >0.2 m/s

c) A minimal clinically important difference (MCID) of 0.1 m/s (Perera et al 2006): 63% of DH patients improved gait speed by >0.1 m/s

**Discussion**

Shifting our focus to specifically define and improve frailty levels as defined by gait speed within DH was simple and effective, as this information was already routinely collected. It enabled physiotherapy goal setting which focussed on making a MCID and improving frailty. The outcomes appeared similar or indeed better to those found in relevant literature. Future work includes looking at whether DH attendance influences emergency admissions.

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PLATFORM PRESENTATIONS (Clinical Quality)

EARLY IMPACTS FROM THE NEIGHBOURHOOD TEAMS PILOT ON KEY PERFORMANCE INDICATORS

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Background
Despite the majority of urgent care being delivered within primary care, an expanding proportion of older people are attending Emergency Departments (ED). Older people who attend ED are more likely to be admitted as they rarely present with one single condition. They usually have a complex overlay of physical and mental health problems combined with adverse social circumstances. The Care Quality Commission suggests that many of these admissions are avoidable and it is proven that patients with complex care needs tend to have poorer outcomes in hospital.

Innovation
The Neighbourhood Team pilot project was commissioned by South Manchester Clinical Commissioning Group in June 2013. The model was developed to identify, proactively care plan and case manage patients deemed moderate to high risk of ED attendance. The multi-disciplinary teams comprise community nurses, mental health workers, social workers, GP’s and practice nurses. The teams convene and discuss at risk patients and target visits to individualise care. Success of the ten month pilot was measured against four main key performance indicators (KPI’s).

Evaluation
The data of 499 patients was analysed. Quantitative analysis of the data compared the health care service utilisation of patients before and after they were allocated to the Neighbourhood Team caseload by MDT. We were able to demonstrate a reduction in A&E attendances of 34%. There was a reduction in outpatient attendances of 6%, a reduction of emergency admissions of 28% and a reduction in the total length of stay of 14%. We have also been able to demonstrate a significant cost saving to the trust. The overall potential saving for the pilot period was £98,382.

Conclusions
A multidisciplinary neighbourhood team project can successfully reduce ED attendances, admissions and length of stay. We aim to expand on this initial success with the formation of Enhanced Neighbourhood Teams (ENTs). These will use other service providers, including the voluntary sector, extend operational hours, improve technology and communication and enable patients and carers to undertake frailty assessment. The ENT will form part of a bigger project in South Manchester aiming to shift activity from acute to community settings.
IMPACT OF AN INTEGRATED MEDICINES MANAGEMENT (IMM) SERVICE ON PREVENTABLE MEDICINES RELATED READMISSION (PMRR) TO HOSPITAL

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Topic
Medication contributes to 5-20% of hospital admissions of which half are preventable (Pirmohamed M et al BMJ. 2004;329:15-19.). Avoidable medicines related harm in England was estimated for 2014 as £1-£2.5bn. In 2010 the Department of Health issued guidance that NHS Trusts would no longer be fully reimbursed for emergency readmissions within 30 days of discharge, making reducing preventable medicines related readmission (PMRR) a priority. The National Service Framework for Older People (2001 London: Department of Health) promoted medication review to reduce adverse effects and PMRR for patients. This parallel cohort study investigates the effect of pharmacy-led IMM service on the rate of PMRR at Northwick Park Hospital site (NPH) compared with a traditional UK hospital pharmacy service at Central Middlesex hospital site (CMH).

Intervention
Health care professionals identified patients at risk of PMRR using the PREVENT© checklist (Barnett NL et al. Pharm J 2011;286:471-2) and referred them to the integrated medicines management (IMM) pharmacist team for medicines reconciliation, review, consultations, discharge planning and post discharge follow up as appropriate. 744 NPH patients were identified between October 2008-October 2014 and 92 patients CMH patients between February-October 2014.

Improvement
At NPH 119/744 (16%) patients were readmitted within 30 days of discharge and 2 (0.3%) had a PMRR. At CMH, 17/92 (18%) patients were readmitted within 30 days of discharge and 4 had a PMMR (4.4%). Fischer’s exact test was used to compare groups and the difference was statistically significant (P=0.002). A saving £3 for every £1 spent on an IMM pharmacist suggests rollout can reduce cost for the health economy.

Discussion
Literature and case review and collaborative cross-sector professional working facilitated implementation. Regular frequent (planned and unplanned) turnover of clinical staff presented challenges around ensuring staff were aware of the service and how to refer. The service has been successfully replicated in Europe and Scandinavia (Scott M et al Eur J Hosp Pharm 2015 doi:10.1136/eurhpharm-2014-000512) demonstrating feasibility of replication. Absence of community pharmacy follow up may present implementation challenges in some settings. Data collection from both sites at service commencement would have been beneficial. Future work will include exploration of patient experience, admission coding to identify high risk patients on admission and developing further links with primary care to identify and manage high risk patients in the community.
IMPROVING THE QUALITY OF CARE FOR CARE HOME RESIDENTS DISCHARGED FROM ACUTE HOSPITAL SETTINGS: THE DEVELOPMENT AND IMPLEMENTATION OF THE SOUTHAMPTON MEDICAL ANTICIPATORY PLAN

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1 University Hospital Southampton NHS Foundation Trust and Health Education Wessex; 2 University Hospital Southampton NHS Foundation Trust

Background
Anticipating and planning for health events is an essential component of delivering high quality, patient focussed care to older people in their final year of life and may be achieved via an Anticipatory Care Plan (ACP). University Hospital Southampton (UHS) is a large acute hospital with multiple health and social care interfaces; anecdotal evidence suggested scope to develop this service within the system. This project aimed to explore, develop and embed an ACP within the acute healthcare setting for care home residents.

Innovation
Areas of best practice were identified, stakeholders contacted and focus groups arranged to develop a Southampton Medical Anticipatory Plan (SMAP). This is an individualised electronic care plan completed within the acute hospital in conjunction with the patient and/or their next of kin and shared across care providers, the patient and care home. A pilot was performed and follow up visits were undertaken to reinforce understanding and education before wider dissemination.

Evaluation
The SMAP has been used within UHS for 6 months and with 39 patients; of these, only three patients were inappropriately readmitted. Feedback from hospital staff, patients and relatives has been positive who find the tool straightforward to use and an important driver of patient centred high quality care. Feedback from CCGs, care homes and primary care has been equally positive. Following this success, the SMAP has been rolled out across all older people discharged from an acute hospital setting. Secondary benefits are seen in: patient flow; front door work load; financial.

Conclusion
Anticipatory care planning can be successfully undertaken in the hospital setting for older people and is a cost effective innovation to drive quality and reduce costs. An important part of this process has been establishing relationships with care homes and the health and social care system to ensure greater understanding and trust.
CREATING A “FRONT DOOR” RAPID ACCESS CLINIC FOR OLDER PEOPLE (RACOP): OUR JOURNEY SO FAR

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Introduction

Our RACOP service offers urgent ‘one-stop’ medical assessments for community-based patients with complex frailty needs. We have recently cancelled all our general elderly care outpatients, we use RACOP as our community hub to practice admission avoidance and develop close links with our community partners. RACOP also reduces length of stay for our medical inpatients by reviewing patients discharged from the acute take who require rapid diagnostics.

RACOP aims to review all new patients within 48 hours of referral excluding weekends. The service has overcome many obstacles on its iterative journey. We have based its development on quality improvement methodology. We would like share our journey with you and our current plans to merge it with the acute medicine service to create an ambulatory floor.

Our Quality Improvement Journey

- Physically moving RACOP next to the Emergency Department.
- Carrying WIFI phones for direct GP/community partner discussion with Care of the Elderly (COTE) Consultants.
- Asking for GP feedback at outset to adjust our clinic service. We now have clear ‘rules’ about prescribing from RACOP and who is responsible for each task, GP or COTE Consultant.
- Bi-monthly clinical governance meetings and peer review to reduce clinician variation.
- Linking directly to the Community Rapid Response Service for same day post clinic review, thereby actively practicing admission avoidance.
- Implementing an Electronic Patient Record so that patients leave RACOP with real time clinic letters.
- Current projects include developing a GP email referral system and providing therapy support to RACOP.

Measuring Progress

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Patients reviewed in RACOP</th>
<th>Occupied COTE inpatient beds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>836</td>
<td>153</td>
</tr>
<tr>
<td>2013</td>
<td>942</td>
<td>126</td>
</tr>
<tr>
<td>2014</td>
<td>1233</td>
<td>99</td>
</tr>
</tbody>
</table>

Conclusion

Moving traditional outpatient services to the ‘front door’ and making all changes patient centred has enabled RACOP to actively practice admission avoidance and improve quality outcomes for patients.