

Autumn Meeting 2023

22-24 November

www.bgs.org.uk/events

Book of Abstracts

Table of Contents

Wednesday, 22 November Clinical Quality	4.0
Clinical Quality	1-2
Orthogeriatrics	3-4
Therapeutics and Safe Prescribing	5-6
Thursday, 23 November	
Research into Ageing	7-8
Platform Presentations	9-13
Poster Presentations (President's Round)	14-21
Poster Presentations Clinical Quality	
Clinical Quality	22-97
Scientific Research	98-142
AUTHORS' INDEX	143

PLATFORM PRESENTATION: CLINICAL QUALITY SESSION WEDS 15.30-15.45

1874. CQ - Clinical Effectiveness

Developing a pathway direct to elderly medicine clinic for frail patients referred via colorectal fast-track: pilot and outcomes

A Nixon; T Memery; J Morgan; A Brown; C Scampion

Bradford Royal Infirmary

Introduction: It is increasingly recognised within oncogeriatrics that standard fast-track pathways for suspected malignancy can be inappropriate for frail and elderly patients (Thomas et. al.; Age and Ageing; 2021; 50; ii8-ii13). Specifically for colorectal referrals, following standard pathways can mean undergoing invasive and expensive endoscopic investigations which may be unwanted and not alter overall management. Streaming frail patients to elderly medicine may increase opportunities for comprehensive geriatric assessment whilst reducing unwanted invasive tests and time spent on fast-track pathways.

Methods: A 3-month retrospective audit of frail patients seen in colorectal fast-track clinic was conducted to evaluate existing practice at Bradford Teaching Hospitals. This informed the design of a new pathway streaming frail patients directly to elderly clinic within 2 weeks. This was implemented in a 3-month pilot with data prospectively collected to compare outcomes.

Cohorts: - 26 patients (median age 79, WHO performance status 3) seen by colorectal team March-June 2022.

- 20 patients (median age 85, WHO performance status 2) streamed to elderly medicine clinic October 2022- March 2023.

Results:

- Median time to fast-track pathway removal was 62 days for patients managed via colorectal clinic compared to 31 days via elderly medicine. Invasive tests and imaging (CT/endoscopy) fell from 1.4 tests per patient in colorectal clinic to 0.4 patients in the pilot.
- 2 diagnoses of cancer made via colorectal clinic, but no further treatment for either patient. 1 diagnosis of lung cancer in pilot group, patient undergoing radiotherapy. Patients seen in elderly clinic had greater rates of positive diagnosis for symptoms (e.g: infective/iatrogenic).

Conclusions: Streaming frail elderly patients referred via colorectal fast-track to elderly medicine reduced the number of invasive investigations undertaken and time spent on fast-track pathways. Expanding this successful pilot could improve long-term clinical quality in the service and more widely if disseminated.

PLATFORM PRESENTATION: CLINICAL QUALITY SESSION WEDS 15.45-16.00

1962. Clinical Quality - Patient Centredness

Improving end-of-life care in Acute Medicine: A retrospective review

S Shah; H Hassan

Acute Medical Unit, Princess Royal University Hospital, King's College Hospital NHS Foundation Trust, UK

Background: End-of-life (EOL) care aims to anticipate, prevent and treat symptoms experienced by the dying patient. An EOL care strategy described by King's Health Partners (KHP) outlines the 'ICARE' framework, created from the five priorities for the dying patient, giving generalist hospital teams a memorable prompt to consider holistic needs of patients. We aim to reconcile performance of Acute Medical Unit (AMU) in providing EOL care, against KHP's framework, to reduce patient suffering and improve care.

Methods: A prospective review was performed of all AMU deaths from March-September 2021, reviewing resuscitation status and EOL medications. Sudden deaths for full resuscitation were excluded. Following review, teaching to AMU was delivered and a wall poster of the 'ICARE' framework was displayed. A second prospective cycle was performed reviewing deaths from March-September 2022.

Results: 50 deaths were recorded in cycle one. 21% (12/58) of dying patients were not prescribed EOL medications. Medication omission for 50% (6/12) of patients were due to lack of recognition of EOL. Other reasons included no consultant review, undecided resuscitation status and a missing prescription. In cycle two, 11% of dying patients (6/48 patients) were not prescribed EOL medications, all of which were due to lack of recognition of EOL. 12 deaths had EOL medications prescribed but had an inappropriate resuscitation status.

Conclusion: The second cycle showed a 50% reduction in deaths with EOL medication omissions, when compared to the first cycle. Reasons for medication omissions were less varied in cycle two, highlighting reduction in avoidable causes. Although not affecting patient care, a notable number of patient records had incorrect resuscitation statuses. Overall, improvement in delivery of EOL care within AMU can be seen. Future considerations involve emphasis on keeping electronic patient record up to date to avoid errors and continual provision of education to new and rolling staff.

PLATFORM PRESENTATION: WEDS SESSION, ORTHOGERIATRICS 16.00-16.15

1895. Scientific Presentation Falls (Falls, fracture & trauma)

Three-year nationwide analysis of falls risk prescribing for over 65 care home and noncare home patients

A Shroufi; M Garbuzov; M McPherson

NHS Business Services Authority

Introduction: In 2021 the NHS Business Services Authority Data Science team openly published the first comprehensive nationwide analysis of over 65 care home versus noncare home prescribing (https://nhsbsa-data-analytics.shinyapps.io/estimated-prescribing-patterns-for-care-home-patients/). The analysis has been expanded to include three years of prescribing data and key falls risk prescribing metrics, offering new insight into falls risk prescribing for the over 65s in England.

Method: Patient address information from 800m prescription forms was matched against 35m Ordnance Survey Address Base addresses. Patient addresses from prescription forms were classified as belonging to a care home or otherwise. Prescribing metrics around volume, cost, polypharmacy and falls risk were generated, with falls risk metrics informed by the STOPPFall study drug groups (https://www.prescqipp.info/umbraco/surface/authorisedmediasurface/index?url=%2fmedia%2f6019%2f300-medication-and-falls-20.pdf). These metrics were the mean number of falls risk medicines and proportion of patients prescribed three or more falls risk medicines within a given month.

Results: Over 65 care home patients received more prescribing of falls risk drugs than non-care home patients, whilst the proportion of care home patients on three or more falls risk drugs within a given month was double that of non-care home patients. Nearly 40% of care home patients aged 65-69 were prescribed three of more falls risk drugs within a given month, far more than both older care home patients and non-care home patients. Falls risk prescribing metrics displayed a great deal of variation by ICS and Local Authority.

Conclusion: Aside from headline figures and key findings, the analysis (due for public release in September 2023) allows granular analysis of over 65 falls risk prescribing, by patient age band, gender, geography and care home setting. The exploratory nature of the analysis lends itself to further investigation by healthcare analysts and clinicians, with the aim to gather feedback, iterate and expand the content annually.

PLATFORM PRESENTATION: WEDS SESSION, ORTHOGERIATRICS 16.15-16.30

2022. Scientific Presentation - Big Data

Association between severe mental illness and risk of osteoporosis and fragility fractures: analysis of UK primary care data

C Avgerinou¹; K Walters¹; J C Bazo-Alvarez¹; R M West²; D Osborn^{3,4}; A Clegg⁵; I Petersen¹

1 Department of Primary Care and Population Health, University College London, UK; 2 University of Leeds, Leeds Institute of Health Sciences, UK; 3 Division of Psychiatry, University College London, UK; 4 Camden and Islington NHS Foundation Trust, London, UK; 5 University of Leeds, Academic Unit for Ageing and Stroke Research, UK

Introduction: Severe Mental Illness (SMI), particularly schizophrenia, has been associated with reduced bone mineral density and increased risk of fractures, although some studies have shown inconsistent results. We aimed to examine the effect of SMI on recorded diagnosis of osteoporosis and fragility fracture in older people in the UK, accounting for age, sex, social deprivation and lifestyle factors (smoking, alcohol and Body Mass Index (BMI)).

Methods: We used de-identified data provided as part of routine primary care (IQVIA Medical Research Database). Patients with a diagnosis of SMI (schizophrenia, bipolar disorder, other psychosis) aged 50-99y between 1/1/2000-31/12/2018 were matched 1:8 to age- and sex-adjusted controls without SMI, using Exposure Density Sampling (EDS). We estimated Hazard Ratios (HR) and 95% Confidence Intervals (95%CI) based on Cox Proportional Hazards model. We stratified the analysis by sex, accounting for age, social deprivation, year (model 1), and the above plus smoking, alcohol, and BMI (model 2). We imputed missing lifestyle data using Multiple Imputation.

Results: In total 444,480 people aged ≥50 years were included in the analysis (SMI N=50,006; controls N=394,474). In men, prior diagnosis of SMI increased the risk of osteoporosis diagnosis by 64% (HR 1.64; 95%CI 1.44-1.88) and the risk of fragility fractures by 87% (HR 1.87; 95%CI 1.70-2.06) in model 1. SMI also increased osteoporosis risk by 49% (HR=1.49; 95%CI 1.30-1.71) and fragility fracture risk by 82% (HR=1.82; 95%CI 1.65-2.00) in model 2 in men. In contrast, prior diagnosis of SMI had no significant effect on recorded osteoporosis risk in women. Prior SMI in women increased fragility fracture risk by 53% (HR 1.53; 95%CI 1.45-1.61) in model 1 and by 51% (HR=1.51; 95%CI 1.43-1.58) in model 2.

Conclusions: SMI is associated with increased risk of osteoporosis in men, and fragility fractures in both men and women, with a greater effect in men.

PLATFORM PRESENTATION: THURS, THERAPEUTICS AND SAFE PRESCRIBING 09.30-09.45

2007. Scientific Presentation - Pharm (Pharmacology)

Willingness of older adults and their informal caregivers to deprescribe medication: UK survey study

R Garnett¹; R Barnes²; J Buckell²; R McManus²; J Sheppard²

Oxford University; Dept of Primary Care Health Sciences

Introduction: Reducing inappropriate polypharmacy is a major public health goal and deprescribing is considered one potential solution. Although patient attitudes towards deprescribing have been well studied, little consideration has been given to the informal caregiver perspective, how this differs from the views of patients and how that might influence care.

Method: A survey including demographic questions and the revised Patients' Attitude Towards Deprescribing (rPATD) questionnaire was undertaken. The primary outcome was to identify the willingness of respondents to deprescribe. This survey was distributed as online, telephone or paper versions, via social media, community centres, day care centres, local organisations, and personal networks. It had two sections composed of equivalent questions: one for the 'patient' (age 65+, based in England, taking 11 prescription medication) and one for their 'informal caregiver' (age 18+). Data were analysed using descriptive statistics and binomial logistic regression.

Results: After exclusion of ineligible respondents, a total of 1,307 survey responses were received (861 patients and 446 caregivers). The average patient was 76±9 years, female (526; 61.6%), white (831; 97%), and educated to degree level (482; 56.9%). The average informal caregiver was 73±14 years, female (278; 62.9%), white (426; 96.4%) and educated to degree level (258; 58.2%). A total of 77.1% patients agreed that they were willing to deprescribe medications if their doctor said it was possible. In contrast, significantly fewer informal caregivers were happy for their patient to have medications deprescribed (59.7%; p-value for difference <0.001). Trust in physician, concerns about stopping medication and belief in the appropriateness of withdrawal were all associated with respondent willingness to deprescribe.

Conclusion: This large study suggests patients are more willing to deprescribe than their informal caregivers. Better understanding of these attitudes and how they differ between patients and informal caregivers, will help inform interventions to improve involvement in medication-related decisions.

PLATFORM PRESENTATION: THURS, THERAPEUTICS AND SAFE PRESCRIBING 09.45-10.00

2023. Clinical Quality - Efficiency and Value for Money

Oral nutritional supplement prescribing in care homes: The benefit of dietetic review

K Taylor¹; S Hope²; V Goodwin³

1. Nutrition and Dietetics; Royal Devon University Healthcare NHS Foundation Trust; 2. Geriatric Medicine; Royal Devon University Healthcare NHS Foundation Trust; 3. Faculty of Health and Life Sciences, University of Exeter

Introduction: Prevalence of malnutrition in care homes is high and oral nutritional supplements (ONS) often prescribed. Prescription and monitoring of ONS use varies considerably within residential settings. Locally dietetics are not funded to visit care homes and input is limited. This project explored dietetic ONS prescribing within care homes in one primary care network within Devon, recording the potential impact on costs.

Methods: All patients prescribed ONS (n=50) across 16 care homes were reviewed, alongside referrals to dietetics (n=39) from November 2022-March 2023. Supplements were switched to first-line formulary supplements where possible, stopped where unnecessary according to dietetic assessment, and a "food first" approach encouraged within homes. Cost of supplements prescribed pre-dietetic assessment, cost of new prescriptions, dietetic staff time and mileage costs were recorded. Supplement cost was calculated from the local formulary and staff cost from NHS oncosts.

Results: Patients seen represented 20% of all residents 20% (89/436) within the 16 care homes, suggesting high suspected clinical need. Mean age was 90 years, ranging from 73-103 years. Female patients accounted for the majority (n=68). Addressing inappropriate prescribing saved £57.62 per day in prescriptions through stopping or changing ONS. Cost of dietetic staff time and milage totalled £3105.80 over the five-month period meaning that after 54 days the dietetic review service was saving money. Patients often preferred first line powder-based supplements, and these were either similar or more appropriate in nutrient content than initially prescribed ONS. For example, one patient affected by pressure ulcers was prescribed a fat emulsion supplement. It contained no protein or micronutrients to promote skin healing (cost £3.15) whilst first--line supplements provided macronutrient and micronutrient needs (cost 52p each and £1.04 total prescription).

Discussion: Dedicated dietetic input for care home residents appears to save costs on ONS prescribing whilst providing specialist nutritional expertise.

PLATFORM PRESENTATION: THURS, RESEARCH INTO AGEING – 11.30-11.45

1955. Scientific Presentation - EET (Eyes, Ear, Teeth)

Multimodal critical discourse analysis of current representations of hearing loss in the UK news media

S Fawcett-Jones¹; E Heffernan^{2,3}; E Putland⁴; E Broome^{2,3}; C Burgon²; A Janani¹; T Dening⁵; J Straus⁶; H Henshaw^{2,3}

1 School of Medicine, University of Nottingham; 2 Hearing Sciences, Mental Health and Clinical Neurosciences, School of Medicine, University of Nottingham; 3 National Institute for Health and Care Research (NIHR) Biomedical Research Centre; 4 Department of Linguistics and English Language, Lancaster University; 5 Mental Health and Clinical Neurosciences, School of Medicine; 6 Patient Research Partner

Introduction: Hearing loss (HL) affects 12 million UK adults, including 70% of those aged over 70 years. It is associated with social isolation, anxiety, and depression. Furthermore, HL in midlife is the largest modifiable risk factor for dementia. However, many individuals delay or avoid treatment. This may be due to limited understanding of HL amongst the public, and the considerable stigma surrounding HL and hearing aids. The media play a crucial role in shaping public perceptions of age-related conditions. Therefore, this study investigated representations of HL in UK newspapers, especially representations of the relationship between HL and mental health.

Method: Using Nexis (a news database), 7173 newspaper articles featuring HL between May 2022-May 2023 were retrieved. Following screening, 20 articles were analysed using multimodal critical discourse analysis. This qualitative approach regards communicative choices (here, images and text) as able to both reflect and shape society, including propagating or challenging stigma. A Patient and Public Involvement (PPI) panel contributed to study design and data interpretation.

Results: Most articles featured young adults with HL, particularly celebrities. Whilst this could challenge the stereotype that HL only affects older adults, it could also increase the invisibility of older adults in the media. Many articles contained inspirational stories, which may help reduce the stigma of HL. However, some people with HL do not want to be portrayed differently to other people. Some articles discussed HL and mental health, especially its association with dementia, loneliness, and depression. PPI contributors indicated that newspapers should provide diverse HL representations and should help improve public awareness of this condition, especially its impact on mental health.

Discussion: This research has important implications for clinicians, researchers, charities, the media, and all those who communicate with the public about HL. Future research should investigate HL representations in other media, particularly social media.

PLATFORM PRESENTATION: THURS, RESEARCH INTO AGEING – 11.45-12.00

1995. Scientific Presentation Epid (epidemiology)

Constructing a Frailty Index using routinely collected measures to study its relationship with adverse health outcomes

K Rockwood^{1,2}; A Nar¹; J Godin^{1,2}; O Theou^{1,2}

1. Department of Medicine, Dalhousie University; 2. Geriatric Medicine, Nova Scotia Health

Introduction: Any Frailty Index (FI) measures overall health. The FI-Lab employs common laboratory data and clinical measures to do so.

Objective: To examine how an FI-lab constructed from vital signs, laboratory tests, and electrocardiographic data is associated with in-patient admission and time to death. FI-Lab performance was compared with an FI from a Comprehensive Geriatric Assessment (FI-CGA), the Clinical Frailty Scale (CFS), and the Canadian Triage Acuity Scale (CTAS).

Method: Participants were Emergency Department (ED) patients aged 65+ years referred to Internal Medicine, staffed by a geriatrician (KR). Fifty-seven FI-Lab variables were binarized (0 = no deficit; 1 = deficit) using standard normal ranges. Each FI was calculated as the fraction of items present as deficits. Age- and sex-adjusted Cox proportional hazard and logistic regression models were used to assess relationships with all-cause mortality, and inpatient admission, respectively.

Results: Of 808 patients, an FI-Lab was calculable in 807. Median age was 81 years (IQR:13); 55.7% were female. FI-Lab values ranged from 0.05-0.78 (Mean: 0.51; Standard deviation (SD) 0.10). Females (0.50 ± 0.11) had lower FI-Lab scores than males (Mean: 0.52 ± 0.09 ; p=0.003). At 30 days, each 0.01 FI-Lab unit increase showed higher mortality Hazard Rate (HR) (95% Confidence Interval (CI):1.04 (1.02–1.06) and inpatient admission risk: Odds ratio (OR) 1.02 (1.00-1.03), as did the FI-CGA (1.04; 1.02-1.04) and CTAS (1.46; 1.02-2.10). Similar results held for inpatient admission, save for CTAS (0.95; 0.54-1.64). By two years, only the FI-lab and CFS significantly predicted mortality risk.

Conclusion: FI-Lab scores were associated with higher mortality rates and in-patient admission risk in older ED patients referred to Medicine. In acute care, the FI-Lab appears to integrate baseline frailty with illness severity. As such data often are routinely available, the FI-Lab might be an additional passive measure of frailty-related risk, potentially available in real time.

PLATFORM PRESENTATION: THURS, 14.30-14.42

1977. Scientific Presentation - Big Data

Multimorbidity patterns and aged residential care admissions in Aotearoa New Zealand

R Teh¹; N Kerse¹; D Ranchhod²; L McBain³

1. University of Auckland; 2. $T\bar{u}$ Ora Compass Health, Wellington; 3. University of Otago, Wellington

Introduction: Multimorbidity is complex and impacts patients' quality of life, health outcomes, and health care utilisation. This project aims to identify multimorbidity patterns and their impact on long-term care admissions in community-dwelling older adults.

Methods: Multimorbidity was ascertained using primary care data Tū Ora COMPASS Health. Adults aged 65+ (55+ for Māori and Pasifika) were included in the analysis. Aged residential care (ARC) admission was determined from interRAI. Twelve conditions ascertained were hypertension, ischaemia, congestive heart failure, stroke, diabetes, cancer, chronic obstructive pulmonary disease, depression, hypothyroid, osteoporosis, dementia, and neurological diseases. Latent class analyses were completed to identify multimorbidity patterns by ethnicity, i.e., Māori, Pasifika, and non-Māori/non-Pasifika (nMP). For the latter group, analyses were also completed by age groups (<80 years and ≥80 years. Coxregression models were used to examine the association between multimorbidity patterns and 5-year ARC admission.

Results: The sample comprises 45,178 older adults: nMP (88%), Māori (8%), and 1,755 Pasifika (4%). The average age for Māori and Pasifika was 65.1, respectively, and nMP was 74.1. We identified three multimorbidity patterns for Māori and Pasifika, and four for nMP (<80 and ≥80). All twelve conditions clustered differently in these samples. Eleven-per-cent Māori were in a 'complex-cluster', and they had a three times higher risk of ARC admission than 'healthier-cluster' [aHR(95%CI): 2.96 (1.81-4.36)]. We did not observe an association between condition clusters and ARC admission risk in the Pasifika sample. In the nM/nP<80y sample, those in 'complex-cluster' (4%) had a 5.5 times higher risk of ARC admission (5.48, 4.68-6.41) than in the 'healthier-cluster'; a similar association was observed in nM/nP≥80y in 'complex-cluster' (8%) when compared to 'healthier-cluster' (4.08, 3.67-4.53).

Conclusions: Complex clusters were associated with an increased risk of five-year ARC admission. Multimorbidity patterns are helpful for a more strategic approach to managing multimorbidity better in primary care settings.

PLATFORM PRESENTATION: THURS, 14.42-14.54

2051. Scientific Presentation - Diab (Diabetes)

How representative are UK-based trials investigating lifestyle interventions for diabetes mellitus: a systematic review

G Miles; R A Smith

Green Templeton College, University of Oxford

Background: Type 2 Diabetes mellitus (T2DM) is the most common long-term metabolic condition in older people. In the UK, half of all diabetic patients are over 65 and prevalence reaches 10% in over 75s. Lifestyle interventions reduce diabetic complications and can achieve remission, however, there are concerns over the generalisability of these findings to the diabetic population, particularly elderly, complex patients, and those from ethnic minorities. This systematic review quantifies the disparity between diabetes clinical trial cohorts and the UK diabetic population.

Method: This is a systematic review of UK-based randomised control trials (RCTs) of non-pharmaceutical interventions in adults with T2DM. Data was collected on characteristics of participants included in these studies, including age, sex, ethnicity, socioeconomic status and education of participants.

Results: Our search strategy identified 5437 results, of which 161 met the criteria for full-text screening. After full-text screening and de-duplication, 80 RCTs were included in our analysis. Of 80 studies, 60% (48/80) reported a mean participant age under 60. Only 40 (50%) reported participant age range; of these the maximum participant age was under 65 in 20% and under 75 in 60%. Where the mean age of participants was over 60, 56% (18/32) restricted participation by comorbidities. Almost all of these precluded anyone with pre-existing CVD (17/18), one third precluded any comorbidities, and 5/18 precluded hypertensive patients. Only 26% of studies reported the ethnicity of participants. These cohorts were not representative of the UK diabetic population, with underrepresentation of Asian ethnic groups in 90% of trials.

Conclusions: Representation of elderly patients with comorbidities and those belonging to ethnic minority groups is severely limited in UK based T2DM RCTs of lifestyle interventions. Failure to include a representative population in clinical trial cohorts risks guidance that is not generalisable to the UK diabetic population, potentially exacerbating existing health inequities.

PLATFORM PRESENTATION: THURS, 14.54-15.06

1706. Scientific Presentation - Education / Training

Introducing geriatrics to medical students through film

K Ali^{1,2}

1. Brighton and Sussex Medical School, UK; 2. University Hospitals Sussex, UK.

Introduction: There is an urgent need to increase the workforce of geriatricians. Geriatrics is not a popular specialty amongst medical students due to limited education and training opportunities in this discipline. Nurturing positive attitudes towards ageing, and early engagement with older people and their social networks could address this challenge. Film can be creatively employed to introduce the lived experience of older generations to medical students.

Methods: An 8-weeks film-based educational intervention, a student-selected module (SSM) was offered by a clinical-academic geriatrician to 11 first year medical students at Brighton and Sussex Medical School to enable them: to appreciate the diversity of older people, to understand the bio-psycho-social model of ageing, to develop skills in history taking, and present a focused narrative learning from film aesthetics, and to learn how to analyse a life narrative in a non-judgemental, compassionate, and empathic manner. Over 6 weeks, students watched and discussed a selection of short films, and a feature 'Radiator' with its director Tom Browne, all films depicted 'old age'. During the last 2 weeks, students delivered a short presentation on a film they choose and gave feedback on the module.

Results: In their presentations, students discussed short, feature, and animated films portraying successful ageing, institutionalisation, dementia, and terminal illness. Examples included 'Ikiru' (Japan, Akira Kurosawa, 1952), 'Driving Miss Daisy' (Bruce Beresford, USA, 1989), 'Howl's Moving Castle' (Hayao Miyazaki, Japan, 2004), 'Amour' (Michael Haneke, France, 2012), 'Echoes' (Ben Bradbury, UK, 2018), and 'The Father' (Florian Zeller, UK, 2020). Students demonstrated insight into the heterogeneity of senior citizens, and the burden experienced by carers of dependent adults. The module, as a platform for interactive learning, was positively perceived by students.

Conclusions: Conversations with medical students around films portraying 'old age' could enhance the possibilities of them choosing 'Geriatrics' as a future career.

PLATFORM PRESENTATION: THURS, 15.06-15.18

1826. Scientific Presentation - Education / Training

Development of inter-professional simulation-based education in geriatric medicine

J Irvine¹; E Nelson²;

1. Northern Ireland Medical and Dental Training Agency; 2. Southern Health and Social Care Trust

Background: Understanding human factors involved in patient care is a focus of the Geriatric Medicine Training curriculum including the leadership of and communication within an interprofessional team. Geriatric Medicine Specialty Trainees (ST4+) need advanced communication skills and confidence in managing complex situations. Simulation-enhanced Interprofessional Education (Sim-IPE) provides insight into other disciplines roles (1). We hypothesised that the implementation of a Sim-IPE programme dedicated to communication skills could improve confidence.

Method: We organised a one-day Sim-IPE programme for our Geriatric Medicine ST4+. Faculty consisted of doctors, advanced nurse practitioner, social worker, occupational therapist, physiotherapist and speech and language therapist. Communication scenarios, with faculty as simulated participants, were undertaken including establishing a ceiling of treatment, management of delirium, breaking bad news, ethical feeding dilemmas, complex discharge planning and capacity assessment. Debrief discussions followed each scenario. Mixed-method evaluation was used with questionnaires collected from learners' pre and post session in a 10-point Likert scale to compare confidence levels. Qualitative feedback was collected from learners and faculty.

Results: Ten Geriatric Medicine ST4+ attended plus nine faculty including two facilitators. Positive feedback was received from learners and faculty. There was improvement in confidence across all six scenarios (one being "not at all confident" and ten "extremely confident"). Pre-session average confidence was 7.2, post-session 8.7. All trainees would recommend the programme to a colleague. Common learning themes included gaining feedback from debrief discussions and shared learning from our allied-health professionals. Learners and faculty commented on the enjoyment, usefulness and value of learning within a safe team environment.

Conclusion: Sim-IPE can improve confidence in complex communication scenarios and human factor skills. Feedback highlighted that this programme would be useful for all General Internal Medicine Specialty Trainees.

PLATFORM PRESENTATION: THURS, 15.18-15.30

1978. Scientific Presentation - N & N (Neurology & Neuroscience)

Donanemab in early symptomatic Alzheimer's Disease: Efficacy and safety in TRAILBLAZER-ALZ 2, Phase 3 Randomized Clinical Trial

M Mintun¹; C Ritchie²; P Solomon³; J R Sims¹; S Salloway⁴; O Hansson⁵; L G Apostolova⁶; J A Zimmer¹; C D Evans¹; M Lu¹; P Ardayfio¹; J D Sparks¹; A M Wessels¹; S Shcherbinin¹; H Wang¹; E S M Nery¹; E C Collins¹; E B Dennehy¹; D A Brooks¹; D M Skovronsky¹; TRAILBLAZER-ALZ 2 Investigators; A Farquharson (Non-author presenter) ¹

1. Eli Lilly and Company, USA; 2. Scottish Brain Sciences, UK; 3. Boston Center for Memory and Boston University Alzheimer's Disease Center, USA; 4. Departments of Neurology and Psychiatry, Alpert Medical School of Brown University, USA; Butler Hospital, USA; 5. Clinical Memory Research Unit, Department of Clinical Sciences Malmö, Lund University, Sweden; Memory Clinic, Skåne University Hospital, Sweden; 6. Department of Neurology, Indiana University School of Medicine, USA

Introduction: In TRAILBLAZER-ALZ donanemab (DONA) cleared brain amyloid plaques, significantly slowing disease progression in early symptomatic Alzheimer's disease (ESAD). Methods: TRAILBLAZER-ALZ2 enrolled participants with ESAD and amyloid and tau pathology by positron-emission tomography, randomizing (multicenter) those with low/medium-tau (n=1182) and high-tau (n=552) (missing tau n=2). Participants (randomized double-blind,1:1) received DONA (n=860)/placebo (n=876) IV every 4w for 72w. DONA participants meeting amyloid clearance treatment completion criteria at 24/52w had blinded switched to placebo.

Primary outcomes: Integrated AD Rating Scale(iADRS) change from baseline at 76w in low/medium-tau or combined (low/medium- and high-tau) populations. Statistical testing allocated most power (80% α spend) to low/medium-tau population outcomes, with the remainder for combined population outcomes, including clinical and biomarker assessments.

Results: In the low/medium-tau population iADRS change at 76w: –6.02 (DONA) and –9.27 (placebo) (difference 3.25; 95%CI, 1.88-4.62; P<0.001), 35.1% slowing of disease progression. Change in Clinical Dementia Rating Scale (CDR)–Sum of Boxes: 1.20 (DONA) and 1.88 (placebo) (difference –0.67; 95% CI –0.95 to –0.40; P<0.001), 36.0% slowing. Participants receiving DONA experienced 38.6% less risk of progressing to next disease stage vs placebo over 76w (CDR-Global score, HR=0.61; P<0.001). Amyloid clearance at 24/52/76w: achieved in 34.2%/71.3%/80.1% DONA-treated participants. Significant, positive results were observed in the combined population. Serious AEs: 17.4% (DONA), and 15.8% (placebo), with 3 deaths among DONA patients who experienced serious amyloid-related imaging abnormalities (ARIA). AEs with DONA included ARIA-E (24.0%, 6.1% symptomatic); ARIA-H (31.4%); infusion-related reactions (8.7%).

Conclusion: DONA treatment significantly slowed clinical progression at 76w with a safety profile consistent with earlier studies. Presented: AAIC2023.

1848. Scientific Presentation - Big Data

Risk of severe COVID-19 increases with the number of comorbidities in fully vaccinated individuals aged ≥65: results from INFORM

S Dube¹; R McNulty¹; S Arnetorp²; R Yokota³; L Carty¹; S Taylor¹; J Peters⁴; N Justo^{5,6}; Y Lu⁷; K Evans⁸; M Yates⁷; H Nguyen⁷; V Olson⁷; J Quint⁹; R Evans¹⁰

1 AstraZeneca, Cambridge, UK; 2 Gothenburg, Sweden; 3 P95, Leuven, Belgium; 4 AstraZeneca, London, UK; 5 Evidera, Stockholm, Sweden; 6 Karolinska Institute, Stockholm, Sweden; 7 Evidera, London, UK; 8 Evidera, Waltham, MA, USA; 9 Imperial College London, London, UK; 10 University of Leicester, Leicester, UK

Objective: Ageing is associated with reduced vaccine efficacy due to immunosenescence. Severe COVID-19 outcomes are associated with comorbidities prevalent in older people. We report results from the INFORM study on severe COVID-19 outcomes in vaccinated older individuals with varying numbers of comorbidities.

Methods: A retrospective observational cohort study was conducted in England using a 25% random sample from NHS databases. COVID-19⊡related outcomes (hospitalisations and mortality) in fully vaccinated (≥3 doses) older individuals from 1 Jan to 31 Dec 2022 are reported.

Results: Of a reference population of 7,180,205 fully vaccinated individuals ≥12 years, 2,232,140 were ≥65 years. The proportion of older people with ≥1 COVID-19 hospitalisation increased with age (≥65, 0.6%; ≥70, 0.7%; ≥75, 0.9%; ≥80, 1.2%) compared to overall population (OP, 0.2%). Incidence rates (IR) (95% CI) per 100 person years also increased with age for hospitalisation (≥65, 0.58 [0.57-0.59]; ≥70, 0.71 [0.69-0.73]; ≥75, 0.90 [0.88-0.92]; ≥80, 1.20 [1.18-1.22] versus OP, 0.22 [0.21-0.23]) and death (≥65, 0.16 [0.15-0.17]; ≥70, 0.20 [0.18-0.22]; ≥75, 0.28 [0.26-0.30]; ≥80, 0.42 [0.39-0.45] versus OP, 0.05 [0.04-0.06]). In those ≥65, 1,375,470 were not immunocompromised (IC) but had ≥1 high-risk comorbidity (no-IC/+Com), 586,155 had neither IC or comorbidity (noIC/noCom). An increased number of comorbidities was associated with increased hospitalisation and death IRs. In those ≥65 noIC/+Com, IRs (95% CI) were 0.63 (0.61-0.65), 0.88 (0.86-0.90) and 1.25 (1.22-1.28) for hospitalisation vs 0.20 (0.17-0.23) in noIC/noCom; and 0.16 (0.14-0.18), 0.23 (0.21-0.25) and 0.32 (0.29-0.09) vs 0.06 (0.03-0.09) for noIC/noCom for death where individuals had ≥1, ≥2 and ≥3 noIC/+Com, respectively.

Conclusions: Despite vaccination, older people are at increased risk for severe COVID-19 outcomes, with higher risk associated with more comorbidities. Even older patients with no-IC conditions have increased risk, especially those with other high-risk comorbidities. Additional interventions may be required to protect older people against severe COVID-19 outcomes.

2027. Scientific Presentation - Big Data

Protein consumption and determinants in community dwelling older adults: National Diet and Nutrition Survey (NDNS) years 9-11

K Taylor¹; V Goodwin²; S Hope³

- 1. Nutrition and Dietetics; Royal Devon University Healthcare NHS Foundation Trust;
- 2. Faculty of Health and Life Sciences, University of Exeter; 3. Geriatric Medicine; Royal Devon University Healthcare NHS Foundation Trust.

Introduction: Reference nutrient intake for protein amongst the general population is 0.75 grammes of protein per kilogram of body weight per day (g/kg BW/d). Expert groups recommend healthy adults over 65 years have 1.0-1.2g/kg BW/d to support good health and maintain functionality (Deutz, Bauer and Barrazoni, Clinical Nutrition, 33(6):929-36). A recent paper suggested age specific recommendations of 1.2g/kg BW/d (Dorrington, Fallaize and Hobbs, Journal of Nutrition, 150(9):2245-2256). This study aimed to quantify percentage of community dwelling older adults meeting recommendations for protein intake and explore factors associated with low consumption.

Methods: The study population comprised >65s completing the NDNS survey years 9-11 (2016-2019). Dietary intake was recorded in food diaries. Protein consumption was calculated as grammes per kilogram adjusted body weight per day (g/kg aBW/d). Adjustment made for body mass index (BMI) below 22kg/m2 and above 27kg/m2. Percentage of participants meeting protein recommendations for 0.75, 1.0 and 1.2g/kg BW/d was calculated. Chi-squared test for independence was utilised to determine association between social, health and lifestyle factors and low protein intake.

Results: Data from 385 participants were included; 43% male, 98% white. Mean protein intake was 0.98g/kg aBW/d (SD ± 0.25). Prevalence of protein intake below 0.75g/kg aBW/d was 16.4% (n=63), below 1.0g/kg aBW/d was 52.2% (n=201) and below 1.2g/kg aBW/d 82.1% (n=316). Current and ex-regular smoking was associated with protein intake <1g/kg aBW/d (p=0.01). No other analysis reached statistical significance although prevalence of low protein intake was higher in those without their own teeth (p=0.08), use of dentures (p=0.14) and BMI of 27-30kg/m2 (p=0.09).

Conclusion: A large percentage of older adults are below expert recommendations for protein intake. There is a need for clarity over recommendations so that a clear public message can be given to optimise health and function in ageing. Factors influencing poor protein intake require further examination.

1867. Scientific Presentation - BMR (Bone, Muscle, Rheumatology)

Efficacy and safety of metformin as a therapy for older people with sarcopenia and frailty – the MET-PREVENT randomised trial

M D Witham¹; C McDonald¹; A P Clegg²; H Hancock³; S Hiu⁴; K Nicholson³; B Storey⁵; L Simms³; C J Steves⁶; T von Zglinicki⁷; J Wason⁴; N Wilson⁴; A A Sayer¹; on behalf of the MET-PREVENT study group

1. AGE Research Group and NIHR Newcastle BRC, Newcastle University; 2. Academic Unit for Ageing & Stroke Research, University of Leeds; 3. Newcastle Clinical Trials Unit, Newcastle University; 4. Population Health Sciences Institute, Newcastle University; 5. Gateshead NHS Foundation Trust, Gateshead; 6. Dept of Twin Research, Kings College London; 7. Ageing Biology Labs, Newcastle University

Introduction: Metformin has pleiotropic biological effects which might improve muscle function in older people. The MET-PREVENT trial tested the efficacy and safety of metformin as a therapy for sarcopenia and frailty in older people.

Methods: Double blind, randomised, parallel-group, placebo-controlled trial. Participants aged ≥65 with walk speed <0.8m/s and low muscle strength (handgrip <16kg for women, <27kg for men, or 5x sit to stand >15s) were recruited from primary care and hospital clinics. Participants were randomised 1:1 using a web-based interactive system to receive 4 months of 500mg metformin or matching placebo 3x/day. The primary outcome, analysed by intention to treat, was the between-group difference in 4m walk speed at 4 months, adjusted for baseline values. Secondary outcomes included grip strength, short physical performance battery, six-minute walk distance, muscle mass by bioimpedance, quality of life and activities of daily living. All adverse events were recorded.

Results: Seventy-two participants were randomised, mean age 80 (SD 6) years. 42 (58%) were women, 42 (58%) were frail (Fried score ≥3); mean baseline 4m walk speed was 0.59 m/s (SD 0.22). 70 (97%) completed the trial (metformin 34/36, placebo 36/36). 14 (40%) discontinued metformin and 5 (14%) discontinued placebo. There was no difference in the primary outcome between the metformin (0.57 m/s [SD 0.19] m/s) and placebo group (0.58 m/s [SD 0.24]); adjusted treatment effect was 0.001 m/s (95%CI -0.06, 0.06); p=0.96. There was no significant effect on measures of muscle mass, physical performance, quality of life or activities of daily living. The metformin group had more adverse events (110 vs 77) and more hospital admissions (12 vs 3)

Conclusions: MET-PREVENT achieved successful recruitment with high retention rates, however metformin did not improve physical performance and was poorly tolerated with high rates of adverse events in older people with sarcopenia.

1724. Scientific Presentation - Cardio (Cardiovascular)

Age is just a number: Cardiac resynchronisation therapy in older patients has comparable outcomes to those that are younger

N Z Safdar¹; S Kamalathasan²; A Gupta¹; J Wren³; R Bird¹; D Papp¹; R Latto¹; A Ahmed¹; V Palin³; J Gierula¹; K K Witte⁴; S Straw¹

1. School of Medicine, University of Leeds, Leeds, UK; 2. Bradford Teaching Hospitals NHS Trust, Bradford, UK; 3. Leeds Teaching Hospitals NHS Trust, Leeds, UK; 4. RWTH Aachen University, Aachen, Germany

Introduction: Older people may be less likely to receive cardiac resynchronisation therapy (CRT) for the management of chronic heart failure. We aimed to describe differences in clinical response, complications, and subsequent outcomes following CRT implantation in older patients when compared to those that were younger.

Methods: We conducted a retrospective cohort study of consecutive patients implanted with CRT between March 2008 and July 2017. We recorded complications, symptomatic and echocardiographic response, hospitalisations for heart failure, and all-cause mortality comparing patients aged <70, 70-79, and ≥80 years.

Results: During the study period, 574 patients (median age 76 years [IQR 68-81], 73.3% male) received CRT. Patients aged ≥80 years had worse symptoms at baseline and were more likely to have co-morbidities. Although the provision of guideline-directed medical therapy for heart failure was less optimal in those ≥80 years old, left ventricular function was similar at baseline. Older patients were less likely to receive CRT-defibrillators (which were twice as likely to require generator replacement) compared to CRT-pacemakers. Complications were infrequent and not more common in older patients. Age was not a predictor of symptomatic or echocardiographic response to CRT (67.2%, 71.2%, and 62.6% responders in patients aged <70, 70-79, and ≥80 years, respectively; p=0.43) and time to first heart failure hospitalisation was similar across all groups (p=0.28). Finally, estimated 10-year survival was lower for older patients (49.9%, 23.9%, and 6.8% for patients aged <70, 70-79, and ≥80 years, respectively; p<0.001).

Conclusions: The benefits of CRT were consistent in selected older patients (≥80 years) despite a greater burden of co-morbidities and less optimal provision of guideline-directed medical therapy. These findings support the use of CRT in an aging population.

1964. Scientific Presentation - HSR (Health Service Research)

Wearable devices to measure gait and balance remotely that could be used in Comprehensive Geriatric Assessment: A scoping review

J Bollen^{1, 2}; N Morley²; E Arjunaidi Jamaludin¹; A Hall²; A Bethel²; A Mahmoud²; T Crocker³; H Lyndon⁴; S Del Din⁵; J Frost²; V Goodwin²; J Whitney¹

1 Population and Health Sciences, Kings College London; 2 Faculty of Health and Life Sciences, University of Exeter; 3 Bradford Institute for Health Research, BRI. Bradford Teaching Hospitals NHS Foundation Trust. Leeds Institute of Health Sciences. University of Leeds; 4 Cornwall Foundation NHS Trust; 5 Faculty of Medical Sciences. Newcastle University

Introduction: Comprehensive Geriatric Assessment (CGA) is widely used in the management and assessment of older people living with frailty, however optimal ways of delivering CGA are not well understood. Gait and balance impairments, common in those living with frailty, are assessed in CGA. Advancements in digital technology provide opportunities to improve patient outcomes by digital monitoring, rather than observation-based assessments - which may be less accurate. As part of the Digital and Remote Enhancements for the Assessment and Management of older people living with frailty (DREAM) study, the aim of this review was to identify devices to assess gait and balance remotely, to enhance CGA.

Methods: Searches were conducted across six databases. Papers published since 2008 were included if: participants were over 65; evaluated gait or balance using wearable technology suitable for community use; presented data on validity, reliability, or acceptability of the device.

Results: Of 6,203 papers identified, 48 papers were included evaluating 49 devices. 35 evaluations assessed gait, 7 assessed balance, and 7 assessed gait and balance. The most common modality was a single sensor (n= 30) on a participants' back (n=22). Seven studies assessed more than one aspect of validity, but the majority examined criterion validity (n=35) and reliability (n=12). Good-excellent agreement between the wearable and a comparable method of analysing gait/balance was found in 15 studies. Devices could distinguish between healthy populations and those with Parkinson's disease (n=8), cognitive impairment (n=4), falls (n=4), mobility disability (n=3) and frailty (n=3).

Conclusion: Wearable technologies offer accurate and reliable assessment of gait and balance that could be used to enhance CGA. These tools could be applied remotely in domiciliary settings, freeing up healthcare professionals to focus on other components of CGA, such as ensuring the delivery of interventions to address identified gait and balance impairment.

1877. Scientific Presentation - PD (Parkinson's Disease)

Recruitment to a phase 3, RCT in Parkinson's: strategies and association between participant characteristics and PI specialty

E J Henderson¹; G Young²; D Pendry-Brazier¹, M Smith¹, K Lloyd¹, C Metcalfe², W Hollingworth³; Y Ben-Shlomo¹

- 1. Ageing and Movement Research Group, Population Health Sciences, University of Bristol
- 2. Health Economics Group, Population Health Sciences, University of Bristol
- 3. Bristol Trials Centre (BTC), Bristol Medical School, University of Bristol

Introduction: Falls are a common complication of Parkinson's disease, driven in part by an underlying cholinergic deficit that contributes to gait and cognitive impairment. Phase 2 studies have established that amelioration of this deficit using cholinesterase inhibitors may reduce falls.

Methods: CHIEF-PD (CHolinesterase Inhibitor to prEvent Falls in Parkinson's Disease) is a phase 3 randomised, double-blind placebo-controlled trial of rivastigmine to prevent falls in Parkinson's disease that recruited from NHS sites. Relationships between the Principal Investigators' specialty and the participants baseline characteristics were evaluated using linear, logistic and ordinal logistic regression. Cognitive impairment was defined as MoCA ≤26, while falls in the prior 12 months were separated into ordinal quartiles (1-2, 3-5, 6-12, 13+).

Results: Recruitment to CHIEF-PD commenced in January 2020 and completed in April 2023. Recruitment increased up until the start of the pandemic and thereafter there were 2 peaks. Potential participants were identified through clinic lists, databases, via national and local media and charities. 600 participants were enrolled across 38 sites. Sites enrolled between 1 and 74 participants, each. The median recruitment rate was 19 participants per month (IQR 6-27). 14 (37%) sites had Principal Investigators that were neurologists and 24 (63%) sites had PIs that were geriatricians. Most participants (76%) were over the age of 65 years. Compared with neurologists, geriatricians recruited older patients (difference in means 2.08 (95% CI 0.68, 3.48); p=0.004), with similar levels of cognitive impairment (OR 1.20 (95% CI 0.85, 1.69); p=0.293) and a lower fall rate (OR 0.46 (95% CI 0.34, 0.62); p<0.001) at baseline.

Conclusion: Recruitment of older participants to a Clinical Trial of an Investigational Medicinal Product (CTIMP) trial throughout the Covid-19 pandemic across 38 UK centres was feasible using multiple strategies. Characteristics of participants varied according to the sub-speciality of the Principal Investigator at the site.

1937. Scientific Presentation - Planned and ongoing trials

The future of research: Participant perspectives on remote trial delivery

W Milczanowska¹; R C E Bowyer^{2,3}; M P García²; S Wadge²; A F Baleanu²; A Nessa²; A Sheedy²; G Akdag²; D Hart²; K Whelan⁴; C J Steves²; M Ni Lochlainn²

1. King's College London; 2. King's College London, Department of Twin Research and Genetic Epidemiology, London, UK; 3. The Alan Turing Institute, London NW1 2DB, UK; 4. King's College London, Department of Nutritional Sciences, Franklin Wilkins Building, SE1 9NH, London, UK

Introduction: The PROMOTe trial was conducted entirely remotely, which aimed to enable a wider recruitment of participants, minimised risk of Covid-19 exposure and adhere to former travel restrictions. Participant experiences with remote clinical trials are not well understood. This work aimed to characterise participant perspectives on the remote delivery of the PROMOTe trial.

Methods: The trial involved remote measurement of short physical performance battery and grip strength, and remote collection of stool, urine, saliva, and capillary blood. Equipment including a dynamometer was posted to participants. Participants returned biological samples by post. A mixed methods approach was used, whereby participants were invited to complete an online questionnaire consisting of Likert, multiple-choice and open-ended questions upon trial completion.

Results: Of 72 trial participants, mean age 73.1, 80.6% (n = 58) completed the questionnaire. 53.5% (n = 31) had no preference between remote or in-person participation. Of those who preferred to take part remotely, 57.1% (n = 4) stated this was because there was no need to travel. 57.1% (n = 12) of those who preferred to take part in-person stated this was because they preferred to talk to the staff and ask questions face-to-face. Participants found that taking 5 out of the 8 physical measures were of similar difficulty over video teleconferencing compared to in-person. 100.0% (n = 58) of participants found it "easy" or "average" to collect stool, urine, and saliva, while 63.2% (n = 36) of participants thought it was "easy" or "average" to collect capillary blood. All participants found packaging and returning all four sample types of "easy" or "average" difficulty.

Conclusion: These findings suggest that the majority of participants found remote trial delivery, including handling equipment and collecting biological samples, both acceptable and manageable. Remote trial delivery has potential for increasing access of older people to trial participation.

2009. Scientific Presentation - HSR (Health Service Research)

Integrated physical-mental health care models for older people under specialist mental health services: a systematic review

B Hickey¹; B Desai¹; T Chithiramohan³; T Robinson¹; E Mukaetova-Ladinska¹; R Evley²; T Dening²; A Rajamani²; H Subramaniam³; A Tako⁴; C Tarrant¹; L Beishon¹

- 1. University of Leicester; 2. University of Nottingham; 3. Leicestershire Partnership Trust;
- 4. University of Loughborough

Background: Older people have complex health needs, with the inter-play between physical and mental health being a prominent issue. The ageing population has resulted in a large proportion of older people living with co-occurring physical and mental health disorders, which can prove challenging to manage simultaneously, particularly for serious mental illness. The aim of this systematic review was to explore models of integrated physical-mental health care available for older people, and whether these result in improved health outcomes. Sources of heterogeneity in the current evidence base alongside limitations were also explored.

Methods: Medline, Embase, CINAHL, PsycINFO and Scopus were searched with a predefined search strategy, generating 5257 articles. Studies were suitable for inclusion where an integrated physical-mental health care service model was utilised in a population of older people (aged >60 years) with a mental health diagnosis and at least one concomitant physical health condition requiring physical health care input. All studies were quality assessed for risk of bias and results were synthesised narratively.

Results: Ten studies met the inclusion criteria. All studies incorporated service models involving integrated and/or multidisciplinary care. These included joint medical-mental health wards as well as the implementation of multidisciplinary teams in hospital and care facilities. Overall, this enhanced the quality of care for elderly patients with benefits including but not limited to, enhanced patient experience, the expansion of multidisciplinary team practice, improved management of illness, and timely intervention.

Conclusions: Multidisciplinary and integrated care resulted in improvement of a range of health outcomes for older people with combined physical and mental health needs. Larger and more robust studies are needed to explore the development of these service models further, with cost-effectiveness analyses.

Role of telemetry in detecting atrial fibrillation in acute ischaemic stroke

L Gan; V Adhiyaman

Care of the Elderly Department; Glan Clwyd Hospital, Wales

Introduction: Atrial Fibrillation (AF) causes 15% of ischaemic strokes. The National Clinical Guideline for Stroke recommends at least 24 hours of cardiac monitoring and a longer duration if cardio-embolic stroke is suspected. The British Heart Rhythm Society suggests up to 72 hours of cardiac monitoring. Currently, there is little data on the use of telemetry in detecting AF in acute strokes. Our study aims to evaluate the detection rate of new onset AF in acute stroke with telemetry and to determine if there was any correlation between the duration of telemetry and the detection rate of AF.

Method: All patients with ischaemic stroke who were admitted to stroke ward over a 3-month period were retrospectively analysed. Exclusion criteria were patients who were known to have AF, had new AF on admission electrocardiogram, patients receiving palliative care, patients who were discharged home early without having a telemetry and patients with missing records.

Results: 61 patients met the inclusion criteria and 5 (8.2%) had AF on telemetry. Two patients had AF on day 1, one on day 2 and two on day 3. All of these patients were anticoagulated. The duration of telemetry ranged between 1- 19 days however no AF was detected beyond the third day of this study.

Conclusions: AF was detected in 8% of patients with ischaemic stroke within the first 72 hours of admission. Among the patients in whom AF was detected, 5% were detected between 24 hours and 72 hours of admission. Studies (EMBRACE and CRYSTAL trials) have shown that prolonged cardiac monitoring (30 days and 6 months to a year respectively) resulted in higher detection rates of AF. This study suggests that patients with ischaemic stroke should be monitored for at least 72 hours due to a higher detection rate of AF.

Developing a novel simulation induction programme for doctors working in Hospital at Home

G Watson; A Paveley; K Chin; A Lindsay-Perez; R Schiff

Department of Ageing and Health, Guy's and St Thomas' NHS Foundation Trust

Introduction: The UK is expanding provision of acute medical care in people's own homes through Hospital at Home (H@H) and virtual wards. Our H@H service is training junior doctors to meet the growing clinical need in this environment. We describe the use of simulation training to improve the H@H induction process.

Methods: From their experiences in H@H, junior doctors identified specific training needs to build relevant competencies. From this feedback, PDSA cycle one involved junior doctors designing a dedicated simulation training (H@H-SIM). Stations addressed clinical, practical and advanced communication skills required in H@H using high- and low-fidelity simulation. PDSA cycle two used post-course evaluation to refine H@H-SIM through introduction of FP10 prescribing stations, point-of-care testing (POCT) and greater emphasis on practical skills. Revisions were evaluated via participant questionnaire before and after the H@H-SIM.

Results: Cycle two of H@H-SIM involved twenty doctors. The clinical scenarios, prescribing and practical skills stations, including POCT and IV administration, were perceived as the most useful parts of training. Overall self-rated confidence in knowledge and skills to work in H@H improved from a mean of 6.9 to 7.7/10. Before H@H-SIM, 60% were 'not confident' with recognising end of life (EOL), IV administration or decision-making around remaining at home; 10% with advance care planning (ACP). After H@H-SIM, 10% felt 'not confident' with recognising EOL or ACP and 5% with IV administration. Concerns persisted with using equipment, prescribing and availability of senior support. An additional station on recording ECGs was suggested.

Conclusions: Working in a H@H context and seeing patients in their homes can be daunting for junior doctors. H@H-SIM embedded into induction is one way to prepare doctors for this role, improve their confidence and has potential for wider replication.

Audit on the prompt mobilisation of patients following hip arthroplasty

B Hama¹; A Illsley²

1. Dept of Elderly Care; Bradford Royal Infirmary; 2. Dept of Elderly Care; Bradford Royal Infirmary

Background: Hip fractures are fractures involving the femoral head, neck or proximal shaft. They most often occur in frail, osteoporotic elderly patients following falls. Hip fractures are associated with a 30-day mortality rate of 10% and a 1-year mortality rate of approximately 30%. NICE and NHFD advise prompt mobilisation post-surgery - with patients being mobilised by the day after surgery at the latest: 1. Nice Guidelines Hip Fracture in Adults; Quality statement 6: Rehabilitation after surgery 2. NHFD KPI 4 – prompt mobilisation after surgery

Method: We carried out two audit cycles assessing the mobilisation rate of patients by the day after hip arthroplasty, at Bradford Royal Infirmary. In the first cycle, from 23 eligible patients, we found only 15 (65%) were mobilised within a day of surgery.

Results: These patients had a reduced length of stay compared to the patients not mobilised by the day after surgery (15.1 vs 18.1 days). As per our data, the reasons for delayed mobilisation included 1. pain (suggest early and regular analgesia), and 2. system miss (discussed with local physiotherapy team). After four months we reaudited. Of 23 eligible patients we found an improvement in patients being mobilised - 17 patients (74%) were mobilised within a day of surgery. Once again length of stay was less in the patients who had been mobilised (21.2 vs 29.7 days). Similar reasons for delayed mobilisation remained.

Conclusion: Our interventions improved the promptness of mobilisation in patients who had undergone hip arthroplasty. This led to a reduced duration of inpatient stay and better patient outcomes. Audit limitations included population size.

Delirium in acute medicine inpatients – are we still missing it? Results from an 8-year audit in a District General Hospital.

C Van't Hoff; A McColl; D Johnson; K Boncey

Royal Berkshire Hospital

Introduction: Improving delirium screening in hospital patients is a recognised important goal to improve patient outcomes, with consequences of delirium including increased mortality, falls, length of stay and dependence on discharge. We undertook a rolling audit over 8-years to examine the use of screening tools to identify delirium and how many cases of delirium were potentially missed in acute medical inpatients in a District General Hospital.

Methods: 4 cycles of audit were completed over an 8-year period (2015–2023) through a snap-shot prospective review of all acute medical inpatients aged over 65 years during a 24-hour period. The medical records were examined for admission delirium screen and the delirium documentation within the first 48 hours. Where a diagnosis of delirium had not been made, the notes were reviewed to see if an inference of delirium during this period could be made.

Results: A total of 873 patient notes were reviewed between 2015–2023. The completion rate of screening for delirium increased to 87% in 2023 (2015/2017/2019=3%/13%/69%). Overall, the diagnosis of delirium that was explicitly stated in the notes (made via CAM/4AT or clinical assessment) similarly increased to 32% in 2023 (2015/2017/2019=10%/22%/12%). However, in the recent results a delirium diagnosis was potentially still missed in 10% of cases, though this similarly had improved from prior years (2015/2017/2019=18%/13%/26%). Overall, in hospital the number of patients >65 admitted under the care of medicine with delirium in the initial 48 hours has remained constant since 2015 between 30%-42%.

Conclusions: A significant improvement in the screening for delirium has occurred between 2015 to 2023 due to multiple changes: electronic notes, pop-up notifications, obligatory completion and change from CAM to 4AT. Reassuringly, the potential missed cases of delirium have reduced also.

Lying and standing blood pressure and ECG for the falling patient

C White; L Boyd

Dept of Elderly Care, Royal Preston Hospital

Introduction: Many elderly patients admitted to hospital have presented following a fall. Causes for falls are often complex and multifactorial, but causes such as postural hypotension and cardiac arrhythmias are easily diagnosed with lying and standing blood pressure (LSBP) and ECG respectively. Therefore, these investigations should be offered as a minimum to any elderly patient after a fall. We aim to review and improve the number of patients receiving LSBP and ECG after presenting to the Acute Frailty Unit (AFU) with a fall.

Methods: Falls admissions were reviewed over two four-week periods, before and after intervention. We gathered information on whether patients had LSBP and ECG, and whether these were reviewed and documented by a doctor or specialist nurse. Patients who could not stand for LSBP were not included. Interventions included teaching for all staff on AFU about LSBP and ECGs, posters about investigations after falls, flash cards on how and when to perform LSBPs and a daily tick-box to complete at handover confirming investigations had been reviewed.

Results: During the first four weeks, 31 patients were identified who presented with falls. 31 (100%) had LSBP recorded and 25 (81%) of these had documentation that it had been reviewed by doctor or specialist nurse. 26 (84%) received an ECG and 24 (92%) of these had a documented review. After intervention, 42 patients were identified. 40 (95%) had LSBP recorded, 42 (100%) of these were reviewed. 42 (100%) of patients had an ECG and 36 (100%) of these were reviewed.

Conclusion: Multiple simple interventions including education, visual prompts and procedural changes can improve practice and help to ensure that minimum investigations are achieved for all frail patients presenting with falls. These interventions could be applied to other common presentations on the AFU and may be an appropriate next step.

The importance of ongoing awareness and education for Lying and Standing blood pressure (LSBP) during hospital admissions

D H Bendahan; C Mitchell; S Chauduri; J Wing; B Bird; S Safeer; S Hota

Dept of Elderly Care, St Mary's Hospital

Introduction: Inpatient falls remain a huge problem in hospital, causing significant injuries to patients and are an avoidable cost to the NHS. Therefore, the National Audit of Inpatient Falls (2015-2017) set out key recommendations for management of falls, including the measurement of LSBP within 3 days of hospital admission.

Method: Our project was conducted in a major acute teaching hospital in North West London across three geriatric wards. Our aim was to improve the measurement of LSBP and correct documentation across the wards in line with the NAIF guidelines. We excluded patients unable to mobilise to standing with support, patients too unwell or unable to follow instructions and actively dying patients. Prior to any intervention, we found that only 24% of patients had LSBP performed within three days of admission. We focused our intervention in raising education and awareness across our staff. We arranged weekly reminders during MDT meetings, created posters and organised twice monthly teaching sessions, including one to one, on how to document correctly electronically.

Results: After one month of intervention, 73% of patients had LSBP as part of the ward round plan and almost half of patients had it correctly recorded on our system. After 4 months, we reaudited our project and found that only 32% of patients had LSBP appropriately recorded. This significant decrease can be explained by the changeover of junior doctors and emphasises the need of a more sustainable change.

Conclusion: Our goal is making LSBP part of a routine preadmission checklist when appropriate. We are currently working on making changes to our electronic patient record (EPR) to facilitate documentation to members of staff. This includes a new falls assessment tool and the newly incorporation of Smartzone feature on EPR. This will allow staff to put non-critical jobs in the workflow showing a less intrusive alert until completed.

Assessment of lying and standing blood pressure; an audit leading to an improved clinical effectiveness and quality improvement

K Singh¹; D Sethi²

1. Good Hope Hospital; UHB NHS Foundation Trust; 2. Good Hope Hospital; UHB NHS Foundation Trust

Introduction: Assessment of lying and standing blood pressure is commonly undertaken in geriatric medicine to make a diagnosis of orthostatic or postural hypotension. We carried out the audit to review the clinical practice and assess its adherence to the Royal College of Physicians (RCP) guidance on how to accurately measure the lying and standing blood pressure (Falls and Fragility Fracture Audit Programme).

Method: It was a prospective audit. The first audit cycle was conducted in July 2020 and the second cycle in April 2021

Results: During the first data collection, the practice was reviewed in 69 patients. 35 were female (age range 63-92 years) and 34 male (age range 72-95 years). The lying and standing blood pressures were measured in 27 patients. Only 4 were performed as per the RCP guidance. 34 team members (including doctors, nurses, healthcare assistants, etc.) were randomly surveyed on how to correctly measure lying and standing blood pressure. None were aware of the RCP guidance in this context. We delivered local presentations of the results of the audit and RCP guidance flyers were displayed on the bulletin boards in the department. During the second cycle, the practice was reviewed in 58 patients. 30 were female (aged 67-94 years) and 28 male (aged 68-96 years). The lying and standing blood pressures were measured in 32 patients, of which 20 were recorded according to the RCP guidance. There was an increase of adherence to the guidance from 14.8% to 62.5% after undertaking the aforementioned interventions.

Conclusions: Following dissemination of the RCP guidance on how to accurately measure the lying and standing blood pressures, we witnessed an improvement in the practice suggestive of an improved clinical effectiveness. Robustly evaluating a service followed by education of the staff can lead to enhanced clinical care and quality improvement.

Brushing up on oral health: Improving oral health practices in geriatric inpatients

R Fernandes; C Ward; S Hope

Department of Healthcare for Older People, Royal Devon University Healthcare NHS Foundation Trust

Introduction: Poor oral health is linked to multiple health conditions, for example pneumonia, cardiovascular and cerebrovascular disease, cancer and diabetes. Older people are particularly vulnerable to developing poor oral health due to comorbidities, medications used, and access to dental services, an effect magnified during hospital admissions. The aim of this project is to improve oral health and care received by inpatients on Healthcare for Older People (HfOP) wards.

Methods: A baseline audit of patient-response surveys on oral health access and behaviours, and care during hospital admissions was performed. HfOP inpatients aged >75 with capacity to consent were included. Plan-Do-Study-Act cycles informed interventions, focusing on education of multidisciplinary staff. First round interventions included presenting/discussing initial audit findings at a regional HfOP meeting, and working with Oral Health Practitioners to do ward-based micro-teaching and develop/distribute posters raising awareness. Second round interventions included a more in-depth certified educational session available to all HfOP staff on oral health care and promotion, and posters on how to document oral health aspects on the electronic patient record.

Results: 82% (82/100) patients reported being registered with a dentist, 50% attending a dentist in the last 12 months. Initially, only 17% (17/100) reported ward staff taking measures to ensure/help support their oral health, rising to 46% (46/50) in the second audit.

Conclusions: Though patient surveys may under-represent oral health access/issues by excluding people unable to consent, and may under-represent staff support offered/provided by recall bias, our audit did highlight gaps in staff awareness/practice. Our interventions were designed to benefit all inpatients, via opportunistic ward-based education through the audit process and formal educational sessions. Limitations included logistics of ensuring access to all staff groups. Our goal is to formalise oral health training in core MDT teaching to generate systemic lasting improvement.

Other information: Registered with local trust audit programme.

Promoting Bone Health by ensuring in-patient Ortho-geriatrician Bone Health plan in notes following Neck of Femur Fracture.

C Carruthers¹; I Stapleton²; A Akande³; G Jacobs⁴; A Timms⁵

1. University Hospital Lewisham; 2. University Hospital Lewisham; 3. University Hospital Lewisham; 4. University Hospital Lewisham; 5. University Hospital Lewisham

Introduction and Aims: Osteoporosis affects 3 million people in the UK with more than 500,000 hospital presentations annually due to fragility fractures costing in excess of £4.4 billion to the NHS. Bone protective medications are a cost-effective way of reducing fracture and admission following a fall. The Royal College of Physicians National Hip Fracture Database targets that patients are: "given suitable bone strengthening treatment and followed up to ensure that they are still receiving this protection 120 days after fracture". Lewisham Hospital achieves this in only 22% of suitable patients against a national average of 35%. This project aimed to increase the number of eligible NOF patients on bone protective medication.

Method: Data was collected for patients over the age of 65 admitted with NOF. 22 eligible patients were admitted from 01/01/23 to 28/02/23 and 16 from 01/03/23 to 31/05/23. It was identified whether an appropriate bone health plan, including FRAX and calcium/vitamin D supplementation, was recorded in the medical notes and electronic departure note (EDN). Interventions included an advice sheet for rotating doctors, additional education at induction and a bone health proforma for medical notes and EDNs.

Results: 86% of patients in cohort one had bone health plans in their notes and 59% in their EDN. 64% commenced bisphosphonates with 1 eligible patient (4.5%) not receiving medication. After the interventions 100% patients had a bone health plan in their notes and 80% on their EDN. 46.7% of this cohort commenced on bisphosphonates which equated to 100% of patients appropriate for bone protective medication.

Conclusion(s): Providing guidance and education to rotating doctors to ensure Geriatrician-led bone health planning resulted in all eligible patients commencing bone protective medication and total numbers above the national average.

Improving treatment for urinary tract infections for older adults in the Health and Ageing Unit

H Petho; S Maruthan; O Poole-Wilson

King's College Hospital, Gerontology Department

Introduction: A suspected urinary tract infection (UTI) is the most common reason to prescribe antibiotics in a frail older patient. Therefore, correct recognition and documentation of UTIs, as well prescribing of antibiotics, is important for optimising patient care.

Methods: We reviewed UTI antibiotic prescribing practice across the Health and Ageing Unit (HAU) wards at Kings College Hospital over a two-month period. Weekly data we collected from all patients commenced on antibiotics for a suspected UTI highlighted key areas for improvement. We designed and delivered a multifaceted educational intervention to all healthcare professionals caring for older adults across the HAU. This consisted of teaching sessions, distribution of posters, and board round reminders.

Results: A further two months of data post-intervention showed improvements in several outcomes. Correct prescribing rose from 61% to 93%. The number of prescriptions with stop dates went up from 50% to 68%. The number of patients with urine samples processed in the laboratory rose from 64% to 93%. We also saw an improvement in the management of patients with catheter associated UTIs.

Conclusions: A multidisciplinary team intervention of teaching and visual cues improved the management of UTIs. This shows the power of multifaceted educational interventions for improving the care of older adults.

An itemised discharge letter format improves clarity of information – a quality improvement project.

J Macaulay; H Wear

Integrated Geriatric and Stroke Medicine, Sheffield Teaching Hospitals

Introduction: Commonly, discharge letters employ a chronological "narrative" style (NS). These unstructured letters often do not clearly communicate rationale for diagnoses and management – a problem exacerbated in letters compiled by multiple staff. This project trialled an alternative format.

Methods: An itemised letter (IL) was designed, each diagnosis a separate numbered point; guidance was provided for relevant investigations and management to include for core geriatric conditions. Four "Plan Do Study Act" (PDSA) cycles were completed. Mixedmethods feedback informed subsequent cycles. PDSA cycle 1 piloted the IL. Responding to concerns ILs took longer, cycle 2 measured writing times on a second ward. Cycle 3 monitored spontaneous IL uptake and feedback throughout geriatric medicine, continued in Cycle 4 after 12 months when the department formally adopted ILs.

Results: We collected 17 email responses, 9 semi-structured interviews, 1 tweet, writing times, and uptake statistics. Framework analysis synthesised qualitative and quantitative results. The key finding was that ILs improved information clarity. The standardised structure made it easier to update letters, and teach letter writing to new staff. Some staff reported challenges changing letter format, and noted electronic templates were not optimised for ILs. Mean completion times were 23 minutes for IL (range 6.5–38, N=15) and 20 minutes for NS (15–26, N=5). Sample size imbalance reflected exclusion of letters, predominantly NS, started on other wards. Uptake data evidenced continued IL use despite staff rotations. When cycle 4 commenced a mean of 35% (range 0–91%) of letters were in IL, increasing after seven months to 64% (40.6–90%). Qualitative feedback mirrored on-going usage, with many doctors continuing IL use after rotation. PDSA cycle 5 has begun, discussing using ILs in other specialties.

Conclusions: The IL format was well received by hospital staff, and will be improved by feedback from GPs, relatives, and patients.

Improving pain management in non-verbal patients

L Babar; G Hodges; I Dudley; M Sessani; H Currie; P Nicolson

Dept of Elderly Care, University Hospital of Birmingham NHS Trust

Introduction: Identification of pain generally relies on patient self-reporting of symptoms. Patients with limited communication, advanced dementia or learning disabilities are unable to self-report pain. This results in pain being under-recognised and under-treated. Consequences of this are serious and include physical and psychological distress, longer length of stay and worse outcomes.¹

Methods: Abbey Pain Score (APS) [Figure 1] was introduced on a single Healthcare of the Older Person ward.^{2,3} It was used as the primary means of assessing pain in non-verbal patients (NVP) in place of the usual verbal pain scale (scored 0-10). [Figures 2 and 3] Ward-based teaching for all doctors, nurses and healthcare assistants was conducted before introduction of the APS. Data was collected for 20 consecutive NVP.

Figure 1: Abbey Pain Score (Six items observed & Score)

Vocalisation: 0-3; Facial expression: 0-3;

Change in body language: 0-3; Behavioural change: 0-3; Physiological change: 0-3; Physical changes: 0-3.

Scoring scale: No Pain (0-2); Mild Pain (3-7); Moderate Pain (8-13); Severe (14+).

Results: At baseline we identified that pain as a symptom was missed in 54 % of NVP using the verbal pain score. With introduction of APS this dropped only slightly at 3 months but there was an increased uptake in scoring NVP on APS. With persistent engagement there was a significant decline in number of patients with un-managed pain needs. *Figure 3*: Abbey pain score (All patients with any pain)

Baseline: Pre-intervention: 21 / 39 (54 %); Post-intervention (3 months): 10 / 20 (50 % Post-intervention (12 months): 1 / 19 (5 %)

Conclusion: ABP is an effective means of addressing pain in NVP. It is simple to implement and can lead to significant improvements in patient care.

Eight to Hydrate: Promoting oral hydration of elderly patients in hospital

M Williams; R Anketell; E Georgiakakis; R Mizoguchi

Care of the Elderly Department; Chelsea and Westminster Hospital

Introduction: Dehydration is associated with prolonged hospital admissions and complications. Elderly patients are more susceptible due to physiology, dexterity and cognition. The British Dietetic Association recommends minimum 7 beverages per day whilst The British Nutrition Foundation advises proactive dehydration risk management in hospital. This project aimed to reduce the proportion of elderly patients at risk of dehydration in hospital.

Methods: Staff documented oral hydration over 24 hours for patients on the Care of the Elderly ward. Additional factors obtained retrospectively included demographics, dementia diagnosis, fluid prescriptions and fluid restriction. Criteria adapted from a 'Hydration Care Assessment Tool' defined risk of dehydration by daily intake as low (>1500mls), medium (800-1500mls), high (400-800mls) or very high (<400mls). Approximating each drink as 200mls, we set a daily target of 8 beverages; equating to low risk. Visual hydration trackers were placed at patients' bedsides and junior doctors reminded the multi-disciplinary team each morning. Data collection was repeated after 2 weeks.

Results: First cycle recruited 13 males, 16 females with mean age 78.5. Over 50% were Very High Risk (5/29) or High Risk (12/29) of dehydration whilst the remainder were Medium Risk (10/29), or Low risk (2/29). 4/5 (80%) at Very High Risk received intravenous fluids. Of the High-Risk group, more than half had a diagnosis of dementia and 3/12 (25%) received fluids intravenously. Following intervention, 12 males and 7 females were recruited with mean age 76. Proportion at highest risk was reduced: Very High Risk (5/29 to 0/19; -100%), High Risk (12/29 to 3/19; -61%). Therefore, more were at Medium Risk (10/29 to 13/19; +101%) and Low Risk (2/29 to 3/19; +131%).

Conclusion: Though improved, few patients meet hydration recommendations. However simple visual reminders are an effective starting point. Further interventions could include oral fluid prescriptions and reflect staff and patient feedback.

Feedback fatigue in the Foundation Year 1 Older Person's Unit cohort: A quality improvement project

S Moore

Guy's and St Thomas' Hospital, Department for Ageing & Health

Introduction: On designing and leading the Foundation Year 1 (FY1) Older Person's Unit (OPU) teaching programme at St Thomas' Hospital, London (STH), it was identified that the method of feedback collation was inefficient and yielding poor quality feedback from FY1s. Feedback fatigue was high.

Plan: FY1 trainees were initially asked to complete feedback for their FY1 OPU teaching on paper forms. This yielded a high response rate (100% of forms completed), but feedback quality was poor. The time taken to collate responses from the paper feedback forms was disproportionate to the quality of feedback received.

Intervention 1: An online feedback form was designed and emailed to the FY1 trainees after each teaching session. This collated responses automatically into a password protected Excel spreadsheet.

Study: The online feedback form initially yielded a high response rate, along with constructive feedback. Time taken to collate responses was reduced to zero. However, was noted that the response rate fell gradually to approximately 20%. The two main factors inhibiting responses were a heavy email burden and forgetting to fill in the feedback form.

Intervention 2: A QR code linked to the online feedback form was designed, with the intention of being shown at the end of each teaching session. This was emailed out to all presenters in advance and incorporated into their teaching presentations.

Study: Feedback response rate attained 100% consistently over a 2-month period. The feedback quality received was higher, with constructive comments being fed back in a timely matter.

Conclusion: Timely recognition of feedback fatigue in the FY1 trainee cohort is extremely important. Designing and implementing methods by which to negate and overcome this is important in obtaining feedback such that future teaching sessions can be continually improved and tailored to FY1 learning needs.

On a knife's edge: role of a Clinical Nurse Specialist on balancing complex treatment decisions in acute surgery

F Norridge^{1,2}; K Anand¹; P Grundy³; A Mullins³; H P Patel^{1,4,5}; E Hewertson^{1,2}

1 Department of Medicine for Older People, University Hospital Southampton NHS Foundation Trust, 2 Department of Surgery, University Hospital Southampton NHS Foundation Trust, 3 University Hospital Southampton, 4 Academic Geriatric Medicine, University of Southampton, UK; 5 NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK

Introduction: 1 in 4 older individuals having emergency general surgery live with frailty, are more likely to have a longer hospital stay, readmission rate, morbidity and mortality. This underscores the importance of individualised approaches to care through Shared Decision Making (SDM). We introduced SDM into our surgical liaison service aiming to measure effectiveness and patient outcomes.

Methods: Between October 2021 and September 2022, patients aged >70 years living with frailty admitted to the surgical unit were identified by an Older Persons Clinical Nurse Specialist (CNS). Involvement in treatment decisions was measured by using the patient and clinician SDM-Q9 questionnaire. Pre-admission as well as follow-up quality of life scores at 6 months using the EQ-5D-5L (0-100) as well as Decision Regret were obtained on subsets of patients.

Results: Of a total of 76 patients seen by the CNS, follow-up data were available for 61 patients, clinician and patient SM-Q9 were completed in 54 patients. Clinicians were 10% more likely to strongly or completely agree that they explained choice available, 16% more likely to feel they explained treatment options compared with patients. Patients were less likely to feel completely involved in decision making. However, they were more likely to agree they understood clinical information presented them. Low levels of decision regret were ascertained at follow up where 18 patients agreed and 32 patients strongly agreed that a right decision was made of their care. Of 15 patients who underwent emergency laparotomy, mean EQ-5D scores across all domains from improved from baseline (69 vs 78).

Conclusions: CNS led implementation of SDM is feasible, acceptable. Patients felt involved in their care and had lower levels of decisional regret. Encouraging and investing in an environment where health professionals take time to determine what is important to their patient can be associated with better outcomes.

A bespoke teaching programme for Hospital at Home improves staff confidence in the clinical management of HaH presentations

M Haf; O Hawkes

Rapid Elderly Assessment Care Team (REACT); St John's Hospital; Livingston.

Background: Hospital at Home (HaH) provides high acuity clinical care for patients in the community. HaH teams are varied and multidisciplinary. A successful HaH service depends upon streamlined communication between multidisciplinary team (MDT) members, facilitated by an integrated knowledge base. Whilst training protocols are under development, there are currently no published teaching programmes for HaH. We responded to this unique challenge by devising a teaching programme for the HaH team at St John's Hospital, Livingston.

Methods: We identified learning needs within our team with a preliminary survey. We conducted a literature review to select four competency resources which were mapped to five domains: clinical care; pharmacy; service design and delivery; anticipatory care planning and palliative care; and ethical and legal guidance. We formalised a weekly teaching session and linked teaching topics to the core competencies. We conducted a review at 3 months and 6 months to assess the impact of the programme on staff learning and clinical confidence.

Results: A tailored teaching programme with domains linked to multidisciplinary competencies increases staff confidence in the clinical management of common HaH presentations. Our bespoke programme has successfully delivered teaching that caters for multiple clinical backgrounds.

Conclusions: HaH teams represent an opportunity to learn from MDT colleagues with diverse training backgrounds and offer a unique challenge in tailoring teaching to multiple learning needs. A formal programme with clear, identifiable domains linked to learning objectives provides an essential framework for staff to demonstrate engagement with professional development, allows staff to develop personal teaching skills and cultures a strong collaborative learning environment. Going forward, we aim to evaluate the impact on staff competence and formalise a cyclical HaH curriculum for circulation to the NHS Lothian HaH teams with scope for wider dissemination.

Standardising fracture clinic letters to help improve communication between clinicians

S Virdee; J Humphrey

Milton Keynes University Hospital

Introduction: Letters are an important part of summarising consultations and need to be as informative as possible. Despite this, there is little guidance on dictating and formatting letters to ensure that vital information is shared, to help facilitate a common understanding of a patient's diagnosis. Our aim was to improve communication through standardising our fracture clinic letters. After assessing our current letters, we noted that vital domains are being missed. Therefore, we have implemented change by having designed a 'gold standard' letter template which includes the fundamental domains that a fracture clinic letter should be comprised of. These templates have been put up in our consultation rooms, helping those follow a structured approach when dictating.

Methods: Researched guidelines for writing outpatient letters to help design a 'gold standard' letter template. We compared one weeks' worth of clinic letters from August 2022 with our template to assess if key domains were being included. After implementing change by having laminated copies of our letter templates in clinic rooms we have reaudited in April 2023.

Results: We compared 152 letters against our 'gold standard' template. From analysing our current letters 98% included diagnosis, 26% neurovascular status, 23% safety netting and 48% documented investigation findings. Overall, 9.8% of letters included all the 'ideal' domains depicted in our template pre- intervention. Post- intervention a re-audit on 146 letters showed a 15% rise in investigations, 14% increase in safety netting and 6% improvement in neurovascular status documentation.

Conclusion: Our audit has highlighted that our letters are failing to document key domains. Utilisation of our 'gold standard' letter template has made an improvement in letter documentation, which we hope clinicians will use as guidance when dictating in the future.

References: Royal College of Surgeons of England (2018) Outpatient Clinics. Available at: https://www.rcseng.ac.uk/standards-and-research/standards-and-guidance/good-practice-guides/outpatient-clinics/ (Accessed: 7th June 2023).

Vitamin D single dose loading regimen in neck of femur fracture patients

S Blackburn¹; R McIntyre²; M Williams²; J Asumang²; A Gandee²; S Khinder²; A Sharma³

1. Chelsea and Westminster NHS Foundation Trust; 2. Department of Elderly Medicine; Orthogeriatrics; Chelsea and Westminster Hospital

Introduction: The best practice tariff for Neck of Femur Fractures (NOFF) was designed to improve patient outcomes and includes establishing and implementing a bone protection plan (BPP). Optimal management is often delayed due to insufficient vitamin D levels. Here we reviewed the administration of anti-resorptive therapies (AR) when giving vitamin D loading doses over 7 weeks compared to stat high dosing followed by maintenance therapy.

Method: Pre-intervention, we reviewed vitamin D levels, the treatment given and the bone protection therapy administered in all new NOFF admissions over 3 months. We introduced once only high dose vitamin D therapy in vitamin D deplete individuals over the subsequent 3 months; deplete (Vit D <50) patients received 140,000 units stat colecalciferol and adcal maintenance, patients with insufficient levels (Vit D 50-70) received 60,000 units stat colecalciferol and adcal maintenance and replete individuals received adcal maintenance. Patients were then given in-patient AR therapy or referred to fracture liaison service (FLS) for further BPP assessment.

Results: Pre-intervention included 64 patients, of which 61% (N=39) had low vitamin D levels (deplete and insufficient combined). These patients were loaded with once weekly 40,000 units of vitamin D for 7 weeks and referred to FLS, with 51% (N=24) receiving an appointment within 4 months. Only 14% (N=9) received in-patient AR treatment. Post intervention, 84 patients were reviewed. Vitamin D replacement was required in 69% (N=59) of patients, of which 83% (N=49) received loading regimen as per protocol. This allowed 53% (N=20) of eligible patients to receive in-patient AR therapy with 43% (N=11) of those not receiving therapy being impacted by junior doctor strikes.

Conclusion: Administrating high dose vitamin D to NOFF patients allowed us to increase in-patient AR therapy treatment 3.7 times. This simple intervention results in less outpatient appointments and treatment is given before an opportunity to re-fracture.

The use of electronic 4AT delirium identification tool in inpatient care

Z Jabir¹; D Alićehajić-Bečić²

1. Dept of Elderly Care; Bradford Royal Infirmary; 2. Dept of Elderly Care; Bradford Royal Infirmary

Introduction: Delirium is an acute, fluctuating change in mental status, with inattention, disorganised thinking and altered levels of consciousness. This has serious consequences including the increased risk of dementia, death, length of hospital stay and increased chance of new admission to long term care. Therefore, prompt identification and management are essential. NICE recommends the use of the 4AT score in identification of delirium to improve subsequent management.

Method: A retrospective descriptive study was done identifying all patients admitted to Wigan infirmary who received a 4AT during the 1/4/22-30/9/22. Patients were excluded if aged <64, 4AT score of 1-3 (a score over 4 is positive for delirium) and had multiple admissions. This reduced the sample size to 275 from 8648 patients, of these data was collected from the individual electronic records from the first 110 patients.

Results: The average age of patients within the sample is 81, average 4 AT score of 6 and the average CSF was 5. There was a diagnosis of delirium in 32 (29%), and 'confusion' in 10 (15%), a past medical history of dementia in 49 (45%) and cognitive impairment/ suspected dementia in a further 10 (9%), PD was found in 9 (8%) of patients. A basic blood test screen to identify a cause for delirium was done in 50 (45%) of patients. DNA CPR was present in 59 (54%) of patients, and a DOLS in 43 (39%) during the admission reviewed. Patients were on a significant number of medication (mean of 10 on discharge) and had an average of 3 ward moves. Length of stay was 20.3 days and 51 (46%) were deceased within a year of admission.

Conclusion: Embedding 4AT in electronic records improves recognition of delirium. Further work will be undertaken to improve management of this condition once it is recognised.

De-prescribing within the East Kent Community Frailty Team: assessment of medication review processes and potential cost-savings

A J D Jones; M Bristow-Smith

Frailty Team, Kent Community Health NHS Foundation Trust

Introduction: Older people living with frailty are often prescribed many medications exposing them to potential medicine-related harm. Pharmacists are a new addition to the East Kent Community Frailty Team, which otherwise consists of doctors and advanced clinical practitioners at various levels of training. Pharmacists are ideally placed to develop medication review processes and support fellow clinicians with deprescribing efforts in frailty. This audit set out to determine current levels of medication review and associated cost-savings through deprescribing.

Method: All patients admitted to the frailty team caseloads in the month of May 2023 had their notes manually reviewed for evidence of medication reconciliation, review, and deprescribing. Medicines were assigned a cost price based on the NHSBSA Drug Tariff (May 2023).

Results: 192 patients were seen in total, 170 of whom were acutely unwell. 62% of patients had their medication documented, taking an average of 8.2 medicines. The majority of omissions were patients with a zero length-of-stay, which include advice calls. 29% of patients had at least one medication stopped, representing an average 0.7 medicines stopped per patient seen. The monthly cost of medications stopped was £690. There were greater levels of deprescribing in the caseloads with MDT board rounds.

Conclusion: Rates of deprescribing are low compared to published studies (*Ibrahim et al, BMC Geriatr 21, 258 (2021)*), although still represent a rolling saving of approximately £8,000 per month on cost of medicines alone, assuming a twelve-month average life expectancy. Lack of standardisation of clinical notes and documentation made data collection difficult and has the potential to lead to transfer-of-care errors. Further work needs to be undertaken to optimise the medication review process and address inappropriate polypharmacy and will be the focus of efforts over the coming year.

QIP to improve the board round process on a general geriatric medicine ward

J Crofts; C Baguneid; A Hillarious

Nottingham University Hospitals NHS Trust

Introduction: Effective board rounds improve the patient's experience and reduce the risks associated with a prolonged hospital stay. Ward C54 at Queen's Medical Centre is a 30-bedded ward dedicated to the provision of care for older, frail (CFS \geq 6) patients. Board round on C54 was unstructured and could take over an hour. The project team set out to reduce the duration of board round, improve the quality of information handed over and improve staff satisfaction with board round.

Method: Pre- and post-intervention data on the daily duration of board round were collected by the junior doctors on the ward. PDSA methodology was then used to test the following interventions: 1. Nerve centre updated daily by the junior doctor responsible for that bay 2. Junior doctors to present information using 4Q approach 3. Staff nurse in each bay highlighting any issues for that bay. Pre- and post-intervention surveys were also distributed to staff working on C54.

Results: The duration of board round was reduced from an average of 52 minutes to an average of 38 minutes post-intervention. Over 90% of survey respondents believed the board round to be more efficient and over 80% were either satisfied or very satisfied with board round duration.

Conclusions: The findings have shown it is possible to improve the duration of and staff satisfaction with board round by giving MDT members a framework to help structure handover of written and verbal information. Future considerations include providing teaching sessions to staff on the board round process.

Early intervention by physiotherapy and occupational therapy in older inpatient population

S Kotak

University Hospitals of Leicester NHS Trust; Acute Medicine

Background: Currently, on inpatient medical wards at University Hospitals of Leicester NHS Trust, first contact by physiotherapy and occupational therapy is made when patients become medically optimised for discharge. This is due to a number of reasons such as staffing and resource shortages.

Aim: Analyse the effects of early intervention by therapy on patients on a geriatric medicine inpatient ward. It is hypothesised that earlier intervention can improve patient and service outcomes.

Method: A data sheet was created to capture baseline information including mobility/care needs prior to admission, date of initial contact by therapy, mobility/care on discharge, length of stay and discharge destination. Data was collected over two phases; initial therapy contact at point of patient being medically optimised, and then with the planned intervention of proactive therapy input early in a patient's admission.

Results: The data shows an improvement in all measured patient outcomes in the intervention group. The average time from admission to therapy first contact reduced from 7 days to 2 days. The average length of stay reduced from 14.5 days to 7 days in the intervention group. 70% of patients left the hospital with a reduction in their mobility status in the control group, whereas only 32% of patients left with worse mobility in the intervention group. 41% of patients in the control group left with new or increased care provision compared to 36% in the intervention group. The data also showed that a higher proportion of patients were mobilised by ward staff and less patients were discharged to 24-hour care settings in the intervention group.

Conclusion: Therapy (with the help of the multi-disciplinary team) should proactively identify patients in need of therapy input as soon as safely possible. This research shows that adopting this approach leads to improvements for our patients and our service.

Improvement in the number of discharges prior to 3 p.m. using quality improvement methodology

S England; K Guthrie; A Winfield

Dept of Elderly Care, St James's Hospital

Introduction: Under current nationwide clinical pressures, hospitals are running at full capacity. Late discharges can lead to poor flow throughout the hospital, overcrowding in the emergency department and out of hours transfers, leading to a poor patient experience and impacts on patient safety. Early morning and afternoon discharges create better flow and improve patient satisfaction, by being home in time for tea. The discharge collaborative within Leeds Teaching Hospitals NHS Trust is a multidisciplinary team (MDT) of junior doctors, pharmacists, nurses and discharge co-ordinators. The aim of the team is to improve discharges in the trust prior to 3 p.m. to 70%. Discharging patients earlier in the day is a complex multifactorial issue which requires an MDT approach.

Method: To understand this further a retrospective case note review was conducted to look at avoidable and unavoidable causes of delayed discharges. Each team also received a questionnaire, to discover their perceived barriers to early discharges. This was communicated to teams to empower them to develop their own solutions which were shared within the trust. Run charts of discharges before 3 p.m. are published for each ward in the hospital every two weeks, which is available to wards, but also monitored by the discharge collaborative. Changes to practice include; education of the medical team regarding importance of timely discharge, use of discharge boards, the increase use of discharge lounge, identifying 'golden patients' for early morning discharges, prioritisation of community discharges the previous day and achievement recognition for wards with the most improvement.

Results/Conclusions: Within the trust, several departments have improved their discharges prior to 3 p.m. through the improvements implemented from the discharge collaborative, including speciality and integrated medicine (SIM), oncology, and trauma services. This project resulted in two step improvements within the Trust with 40% of patients being discharged before 3 p.m.

Implementing a comprehensive geriatric assessment (CGA) in older adults presenting to a district general emergency department

D Niranjan¹; A Findlay¹; S Joomye¹; C Carolan¹; S De Bhaldraithe²; M Abu Rabia²

1. Department of Geriatric medicine at North Manchester General Hospital

Introduction: Frailty is the concept of increasing vulnerability to minor stressors in the context of a reduction in physiological reserves (Clegg et Al. The Lancet 2013, Volume 381, pages 752-762). It affects 10% of people presenting to Emergency departments (ED) and around 30% of inpatients in acute medical units (NHS England and NHS Improvements. 2019). Implementing a CGA is known to result in a significant increase in your likelihood of being alive and in your own home at 6 months (Ellis et Al. BMJ 2013).

Aims: To implement an ED in reach frailty service with the goal of performing a CGA at the earliest opportunity.

Methods: We undertook a 3-week pilot with a small team comprising a consultant, frailty ACP, SHO and geriatric registrar. The team were based in ED and worked alongside the existing ED navigator team and in conjunction with various community teams. Data was collected assessing completion of the usual domains within the CGA and discharge data.

Results: 62 patients were seen in total. Mean age was 82.4 years with a mean CFS of 5. Each patient received a CGA. 9/62 (15%) of patients were discharged on the same day. 15/53 (28%) were discharged within 72 hours of admission. Other notable results include: 100% completion of 4AT and 70 medications de-prescribed. Feedback from patient and relatives in addition to ED and AMU doctors was extremely positive.

Conclusion: We demonstrated that performing a CGA in ED resulted in higher numbers of patients being discharged on the same day or within 72 hours of admission. We were able to demonstrate a significant increase in assessment of delirium allowing earlier detection and a much higher rate of deprescribing with significant benefits for both patient and the trust.

Improving access to community palliative care by raising awareness of services, indications for referral and referral pathways

B Knowles; P Springbett; C Hunt; O Ingram

Dept. of Elderly Care, Tunbridge Wells Hospital

Introduction: 40% of 1056 patients discharged from our acute geriatrics ward met Gold Standards Framework (GSF) Prognostic Indicator Guidance for Recognition of Patients approaching End of Life (EOL). 92% were not referred to Community Palliative Care (CPC) services, meaning patients' needs were not fully met and other services over-stretched. This project aimed to achieve a 10% reduction in missed referrals.

Methods: Highlighting the missed referral rate enabled engagement of key stakeholders including ward and palliative care multidisciplinary teams. This 12-month project comprised four PDSA Cycles: 1. Raising awareness of GSF and CPC through ward-based teaching; 2. Development of posters outlining referral criteria and pathways; 3. Hospital-wide survey of doctors' understanding of treating patients approaching EOL, with real-time feedback on GSF and CPC; 4. Formal departmental and year-group teaching sessions. The outcome measure was the percentage of patients meeting GSF criteria who were not referred to CPC, as determined by retrospective analysis of discharge letters. Readmission rate was calculated as a marker of quality of life (QoL) and to assess the impact of missed referrals on the Trust.

Results: Interventions led to a sustained reduction in missed referrals (72% from 92%). Certain diagnoses are more readily referred, metastatic malignancy for example, 9x more frequently than advanced Parkinson's. Patients meeting criteria averaged 3 admissions in the preceding year (compared to 1.7). Of those meeting criteria and still alive, patients not referred averaged 1 re-admission within 6 months compared to 0.3 when referred.

Conclusions: Missed CPC referrals impact patient QoL and increase the burden on acute inpatient services. Significant benefits could be seen if these findings are extended to other inpatient wards. There is also a need for education about the palliative stage of non-malignant diseases such as Dementia and Parkinson's. Future steps include technology-based active screening of inpatients to facilitate referrals.

Identifying Older Frail Patients Suitable for Same Day Emergency Care (SDEC); The Applicability of Patient Selection Scoring System

A J Burgess; K Collins; D J Burberry; K H James; E A Davies

Older Person's Assessment Service (OPAS), Morriston Hospital, Swansea Bay University Health Board (SBUHB), Wales

Aim: Several patient selection scores have been developed to identify patients suitable for SDEC from triage in Emergency Departments (ED) and the acute medical intake. Scores are designed to improve system efficiency, overcrowding and patient experience. Studies have been conducted that compare these; none in frail older adults. This study compared the Glasgow Admission Prediction Score (GAPS), Sydney Triage to Admission Risk Tool (START) and the Ambulatory Score (Amb).

Methods: The Older Person's Assessment service is ED based, accepting patients with frailty syndromes aged >70 years with same-day discharge for >75% of patients. The OPAS databank was retrospectively analysed from June 2020 to December 2021. Interactions with age, Charlson Co-morbidity index (CCI) and Clinical Frailty Score (CFS) were evaluated alongside each ambulatory score. ED documentation was used to gain triage data.

Results: 748 attendances, 274(36.6%) Male with mean age 82.8(\pm 8.5) years, CFS 5.2(\pm 1.4) and CCI 6.7(\pm 2.6) with 584(78.1%) discharged same day. Mean Amb score 4.2(\pm 1.7), GAPS 21.4(\pm 5.8), START 23.5(\pm 4.7) all within admission range with 29.1% Mortality within 12 months. There was a significant difference between those admitted and discharged with CFS (p<0.001), mortality (p<0.001), Amb score and START score but not GAPS (p<0.001 vs p=0.03 vs p=0.17).

Conclusion: Frailty is an important determinant in identifying whether ambulatory care is appropriate. No score could be reliably used as a screen for suitable patients for SDEC services although the Amb score was the most accurate when assessing each individual variable. We are developing our own SDEC score for older, frailer adults which is currently being validated in the OPAS and SDEC settings.

Identifying and Managing Visual Impairment in Older Patients with Falls on a Care of the Elderly (COTE) ward

C Abbott¹; E Bristow²; L Twiddy²; A Warner²; R Setchell²; A Cavanagh²

1. Dept of Elderly Care; Gloucestershire NHS Foundation Trust. 2. Dept of Ophthalmology; Gloucestershire NHS Foundation Trust. 3. Dept of Ophthalmology; Gloucestershire NHS Foundation Trust. 4. Royal National Institute of Blind People. 6. Dept of Elderly Care; Gloucestershire NHS Foundation Trust.

Introduction: In 2019, the Royal College of Physicians (RCP) advised that all patients should have their vision screened if identified as a falls risk. Our aim was to implement a bedside visual screening test and establish an onward inpatient referral to Hospital Eye Services (HES).

Method: This is a collaborative Quality Improvement project involving Geriatric Medicine, HES and the Royal National Institute of Blind People (RNIB). A pilot study cross referenced falls admissions with previous known ophthalmic data to estimate the proportion of known vision loss in this group. In the second phase of the project, a bedside visual screening test has been introduced for all patients admitted to COTE with a fall. Patients failing the screening are reviewed by an RNIB Eye Clinic Liaison Officer (ECLO) and if necessary, a prompt inpatient HES review is arranged.

Results: Of 182 patients admitted following a fall, in the pilot study, 112 (61%) were known to ophthalmology previously. Of patients known to ophthalmology, 28 (25%) had vision of 6/18 or worse and would be considered to struggle with daily living tasks. 12 (10%) had a certificate of visual impairment (CVI) and 3 (3%) were eligible for CVI but had not been previously registered. One year following implementation of bedside vision testing, 287 patients had been reviewed after failing bedside screening. 97 of these had an onward referral sent or an intervention performed. The first 'COTE ECLO' post has been funded as a result of this work.

Conclusion: Assessing vision is a critical element of the assessment of patients with falls. Through collaboration with the RNIB and Ophthalmology a successful pathway has been developed to address visual impairment in this vulnerable group of patients.

A Hospital at Home service working with care homes to triage acutely unwell patients

F Adenwalla; A Davies; L Thomas; A Grimstead; R Jenkins; S Kelly; L Hopkins; A Britton; N O'Shea

Neath Port Talbot Acute Clinical Team, Swansea Bay University Health Board

Introduction: The Acute clinical team (ACT) is a Hospital at Home (H@H) service and supports care homes to look after residents who are acutely unwell but residents were being inappropriately admitted instead of being referred to ACT. This was due to the lack of awareness among staff about ACT and GPs advising homes to call 999 due to their inability to see patients.

Method: ACT would phone all the care homes three times a week to ascertain if the care home had residents who were acutely unwell or not responding to treatment initiated by the GP. Residents who were identified would be triaged and either advice would be given or patient would be seen within 24 hours.

Results: The intervention took place from 20/03/23 to 30/04/23. Total number of referrals- 33. Average age- 87 years. 5/33 (15%) were given advice and 28/33 (85%) had face to face assessment. 29/33 remained at home. 4/33 were admitted 2 died. The 28/33 who received face to face assessments had received 106 GP consultations (most were virtual) within one month of referral equating to 3.7 consultations per patient. 8/28 patients had been discharged from hospital within 28 days of referral to ACT. ACT administered parenteral fluids 11/28 patients, Intravenous antibiotics 5/28, medication review with changes 14/28.

Conclusion:

- The patients assessed by ACT were unwell and unstable. 4/33(12%) needed admission. Most had recent GP input and 16/28 (60%) needed hospital-based treatments like IV antibiotics and parenteral fluids.
- Patients who are moderately or severely frail need early face-to-face assessments. A proportion of the 106 GP assessments could have been prevented if they had face to face assessments and/or early referral to ACT.
- This intervention has the potential of preventing unnecessary 999 calls, hospital admissions and improving working relationships between

Improving the utilisation rate of 'hot slots' in an outpatient frailty service

E Shekarchi-Khanghahi; F Morelli; N Smith

Care of the Elderly Department, North Middlesex University Hospital

Background: North Middlesex University Hospital runs an outpatient frailty service where patients are referred for a Comprehensive Geriatric Assessment. There is a daily 'hot slot' for patients who otherwise would have required hospital admission if not seen within seven days. We aimed to improve utilisation of hot slots from 50% to 100%. Empty hot slots result in the under-utilisation of pre-allocated resources and increase the workload of healthcare professionals in other departments.

Methods: Author ESK audited hot slot usage in November and December 2022, marking slots as 'filled' or 'unfilled'. In January 2023 we established a clear referral process for the hot slots and implemented an education program targeted at referrers to increase awareness of the availability of hot slots and referral criteria. Authors ESK, NS and FM reaudited the hot slot usage from February to April 2023. Author FM analysed the data and conducted statistical testing of the results. Authors NS and FM produced visual representation of the data collected.

Results: After exclusion of periods where the hot slots were closed (n=13) including strike days, bank holidays and times with below minimum staffing; 82 hot slots were audited, pre-intervention (n=39) and post-intervention (n=43). The utilisation of hot slots increased from 51% pre-intervention to 86% post-intervention. Fisher's exact test shows this is statistically significant (p<0.0007).

Conclusions: The education program increased utilisation of hot slots but fell short of the targeted 100% utilisation rate. We made the hot slot available exclusively to the Geriatric Emergency Medicine (GEM) team for one week in August 2023 to assess whether this increases GEM utilisation of the hot slot. We intend to further analyse the data to review the appropriateness of referrals and try to improve this. A larger project could assess impact of hot slot usage on patient outcomes.

Establishing an oncogeriatric multi-disciplinary team (MDT) and accompanying clinic at a DGH in Somerset

H Parker¹; S Birchenough¹; E Cattell²; U Barthakur²; S Woodhill²; M Foster²

1. Care of the Older Person Department, Musgrove Park Hospital, Somerset NHS Foundation Trust; 2. Oncology Department, Musgrove Park Hospital, Somerset NHS Foundation Trust

Introduction: Recent studies show the use of comprehensive geriatric assessment (CGA) in older patients with cancer can result in better quality of life, improved treatment tolerance and reduced hospital admissions, leading to international consensus that CGA should be routinely included in care. We have piloted an onco-geriatric MDT, consisting of oncologists, geriatricians and therapy input, alongside a rapid-access geriatrician-led onco-geriatric clinic

Method: Referrals were invited from oncologists for older patients (>70) with a new diagnosis of cancer, with expected prognosis of more than 1 year, about whom they had concerns regarding their ability to undergo radical treatment due to co-morbidities, falls, cognitive impairment or social isolation. A CGA was completed prior to starting radical treatment in most cases. Performance status, Rockwood frailty score (RFS) and G8 score were calculated for all patients.

Results: During the 24-week trial period, an MDT and clinic has run every week. A total of 32 patients have been discussed at MDT, with 22 seen in clinic, from cancer sites including colorectal, breast, urological and ovarian. Patient seen in clinic had an average RFS of 4.5 and G8 score of 13. All patients have seen a geriatrician, with most also seeing our physiotherapist. Interventions included medication review and rationalisation, anaemia review and treatment, referral to specialist memory and continence services, blood pressure optimisation and completion of a treatment escalation plan.

Conclusions: Feedback from patients attending the clinic has been resoundingly positive, with 100% of patients rating their service experience as "good" or "very good" and praising the time to talk about their health as a whole. Follow up of clinic patients is in progress, identifying emergency admissions alongside treatment toxicities and complications within this group, as well as whether G8 is an appropriate screening tool for clinic review, to secure the long-term future of the service.

Scoping an Oncogeriatric Pathway in Acute Care

H Cooper¹; S Ganjam²; A Badawi³; A McIntosh⁴; E Marshall⁵

1. Department of Medicine for Older People; Mersey and West Lancashire Teaching hospitals NHS Trust; 2. Department of Medicine for Older People; Mersey and West Lancashire Teaching hospitals NHS Trust; 3. Department of Respiratory Medicine; Mersey and West Lancashire Teaching hospitals NHS Trust; 4. Department of Respiratory Medicine; Mersey and West Lancashire Teaching hospitals NHS Trust; 5. The Clatterbridge Cancer Centre NHS Foundation Trust

Introduction: Oncogeriatrics is relatively new concept aligning geriatric services with oncology, whereby older cancer patients have a comprehensive geriatrics assessment (CGA) to support oncology decision-making and improve outcomes and quality of care. Despite the rationale, evidence for effective oncogeriatric services is largely based upon specialist centres. We initiated a feasibility study February 2021, to establish criteria and pathway implications for an Acute Trust without oncology beds.

Method: Following an iterative process, a pathway was established between the Lung MDT and the established frailty unit. Patients with lung cancer who met criteria would be seen within a week and underwent a CGA by a frailty practitioner, consultant geriatrician, physiotherapist, occupational therapist. Referrals were made as appropriate to allied services e.g. dietician, pharmacy, continence teams etc.

Results: We refined the referral criteria and process, identifying the presence of a geriatrician at Lung MDT as key to ensuring incorporation of CFS (Rockwood) for effective MDT case discussion. Defining the cohort and pathway was challenging given the complex interplay of cancer symptom burden and comorbidity set against COVID, workforce pressures and cancer targets. Final referral criteria were: age over 70, Rockwood 4 or more, a formal lung cancer diagnosis, and a plan to undergo active treatment. Referral numbers were low during the feasibility phase. Only 38 patients were referred and we saw 23 patients over a 2-year period. Referral rates increased in the final 3 months of the pilot although only 9 of 22 who met criteria were referred.

Conclusion: Establishment of an effective oncogeriatrics service is challenging. The feasibility study has established a baseline for potential activity and job planning. Analysis of individual patient benefit is ongoing. Longer term we aim to extend the service to support patients after treatment has started, provide prehab, and include patients with all types of cancer.

Developing a Frailty SDEC Team at Salford Care Organisation

R Dewar; E Swinnerton; C Ingham; C Elliott, J McFarlane; T Pattison; J Fox; L Butler

1. Salford Care Organisation, Northern Care Alliance

Introduction: Frail older adults have longer waiting times in emergency departments (ED's), are more likely to be admitted, and have longer lengths of stay^{1,2}. The NHS Long Term Plan requires hospitals to provide an Acute Frailty Service (AFS) for at least 70 hours/week and complete a Clinical Frailty Score (CFS) within 30 minutes of arrival³. The plan advocates Same Day Emergency Care (SDEC) to reduce admission related harms and discharge patients in a timely way⁴. The introduction of an acute frailty CQUIN that requires prompt identification of frailty and initiation of CGA is another driver for the development of AFS⁵.

Methods: We created an acute frailty SDEC team including a frailty nurse, clinical-fellow, advanced clinical practitioners and GPs. The team was present in ED on weekdays between 9am-5pm with 1-2 team members on each shift. A Consultant Geriatrician provided advice and support. We developed loose frailty SDEC criteria: - Age >=65years with CFS>=5 and - NEWS<3 - Triage note suggests patient may not need hospital admission.

Results: Over a 4-month period, 262 patients were seen by the SDEC team. Age and CFS score for this population are shown in Graphs 1 and 2.

Graph 1: Age of Patients Reviewed by SDEC Team

Graph 2: CFS Score of Patients Reviewed by SDEC Team -74% were seen within 2 hours as demonstrated in Graph 3

Graph 3: Minutes patients waited to be seen (WTBS) from arrival at ED triage - 131(50%) of patients were discharged directly from ED. A further 25 patients were later discharged from EAU.

Conclusions: A frailty SDEC service results in early identification of frailty, timely assessment in ED and a high likelihood of discharge (60%) directly from ED or EAU rather than being admitted to an inpatient ward. Implementation of a 7-day service would only serve to increase these figures.

Community geriatrician led memory service improving access to dementia diagnosis with focus on admission avoidance.

M McCarthy; C O'Donnell

Countess of Chester Hospital

Introduction: The Community Geriatrician team based at the Countess of Chester Hospital is a multidisciplinary team offering comprehensive assessments at home to older patients with frailty. The team review frail patients identified as being at risk of hospital admission. Cognitive impairment and dementia are increasingly common concerns in our patient group and significant risk factors for admission. Frail patients often struggle to access traditional memory clinics for a variety of reasons and can therefore remain undiagnosed. They often require a more holistic approach in their home environment. We therefore identified a need to offer a dedicated frailty memory pathway within our community geriatrician team enabling better access to dementia assessment and diagnosis in complex frail patients.

Method: A frailty memory assessment pathway was proposed and commenced in 2022. Following identification of a cognitive concern during the initial comprehensive geriatric assessment a further home visit is arranged to assess memory in more depth. Patients are then discussed, and a diagnosis reached via a monthly Frailty memory MDT attended by a consultant psychiatrist, consultant geriatrician, and specialist occupational therapist. Following delivery of a diagnosis our AGE UK well-being coordinator within the team provides post diagnostic support and sign posting to patient and family. A retrospective audit was undertaken reviewing the 44 patients diagnosed since pathway commenced. The number of hospital admissions and number of inpatient bed days was compared in the 3 months pre and post initial assessment.

Results: In the 3 months following assessment, 82% of patients had a reduction or unchanged number of admissions, there was a total reduction of 71 inpatient bed days.

Conclusion: We believe our pathway offers a unique multidisciplinary approach to dementia diagnosis in the frail population, improving frail patients access to dementia assessment with a reduction in hospital admissions.

Evaluating the rate, timeliness and accuracy of centralised Clinical Frailty Score documentation at a major NHS A&E department

E Ghaffari¹; A Collier²; T J Robb³; C Brenchley⁴; J Carrick⁵; M Osei-Banahene⁶; J Martin⁷; S Singh¹; S McKelvie⁷

1. Acute General Medicine; John Radcliffe Hospital; 2. Emergency Department; John Radcliffe Hospital; 3. Department of Neurology, John Radcliffe Hospital; 4. Surgical Emergency Unit, John Radcliffe Hospital; 5. Directorate of Gynaecology, John Radcliffe Hospital; 6. Emergency Assessment Unit, John Radcliffe Hospital; 7. Department of Geratology, John Radcliffe Hospital

Introduction: Between 5-10% of patient's attending the emergency department (E.D) are elderly patients living with frailty. NHS England now recommends that all patents >65 presenting to acute care should have a Clinical Frailty Score documented within 30 minutes of arrival. We audited the CFS documentation from the electronic patient record (EPR) for patients >65 presenting to our local E.D.

Methods: Our baseline audit looked at patients >65 presenting to our E.D from 01/09/23-07/09/2023 (n=430). We extracted data for rate and timeliness of documentation through our local I.T team. To calculate accuracy, we compared the documented scores from EPR, with that documented by our Frailty Intervention Team (FIT). For this date point, we excluded patients who were not assessed by the FIT team. We re-audited the week starting January 1st 2023 (n=385) and 30th January 2023 (n=415) after delivering a tailored teaching session for band 6 and 7 nurses, and introduction of an educational poster.

Results: We found exceptional baseline compliance and timeliness of CFS scoring with a 97% documentation rate with a median time of 31 mins from presentation. When assessing accuracy however, found that 64% of patients fell into a lower category of frailty when compared to scores allocated by the FIT team, leading to under recognition of frailty. Following the teaching sessions and poster education, we achieved a 3% and 16% improvement respectively.

Conclusion: Our audit identified an overall excellent baseline compliance and timeliness in EPR documentation of CFS scores despite the department's heavy workload. Overall, we noticed a significant under recognition of frailty as per the centralised CFS score documentation. Following introduction of an educational poster, we found a significant 16% improvement in accuracy of frailty scoring however there is still significant room for improvement with 48% under recognition of frailty.

Reducing admission to hospital of frail people, with acute illness, from care homes: A quality improvement project

J Seeley; S Cole; S Sage

East Kent Frailty Home Treatment Service; Kent Community Health NHS Foundation Trust

Background: The East Kent Frailty Home Treatment Service (Frailty HTS) provides personcentred, hospital-level care for people living with frailty. The Frailty HTS can diagnose and treat acute medical illness at home or in care homes. The team philosophy is "we identify what you want and strive to make it happen". This project was underpinned by advance care planning for people living in care homes, which the frailty team supports through proactive work with the primary care network care homes teams. Frailty is associated with increased healthcare costs and poor outcomes associated with hospitalisation. The acute hospitals were under extreme pressure. The Frailty HTS serves 360 care homes.

Methods: Carers and the ambulance service discuss all acutely unwell care home residents with the Frailty HTS prior to conveyance except in the case of a long bone fracture or acute cardiac/cardiovascular event (unless care plan is not for escalation). There were communications initiatives to care homes and Ambulance Trust explaining referral process and eligibility. A dedicated frailty HTS clinician was available to respond to calls.

Results: The pilot has seen an increase in referrals of people living in care homes from SECAMB to Frailty HTS (monthly average up from 49 up to 64) an increase in direct referral from care homes (monthly average up from 15 to 21.5). We also saw a reduction in attendance of care home residents at ED (monthly average down from 276 to 209) and reduced admissions to hospital from care homes (monthly average down from 203 to 191)

Conclusion: his project raised awareness of an alternative to acute hospital care for people living in care homes. Referrals to the Frailty HTS were increased and attendance at ED and admissions to hospital reduced. Due to system pressures it continued to run and became business as usual.

Development of a novel 2-week wait oncogeriatric service: A GI Frailty Clinic

E Dinsdale¹; K Whitehead², D Gould³, C Miller⁴, S Nair⁵

1. Elderly Medicine Department; Leeds Teaching Hospitals NHS Trust; 2. General Medicine Dept, Leeds Teaching Hospitals NHS Trust; 3. Elderly Medicine Department; Leeds Teaching Hospitals NHS Trust; 4. Cancer Services Lead; Leeds Teaching Hospitals NHS Trust; 5. Elderly Medicine Department; Leeds Teaching Hospitals NHS Trust

Introduction: Over the last 12 months, a novel oncogeriatric clinic was successfully established to assess frail 2-week wait (2WW) patients referred with gastrointestinal (GI) symptoms. The clinic was initially funded by the West Yorkshire Cancer Alliance, enabling a weekly clinic, run by a geriatrician, clinical specialist nurse and an advance clinical practitioner.

Methods: A total of 350 patients were assessed (those with a clinical frailty score of ≥ 6 were eligible for referral); due to demand exceeding capacity, remaining patients were referred on through the default surgical or GI pathways. Patients were triaged by endoscopy nurses from 'straight to test' referrals after training provided to assess frailty scores using routinely available data.

Results: Only a third of patients referred remained on the 2WW pathway compared to surgical patients; this was due to patients being too frail or an alternative diagnosis being made through comprehensive geriatric assessment, and a shared decision-making process. The patient level information and costing system (PLICS) demonstrated that the oncogeriatric clinic was cost effective, costing approximately £190 less per patient than the default pathways of care. Feedback from patients demonstrated extremely high satisfaction rates with the service provided. One of the most significant interventions was medicines management, which has led to a pharmacist supporting the clinic through further innovation funding.

Conclusion: Lessons learned included developing a better understanding of cancer diagnosis and frailty, providing a 'one stop centre' for cancer care, and managing complex comorbid conditions in frail older people suspected of having cancer. As a result of this QI service development project, a Frailty Cancer Strategy for the Trust is currently being developed and will be presented to the executive team with the aim of developing a comprehensive oncogeriatric service for frail patients in Leeds, providing the right care, the right treatment, first time.

Enhancing the recognition of sensory impairment on the Care of the Elderly wards

A Hackney; G Ball; J Brown; C Wharton

Older Adult Medicine Directorate, New Cross Hospital, The Royal Wolverhampton NHS Trust

Introduction: Although hearing loss is the foremost cause of years lived with disability in people over 70, it remains commonly under-recognised. Health of the UK signing deaf community is reportedly worse than the general population, often due to resulting undertreatment of associated co-morbidities including visual impairment, falls and dementia.

Local Problem: There is an estimated 21% prevalence of ≥25dBHL hearing loss within the Wolverhampton adult population, this increasing with age. A large number of inpatients admitted to the Older Adult Medicine (OAM) wards at New Cross Hospital have clinically evident sensory impairment, impacting upon interactions with healthcare staff. This project identified the current methods through which hearing and/or visual impairment is formally screened for and documented within the OAM Department of a large district general hospital, targeting interventions towards mitigating barriers faced in sensory assessment.

Methods and Intervention: Baseline and post-intervention documentation of sensory impairment was collected from admission and bedside notes of 23 inpatients during each cycle. A multidisciplinary focus group of medical, nursing and practice education facilitators identified a marked underutilisation of bedside alert signs (4%), prompting creation of a redesigned bedside poster with a greater focus on sensory aid functionality.

Results: 60% of posters were utilised 10 days after introduction, with an increase from 4% to 36% in recording of known sensory impairment being observed. 100% and 25% of inpatients with correctly functioning hearing aids and spectacles were documented respectively. 100% of patients admitted through frailty intervention streams were assessed for sensory loss, compared to 0% admitted via the unselected medical take.

Conclusions: Improved bedside alert posters provided initial evidence as a sustainable improvement in supporting inpatients with sensory impairment. Incorporating positive lessons from frailty team practice will assist in developing future education sessions, highlighting intended sign usage and transferrable sensory assessment methods for involved healthcare teams.

Improving the documentation of Treatment Escalation Plans in patients >65yo admitted under the care of orthopaedics

M Quarm¹; J Turnbull¹; A G Stirzaker²

1. Medicine for the Elderly, Royal Infirmary of Edinburgh; 2. General Medicine, St John's Hospital West Lothian

Introduction: Treatment Escalation Plans (TEPs) are helpful tools that reduce unnecessary treatment burden, improve patient experience and follow the principles of realistic medicine. This is relevant in orthopaedics where a high percentage of the patients are frail, co-morbid, and would benefit from clear and realistic care plans. We aim to improve TEP completion to >50% of orthopaedic patients, over the age of 65yrs old, in three trauma wards at the Royal Infirmary of Edinburgh by August 2023.

Methods: We sampled three patient notes on each ward twice weekly from May – August 2023, noting whether TEPs were present, if it was consultant endorsed or provisional, and what key sections were completed (resuscitation, treatment goals and communication). To be included, the patient had to ≥65 and under orthopaedics. Process mapping demonstrated 2 key targets- admission clerk-in and registrar review. PDSA 1 involved creating a prompt for documenting TEPs on FY1 clerk-in which was added to the admission proforma folder and displayed as posters. PDSA 2 was a teaching session designed for orthopaedic registrars and other team members about TEP conversations.

Results: Pre-intervention data, demonstrated a median of 28% of orthopaedic patients ≥65yo have a TEP. Of the completed TEPs: 88% solely consisted of a resuscitation decision; 33% had treatment goals, 33% communication; and 0% of TEPs were endorsed. After PDSA 2; median TEP completion increased to 33%. Of the completed TEPs; none had only a resus decision, 100% have treatment goals; 100% communication, and 67% are endorsed.

Conclusions: Our studies have demonstrated that education and proforma changes have increased TEP documentation rate, although not to our projected target. However importantly, the percentage of TEPs that contain goals, document communication and consultant endorsement has improved significantly. This project is ongoing with planned further PDSA cycles.

The Feasibility to Staff of Patient Specific Music Choice on Elderly Care Wards – A Post Intervention Survey

R Allfree¹; A-M Greenaway²; A Chatterjee¹; A McColl¹

1. Care of the Elderly Department, Royal Berkshire Hospital; 2. University of Reading

Introduction: Receptive music listening has been shown to reduce depression, anxiety, and agitation in older adults. However, unfiltered and disruptive noise can increase confusion and agitation. Yet, during hospitalization older patients often have little control over when and for how long they are exposed to music, the genre which is heard, or they may have no access to music. Furthermore, older persons have reduced ability to use modern technology to counter this and their sensory and functional impairments may further isolate them. This study aimed to assess the feasibility of offering two one-hour daily sessions of patient specific music (PSM) choices on an elderly-care ward.

Methods: On a district general hospital elderly-care ward a 5-day trial of offering two one-hour daily sessions of PSM, using enhanced wireless speakers optimally positioned with daily amended music playlists based on specific patient choice. Ambient noise was minimised with regular decibel monitoring. A post-intervention staff survey was completed to assess the feasibility of continuing, the perceived impact on staff and patients and potential barriers to continuation. Thematic analyses were completed on the survey.

Results: In the post-intervention feasibility survey (n=14) the majority of staff (86%) agreed that it was possible, implementable and the procedure easy to use. In the impact assessment (n=19) 80% of staff stated it had a positive effect on patients and 89% stated it had a positive effect on staff. Thematic analyses on impact identified benefits to: work, engagement, enjoyment, physical activity and well-being. Barriers that were identified included patient choice, repetition of music, patients unable to engage with the process and staff availability for consistent delivery.

Conclusion: Playing patient specific music choice was feasible and acceptable to staff with a perceived positive influence on both staff and patients. Further studies are now required to assess the impact on patient outcomes.

Evaluation of awareness and implementation of DNACPR decisions in trauma and orthopaedic Surgery

B Taylor; H Naqvi

Sandwell and West Birmingham NHS Trust; Sandwell and West Birmingham NHS Trust

Introduction: In-hospital CPR has survival rates of 15-20% [BMA Decisions on CPR, 3rd edition, 2016], further reduced with frailty and multimorbidity. Successful CPR is associated with significant morbidity and prolonged suffering. Do not attempt resuscitation (DNACPR) is an advanced medical decision, aimed at preventing harm where CPR is considered futile. [GMC Guidance.p128-145]

Aims: To reduce the burden of inappropriate CPR within surgical specialties using the following standards: 1. DNACPR status reviewed on admission, and all decisions implemented within 24hours of clerking. 2. DNACPR decisions implemented prior to surgery. 3. To assess clinician perceptions regarding DNACPR decisions.

Methods: This second cycle follows the intervention of a poster and departmental education in January 2020. A survey was sent to clinicians of all grades in Trauma and Orthopaedics (T&O) and General Surgery in January 2023. Data on implementation of DNACPR decisions was retrospectively collected over January and February 2023 for all T&O emergency and elective admissions >60-years-old.

Results: 26 survey responses were obtained with all participants having had DNACPR discussions. 80.7% self-reported as confident/very confident in having these discussions. Out of 264 patients included, 80 discussions took place, of which 64 (80%) were implemented. 69% were implemented within 24hours of clerking, a 23% increase from cycle 1. 90% of community DNACPRs (9/10) were applied within 24hours, however the one remaining patient received inappropriate CPR. Of the 47 patients with DNACPR who had surgery, 87% were implemented prior to surgery, a 12% increase from cycle 1.

Conclusion: Improvement was demonstrated on both standards between cycles. This QI focused on implementation of DNACPR following discussions, however, did not consider patients in whom DNACPR may have been appropriate but not discussed. Further areas to explore include appropriateness of CPR/ DNACPR decisions in advance of surgical interventions and the understanding behind limitations of treatment offered separate to CPR.

Outcomes of exercise practitioner-led physical activity in hospitalised older people: Saints Foundation – UHS Partnership

P Draper¹; J Batchelor^{1,2}; P Hedges ²; M Gealer²; R McCafferty¹; H Leli¹; H P Patel^{1,3,4}

1. Department of Medicine for Older People, University Hospital Southampton (UHS) NHS Foundation Trust; 2. Saints Foundation, St Marys Football Ground, Southampton, UK; 3. Academic Geriatric Medicine, Faculty of Medicine, University of Southampton, UK; 4. NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK

Background: University Hospital Southampton (UHS) partnered with Saints Foundation (SF), to test the feasibility and acceptability of a non-registered Exercise Practitioner (EP) to work alongside the therapy team to promote physical activity (PA) of hospitalised older people. Our aim was to collect trust level data to review the impact the EP had on outcomes such as length of stay (LOS) and discharge destination (DD) and identify and address any additional challenges that arose.

Methods: The EP delivered twice weekly gym-based group interventions as well as regular 1:1 rehabilitation and education sessions to hospitalised older patients. Interventions were ward based or within the acute therapy gym.

Results: From June to August 2023, the EP reviewed 82 patients, mean age of 88 years. 15 (18%) patients underwent 1:1 rehabilitation whereas 67 (82%) patients underwent gymbased rehabilitation sessions. Median LOS for patients reviewed by the EP was 15 days compared with average departmental LOS of 8 days. 53 (65%) patients were able to either maintain or improve their predicted to actual discharge destination, compared with 10 (12%) patients whose physical capability declined. Of those remaining, 1 patient died and 18 others had not yet been discharged. High patient satisfaction levels continued to be reported.

Conclusion: Intervention by a non-registered EP appears to have an impact on patients' ability to maintain or improve level of function and physical dependency during acute hospital stay. Factors such as outbreaks of infectious illness and staffing challenges prevented more frequent EP led intervention. Next steps include introducing daily class-based interventions. Participants will be encouraged to attend at least three classes. Anticipated benefits include improvement in patients' functional levels and reductions in physical dependency on discharge. Additional data will be collected on fear of falling and confidence in function as well as uptake of post discharge activity and readmission.

Antipsychotic medication prescription in elderly patients in Royal Gwent Hospital, Wales

K Dineshkumar; D Duric; E B Peter

C4 East, Geriatric Medicine Royal Gwent Hospital

Introduction: he use of anti-psychotics is higher in older people than their younger adult counterparts due to high prevalence of dementia/delirium. Anti-psychotic drugs cause side effects which include cardio vascular, metabolic, extra pyramidal and risk of falls. So, we set out to do a QIP on antipsychotic medication prescription on our Geriatric wards comparing it with NICE guidelines.

Method: We had 2 approaches to use. Firstly, we prepared a check list for anti-psychotic medication monitoring according to NICE guidelines 2021 and we applied this retrospectively to our patients who had been initiated on anti-psychotics within the last year, the aim being to compare our practice with best practice. Secondly, we prepared a questionnaire for doctors to assess their knowledge about anti-psychotic NICE guidelines and distributed this to our junior doctors in RGH.

Results: • Main Indication for prescription was Behavioural and psychological symptoms of dementia (BPSD) - 94% of the time

- Risperidone was the most commonly prescribed (64%) antipsychotic.
- 83% of them had non pharmacological methods tried before considering antipsychotic medications.
- 82% had their baseline ECGs checked and falls risk assessments done
- 35% had their lipids checked and 47% had their HbA1c checked
- 52% of the doctors were aware about NICE guidelines on prescribing anti-psychotic medications
- 70% of the doctors had knowledge about the side effects.

Conclusions: Our study showed the most commonly used antipsychotic drug was risperidone. We were good at documenting the indication, trying non pharmacological methods and discussing side effects with patients/family. Hba1c, lipids and prolactin were not often checked, showing room to develop best practice. We are in the process of finalising stickers as a checklist when starting antipsychotics. To improve knowledge, we have presented the findings and aim to put up posters on wards and to do regular teachings.

Polypharmacy reviews in outpatient clinic - effectiveness of starting structured medication review in OPD setting

Đ Alićehajić-Bečić

Ageing and Complex Medicine Department, Wrightington, Wigan and Leigh NHS Teaching Trust

Introduction: Patients attending Frailty Bone Health clinics often have inappropriate polypharmacy identified during their outpatient consultation. This cohort is known to have significant level of frailty and associated risk of adverse events due to medication. The aim of this project was to start the structured medication review in OPD clinic and evaluate the effectiveness of this intervention six months after initial review.

Method: 30 patients were selected who were seen in the period 01.09.22 - 28.02.23 who were on five or more medicines and were still alive six months later. Data on frailty level, age, sex, number of medicines when seen in clinic and number of medicines 6 months later was gathered. Completion of recommended action was reviewed and subsequent total number of treatments patient was taking before and after clinic attendance was analysed. Reduction in anticholinergic load resulting from interventions completed was calculated.

Results: Most frequent recommendation to the GP was to review medication with significant anticholinergic load, stopping treatment where prognostic benefit was minimal, reviewing antihypertensive therapy with up to date checks of lying and standing BP and addressing potential prescribing cascades. Average age of the patients reviewed was 81.4, average CFS score 5.7, average number of medications when seen in clinic was 10.4 which reduced to 9.9 post intervention. Full implementation of recommendations was completed in one third of the cohort with one third having partial completion and in one third recommendations were not followed. Average reduction of -3 was achieved in patients with high anticholinergic load.

Conclusion(s): Starting a structured medication review in outpatient setting has the potential to reduce inappropriate polypharmacy and address the harm associated with it. Further interventions will follow to address the trends identified and collaboration with colleagues in Primary Care will continue to improve patient outcomes in the future.

Expanding undergraduate medical students' understanding of frailty

E Bellhouse^{1,2}; R Maitland^{1,2}; R Alexander^{1,2}; K Colquhoun^{3,4}

1. Clinical teaching fellow, Glasgow Royal Infirmary; 2. Honorary clinical lecturer, University of Glasgow Medical School; 3. Consultant geriatrician, Glasgow Royal Infirmary; 4. Hospital co-sub-dean, University of Glasgow Medical School

Introduction: In response to the recent publication of the new British Geriatrics Society undergraduate medical curriculum (1), the medical education department at Glasgow Royal Infirmary created a session focusing on frailty for medical students. The aim was to introduce the concept to students by exploring and expanding on their experiences of frailty.

Methods: We used a pedagogical approach in a 90-minute, small group session. The session was split into three activities; the first was a case of an older adult presenting acutely with urosepsis. The session dealt with acute treatment for frail patients including polypharmacy, collateral history taking, and consideration of patients wishes. The second activity presented the students with three patients with differing manifestations of frailty; students were asked to discuss the concept of 'the dying process', and how each patient requires different support. Finally, students were given a 'frailty suit' which included 'visual impairment glasses' and 'reduced dexterity gloves' then asked to complete several activities of daily living. This light hearted activity allowed students to experience reflect upon the effects of frailty.

Results: The session was delivered to 25 students, of which 16 provided feedback. Over 85% of students stated that the session was extremely relevant and well delivered on a Lirkart scale; comments included "...we don't get taught about it enough in medicine". Results highlight that students recognise the utility of frailty focussed sessions in medical education.

Conclusions: We show that students are aware of the gap in frailty curriculum and an interactive discussion focussed session is one way to enhance their understanding of frailty. We present details of the session, and further iterations of the project we hope to introduce during the upcoming academic year.

References: 1. Grace M E Pearson et al, Age and Ageing, 2023, Volume 52, 1-8.

To ascertain the theme relating to advice given to healthcare professionals by the Urgent Community Response team

M Gosney; L Abbott; G Gash; H Matthews

Frimley Health Foundation Trust; Older persons Medicine; Surrey

Introduction: Urgent Community Response (UCR) (Formally known as Hospital @ Home Team), was established in 2021 to improve patient choice in treatment options. An increasing number of patients are choosing to stay at home and receive acute intervention. It is important to support those responsible for delivering such care in the community. By identifying themes around advice given and to whom it is possible to target gaps in knowledge.

Method: Referrals to UCR were categorised into 2-hour response (Medical or Therapy), advice given or declined as inappropriate. All advice calls were categorised according to referrer and type of input given.

Results: Between 1st April 2022 and the 31st of March 2023, 99 referrals for advice alone were received. Of these 99 patients, 76 were residing in their own home, 13 in residential homes and 10 in Nursing homes. Over 22% of referrals were from 999 Paramedics; 18% from General Practitioners; 18% from visiting Paramedics, 11% from Specialty Nurses, 11% Residential/Nursing Home Staff, 5% from 111 and 9% from others including Hospital Consultants and family members (after recent UCR involvement). In general, General Practitioners were seeking medication advice (56%), medical management decisions (22%) and advice about end-of-life care. Home Visiting Paramedics were also often asking for medical advice (39%) and end of life prescribing (28%). Over 20% of 999 calls were asking for end-of-life care management, with the largest other category being around falls and the possible need for intravenous fluids.

Discussion: This illustrates the need for immediate high-level input to telephone queries. Our phone is managed by Advanced Clinical Practitioners and Consultants, who can access both Community and Hospital notes. Thereby providing holistic, up to date advice and guidance. The preponderance of advice being around medication, medical management and end of life care indicates where further education should be targeted.

Improving physical activity in hospitalised older people: The Saints Foundation – University Hospital Southampton Partnership

J Batchelor ^{1,2}; P Hedges²; M Gealer²; R McCafferty¹; H Leli¹; P Draper¹; H P Patel^{1,3,4}

1 Department of Medicine for Older People, University Hospital Southampton (UHS) NHS Foundation Trust; 2 The Saints Foundation, St Marys Football Ground, Southampton, UK; 3 Academic Geriatric Medicine, Faculty of Medicine, University of Southampton, UK; 4NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK

Introduction: Deconditioning in the acute setting is associated with adverse outcomes, that cannot always be mitigated by increasingly stretched MDT workforce. We partnered with the Saints Foundation (SF), to test the feasibility and acceptability of a non-clinical Exercise Practitioner (EP) to work alongside therapies to promote physical activity (PA) of hospitalised older people.

Methods: Charity funded joint appointment of an NVQ3 EP with Postural stability Instructor (PSI) qualifications delivered quality education and rehabilitation programmes to hospitalised older patients. These took place in both one to one and gym-based group settings whilst working with the SF team to improve access to community-based exercise programmes.

Results: Between Sept 2022 and May 2023, the EP assessed 169 patients, mean age 86 yrs; male (62%), admitted after a fall. 105 patients (62%) underwent one to one rehabilitation consisting of falls education and individual exercise plans, 64 patients (38%) underwent gym-based rehabilitation, where strengthening and balance exercises were conducted in groups to improve overall function and increase confidence in functional ability. No adverse safety incidents were reported and a high level of satisfaction after interaction with the EP was conveyed. Initial focus was on patient feedback and satisfaction to ensure input of an EP was well received and accepted.

Conclusion: Intervention by a non-clinical EP to improve the PA of hospitalised older people is acceptable, feasible, appears to be safe and is associated with increased patient satisfaction. By capitalising on SF expertise, we provided a clinical standard on exercise for older adults and built a strong relationship between our workforce to bridge community and acute services. Next steps are to increase the scope of interventions, evaluate quality of life pre and post hospitalisation, capture trust level metrics including length of stay, readmission rates and discharge destination to further evaluate the impact on service users.

Completing the 'This is me' document within the first 48 hours reduces length of stay and improves patient experience.

H Payne¹; H Foxley¹; R Wilton¹; E Clift²

1. Therapy Services, University Hospital Southampton NHS Foundation Trust; 2. University of Winchester

Introduction: By 2025 over 1 million people will be diagnosed with dementia in the UK. Person-centred care is the best practice for looking after patients with dementia, but this is often not managed well within acute hospital settings. This can result in poor hospital experience and longer than necessary stay. A snapshot of data was taken retrospectively from May 2023 within the ED & AMU at an acute hospital. This showed an average length of stay (LOS) of 5.25 days. A study in 2013, which implemented This Is Me (TIM) documents in hospital saw a reduction in inpatient falls, improved patient experience and in turn LOS reduced.

Aim: To reduce LOS and improve the patient experience for people with dementia presenting to the hospital following a fall.

Method: A two-week pilot was implemented in ED & AMU 7 days a week, 8-6pm. Patients were identified through the ED therapy screening process. Paper copies of the TIM were filled in for patients meeting the criteria. Inclusion criteria were admission with a fall and had a dementia diagnosis. LOS data was collected and follow-up data was collected.

Results: Twenty-five patients met the inclusion criteria. Every patient had a TIM document completed within 48 hours. The average LOS was 1.87 days. All patients/relatives reported the TIM was important, and that it improved information transfer. There were several limiting factors including the time involved to complete the TIM, reduced weekend staffing and limited awareness from the multidisciplinary team of the TIM document.

Conclusion: To conclude, using the TIM Document facilitates a reduction in LOS and an improvement in patient experience. Further recommendations such as launching this project for a longer time frame, using an electronic version of TIM and MDT teaching.

A Quality Improvement Project to improve MUST score and food chart completion on Frailty Wards

A Zaki; H Alexander

Eastbourne District General Hospital (EDGH)

Introduction: Nutrition is one of the cornerstones of healthy aging. As we age, there are many changes in our bodies including decreased appetite and poor dentition, that contribute to increasing malnutrition. The MUST (Malnutrition Universal Screening Tool) score is a quick and effective tool to assess this. In this project, we reviewed MUST score and food chart completion on the frailty wards at EDGH to attempt to improve the nutrition of elderly patients.

Methods: The charts of seventy-five patients were reviewed over a period of one month. Following this, a training program for all the nursing staff was put in place. Initial results were discussed and the importance of nutrition in the elderly was highlighted. The staff were shown how to fill in the MUST score and follow management guidelines. Also, a reminder was set up on Nervecentre (local electronic patient record) for all staff.

Results: Of the initial seventy-five patients: 1 – a MUST score was completed for only 64% on admission to the ward 2 – 41.3% of patients were eating 50% or less of their meals 3 – In only 27% the reasons why they were not eating were documented. In the second cycle, eighty patients were included, and the results were markedly improved. 1 – The percentage of MUST score completion on admission increased to 91.3% 2 – Management guidelines were followed in 92.5% of the cases 3 – 18.8% with a MUST score of two or more, were referred to dietitians at an early stage

Conclusions: Our quality improvement project significantly increased MUST score completion and prompted action at an early stage. The third cycle in our improvement project is to improve the documentation of patients' food charts and encourage staff to look for and document the reasons why patients are not eating.

"Polyclinics" - a concept of multiple clinic attendance. A pilot quantitative and qualitative review

M Stross; J Laraman; A Begum; M Punniamoorthy

Department of Elderly Care; Cardiff and Vale University Hospitals

Introduction: The concept of "polypharmacy" is a well-recognised phenomenon, forming a keystone of any comprehensive geriatric assessment. We considered whether a similar concept could be applied to the number of outpatient clinics that patients may attend - a concept we have coined "polyclinic". We recognise that older populations may have a greater number of comorbidities and, as a result, have more healthcare professionals inputting into their care. Similar to the potential detrimental effects of multiple medications, we were interested to explore if a similar detrimental effect may apply to patients attending multiple clinics. We also attempted to consider environmental and financial impacts. We approached this in both a quantitative and qualitative manner.

Method: A cohort was selected from all admissions to a subacute Geriatrics ward at University Hospital of Wales during the month of April 2023. National records were used to review the last decade of clinic attendances. For interviews every 4th patient was contacted

Results: 66 patients (75% female) were identified with 3 exclusions. The average number of clinics attended was 18.4 with 0.36 new diagnoses being made per clinic and 0.69 interventions per attendance. Geriatric clinic attendance yielded both a higher average number of diagnoses and interventions (0.93 and 1.4 respectively). Patient feedback was limited to 8 patients and 7 next of kin. Feedback regarding 'worthwhileness' was very positive with ratings >8/10. Feelings about possible cutting back on clinics or virtual clinic attendance were mixed with concerns regarding suitability and access to technology

Conclusions: We identified several limitations to this pilot project but overall feedback was positive. This study does not have the scope to suggest that attending multiple clinics are detrimental but aims to raise the concept of "polyclinic" that may be overlooked, particularly in a comorbid population and considers potential patient impact and concerns.

Front door frailty team reviews of care home residents in a North Wales District General Hospital

H Begum; S Mrittika; C Young; C Speare; J Healy; C Abbott

Care of the Elderly Department, Wrexham Maelor Hospital, Betsi Cadwaladr University Health Board

Introduction: Care home residents are increasingly presenting to hospitals. In October 2022, a frailty team was formed in our district general hospital, consisting of two SHOs, one SpR and one consultant, with support from pre-existing care home ANP and community resource team (CRT). Focusing on patients presenting to the Emergency Department, their aims were early identification of care home residents in order to optimise their care by facilitating discharge, tackling polypharmacy and seizing opportunities for advanced care planning.

Method: Care home residents were highlighted on the ED clinical system, using a unique icon, and reviewed by the frailty team. Anonymised patient statistics were logged into a bespoke e-database. This generated a dashboard of graphs showing trends in outcomes. The statistics from the first 8 months (3/10/22 to 5/6/23) were utilised to show patient demographics, number of reviews and rates of discharge.

Results: 297 care home residents were reviewed. 83.8% of these patients had a Rockwood Clinical Frailty Score of \geq 7. Delirium was present in 91 (30.6%) patients. 121 (40.7%) had at least 1 medication stopped. 165 (55.6%) were discharged after frailty review. Do not resuscitate forms were completed for 208 (70.0%) patients. Advanced Care Planning was discussed with 138 (46.5%) patients and 6 (2.0%) patients were not for re-admission. End of life care was commenced for 17 (5.7%) patients.

Conclusion: It is clear that patients attending the Emergency Department would benefit from an early comprehensive geriatric assessment. The benefits this has provided in one North Wales DGH are significant and have made strides in reducing unnecessary admissions, reducing polypharmacy and providing holistic, interdisciplinary and patient centred care including advanced care planning. Whilst the Emergency Department is not an ideal environment for this, the team have demonstrated the benefits to this model.

Does attendance at a geriatrician led, oncogeriatric clinic, improve the symptoms for older adults with cancer?

F Samy¹; M Teo²; K Colquhoun³; P Seenan³; T Downey³; D Kelly³

1. Older Peoples Services; Glasgow Royal Infirmary; 2. Glasgow University; 3. Beatson West of Scotland Cancer Centre

Introduction: In the cancer setting, Comprehensive Geriatric Assessment (CGA) reduces chemotherapy toxicity, improves QOL and increases advance directive completion (ASCO 2020: The Geriatric Assessment Comes of Age; Soto-Perez-de-Celis et al; The Oncologist). We wanted to look at whether CGA improved symptomatology, as patients attending our oncogeriatric clinic complained of a range of symptoms, related to their cancer, as well as other co-morbidities and frailty.

Methods: We retrospectively analysed follow up clinic letters of patients who had attended the oncogeriatric clinic, between June 2022 and June 2023. We used a Lirkert scale, to see whether symptoms they had complained of had 1 - got worse, 2 - stayed the same, 3 - improved or 4 - resolved.

Results: 32 patients with a wide range of malignancies were included. 59 patients were excluded because they: died before the 2nd appointment, did not require a second appointment, had their second appointment outside the analysis window, DNA or in 1 case the follow up letter could not be found. On average each patient complained of 3 symptoms. 30 different symptoms were noted (2 excluded as there was no mention of them in the 2nd visit.) The top presentations were pain, constipation, low mood, breathlessness, reduced mobility, falls and dizziness. 68% of the symptoms complained of showed improvement – including all the top presentations. The average score on the Lirkert scale was 2.76. 78% of patients had shown improvement or resolution in at least some of their symptoms.

Conclusions: Our retrospective review shows that older, cancer patients, have a high burden of varied symptomatology, because of their cancer, co-morbidities and frailty. Attendance at an oncogeriatric clinic results in improvement in the symptom burden for the majority of older adults, and an improvement in some symptoms, whether they are related to cancer, or other frailty syndromes.

Implementing the principles of Shared Decision Making into a Hospital at Home service, as part of a wider organisation adoption

L Lewis^{1,2}; S Olden¹; M Waldon¹; M Loulaki¹

1. Wilshire Health and Care; 2. University of Southampton

Background: NICE (2023) Shared Decisions Making (SDM) Guidelines ensure Health Care professionals work together with a person to reach a decision about care based on their individual preferences, beliefs, and values. Local Problem. We conducted an Audit across our community services to assess NICE SDM, achieving 71% compliance. Results informed the project problem statement "Clinical Teams are not fully compliant to NICE SDM guidelines therefore a shared decision-making approach is not guaranteed".

Methods: A fishbone diagram was applied to understand why SDM wasn't routinely occurring in clinical practice. Our aim is to achieve organisation wide adherence to SDM. We propose a multi modal approach to increasing awareness of SDM across the organisation. We used a driver diagram working backwards from the goal, identifying the drivers and determining the project activities.

Interventions: Due to the enormity of rolling out a pan-organisational programme we decided to use the Frailty NHS@Home virtual ward to test and learn before greater adoption. We firstly processed mapped how the "What Matters to you?" question is embedded into our Comprehensive Geriatric Assessments. A decision support grid for treatment option decision making was created for dehydration or high risk of dehydration within the NHS@Home service, adapted from Marrin et al (2014). Three options are described underpinned by five questions. Feedback from Patient and public involvement ensured the language was appropriate. After the first PDSA cycle, the tool was reviewed by the project team and two further questions were added, "Did you understand the options which were explained to you?" and "What matters most to you as we decide together how best to treat your dehydration?"

Conclusion: A re audit and colleague survey will reveal increased knowledge and understanding of the SDM concept. We continually seek Feedback from individuals who use our services for their experience of SDM processes.

Frailty and the impact of Electronic Advance Care Planning records on readmission rates and location of end of life care

L Stapleton, L Marsh, T Rajeevan

Princess Royal University Hospital, King's College Foundation Trust

Introduction: Older people with severe frailty are 5 times more likely to die in the next 12 months than older non-frail people however prognosis and disease trajectory in frailty remains difficult to predict. Advance care planning (ACP) is often not fully discussed or documented due to these prognostic uncertainties, plus time/workload constraints. This can result in multiple admissions for people with frailty in the last 12 months of life and can lead to care and death in a non-preferred place. Electronic Advance Care Plans (eACP) can be useful in reducing unwanted admissions and promoting care and death in preferred location. This project aimed to improve proportion of patients receiving care in their preferred location and reduce readmission rates.

Method: Identified patients who wished to avoid hospital readmission with clinical frailty score of 6 or more and at least 2 unplanned admissions in the preceding 12 months over a 4-month period at a district general hospital in south London. ACP was discussed with patients and families and an eACP was generated. Patients were then followed up at 3 and 6 months to assess readmission rate and rate of end-of-life care in preferred location. 24 patients consented - 17 women, 7 men. Mean age of 88.3 Mean pre-admission frailty score of 6.1. High level of pre-admission co-morbidity with 80% having 3 or more major comorbidities.

Results: Readmission rate was 8%. One third of patients alive at 3 months all without readmission. 23 patients had died at 6 months. 13% died in hospital versus a national average of around 50%. 70% died in preferred place of death versus national average of around 49%.

Solution: Use of electronic Advance Care plans resulted in a low readmission rate and a higher proportion of people receiving end of life care in their preferred place of death.

Working as a multidisciplinary team to reduce weight loss - a quality improvement project to improve nutrition in older patients

L Wright; C Newman

Liverpool University Hospitals Foundation Trust

Introduction: Weight loss is common during acute hospital admissions, and can be devastating to the older patient where weight loss is associated with an increase in mortality over a 12-month period. Patients who lack the ability to communicate their food preferences are at risk of receiving food they do not like, especially as food orders are often taken when family/carers are not present.

Methods: While working on a Department of Medicine for Older People and Stroke (DMOPS) ward, we worked with the Multidisciplinary team (MDT) with the aim of reducing weight loss. We implemented two interventions. The first being 'MUST Mondays', where patients were weighed and had a Malnutrition universal screening tool (MUST) completed on admission to the ward, and then weekly. We also implemented A3 Laminated menus - where patients and their families/carers were given food choices for the week in advance, and could use a marker to identify foods they did/did not like. These were then displayed above the bedspace. All patients were over the age of 65. We excluded patients who were actively dying, patients who were aiming for weight loss (Such as in fluid overload) and patients who were admitted for fewer than 8 days.

Results: Prior to putting the interventions in place, we audited 23 patients admitted over a 3-month period. 70% of patients lost weight over the course of their admission, and 48% had MUST assessments completed weekly. We re-audited 5 months after the interventions were implemented, we audited 20 patients over a 5-month period and found 55% lost weight over the course of their admission, and 80% had weekly MUST assessments.

Conclusion: Working as an MDT to put in place small interventions can have a meaningful impact on reducing weight loss in older patients during acute hospital admission.

Advance care planning on the Same Day Emergency Care Older People's Unit – a quality improvement initiative

M Kondo; C Stothard; S Nair; C Handalage; D Gould; J Harris; C Mukokwayarira; T Ferris; A Bowden; L Harrison

Leeds Teaching Hospitals NHS trust

Introduction: Same Day Emergency Care (SDEC) at St James' Hospital, Leeds provides urgent care at the interface between primary and secondary care, offering comprehensive geriatric assessment (CGA) to those living with frailty, aiming to prevent hospitalisation and delay frailty progression. Advance care planning (ACP) is a vital component of prioritising care preferences including at end-of-life, but timing often falls short in practice. This quality improvement (QI) initiative aims to proactively open ACP discussions, allowing patients to consider their care goals, ensuring our care is aligned with their priorities.

Method: Between July 2022 and April 2023, the project involved 1039 patients. Led by Advanced Clinical Practitioners with support from consultant geriatricians and a palliative care specialist nurse, ACP discussions were encouraged through prompts in daily staff huddles and drop-in teaching sessions.

Results: ACP uptake increased from 7.8 % to 19.3%. Insights from a perception survey involving 83 healthcare professionals revealed key barriers including clinical workload, limited space, lack of experience and confidence as well as prognostic uncertainty and patient factors. Education and training, clinical supervision, patient information leaflets and a conducive environment were positively associated with ACP.

Conclusion: There has been a cultural shift in the department as the practitioners now routinely prompt staff to undertake ACP in safety huddles. Key catalysts for ACP initiation were found to be progression of frailty, terminal diagnoses, dementia, and recurrent hospital admissions. As a new SDEC unit is scheduled to open in the coming months, with provision of space and privacy, our aim is to improve the quality and quantity of ACP discussions with the patient at the centre of all decision-making. In line with these endeavours, parallel support within the community through our home (virtual) ward will further enhance proactive care planning in older people living with frailty.

Using the Visual Assessment Tool (VAT) on all patients at risk of falls in the day assessment unit (DAU)

P Gurung¹; S Sathiananthamoorthy²

1. Mid and South Essex; 2. Southend University; 3. Department of Elderly Care; 4. Day Assessment Unit

Objective: To conduct a QIP to ensure that >80% of DAU patients' vision was assessed via the VAT as per National Audit of Falls Prevention Guidance.

Background: Patients with visual impairment are twice as likely to fall than those without. The NAIF 2015 report identified <50% of elderly patients had their vision assessed in hospital; also evident at Southend Hospital.

Methods: Data collection from 56 patients over 8 weeks following weekly interventions helped us analyse their impact on VAT use. Control data (week 1) was pre-intervention.

Intervention: Six interventions were applied over 7 weeks: teaching to nurses, HCAs and doctors about VAT; email to Geriatrics team; reminder email to DAU nursing team and a feedback questionnaire.

Results and Discussion: Mean age was 82 and 38% of patients attending DAU had an ophthalmic history. Pre-intervention (week 1) identified 0% VAT use. In week 2, there was a 75% increase in VAT use after teaching nursing and HCA staff. In week 3, there was only 12.5% VAT use after the poster intervention. In week 4, there was a 25% uptake on VAT use with no intervention. Week 5's intervention witnessed 100% in VAT use, which remained high in week 6 (85.7%), 7 (100%) and 8 (100%). The final intervention questionnaire highlighted that 100% of staff were (i) previously unaware of VAT, (ii) agreed on its importance in assessment of elderly patients, (iii) found teaching adequate, (iv) thought there was enough awareness on VAT use via the QIP, (v) agreed that an incomplete VAT was due to inability to undertake section 4 and 5.

Conclusion: VAT use identified 3 ophthalmic problems that would have otherwise not been managed. While the QIP did not meet the target of >80% VAT use, it successfully informed DAU staff in proper conduct of VAT in falls patients.

Assessing the acute hospital care of patients with a diagnosis of a learning disability and hip fracture

R Wilson; R Marlor; S Madan; V Knox; D Wilkinson

Sheffield Teaching Hospitals NHS Foundation Trust

Introduction: Patients with learning disabilities (LD) often have complex medical needs resulting in onset of frailty at younger ages. This increases risk of morbidity and mortality following emergency admissions, such as acute fractured neck of femur (FNOF). This risk is further increased by communication difficulties experienced in this group. There is little information about how LD affects the quality of care of patients with FNOF as defined by the national hip fracture standards (NHFS).

Methods: This retrospective audit reviewed notes of patients with LD admitted to a teaching hospital with FNOF over 5 years. The audit examined whether the care of patients with LD complied with the NHFS and best practice tariff guidelines, regardless of age. The audit sought to explore potential disparities between patients with LD and the general population. It assessed whether steps were taken to optimise care as defined by the Royal College of Physicians toolkit for LD.

Results: 46 patients were included; 22% were under the age of 60. Operative management was in line with recommendations. However, 37% did not receive appropriate bone strengthening treatment and 37% were not mobilised within the first 24 hours. This correlated with fewer patients remaining freely mobile following the admission (8.7% post-operatively vs 41.3% pre-operatively). Documentation of LD severity LD and usual behaviours was unreliable, as was documentation of key conversations, such as those regarding capacity or resuscitation.

Conclusions: This highlights the importance of addressing the increased needs of patients with LD regardless of age, to better facilitate holistic assessment and treatment of this vulnerable population. Locally we plan to minimise variation by utilising LD nurses and providing comprehensive geriatric review of all patients with LD admitted with FNOF. We recommend that data collection, including 120-day follow-up, be incorporated into routine practice for all patients with LD admitted with FNOF.

Improving accuracy of Clinical Frailty Scale (CFS) scoring on geriatric and oncology wards in Hull University Teaching Hospitals

S Martin^{1,2}; R Asiwe¹; J Young¹; M Amusan¹; A Lim¹; S Stapley¹

1. Hull University Teaching Hospitals NHS Trust; 2. Future Leaders Programme, Health Education England, Yorkshire and the Humber

Introduction: The Rockwood Clinical Frailty Scale (CFS) is a tool that assesses global frailty, validated for use in people aged over 65. It assesses an individual's functional status to assign a number from 1 (very fit) to 9 (terminally ill). Hull University Teaching Hospitals has integrated mandatory CFS assessment on admission for inpatients aged over 65. This project aimed to improve the accuracy of CFS scoring in an oncology and a geriatric ward by empowering ward nurses to better recognise frailty.

Methods: Phase 1. Baseline data was collected from admission CFS scores from inpatients on one geriatrics ward and one oncology ward. We then individually reviewed admission CFS scores for the same patients. We recorded concordance if the same score was assigned.

Phase 2. We surveyed nursing teams on both wards, as they assign the initial CFS score during a patient admission. This revealed unanimous recognition of the pivotal role accurate frailty recognition plays in targeting individualised frailty intervention and called for more staff training in frailty/CFS. Following this, we introduced a pictographic version of the Rockwood CFS scale to nursing stations where admission documentation takes place and re-assessed CFS score concordance.

Results: A substantial improvement in CFS score concordance was demonstrated within the geriatric ward, from 41% at baseline to 56%. However, only minimal change was observed within the oncology ward remaining static at 11.1% from baseline 8.3%.

Conclusions: We have worked with the two wards to disseminate knowledge and use of the NHS CFS app. Through collaboration with the trust's frailty leads, the CFS app is now being incorporated into the electronic recording system, encouraging routine use of the app when calculating CFS scores. Once this change is implemented, we will recollect data again.

Geriatrician involvement with community multi-disciplinary teams to support people living with frailty and reduce readmissions

S Rahman; S Shamsad; L Bafadhel

1. Southend University Hospital; 2. Department of Elderly Medicine

Introduction: Factors contributing to frailty result in increased hospitalisations, with 5-10% of patients attending Accident and Emergency department living with frailty, and 30% of those patients admitted to acute medical units (Conroy, 2013). Hospital admissions result in functional decline and deconditioning (Get It Right First Time, 2021). The number of people in the UK over the age of 85 is set to double in the next 20 years and treble in the next 30 (Office of National Statistics, 2013). Their needs are best met in the community with a multi-disciplinary approach.

Method: Patients, residing in Benfleet and Leigh-on-sea, discharged from Geriatric wards at Southend Hospital were identified during ward MDT meetings. Inclusion criteria: • Recurrent admissions • Prolonged hospital stay • Clinical Frailty Score > 5 • Social support Using this criteria, 216 patients were included. 7-day readmission and 30 day readmission data was collected and compared to readmission rate prior to intervention. Intervention On discharge patients were linked with Frailty Nurses within their Primary Care Network and were reviewed within 48- 72 hours of discharge. Community support was provided via MDT, with involvement from consultant geriatrician. Concerns that could result in readmission were highlighted during these meeting, with patients being seen in Day Assessment Unit for review of sub-acute frailty syndrome if appropriate.

Results: Following intervention of utilising community MDT there was a reduction in rate of readmission. 9 patients (4.1%) were readmitted within 7 days of discharge and 14 patients (6.4%) were readmitted within 30 days, in comparison to 7.6% and 19.3%, respectively, prior to commencement of MDT.

Conclusion: This concludes that utilising community MDT with review following discharge has positive impact in reducing readmission rates. Highlighting potential risks of readmissions allows the MDT to address issues within the community and use bridging services appropriately.

Enhancing detection of possible sarcopenia and delivery of targeted physiotherapy interventions among hospitalised older patient

S Y Tan¹; L L S Tan²; Z C D Cheng³; H W Q Yong⁴; L L Wong⁵; C C D Seow⁶

1. Department of Geriatric Medicine, Singapore General Hospital; 2/3. Department of Internal Medicine, Singapore General Hospital; 4/5. Department of Physiotherapy, Singapore General Hospital; 6. Department of Geriatric Medicine, Singapore General Hospital

Introduction: Sarcopenia, defined as age-related loss of muscle function and strength, has a reported prevalence of up to 40.4% in the older adult. Despite its association with frailty, disability and mortality, it is underdiagnosed among hospitalised older patients. Exercise interventions have also been shown to improve fall risk scores for sarcopenic patients. A QI initiative was started by a team comprising doctors and physiotherapists.

Method: Our aim was to enhance detection of possible sarcopenia and reduce time to delivery of targeted physiotherapy interventions to 1 working day from admission in patients aged > 65 admitted to our ward. Interventions were grouped into three main categories – strength training, balance and gait stability training. A pilot study of 12 patients showed that no sarcopenia assessments were carried out and mean time to PT review was 2.6 days from admission, with an average of 1.08 interventions performed per patient. Fishbone analysis and Pareto chart were conducted to identify and prioritise factors behind low screening rates of sarcopenia, before driver diagram was performed to develop solutions. Our team established that education of junior doctors on sarcopenia and implementation of SARC-CAIF screening were the most appropriate interventions to achieve our objective.

Results: A total of 26 patients were identified, with an average age of 76.7 [6.7] years old. The mean SARC-F and SARC-CalF scores were 4.51 [3.5] and 14.6 [2.4] respectively. 50% (13/26) of patients were admitted for falls. After implementation of SARC-CalF screening, mean time to PT review was shortened to 1.38 days from admission, with an increase in PT interventions to 2.23 per patient. Prevalence of possible sarcopenia is high among inpatients.

Conclusion: More can be done to enhance its detection among frail hospitalized older patients, so as to deliver targeted physiotherapy interventions. Doctor education and SARC-CalF screen are simple and practical tools that can be utilised.

From care home to the emergency department; a snapshot of frailty admissions

S Blackburn¹; S Abou Sherif²; M Syed²; A Hughes²; C De Rohan²

1. Chelsea and Westminster NHS Foundation Trust; 2. Department of Elderly Medicine; Chelsea and Westminster Hospital

Background: Care home residents form a large number of admissions to the Emergency Department (ED). Over an 8-month period, care home admissions to ED were reviewed, examining the nature of admissions to inform how to improve current pathways.

Method: Patients with a frailty score ≥6 (N=180), admitted from 34 care homes to Chelsea and Westminster Hospital ED over 6 months were included. Data was collected from medical and London Ambulance Service (LAS) records. Data collected included; Presenting Complaint (PC), LAS attendance times, prior discussion with a Health Care Professional (HCP), Length of Stay (LOS).

Results: LAS attendances during normal working hours (9am-5pm Monday-Friday) formed 34% (N=61) of admissions with only 43% (N=26) being discussed with an HCP prior to attendance. Of these, 30% (N=18) were discharged <24hrs and up to 39% (N=7) of these may not have required emergency admission. For all admissions, 'fall' was the most common PC, 33% (N=59) followed by 'respiratory issue' 21% (N=38). Overall, 24% (N=47) of total admissions were discharged <24hrs but total care home admissions accounted for a total of 454 bed stay days. Factors impacting discharge included COVID status, requiring care home re-assessment prior to discharge and no longer having a bed available.

Conclusion: This data demonstrates that there is an opportunity to improve care home support and admission pathways. Discussing patients with an HCP prior to contacting LAS may reduce requirement for ED attendance alongside access to rapid response community teams. Expanding an HCP accessible service out of hours (OOH) could facilitate this and implementing a frailty telephone service may also support with this initiative. Collaboration with care homes and community partners will form the next steps in this quality improvement work.

Review of the requirement and impact of the medicine for the Elderly Major Trauma Service in South-East Scotland

M L Quarm¹; C S Johnston¹; A H M Kilgour^{1,2}

1. Medicine for the Elderly, Royal Infirmary of Edinburgh, NHS Lothian; 2. Ageing and Health Research Group, Usher Institute, University of Edinburgh

Introduction: It is well established that older adults with hip fracture benefit from comprehensive geriatric assessment (CGA), but there is less evidence for its use in major trauma. Since 2012 Major Trauma Centres (MTCs) have opened across the UK, with varying access to CGA. We report the requirement and impact of CGA in a MTC in its first year of opening.

Methods: We reviewed all adult patients admitted under the South-East Scotland MTC included in the Scottish Trauma Audit Group (STAG) database from 1st November 2021 − 31st October 2022. We compared: patients under 65y, patients ≥65y who did not undergo CGA, and patients ≥65y who underwent CGA. Outcomes were: review by ED consultant within one hour of presentation, trauma team activation, injury severity score (ISS), CGA within 7 days when CFS≥5, and mortality at 30 days.

Results: 1323 patients were identified (mean age 63.7y, SD20.9): <65y (n=690, 45.5y, SD14.0), ≥65y without CGA (n=401, 77.2y, SD8.2), and ≥65y with CGA (n=289, 84.6y, SD 7.3). The commonest mechanism of injury in all three groups was fall from standing height (29.1%, 59.6%, and 73.4% respectively). ED consultant review within 1 hour occurred in 37%, 25% and 18% of cases, with trauma team activation occurring in 32%, 18% and 7%. Average ISS were: 13, 12 and 11, and commonest sites of injury in those over 65 were external (e.g. skin), chest and limb. CGA was undertaken within 7 days in 95.1% of those with a documented CFS≥5. Mortality at 30 days was 2.9%, 12% and 8%.

Conclusions: A fifth of patients admitted to our MTC in the first year were older adults with CFS≥5. These patients were under-triaged at several stages despite comparable average ISS across groups. CGA may reduce 30-day mortality. We recommend further research into the benefit of CGA within MTCs.

Advanced care planning in severe frailty - quality improvement project two-year summary

S Robinson; P Sawney; S Bethel; E Clarke; S Woods; Đ Alićehajić-Bečić

Ageing and Complex Medicine Department, Wrightington, Wigan and Leigh NHS Teaching Trust

Introduction: NICE guidance recommends that clinical teams should identify patients who are approaching their final year of life. It advises using tools such as the Clinical Frailty Score (CFS) to identify this cohort. Wigan has a significant proportion of severely frail patients would benefit from this conversation. The aim of this project was to increase the percentage of patients with severe frailty who have an advanced care planning (ACP) conversation during their hospital stay.

Method: Retrospective data collected from discharge letters was used to identify patients aged >65 years with a CFS ≥7 Astley ward. Exclusion criteria included patients <65 years old, patients who died during admission, patients who moved wards prior to discharge and re-admissions if within 30 days. The cohort was examined to see if firstly they had been highlighted as a patient who would benefit from ACP, and if an aspect of ACP had been completed during their admission.

Results: 10 PDSA cycles were completed over the two years (2021-2023). Our data showed that teaching on ACP and dedicated Registrar sessions on the rota had the greatest impact on improving the completion of ACP discussions. While unified method of CFS assessment on admission and documentation of ACP on shared platforms did not change the ACP uptake significantly.

Conclusions: Systematic approach to improving ACP in severe frailty has the potential to improve patient experience and allow them to highlight their wishes at the end of life. Despite trialling multiple activities to increase ACP uptake it was clear whole multidisciplinary team engagement is required to maximise ACP. Therefore, future cycles will examine the impact of implementing a focused approach to ward rounds. Although we have progressed towards our goal, more work needs to be done to maximise uptake of ACP for severely frail patients during hospital admissions.

Encouraging Mental Capacity Act assessments in cognitively impaired or delirious patients over 65 at an orthopaedic hospital

A Fattahi; K Shah

Nuffield Orthopedic Centre Oxford

Introduction: The Mental Capacity Act (MCA) is designed to protect patients who may lack capacity to make decisions about their proposed treatment. At the Nuffield Orthopedic Centre (NOC), Oxford, nurses obtain a baseline abbreviated mental test score (AMTS) during the pre-operative assessment clinic. Post-operatively, the AMTS should be repeated with the 4AT to screen for delirium. If the AMTS is less than 8, or the patient is clinically believed to be delirious, then an MCA assessment should be undertaken and documented for the decision to accept treatment. The aim of this QI project was to widen this practice to all the junior doctors at the NOC.

Method: Baseline AMTS and MCA data were collected from one month of inpatients >64 years old at the NOC. Patients with post-op AMTS of <8 or those with delirium were identified and checked for documented MCA assessments. The results, teaching and training on capacity and consent were presented to the junior doctor team and a repeat audit cycle was performed to assess if the practice was being implemented.

Results: Data collected from 10/01/23 - 10/02/23 (n=125) showed that out of 10 patients meeting the AMTS criteria, only 4 had MCA assessments completed. Once the QI project was presented on 25/05/23, data collected from 12/06/23 - 15/07/23 showed that out of 5 eligible patients, 4 of them had MCA assessments documented.

Conclusion: Prior to this QI project, only 40% of patients with suspected cognitive impairment were undergoing an MCA assessment. Following the teaching and training to the junior doctors, the data collected shows that this figure had increased to 80%. In conclusion, this QI project has shown an improvement in appropriate application of the MCA. It should be repeated every 4 months to account for each new rotation of junior doctors.

Documentation in Clinical Frailty scores in patients aged >65 admitted to surgical assessment unit.

B Basharat¹; A Fayyaz²; R Alkaissy³

1. Leeds teaching hospital; 2. Mid Yorks teaching hospital; 3. Edinburgh hospital

Introduction: According to the latest NELA report, frailty doubles the risk of mortality in patients >65 and above, but review by a geriatrician can significantly reduce this risk. To identify patients at risk, the report recommended that a formal frailty assessment for all patients>65 should be performed. The aim of this audit was to check compliance with this recommendation.

Methods: Data were collected retrospectively from a prospectively maintained electronic hospital records. Patients > 65 years admitted acutely under general surgery were identified from handover lists spanning a period of two weeks. The admission documents were reviewed to check for a formal assessment of clinical frailty score (CFS) had been completed. Following initial results, posters were put up in the SAU doctors' office and all clerking doctors made aware via e-mails, WhatsApp groups and teaching to complete a CFS for patients >65 years.

Results: In the first cycle, 50 patients were identified and compliance rate was 18%. Following intervention, 51 patients were identified in the subsequent cycle with a compliance rate of 47%. After a second intervention, 99 patients were identified with a compliance rate of 61%.

Discussion: The NELA report highlighted only 23% of patients had a CFS documented and this was similar to the results of the initial audit. The main reason was lack of awareness, which was addressed by creating an awareness among the colleagues via poster, group chats and emails. This brought compliance up to 47%. Another reason was doctors being unable to locate the CFS on the electronic clerking document. A second round of intervention by poster, group chat, email communication and teaching achieved a 61% completion rate. The recommendation is to continue to improve the documentation of CFS further and utilize this to get input from geriatricians.

Reviewing the effect of COVID pandemic on changing clinical practice of administrating Zoledronic Acid to hip fracture patients

Z L Tun; R Melrose; R Saharia; U Tazeen

Hull University Teaching Hospitals NHS Trust

Introduction: Reduction in outpatient appointments during the COVID-19 pandemic and patient concern surrounding risk of contracting COVID-19 by attending day-case settings, resulted in delayed or cancelled medical treatments including Zoledronic Acid infusions as management for Osteoporosis. This, alongside recent research concluding that these treatments can be given safely as early as 1-2 weeks post-fracture, lead to the adaptation of protocol at Hull University Teaching Hospitals Trust in 2021, to provide rapid loading of Cholecalciferol over 6 days, prior to administration of Zoledronic Acid on day 7. However, some concerns remain surrounding the potential interference with bone remodelling and healing. This completed audit cycle evaluates the logistics and safety of this new protocol.

Methods: All patients over 60, admitted with neck of femur fracture who received Zoledronic Acid infusion as inpatient or outpatient in 2019 and 2021 were included in the initial and repeat audit respectively. Electronic records for the following 12 months were analysed evaluating for further fragility fracture and mortality rate.

Results: There was an increase in patients receiving Zoledronic Acid as an inpatient treatment from 21% in the initial audit to 97% in the repeat audit. There was a slight increase in mortality rate at one year from 14% to 19%. The percentage of a further fragility fracture within one year, remained stable at 7%.

Conclusion: The increase in inpatient infusions suggests more patients with significant frailty who would otherwise not have been able to attend outpatient settings, have been able to receive treatment. The mortality results reflect this frailer audit population. The absence of a substantial increase in the rate of further fragility fracture at one year; supports the earlier administration of Zoledronic Acid as a management protocol.

A quality improvement project looking at improving the documentation of bowel charts in a geriatric department

M Darwish¹, L Jones², C Roberts^{3,4}, E Williams¹

1. Medicine for Older People, University Hospital Southampton; 2. Department of Geriatrics, Portsmouth University Hospital Trust; 3. IBD Pharmacogenetics Group, Exeter, UK; 4. Royal Devon and Exeter NHS Foundation Trust

Introduction: Effective bowel care is a key part of patient care which involves the accurate documentation of bowel movements. Older patients are at higher risk of delirium and increased length of stay if constipation and diarrhoea are not recognised. We aimed to identify the quality of bowel chart documentation comparing the use of paper and electronic bowel charts.

Methods: Data was collected on whether bowel charts were filled in at two timepoints over a two-day period. The first cycle in September 2020 using paper bowel charts and the second cycle in June 2023 using electronic bowel charts. All inpatients, on the geriatric wards were included unless they were on end-of-life care or had moved ward on the day of data collection. The primary outcome was whether the bowel charts for both days were filled in fully. Secondary outcomes were whether the bowel charts were 'easy to find' and whether there was reference in the notes to the bowel chart. Data was analysed using a Mann-Whitney test.

Results: In the first cycle data was analysed on 129 inpatients, 4 were excluded and in the second cycle data was assessed on 128 inpatients, 16 were excluded. There was a significant increase in the proportion of inpatients that had a fully-completed bowel chart rising from 41.6% to 73.3% (p<0.001). There was an improvement in whether in whether bowel charts were 'easy to find' from 51.2% to 100% and this led to increase in whether bowel charts were commented in the medical notes.

Conclusion: This quality improvement project shows how the introduction of electronic bowel charts has had a significant improvement in the charts being filled out and easy to find.

Polypharmacy reviews in outpatient clinics - beginning the structured medication review in bone health clinic

Đ Alićehajić-Bečić

Ageing and Complex Medicine Department, Wrightington, Wigan and Leigh NHS Teaching Trust

Introduction: Inappropriate polypharmacy is recognised as a contributing factor towards adverse outcomes in frail patients. Current efforts at national level are centred around primary care initiatives in completing structured medication reviews (SMR) where shared decision making takes place with open discussion around risks and benefits of treatments. The aim of this review was to assess whether recommendations for discussion in SMR have been adopted for patients attending frailty bone health clinic led by Consultant Pharmacist, in hospital outpatient setting.

Method: Retrospective analysis of notes was undertaken in a sample of 30 patients reviewed in clinic in the period 01.09.22 - 28.02.23 who were on at least five medications, were still alive six months post review and where suggestions with regards to actions to discuss during a structured medication review were made.

Results: Average age of patients sampled was 79 years with average CFS of 5.75. Number of medicines documented at outpatient appointment was on average 10.6 which reduced to 9.95 at review six months after the appointment. Around a third of recommendations were adapted fully, with another third partially completed and a third not completed. Interventions included review of falls risk increasing drugs (FRIDs), reduction of anticholinergic load, identification of possible prescribing cascades, review of opioid medication in chronic pain context and review of medicines where benefit may no longer be derived due to frailty progression. In cases where review of medication with high anticholinergic load was advised, an average reduction of -3 was achieved at six-month review.

Conclusion(s): Starting a structured medication review in outpatient clinic has the potential to reduce the risk of adverse events and improve outcomes for patients. Further work will be undertaken to ascertain reasons for not adopting the recommendations and continuous collaboration with primary care colleagues will continue to address problematic polypharmacy.

The Psychological Impact of Hospital Discharge on the Older Person

Y Hussein¹; S Edwards²; H P Patel^{2,3,4}

1 Undergraduate Medicine, Faculty of Medicine, University of Southampton, UK; 2 Department of Medicine for Older People, University Hospital Southampton NHS Foundation Trust, UK; 3 Academic Geriatric Medicine, University of Southampton, UK; 4 NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK

Introduction: Older people often require hospitalisation but prolonged length of stay and deconditioning in the acute setting is associated with adverse outcomes. 35% of older people do not recover functionally after discharge. Less is known on the psychological impact and coping mechanisms of vulnerable older people after discharge. Our aim was to explore factors signalling psychological vulnerability in older patients, post-discharge to inform better discharge planning.

Methods: A systematic search for studies reporting poor discharge outcomes in older people was performed in Medline, CINAHL, PsycInfo between 2010-2022. The search terms were 'older patients >65 year', 'post-discharge', 'psychological distress', 'loneliness', 'anxiety', 'depression', and 'length of hospital stay'. Exclusion criteria included COVID-19 disease, dementia (+/- severe cognitive impairment), individuals aged <65 and those under palliative care services.

Results: 1,666 records were identified of which 878 were excluded as they were outside of our date limits or were not in English Language. 681 were excluded after application of exclusion criteria and 699 were excluded because of insufficient details. 31 duplicates were removed leaving 38 articles that were assessed for eligibility. 7 of these reports were found suitable, comprising of 1,131 patients. Three highly relevant themes identified relating to post-discharge outcomes across all studies were social isolation, lack of support, depression, apathy and fear, which led to further psychological distress. Older patients with tendency toward depressive symptoms had an increase likelihood of death.

Conclusion: It appears discharge processes fail to address psychological factors that permit successful transition from hospital. Pre-discharge screening of psychological symptoms and coping ability may assist in identifying older patients who are at risk of mental as well as subsequent physical deterioration. Better knowledge of positive and negative predictors of a successful transition from hospital to home would enable more holistic, effective, and inclusive discharge planning processes for older people.

Treatment Escalation Plans (TEP): benefits in adult in-patient facilities

C Jenkins¹; H P Patel^{2,3,4}

1 Undergraduate Medicine, Faculty of Medicine, University of Southampton, UK; 2 Department of Medicine for Older People, University Hospital Southampton NHS Foundation Trust, UK; 3 Academic Geriatric Medicine, University of Southampton, UK; 4 NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK

Introduction: Treatment escalation plans (TEP) guide level of life sustaining therapeutic interventions that should occur for each patient admitted to hospital and can prevent inappropriate and undignified interventions. However, implementation of TEP in routine clinical practise has been ad hoc partly due to the paucity of literature on their benefits. Our aim was to systematically review the literature to ascertain the use and benefits of TEP in adults.

Methods: A systematic search for studies reporting TEP use were performed in the databases OVID Medline, Embase, Scopus and Web of Science. Search terms were 'Treatment Escalation Plan' Treatment Limitation, 'Therapy Escalation', 'Escalation of Care', 'Palliative', End of Life', 'Advanced Care Plan'. Exclusion criteria included studies prior to 2007, systematic reviews, case reports and letters.

Results: 468 records were retrieved, 117 duplicates removed, 351 records were screened. 302 were excluded by date or relevance. Of 49 eligible records, 39 were excluded by criteria or unavailability of full text articles. 10 Studies using case control and quality improvement methodology conducted between 2010-2022 involving 1614 patients were subject to a narrative review. 8 different TEP proformas were used. All studies reported an increase in TEP use across all clinical settings and after each PDSA intervention ranging from 78%-100%. TEP reduced the frequency of non-beneficial interventions and was associated with an average saving of £220 per patient.

Conclusions: TEP lead to more frequent and proactive discussions with patients on ceilings of care and provide clear guidance to clinical staff out of hours, facilitate patient handover over successive shifts and enable proactive discussions with critical care. We identified the need for TEP to be successfully implemented in a unified manner across all healthcare facilities in order to improve patient care, reduce the burden of non-beneficial interventions and align with the NHS Long Term Plan.

Delirium education and documentation - Quality improvement project in geriatric assessment unit

H Zamir; L Shield; L Brodie

Aberdeen Royal Infirmary NHS Grampian; Geriatric Medicine Department

Introduction: Delirium is a common presentation in older people (>65 Years age) and associated with falls risk, longer inpatient stay, post-discharge institutionalization, accelerated cognitive decline and higher mortality. While median duration of delirium is reported as 1 week but for one third patients, symptoms may persist 3 months or more, even a proportion of patients will never fully recover to their pre-delirium cognitive baseline. It is essential to educate patient and family that staying in the hospital can only make delirium worse and they will need extra support on discharge for usual daily activities to avoid falls and readmissions. Physicians should be aware that delirium sufferers often have an awareness of their experience and for affected person and their family, delirium can be a cause of significant distress. Identification of risk factors, education, and a systematic approach to management can improve the outcome and experience of the syndrome.

Aim: To provide delirium education and Improve documentation up to 95 % in GAU.

Method: • Prospective data collection

- Jan 2023 to March 2023
- Monthly data analysis of 20 patients in GAU with the confirm diagnosis of delirium.
- PDSA 1 Departmental teaching and delirium leaflet awareness and availability
- PDSA 2 Poster as Visual prompt

Results: After 2 PDSA cycles, we noticed significant improvement in delirium education and documentation up to 95%. Another QIP is ongoing to incorporate delirium time bundle in our practice to timely identify diagnosis, manage potential triggers and provide education to better understand its nature.

Conclusion: Along with prompt diagnosis and management, good educational approach and clear documentation will lead to improve understanding about delirium, reduce distress and facilitate safe early discharge. References https://www.sign.ac.uk/sign-157-delirium

Five years of the National Audit of Inpatient Falls

J Whitney¹; N Sheshi²

1. King's College London/Hospital; 2. Royal College of Physicians

Introduction: There are around 250,000 inpatient falls in English hospitals each year. Inpatient falls are associated with poor outcomes. Evidence suggests multifactorial assessment and intervention is the most effective way to prevent inpatient falls. There are National Institute of Health and Care Excellence (NICE) quality standards for safe post fall management. National audit supports improvement in the quality and safety of clinical care.

Methods: The National Audit of Inpatient Falls (NAIF) began collecting continuous data from all femoral fractures (as identified on the National Hip Fracture Database) in England and Wales from 2019. Prospective documentation review collects data on multifactorial falls risk assessment (MFRA) prior to the femoral fracture as well as immediate post fall management and presents performance indicators related to NICE guidelines/quality standards.

Results: There are around 2000 inpatient femoral fractures each year. Those with an inpatient fracture have double the 30-day mortality of those who fracture elsewhere, highlighting the vulnerability of this group of patients. There has been improvement in most aspects of MFRA and the proportion of patients checked for injury before moving from the floor has increased from 69 to 77%, use of flat lifting equipment from 22 to 29% and medical assessment within 30mins of the fall from 52 to 60%.

Conclusion: There have been steady improvements in guideline compliant inpatient fall-prevention and post-fall management, but there is more to do. The programme also produces improvement resources and activities and will be expanding the range injuries covered in the next 2 years.

Capillary blood glucose testing on older inpatients at the Norfolk and Norwich University Hospital (NNUH)

N Navaneetharaja¹; R De Silva¹; K Mattishent²; Y Loke²

1. Norfolk and Norwich University Hospitals NHS Foundation Trust; 2. Norwich Medical School, University of East Anglia

Rationale: Inpatient glycaemic management is a challenge in older people. Clinicians at the Norfolk and Norwich University Hospital noticed substantial numbers of finger-prick capillary blood glucose (CBG) tests being documented. This quality improvement project explored the frequency of CBG testing on older people's medicine wards, to determine if improvements in service provision and patient safety could be made.

Methods: Setting: Electronic records of inpatients on geriatric medicine wards at NNUH (May-July 2023)

Patient selection: Older people with recorded CBG testing

Measures: Type of diabetes, medication regime and frequency of CBG testing. Staff survey of CBG monitoring knowledge.

Analysis: Compliance with the Joint British Diabetes Societies for Inpatient Care guidelines for frail older adults with diabetes (February 2023). Staff knowledge.

Results: 240 inpatients included - 23% had type 2 diabetes. 32% had regular CBG monitoring (once daily or more). Of these patients, 70% had tests that were not compliant with guidance. In a single day, we calculated 120 CBG tests that were not clinically indicated. 43% of patients were on single-therapy treatment (not including sulphonylureas) or diet-controlled type 2 diabetes, all of whom underwent excessive testing during their inpatient stay. A staff survey of 15 ward sisters, nurses and healthcare assistants revealed no consensus on who determines frequency of CBG testing and target CBG ranges for frail, older inpatients.

Conclusions: Ad hoc CBG testing has resulted in potential harm to our inpatients and overuse of staff time and resources. Future work is underway to 'Think Glucose' and implement protocols for appropriate CBG monitoring frequencies and target CBG ranges for our inpatients.

Assessing antibiotic usage on a geriatric ward

M Truman; I Ajibola; W Tan; R Rawoo

Croydon University Hospital

Introduction: The World Health Organisation lists antibiotic resistance as one of the biggest threats to global health [1]. We contribute to this as clinicians, through errors such as delayed review of prescriptions or prescribing against local trust guidelines. We have carried out a quality improvement project to improve antibiotic prescriptions on a geriatric ward at Croydon University Hospital.

Method: We carried out a fortnightly cross-sectional analysis of the antibiotic prescriptions on a geriatric ward. This included looking at the antibiotic prescribed, indication, duration, route of administration and presence of a review date. These were then compared to trust guidelines. After the first 8-weeks, we delivered a departmental teaching session on antibiotic prescriptions. We then re-audited the prescriptions. Following this, we sent out weekly email reminders on locating trust guidelines and information on prescriptions. We then re-audited following this. Finally, we created an elearning resource to deliver to the ward on antibiotic prescriptions. We are planning to deliver this to the ward and re-audit afterwards.

Results: Initially, up to 90.0% of prescriptions differed from trust guidelines. Common reasons for differences when compared included incorrect drug prescribed, incorrect frequency of dosing, or non-specific indications leading to difficulty comparing. Following all interventions, approximately 32% of prescriptions differed from trust guidelines. This showed sustained improvement across 2 complete PDSA cycles (plan, do, study, act). A 3rd PDSA cycle is ongoing at present and preliminary data has shown approximately 28% of prescriptions differed from trust guidelines.

Conclusion: This quality improvement project has successfully contributed to a reduction in prescription errors and safe prescribing. We will continue to provide information to our colleagues on antibiotic stewardship, to further encourage safe prescribing.

[1]. Antibiotic resistance (2020) World Health Organization. Available at: https://www.who.int/news-room/fact-sheets/detail/antibiotic-resistance (Accessed: May 2023).

An observational study of the effectiveness of FIT test as a risk stratification tool in frail patients presenting with anaemia

M Khatun¹; S Khanom²; R Rasheed³

- 1. Imperial College London; 2. Chapel Street Surgery, Rigg Milner Medical Centre,
- 3. Collingwood Surgery Medical education and Research

Introduction: Faecal-immunochemical-test is employed as a screening tool for colorectal cancer. Our observational study examined the FIT in primary care as a risk stratification tool in frail patients.

Method: The records of 217 frail patients over a 24-month period were analysed. Patients with haematological indices of anaemia were offered FIT to detect GI haemorrhage as part of assessment for selection for lower GI investigations. Patients were risk stratified based on FIT results based on the presence or absence of red flags. Patients who were FIT positive were referred for urgent lower GI endoscopy versus those who were FIT negative were managed without bowel investigations unless there were red flags such as abdominal mass, changed bowel habits or family history of bowel cancer.

Results: Of 217 patients over a 24-month period of these 42 patients (19.4%) were FIT positive. All of these (n = 42) underwent colonoscopy of which 15 (normal)16 (colonic polyps) 6 (diverticulosis) 3 (colorectal cancer). Of the 42 FIT positive patients 16 were on direct oral anticoagulant (DOAC). Patients on DOACs and those on dual anti platelet agents were more likely to be FIT positive. We also found a positive correlation between higher frailty indices, HAS BLED scores and chronic kidney disease and low creatinine clearance r=0.82, p=0.001. Despite the small numbers in this study the correlation is statistically significant

Conclusion: There is a statistically significant positive correlation of FIT positive and frailty indices with DOACs, Dual anti platelet agents, CKD, low creatinine clearance (r=0.82 and p=0.001). Following this the HASBLED scores increased hence our practices implemented an enhanced surveillance of monitoring these patients quarterly due to the increased risk. We advocate frailty indices should be incorporated in the HAS BLED scores for improved patient safety.

Acute Sedation Prescribing in the Older Person

S Ashcroft-Quinn^{1,2}; M McKenna¹; M V Roberts¹

1. Western Health and Social Care Trust; 2. Northern Ireland Medical and Dental Training Agency

Introduction: Anti-psychotics and benzodiazepines are commonly prescribed for older people. They are usually indicated in the short term for delirium and agitation. There are known risks associated with these drugs in the older population including functional decline, increased falls risk and overall mortality. Moreover, chemical sedation is a form of restraint and deprives patients of their liberty. Sedative prescribing should be protocol driven and preceded by non-pharmacological intervention. However, these prescriptions are often initiated prematurely and evade review, continuing in the long-term.

Method: Our QI team aimed to reduce prescribing of new sedating drugs by 60% in patients using an MDT approach. Our strategies focused on increasing awareness and utilisation of existing protocols, to improve non-pharmacological management of delirium. This was achieved through the strategic delivery of teaching sessions for nursing, pharmacy and medical staff. Further, we utilised force function techniques and management charts to encourage review of these prescriptions. We gathered our data on a weekly basis over a five-month period by reviewing all prescribed medicines for patients on an older people's ward.

Results: We exceeded our initial aim achieving a reduction of 82% in the prescribing of new lorazepam and haloperidol. We also attained a significant and sustained uptake of over 95% in the use of the delirium protocol. Where a review sticker was used, 80% led to discontinuation of the target prescription. Although these improvements were focused on one ward, the wider changes and improvements were observed throughout the hospital.

Conclusion: The significant reduction in sedative prescribing demonstrates the need and potential for improving the quality and safety of this aspect of patient care. The wider success of this project highlights the importance of addressing human factors to drive and sustain change. Improving the understanding of MDT members is integral to changing behaviours and improving patient safety.

Association of Bradykinin receptor 2 variants with physical performance and muscle mass: findings from the LACE sarcopenia trial

A Shrestha¹; T Bashir¹; M Witham²; the LACE study group; P Kemp¹

1. National Heart and Lung Institute, Imperial College London, South Kensington Campus, London, SW7 2AZ; 2. AGE Research Group, NIHR Newcastle Biomedical Research Centre, Newcastle upon Tyne, UK

Introduction: The kinin-kallikrein system has been implicated in muscle performance: bradykinin promotes glucose uptake and blood flow in muscle through bradykinin receptor 2 (BDKRB2). BDKRB2 variants include rs1799722 and rs5810761, where the T and -9 alleles respectively have associated with increased transcriptional rates and were overrepresented in endurance athletes. However, these variants have rarely been studied among older people or those with sarcopenia.

Methods: The Leucine and ACE inhibitor (ACE) trial enrolled 145 participants aged ≥70 years with low grip strength and low gait speed. Participants' blood samples had DNA extracted and were genotyped for rs179972 using TaqMan and rs5810761 by amplification through Hotstar Taq (and visualised through 4% agarose gel electrophoresis). The differences in genotypes for each variant against physical performance measures (e.g. six-minute walk distance [6MWD]) was calculated using t-tests or Mann-Whitney tests where appropriate. Genotypes were also tested for Hardy-Weinberg equilibrium (HWE) using Chi-squared test.

Results: Data from 136 individuals were included in the analysis. For rs1799722, the genotype frequency (TT: 17, CC: 48, CT: 71) remained in HWE (p=0.248). No difference between TT and CC/CT group was seen for 6MWD, grip strength or SPPB. Among men, the TT genotype had greater 6MWD compared to CC/CT (400m vs 312m, p=0.007), and also greater leg muscle mass (17.6kg vs 15.3kg, p =0.005), but no difference was noted in women. For rs5810761, the genotype frequency (-9-9: 31, +9+9: 43, -9+9: 60) also remained in HWE (p=0.269). No difference between -9-9 and +9+9/+9-9 was seen for 6MWD, grip strength or SPPB. In men, but not women, -9-9 genotype had reduced arm fat baseline (1.85kg vs 2.72kg; p=0.005).

Conclusion: Among men, the TT genotype was associated with longer 6MW distance and higher leg muscle mass. The -9-9 genotype was associated with lower regional fat mass in men.



Sarcopenia and post-hospital outcomes for older patients in an emergency department

T H Ho¹; H H Huang²

1. Faculty of Medicine, National Yang Ming Chiao Tung University, Taipei 112, Taiwan; 2. Department of Emergency Medicine, Taipei Veterans General Hospital, Taipei 112, Taiwan

Introduction: Sarcopenia, an important condition in older adults, is associated with increased adverse outcomes, including falls, functional decline, frailty, and mortality. Sarcopenia is often not diagnosed in emergency department (ED) settings. Therefore, this study aimed to determine the prevalence, risk factors, and clinical outcomes of sarcopenia patients admitted to the ED.

Methods: This observational study included patients aged ≥ 65 years admitted to the ED of Taipei Veterans General Hospital from September 2019 to November 2021. The patients were divided into two groups according to the definition of the Asian Working Group for Sarcopenia: sarcopenia and non-sarcopenia.

Results: Among 867 enrolled, 447 (51.6%) were categorised into non-sarcopenia and 420 (48.4%) into sarcopenia groups. Sarcopenia patients were significantly older, shorter, weighed less, and had significantly lower values of body mass index, skeletal muscle mass, skeletal muscle index, and handgrip strength. The sarcopenia group had significantly fewer daily living and instrumental activities. The independent risk factors for sarcopenia were age (odds ratio [OR] 1.07, P < 0.001), malnutrition (OR 3.83, P < 0.001), and frailty (OR 1.91, P = 0.001). Sarcopenia patients had significantly higher admission (66.7% vs. 59.1%, P = 0.021) and 1-month mortality rates (P = 0.002).

Conclusion: Sarcopenia patients are at risk of functional decline, hospital admission, and 1-month mortality. The independent risk factors for sarcopenia include age, malnutrition, and frailty. The recognition of sarcopenia as a medical condition in an ED may prompt targeted nutritional interventions, tailored discharge plans, and referrals to reduce disability, admission, and mortality.

Sarcopenia screening in older community-dwelling adults: findings from Southampton Longitudinal Study of Ageing (SaLSA)

F Laskou¹; L D Westbury¹; G Bevilacqua¹; I Bloom¹; C Cooper¹; P Aggarwal²; E M Dennison¹; H P Patel^{1,3,4}

1 MRC Lifecourse Epidemiology Centre, University of Southampton, Southampton, UK, 2 Living Well GP Partnership, Southampton, UK, 3 Academic Geriatric Medicine, University of Southampton, UK, 4 NIHR Southampton Biomedical Research Centre, University of Southampton & University Hospital Southampton NHS Foundation Trust, UK

Introduction: The SARC-F questionnaire can be rapidly implemented by clinicians to identify patients with probable sarcopenia. A score ≥4 is predictive of sarcopenia and poor outcome. We sought to identify the prevalence and demographic correlates of probable sarcopenia (SARC-F score ≥4) in community-dwelling older adults.

Methods: 480 participants (219 men, 261 women) identified from Primary Care completed a questionnaire ascertaining demographic, lifestyle factors, comorbidities, nutrition risk score (DETERMINE) and SARC-F score. Participant characteristics in relation to probable sarcopenia were examined using sex-stratified logistic regression. Age was included as a covariate.

Results: The median (lower quartile, upper quartile) age was 79.8 (76.9, 83.5) years. 12.8% of men and 23% of women had probable sarcopenia. Self-reported walking speed strongly associated with probable sarcopenia (men: odds ratio (OR) 10.39 (95% CI: 4.55, 23.72), p<0.001; women: 11.42 (5.98, 21.80), p<0.001 per lower band). Older age was associated with probable sarcopenia in both sexes (p=0.01) as was higher DETERMINE score (men: 1.30 (1.12, 1.51), p=0.001; women: 1.32 (1.17, 1.50), p<0.001 per unit increase). Among men, being married or in a civil partnership or cohabiting was protective against probable sarcopenia (0.39 (0.17, 0.89), p=0.03) as was reporting drinking any alcohol (0.34 (0.13, 0.92), p=0.03) while in women generally similar relationships were seen though these were weaker. Higher BMI (1.14 (1.07, 1.22), p<0.001 per unit increase) and presence of comorbidities (1.61 (1.34, 1.94), p<0.001 per extra medical condition) were also associated with probable sarcopenia in women. All associations were robust after adjustment for age.

Conclusions: Probable sarcopenia (SARC-F score ≥4) was common in older adults living in their own homes. As expected, self-reported walking speed was highly predictive of probable sarcopenia. In addition to advancing age and malnutrition, socio-demographic factors were also important. Identifying these factors in clinical practice should trigger sarcopenia screening in older adults.

1986. Scientific Presentation - Diabetes

Hypoglycaemia in older people with diabetes and symptoms suggestive of hypoglycaemia - continuous glucose monitoring (CGM) study

N Navaneetharaja¹; K Mattishent²; Y Loke²

1. Norfolk and Norwich University Hospitals NHS Foundation Trust; 2. Norwich Medical School, University of East Anglia

Introduction: Older people with diabetes are often admitted with falls, dizziness or confusion that may stem from undiagnosed episodes of hypoglycaemia. We examined the use of a 10-day period of round the clock glucose monitoring (CGM), to detect hypoglycaemia in older people with diabetes with symptoms potentially related to hypoglycaemia.

Methods: Population: Age 75 years and older, on sulfonylureas and/or insulin, presenting to hospital with a fall and/or symptoms suggestive of unrecognised hypoglycaemia.

Design: Single-centre, observational study (no change to standard diabetes care). Intervention: 10 days of CGM with Dexcom G6 sensor and Android app on smartphone to continuously transmit data.

Primary outcomes: Proportion of participants with captured hypoglycaemia; within that group, time spent in the hypoglycaemic range (Battelino T, Danne T, Biester T, et al. Diabetes Care. 2019;42(8):1593-603.).

Secondary outcomes: Overall time in range; emergency department re-attendances and/or hospital re-admissions for falls, fractures, heart attacks, ischaemic strokes and death within 30 days. REC IRAS project ID: 301286.

Results: 26 eligible participants of which 13 consented to participate. At the time of writing, nine participants (mean age 81 years) completed the study. There were no reports of pain or skin reactions from the participants. Hypoglycaemic events were captured in 3 of 9 participants, with two participants suffering >1 hour below 3.9mmol/L. Only 3 participants achieved >50% time in range target (3.9-10.0mmol/L).

Discussion: We have detected significant hypoglycaemic episodes in our participants. CGM should be used more widely in older patients with diabetes who present with falls, dizziness or confusion. Limitations include issues around data capture due to participants struggling to navigate the mobile phone app. Despite this, all participants felt that CGM was better than finger-prick glucose testing. Future work is needed to explore how CGM can be deployed after acute admissions in this patient group.

1735. Scientific Presentation - Diabetes

Examining the correlation between glycemic control and malnutrition - a cross-sectional study of older adults in Singapore

S Y Tan; V Barrera; R Tan-Pantanao; S C Lim

Department of Geriatric Medicine, Changi General Hospital (Singapore)

Background: Type II Diabetes Mellitus (T2DM) is a common condition managed by geriatricians. Drugs and treatment goals for T2DM are individualized to patient profile and physician preference. Some diabetic medications are also known to affect appetite and subsequently, nutrition. The authors examined whether there is a correlation between glycemic control and malnutrition in older adults.

Methods: This cross-sectional study enrolled patients > 70 with T2DM in a teaching hospital in Singapore. Data was collected on age, sex, ethnicity, body-mass index (BMI), function (iADL-impairment), Barthel's score and cognitive scores (Abbreviated Mental Test), as well as the last glycated hemoglobin (HbA1c) reading. Nutritional assessment was performed using Mini Nutritional Assessment (MNA) screen. Univariate analysis and logistic regression analysis were performed to determine predictors of malnutrition.

Results: Overall, 135 patients were recruited (57.1% male, mean age 85.6 [6.1] years). 75 patients (55.6%) were classified to have moderate or severe disability by Barthel's and 19 (14.3%) had a BMI classified as underweight. 76 (56.7%) patients were considered to have good glycemic control (HbA1c < 7%) and 58 (43.3%) were not on any medications. Prevalence of patients with or at risk of malnutrition was high with 105 (88.4%) scoring MNA < 12. On univariate analysis, factors such as age, BMI, Barthel's score, iADL-impairment and AMT scores were significantly associated with malnutrition. Multivariate logistic regression analysis showed that there was no association between good glycemic control and malnutrition. (aOR 0.95, [0.14, 2.47], p=0.467)

Conclusion: Good glycemic control was not significantly associated with malnutrition after adjusting for confounders. Older adults at baseline have increased risk of malnutrition and more education delivered towards a proper diet.

1903. Scientific Presentation - Education / Training

Barriers perceived by medical students when considering a career in geriatric medicine.

G Fisher¹; S True²

1. Warwick Medical School; 2. Care of the Elderly, University Hospitals Coventry and Warwickshire (UHCW)

Introduction: Despite the UK's increasing life expectancy, and increase in the elderly population, there is an overwhelming lack of Geriatricians in the UK; as of 2022, there is only 1 consultant Geriatrician per 8,031 individuals over the age of 65 (BGS, 2023). To meet the complex care needs of this population, there must be a focus on increasing the interest that doctors have towards Geriatric Medicine, with the overall aim being to recruit more doctors into the speciality.

Method: The aim of this review was to investigate what factors medical students perceive as barriers to pursuing a career in Geriatric Medicine and then, from identifying these, generate a set of comprehensive suggestions as to how to tackle these barriers at a medical school level to increase the interest and ultimately uptake of Geriatric Medicine. The qualitative review contains literature published between 2003 and 2023 accessed using MedLine.

Results: Six themes were identified in answering our question: (a) high emotional burden, (b) caring for patients with complex needs, (c) negative preconceptions of non-clinical factors (prestige, salary, career progression), (d) negative influence of clinical educators, (e) lack of intellectual stimulation and (f) lack of exposure to the speciality and the elderly.

Conclusion: The barriers perceived by medical students when considering Geriatrics as a speciality are complex and multifaceted; these barriers must be tackled promptly in order to secure the next generation of Geriatricians. We suggest that this work can be used as a foundation for further qualitative studies with UK medical students to investigate barriers that are specific to UK students. From this, interventional courses designed to increase Geriatric Medicine uptake could be developed to strengthen the UK Geriatric Medicine workforce.

2000. Scientific Presentation - Epidemiology

Cause of death amongst frail and non-frail older people post-hospital admission in northern Tanzania

D T Moore¹; S L Davidson^{1,2}; A Murray¹; T Randall¹; J Hardy¹; G Lyimo³; J Kilasara⁴; S Urasa³; R W Walker^{1,2}; C L Dotchin^{1,2}

- 1. Newcastle University, UK; 2. Northumbria Healthcare NHS Foundation Trust, UK;
- 3. Kilimanjaro Christian Medical Centre, Tanzania; 4. Kilimanjaro Christian Medical University College, Tanzania

Introduction: Verbal autopsy (VA) is a tool used to determine cause of death (COD) in regions lacking routine medical certification. Automated algorithms are widely used to interpret VA data. This study aimed to investigate potential differences in COD between frail and non-frail older people in northern Tanzania.

Method: This work forms part of a longitudinal study investigating the clinical outcomes of 308 consecutive adults aged ≥60 years following admission to four hospitals in northern Tanzania. Frailty status was established on admission using the Clinical Frailty Scale (CFS) and dichotomised with CFS ≥5 indicating frailty. For participants who passed away in the 10-12 months following admission, VA data were collected through telephone interview using the 2022 World Health Organization (WHO) VA instrument. COD estimates were established using the SmartVA-Analyze program, implementing the Tariff 2.0 Method.

Results: After a mean follow-up period of 10.8 (±0.9) months, VA data were available for 69 participants. At admission screening, 51 (73.9%) were frail, while 18 (26.1%) were nonfrail. SmartVA produced COD estimates for 42 (60.9%) participants, while 27 (39.1%) remained undetermined. Cause Specific Mortality Fractions (CSMFs) for noncommunicable disease were higher for those with frailty than the non-frail group (70.6% vs. 54.0%, respectively). An undetermined COD was more likely in those with frailty. Of the 27 undetermined COD, 22 (81.5%) were attributed to frail individuals and 5 (18.5%) to non-frail. These undetermined COD represent 43.1% of frailty-related deaths and 27.8% of non-frailty-related deaths.

Conclusions: Older people with frailty living in Tanzania are more likely to die from non-communicable diseases compared to non-frail older people. Although employing SmartVA to analyse VA data from this population was feasible, it faced challenges ascribing COD to all participants. This limitation may be due to the multi-morbidity often present in older populations where multiple factors combine to cause mortality.

1938. Scientific Presentation - Epidemiology

Prevention of herpes zoster infection with a recombinant zoster vaccine to support healthy ageing in older adults

A Ankobia¹ on behalf of; D Curran²; T M Doherty²; N Lecrenier²; T Breuer²

1. GSK, London, United Kingdom; 2. GSK, Wavre, Belgium

Introduction: In the European Union, life expectancy has increased from 74 to 81 years between 1990 and 2018. Time spans living in ill health are also increasing. Vaccine recommendations focus primarily on vaccines that prevent death thereby extending length of life. The focus should also include vaccines that promote healthy ageing (HA), improving the quality of longer lifespans. The aims of this review are to describe the impact of herpes zoster (HZ) in adults ≥50 Years of Age (YOA), and to summarise the available evidence on how the recombinant zoster vaccine (RZV) contributes to HA.

Methods: We conducted a narrative review of published literature on the impact of developing HZ on HA and the ability of vaccination to prevent the subsequent burden of disease. Specifically, we describe HZ impact on functioning ability and quality of life, and impact of RZV on reducing the burden of HZ in adults ≥50 YOA.

Results: One in three people develop HZ in their lifetime. Approximately, 15 million cases of HZ occur annually worldwide in adults ≥50 YOA. Post-herpetic neuralgia (PHN, pain persisting for ≥ 90 days) occurs in up to 30% of patients, with HZ ophthalmicus affecting up to 25% of patients. HZ presents as a unilateral, vesicular rash with pain scored as "worst pain imaginable" in ≥15% of patients. Treatment options for HZ and its complications are limited and suboptimal with only 14% of patients with PHN satisfied with their treatment. Pain significantly impacts sleep, mood, physical, social and mental functioning. RZV elicits a strong and long-lasting immune response, targeting the decline in cellular immunity. RZV reduced the burden of HZ pain and interference on activities on daily living by >90% in adults aged ≥50 YOA.

Conclusion: RZV, by preventing HZ episodes, supports maintenance of functional ability contributing to wellbeing in older age.

2012. Scientific Presentation - Epidemiology

The long-term clinical outcomes of older adults with frailty following acute hospital admission in Tanzania

*S L Davidson^{1,2}; *A Murray¹; J Hardy¹; T Randall¹; G Lyimo³; J Kilasara⁴; S Urasa³; R W Walker^{1,2}; C L Dotchin^{1,2}

*Joint first authors

- 1. Newcastle University, UK; 2. Northumbria Healthcare NHS Foundation Trust, UK;
- 3. Kilimanjaro Christian Medical Centre, Tanzania; 4. Kilimanjaro Christian Medical University College, Tanzania

Background: Non-communicable disease, multimorbidity and frailty are posing considerable challenges as global populations age. Healthcare systems in Low- and Middle-Income Countries are having to rapidly adapt services to meet the needs of older people.

Objective: This study, the first of its kind in sub-Saharan Africa, aimed to establish whether screening older people for frailty on admission to hospital could be used to identify those at greatest risk of adverse outcomes.

Methods: At baseline assessment, 308 participants aged ≥60 years, admitted to medical wards at four hospitals in the Kilimanjaro Region of Tanzania, were screened for frailty using the Clinical Frailty Scale (CFS). After 10-12 months, participants, and their informants, were contacted by telephone to establish clinical outcomes. The primary outcome was all-cause mortality. Cox regression was used to estimate hazard ratios (② 95% confidence interval) for mortality, with dichotomised CFS frailty status (frail if ≥5) as the independent variable.

Results: Primary outcome data were obtained for 194 (63.0%) of the original participants after a mean follow-up period of 10.8 ($\boxed{2}$ 0.9) months. Mean age was 75.1 years and 99 (51%) of respondents were female. A total of 100 (51.5%) respondents were deceased and hazard ratios for all-cause mortality demonstrate that those with frailty were at significantly greater risk of mortality (HR 2.27 [CI 1.39 – 3.69], p<0.01), an effect that persisted even after adjustment for age, baseline Barthel Index, education and number of chronic conditions.

Conclusion: For older people living in Tanzania, unplanned admission to hospital is associated with high mortality and frailty is a strong independent predicator. In accurately identifying which older people are at the greatest risk, frailty screening using the CFS could provide a starting point for the development of targeted care pathways and interventions.

Dogs and Bones

L Williams, N Nyunt, R Davies, V Adhiyaman

Department of Geriatric medicine and Orthopaedics, Glan Clwyd Hospital, Rhyl, North Wales

Introduction: The health benefits of owning dogs include improved physical activity, mental well-being, companionship, and so forth. However, musculoskeletal injuries caused by dog-related activities might negate the aforementioned benefits. The aim of this study was to estimate the number of femoral fractures directly linked to dog-related activities in people above the age of 60.

Methods: In this observational study, we included all patients above the age of 60 with femoral fractures caused by dog-related activities, over a one-year period (June 2022 to May 2023). We chose to include people above the age of 60 because they are more likely to have a fragility fracture and are entered in the National Hip Fracture Database.

Results: 387 patients (above the age of 60) were admitted with femoral fractures during the study period. Of these, 16 were directly related to dog-related activities. The common mechanisms of injuries include being tripped, pulled down and jumped over by a dog, and tangled and tripped by the dog leash.

Conclusion: 4% of femoral fractures (1 in 25) in people above the age of 60 were caused by dog-related activities. This is probably an underestimate, because some owners may not have volunteered this information out of love for their dogs and inadequate history regarding the circumstances that led to the fall. Despite the injuries, all patients still loved their dogs and wanted to go home as soon as possible to be with them. There were more fractures in spring and summer (11) compared to autumn and winter (5) which reflects increased activity with better weather. Having a dog is a risk factor for falls and fractures. We recommend that dog owners carefully consider their choice of dogs and if there are issues with handling them, both dogs and their owners should receive appropriate training.

Development of an innovative digital questionnaire to screen adults for risks of Osteoporosis and Falls by a Primary Care FCP

C Y Birch

Pier Health, Primary Care, Weston-super-Mare

Introduction: Socio-economic costs of hip fractures are formidable. Despite osteoporosis and falls being major risk factors, preventative screening in Primary Care does not occur. Evidence shows screening older women for osteoporosis prevents hip fractures, but to make a greater clinical and economic impact simultaneous screening of falls and fracture risks is logical. This cross-sectional study evaluates an innovative digital questionnaire and computer programme to combine person-reported data with medical data, and autocalculate fracture and falls risks without the need for clinician time.

Method: Digital questionnaires were distributed via email or SMS to adults aged ≥65 who had consented to receive electronic correspondence over a 16-week period in one medical centre. Excluded were adults in nursing/residential care or receiving palliative care. A computer programme combined patient-reported information with existing medical data required to calculate FRAX® & FRAT scores. A robot computer function retrieved fracture risk scores from the FRAX® online tool. A weekly report showed those at high/medium risk of fracture and high risk of falls. Personalised bone health and lifestyle advice was automatically distributed.

Results: 632 (37%) of 1692 questionnaires were returned. Ages ranged from 65 to 92 years (M=72.5, SD=5.7), 47.8% identified as male and 52.2% female. Using NOGG UK Guidelines (2021), 217 (34%) adults were identified at amber and 46 (7%) at red fracture risk. 131 (20.7%) adults had fallen within the previous year and 122 (19%) had a high-risk FRAT score ≥3. Personalised bone health and lifestyle advice was delivered to all 632 adults.

Conclusion: This automated screening process accurately identifies adults who are falling and/or at risk of osteoporosis and enables personalised bone health and lifestyle advice to be distributed without the need for clinician time. Prevention of falls and hip fractures would result in significant savings to the NHS and Social Care budgets.

How confident are we in decision making? The quantitative analysis of ambulance response to older adult fallers: A pilot survey

I Gunson^{1,2}; L Bullock¹; T Kingstone¹; M Bucknall¹

1. Keele University; 2. West Midlands Ambulance Service University NHS Foundation Trust

Introduction: The number one reason for older people to be taken to hospital emergency departments is a fall¹. An "Ambulance Improvement Programme Pillar"² is trying to reduce conveyance to hospital for falls, however it is not understood how the attending clinician's confidence impacts decision-making. The objectives were to assess recruitment rate and feasibility of online survey delivery, and determine the experiences and confidence of frontline emergency clinicians in attending older adults who have fallen.

Method: Online cross-sectional survey, undertaken in one English ambulance service in May 2023. Items included participant demographics and 5-point Likert scales of confidence. Data were summarised using descriptive statistics and Chi-square analyses to compare confidence between localities and years' experience.

Results: 81 responses were received from across the regional ambulance service's 16 localities, supporting online survey delivery to be feasible in this population. 76% of respondents were paramedics, and 53% were aged 25-34. 60% of respondents rated being 'Somewhat confident' in assessing older adults who have fallen, with responses ranging between 'Neither confident nor unconfident' to 'Completely confident'. No significant difference was found between the locality and confidence levels for assessing this patient population. However, there appeared to be significant variation between confidence levels relating to utilisation of hospital pathways and localities (p-value=.0045). Length of experience in both frontline ambulance and overall healthcare provision was not significantly associated with different levels of confidence.

Conclusion: Online survey delivery is an effective method in this population. Locality of work had a relationship with confidence in utilising hospital avoidance pathways, however, it did not relate to assessing this population. Confidence levels were not found to be related to the number of years providing care.

References: 1. Dewhirst. (2023). National Falls Prevention Coordination Group. https://committees.parliament.uk/writtenevidence/117837/pdf/
2. NHS England and NHS Improvement. (2019). Ambulance Improvement Programme. https://www.england.nhs.uk/wp-content/uploads/2019/09/planning-to-safetly-reduce-avoidable-conveyance-v4.0.pdf

How do emergency ambulance clinicians decide what to do for older adults who have fallen? An analysis of qualitative survey data

I Gunson^{1,2}; L Bullock¹; T Kingstone¹; M Bucknall¹

1. Keele University; 2. West Midlands Ambulance Service University NHS Foundation Trust

Introduction: Around 10% of calls received by English ambulance services are for older adults who have fallen¹; with an ageing population there are significant care provision needs. Decision-making on the treatment for people who fall, can impact their future physical and mental health. Previous research in decision-making of ambulance staff found perception of role, confidence, service demands and training to be key drivers². The previous work highlighting drivers, but not the experiences that explain why they occur, leads this study aim to determine the experiences and confidence of frontline emergency clinicians in attending older adults who have fallen.

Method: Online cross-sectional survey of frontline emergency clinicians from one English ambulance service in May 2023. Open questions generated qualitative data for thematic analysis³. Ethical and regulatory approvals, and informed consent, were obtained. Results: 81 participants completed the survey. Analysis identified three themes. Care Provision: Provision of hospital avoidance pathways varies throughout the region. Concerns arose from not knowing what different areas had and reduced accessibility out of hours. Communication: Decision-making confidence was impacted by the participants' experiences; positive experiences encouraged use of hospital avoidance pathways, whilst negative experiences impeded willingness to avoid hospital for fear of repercussion. Shared Decision-Making: Patients, family and clinicians were all valued as part of shared decision-making, with past feedback on decision-making informing future practice.

Conclusion: Confidence of frontline ambulance staff was impacted by the challenge of a regional and 24/7 ambulance service not having consistent pathways available. This variation led to concerns when responding to patients outside of the clinician's usual area, and further challenges ambulance clinicians must balance in their practice.

References: 1. Snooks, Anthony, Chatters, et al. (2017) Health Technology Assessment, 21; 1-218.

- 2. Simpson, Thomas, Bendall, et al. (2017) BMC Health Services Research. 17; 299.
- 3. Braun and Clarke. (2022) Thematic Analysis: A practical guide.

2010. Scientific Presentation - Gastroenterology

The scope of CT in investigating iron deficiency anaemia in the context of frailty

M Amin¹; C Tilley¹; U Pabani¹; M Kaneshamoorthy²

1. Internal Medicine; Southend University Hospital; 2. Department of Medicine for the Elderly; Southend University Hospital

Introduction: Iron Deficiency Anaemia (IDA) is a highly prevalent co-morbidity in older patients with advanced frailty. It's associated with adverse outcomes and heightened all-cause mortality. IDA is frequently multifactorial and can stem from various gastrointestinal causes. The British Society of Gastroenterology and National Institute for Health and Care Excellence advocate a combination of endoscopy and computerised tomography (CT) as the gold standard investigations for IDA. The aim of this review was to evaluate oesophagogastroduodenoscopy (OGD) findings and management outcomes of clinically frail patients with IDA.

Methods: We review notes for patients referred for OGD to investigate IDA without additional symptoms over a six-month period. The inclusion criteria were IDA, age of 65 years or greater and a clinical frailty score of 5 or greater.

Results: 53 patients met the inclusion criteria. A single case (1.8%) UGI malignancy using OGD was identified prior to CT. Thus, demonstrating low yield of OGD in malignancy. 35.6% of patients underwent CT scanning 3 months prior to OGD. Approximately 90% of OGD findings were benign. 23% of patients died within 90 days of OGD. No significant adverse events during OGD or significant complications were recorded in our cohort. It is therefore highly unlikely that the undergoing of an OGD had a direct impact on mortality.

Conclusion: This review shows there is a low yield of UGI malignancy on OGD following a negative CT. Benign upper GI condition is the most common finding. Thus, CT imaging alone may be an adequate investigation to rule out UGI malignancy in this group. Considering there is a high mortality rate in older patients with frailty, following an OGD, we suggest considering starting empirical treatment with PPI and iron replacement as a suitable and less invasive alternative to OGD after a negative CT in frail patients

A new way of involving experts by experience in social care research

J Faraday^{1,2}; B Brown³; N Brown³; D Rowland³; F Shenton⁴; A Hand^{1,5}

1. The Newcastle upon Tyne Hospitals NHS Foundation Trust; 2 Newcastle University; 3. The White House Care Home; 4. NIHR Applied Research Collaboration North East and North Cumbria; 5. Northumbria University

Introduction: Meaningful involvement of experts by experience in the design of health and care research is now well-established as good practice (Staniszewska, 2018). For example, it is essential that the voices of residents and staff are properly heard in care homes research, since they provide important perspectives not necessarily shared by the wider multidisciplinary team (Shepherd et al. 2017). Nevertheless, there are concerns that involvement can be tokenistic, or vulnerable to power imbalances (Baines & de Bere, 2017; Jennings et al., 2018).

Methods: A care home in northeast England is working with researchers to pioneer a new approach to involvement, with residents and staff at the centre. The care home has helped to shape a number of research projects, for example a feasibility study of mealtime care training. In this study, an advisory group was set up initially within the care home itself, comprising residents, staff and family carers. Subsequently the group was joined by people from other care homes in the area, with support from the local authority. In parallel to this, health and social care professionals have contributed to the advisory group through one-to-one meetings with the researcher.

Results: Advisory group meetings in the care home have provided an inclusive and equitable platform for residents and staff to share their views on the research topic and design. Other stakeholders have been able to input into the project, but separately and in a way that has left room for key voices to be properly heard. Contributors have felt valued and are keen to continue in the process.

Conclusion: This study offers an alternative and authentic model for the involvement of experts by experience in social care research, inverting the more typical approach so that residents and staff are at the centre not the periphery.

A scoping review of remotely delivered cognitive assessment tools that could be used in comprehensive geriatric assessment

J Whitney¹; E A Jamaludin¹; J C Bollen^{1,2}; A Hall²; A Bethel²; J Frost²; A Mahmoud²; N Morley²; S Freby²; V Goodwin²

1. King's College London; 2. University of Exeter

Introduction: Community-based comprehensive geriatric assessment (CGA) reduces hospital admissions but the optimal way in which CGA can be delivered is not well understood. Digital and Remote Enhancements for the Assessment and Management of older people living with frailty (DREAM) is a programme of research seeking to develop an enhanced community CGA intervention. We aimed to identify candidate cognitive assessment tools (CATs) that could be undertaken remotely and enhance CGA.

Methods: Searches were carried out on Medline, PsycINFO, CINAHL and Cochrane databases. Papers published since 2008 were included if they analysed the validity, reliability or acceptability of CATs that could be undertaken remotely in a domestic setting and were tested on older people.

Results: Of 4286 papers identified, 56 were included. Four types of CAT were identified: computer/tablet/smartphone applications (23tools/27papers), telephone (16tools/23papers), video (2tools/2papers) and specialist equipment (4tools/4 papers). 14 tools demonstrated excellent accuracy for identifying mild cognitive impairment or dementia (specified as AUC >0.80 or sensitivity/specificity>80%). 42 papers presented concurrent/convergent validity, 14 reliability and 16 acceptability data. Time taken to perform tests ranged between 2-30 mins. Of the 23 computer/tablet/smartphone applications, 7 tools are currently available to download.

Conclusions: Remote CATs could be used in CGA. Computer/tablet/smartphone applications and some specialist equipment could enhance assessment by quickly and accurately identifying cognitive impairment, in some cases with greater accuracy than traditional tests. Tools that use 'games' may be more appealing than conventional pen and paper tools. However, many of the computer/tablet/smartphone applications tested are not available for clinical use.

Systematic review of 'Ageing well' interventions to improve and maintain independent living for community housebound populations

D Thomas¹; S Voss²; R Hoskins²

1. Sirona; 2. University of the West of England

Introduction: The housebound population are growing in number, with a large proportion living rurally or in coastal areas, which increases the risks of isolation and health inequalities. This population are an under researched and underserved group (Public Health England, 2019). Being unable to leave the home is a factor for living in the poorest of health, which contributes to advancing levels of frailty, Curtis et al (2018). Considering the current focus of empowerment to 'age well' (NHS England Long Term Plan, 2019), a granular understanding of community focused ageing well interventions is the focus of this systematic review to empower clinicians to 'make every contact count' (NHS England 2020).

Method: A narrative evidence review of findings has been completed entitled 'ageing well interventions to improve and maintain independent living for community housebound populations.' The review was registered with PROSPERO international prospective register of systematic reviews (CRD 42022371047) and reported according to the Preferred Reporting Items for Systematic reviews and Meta-analysis (PRISMA). Data screening was undertaken by two reviewers at each stage to ensure accuracy, quality, and reliability.

Results: The results have identified key health interventions designed and delivered by community clinicians, including benefits of exercise, medication review, oral health, and health empowerment to improve outcomes for the housebound population. The results have outlined a total of twenty-nine outcome measures, which have been examined intrinsically and extrinsically to explore greatest impact for housebound health.

Conclusion: At the time of the Autumn conference, the research study will have completed the systematic review and be able to present findings to illustrate areas of intervention synthesized for the target population. Key to this will be understanding application, effectiveness, and generalizability for community delivery. The poster presentation will share progress of the wider study with opportunities to take part in the next Delphi panel stage.

Recommendations for a deprescribing approach that can be implemented in care homes: STOPPING study findings and lessons

K Warmoth^{1,2}; J Rees^{1,2}; J Day^{3,4}; E Cockcroft^{3,4}; A Aylward⁵; L Pollock⁶; G Coxon⁷; T Craig⁸; B Walton², K Stein^{3,4}

1 University of Hertfordshire; 2 NIHR Applied Research Collaboration East of England; 3 University of Exeter; 4 NIHR Applied Research Collaboration South West Peninsula; 5 Peninsula Public Involvement Group, NIHR Applied Research Collaboration South West Peninsula; 6 Somerset NHS Foundation Trust; 7 Classic Care (Devon) Homes Ltd.; 8 Somerset Care Ltd.

Introduction: Care home residents often have multiple long-term conditions and experience polypharmacy. Deprescribing is the reduction or stopping of prescription medicines that may no longer be providing benefit. Previous research has found that deprescribing is generally safe but it is unknown how to make it work well in practice, like care homes.

Method: Using the findings from the NIHR-funded STOPPING project, which aimed to support the development of better deprescribing practice approaches within care homes, considering different views and environments, recommendations for designing a deprescribing approach for care homes were developed. The STOPPING project included interviews with residents and their family members/friends, care home staff, and healthcare professionals about their experiences and beliefs about what influences deprescribing in 15 different care homes, and in-depth interviews with care home staff assessing current deprescribing tools/approaches about their acceptability, feasibility, and suitability for use in care homes.

Results: The developed approach included four implementation aspects: (1) plan and coordinate, (2) communicate and collaborate, (3) access and share information, and (4) monitor and evaluate. Proposed actions to encourage deprescribing in care homes were identified for each aspect (e.g., communication with residents and families about medication changes addressing concerns and offering clear instructions about observations).

Conclusion: Deprescribing within care homes is a complex and collaborative process, which involves many individuals with unique clinical and care skills, knowledge, and beliefs. To ensure it is successful, these different people need to be involved and contribute their specific knowledge and views. Communication and collaboration between care homes and healthcare professionals (such as GPs, nurses, and pharmacists) are essential to ensure deprescribing is done well. Information sharing and integrated working may support better communication and collaboration. Further work is needed to develop tools and approaches, and this work must include input from care home staff and residents.

Understanding the Perceptions of Caregivers of Older People in Residential Homes in Cairo

M Rakhawy¹; M Shahin¹; N Sabry²; G Tadros³; R Nawwara¹; K Ali⁴

1. Rakhawy Institute for Training and Research, Egypt; 2. Kasr Alainy, Egypt, 3. American Centre for Psychiatry and Neurology, Khalifa University, UAE, 4. Brighton and Sussex Medical School (UK)

Introduction: Institutional care for older people is a relatively new social phenomenon in Egypt that is associated with societal stigma. Traditionally dependent older people are looked after by family members at home. There are currently 145 care homes in Egypt, mostly based in Cairo serving 2% of the older population. The aim of this study was to understand the perspectives of paid caregivers on the strengths, weaknesses, opportunities, and threats (SWOT) associated with their professional roles. This knowledge is crucial to deliver a culturally sensitive training program for caregivers, and enhance their job satisfaction, ultimately leading to person-centred high-quality care.

Method: Two focus group meetings, 90 minutes each, were conducted with 39 caregivers in a private care home in Cairo. Each group was further divided into four working subgroups using a SWOT approach to guide the discussion. Generic themes were identified, analysed, and agreed on by the group participants.

Results: Thirty-nine caregivers (31 % males), age range 18-50 years, were interviewed including undergraduate and qualified nurses and social workers. Five themes were identified: administration, team values, training, place and equipment, and residents and families. SWOT findings related to each theme are summarised below:

Theme	Strength	Weakness	Opportunities	Threats
Administration	Support and	Poor incentives	Access to Lack of rest	
	flexibility		healthcare	facilities
			services	
Team values	Peer support	Mixed qualities in	Outdoor	Lone working
		different leaders	recreational	
			activities	
Training	Mentoring	Unfulfilled training	Regular updates	No medical cover
	programme	needs	on CGA	
Place &	Resident	Not always fit for	Health and safety	Cost of
Equipment	accommodation	purpose	compliance	accommodation
Residents and	Sharing knowledge	Discriminatory	Documentation of	Unfounded
families		attitudes toward	resident's	complaints
		staff	priorities	

Conclusion: Reflecting on the views of paid caregivers provided valuable insight that could enhance the quality of institutional care for older people in Cairo.

The association between access to medical care and impact on resident outcomes: A retrospective cross-sectional analysis

K Bali¹; A Wagg¹; R Murphy²; A Gruneir³

1. Department of Medicine; University of Alberta; 2. Citizen partner; 3. Department of Family Medicine; University of Alberta

Introduction: There is a high level of clinical need among residents but little is known about the role of physicians or nurse practitioners (NP) in the nursing home (NH) setting. Our objective was to test for associations between physician and nurse practitioner (NP) presence on care units and outcomes among nursing home (NH) residents. A retrospective cross-sectional analysis of secondary data collected in the Translating Research in Elder Care (TREC) study during 2019-20. The sample consisted of 10,888 residents across 320 care units in 92 facilities.

Method: We used TREC Survey data (which included items on daily presence of physicians and NPs on units, physician involvement in care planning, and ability to contact physician or NP when necessary) linked to routinely collected Resident Assessment Instrument – Minimum Data Set version 2.0 (RAI-MDS 2.0), which included the outcomes antipsychotic medication (APM) use without indication, physical restraint use, hospital transfers, and polypharmacy. Eight logistic regression models were created to test the association between measures of daily presence of physician or NP on unit and physician involvement in care planning and each outcome.

Results: Of the 320 sampled units, 277 (86%) reported a physician or NP visited daily, 160 (72.1%) units reported that the resident's physician was involved in care planning, and 318 (99%) units reported that the physician or NP could be reached when needed. Following adjustment for multiple confounding variables, there were no associations between presence of medical professional and any resident outcome. There was no association between either physician or NP presence on the unit and hospitalization and ED transfers (AOR=1.17, 95% CI: 0.46-3.10) or polypharmacy (AOR=1.37, 95% CI: 0.64-2.93).

Conclusion(s): No association was found between any of the medical care provider presence measures and resident outcomes. This was surprising given the existing, but limited research.

The impact of patient and public involvement on partnership in the DREAM project

N Morley¹; T Sanders²; V A Goodwin¹ on behalf of the DREAM team

1. University of Exeter; 2. Ageing Research Unit Patient and Public Involvement Group (PUPA), Kings College London

Introduction: Patient and Public involvement is a cornerstone of the DREAM (Digital and Remote Enhancements for the Assessment and Management of older people) project. An advisory group of 10 diverse older people and carers was established to shape the research through regular discussions and explore inclusive involvement approaches for future work.

Methods: We conducted a reflective process evaluation to highlight the impact of the involvement process on the project and our public partners themselves. We collated impact logs, reflections and feedback from our public partners and an artist recorded the impacts using illustration.

Results: The advisory group:

- helped to lay the foundations of the project and steered its development with their views, knowledge and experiences
- shaped how evidence is captured and analysed so that it is usable, acceptable and makes sense to older people and carers
- provided insights to consider for implementation and shaped our dissemination strategy Our public partners and researchers also expressed relational impacts such as shared ownership. Public partners joined this project to improve health care for other people. They felt safe to share their experiences and be listened to. It gave them confidence in their health management, and they have built friendships. People also found comfort in the diversity of individuals and sharing common concerns.

Conclusion(s): Public partners have been instrumental in the development of the DREAM project and supported the programme by being a critical friend beyond the remit of the research. Continued communication and feedback resulted in public partners feeling heard and their suggestions acted upon. Researchers and public partners felt gratitude, ownership and joy working on this project, and finding shared values. Our involvement approaches have shaped reciprocal relationships and had impact on our research culture, forming a foundation to the values of the people it is serving.

Non-governmental organisations' digital engagement in providing services for older people's needs: a scoping review

S Bhattacharjee¹; A Kebede¹; M Raja²; R Sandic-Spaho²; L Uhrenfeldt³; I G Kymre²; K Galvin¹

1. School of Sport & Health Sciences, University of Brighton, UK; 2. Faculty of Nursing and Health Sciences, Nord University, Norway; 3. Institute of Regional Health Research, Southern Danish University, Denmark

Introduction: Digital technologies can play a significant role in addressing care needs of older people. The process of establishing an effective and efficient digital engagement with older people demands multi-sectoral collaboration from various stakeholders including non-governmental organisations. The role non-governmental organisations play in such digital programs, their process of engagement with older people and factors which influence such multi-sectoral collaboration is an under researched area.

Methods: A scoping review was performed to map existing literature on older people's engagement with digital health technologies delivered through NGOs. The focus was on exploring the factors influencing the process of digital engagement, delineating modes of digital engagement and exploring the caring needs of older people. Multiple databases and grey literature sources were searched to retrieve articles from 2000 till 2023. JBI methodology for scoping reviews was adopted for this review.

Results: Out of 8970 citations, 50 articles (27 original articles, 9 reports, 12 website sources, 1 handbook and 1 research summary) were included in the final review. NGOs engage with older people either directly by delivering the program or indirectly through other program stakeholders through various inter-organisational processes (collaboration, co-ordination, partnership, delegation, sector-wide participation and association). Different types of NGOs (national, regional, provincial and local) were involved in this process of delivering care. Majority of the studies implemented programs through smartphone or tablet based digital applications. Individual factors, organisational factors, technological factors and system-wide factors influence the process of digital engagement between older people and NGOs.

Conclusion: The number of studies included in this scoping review, concerning older people's engagement with digital health technologies, through NGOs were informative, but limited information was present on the process of engagement. Acknowledgement of NGOs work, and the societal role they play do also indicate that our developing digital societies more or less depend on these organisations.

'Three sides to every story'- Living the patient, carer and staff experience of COVID.

S Ramsey¹; H Hurst²; M Briggs³; L Wentworth¹

1. Manchester University NHS Foundation Trust; 2. University of Salford and Northern Care Alliance Trust; 3. Manchester University NHS Foundation Trust and The University of Manchester

Introduction: When COVID-19 first entered our world in March 2020 and the country went into lock down, the NHS braced itself for one of its biggest challenges of this century. Older, frail patients were in the highest risk group, with those in care homes not only at higher risk of death, but higher risk of contracting COVID-19, often suffering more psychological disturbances (Hewitt et al., 2020; Numbers & Brodaty, 2021). This study was conceived by two nurse researchers working throughout the pandemic on a COVID ward for predominantly older people, aiming to capture the experiences of patients, families/carers and staff members.

Methods: Phenomenology was the most appropriate methodology to provide an in-depth lived experience perspective. Full ethical approval was obtained and participants were sampled purposively. In-depth unstructured interviews were conducted and transcribed in full before being analysed hermeneutically using the four steps outlined by Fleming et al. (2003).

Results: 30 participants were recruited (10 patients, 10 relatives, including several bereaved and 10 staff members). Whilst experience varied between and within groups, core themes emerged:

- 1. Communication difficulties were poignantly expressed, with staff acting as intermediaries between patients and their family members who were kept apart through visiting restrictions, whilst managing clinical care and their own emotional responses.
- 2. Challenges of care were experienced by all groups, with anxiety around contagion conflicting with feelings of guilt and long-term psychological impact described by staff.
- 3. Collective experiences of grief and loss were described as participants grappled with coming to terms with encountering death and dying on an unprecedented scale and under such extraordinary conditions.

Conclusion: This study adds to the growing evidence base around experience of the COVID pandemic, adding insight into the triangulated experience of those affected and highlighting the profound effect on patients, relatives and staff.

The experience of frailty in the Tanzanian hospital system: A qualitative exploration service user and provider perspectives

S L Davidson^{1,2}; J Hardy¹; T Randall¹; A Murray¹; G Lyimo³; W Msangi³; J Kilasara⁴; L Mariki³; S Urasa³; M Breckons¹; C L Dotchin^{1,2}; R W Walker^{1,2}

- 1. Newcastle University, UK; 2. Northumbria Healthcare NHS Foundation Trust, UK;
- 3. Kilimanjaro Christian Medical Centre, Tanzania; 4. Kilimanjaro Christian Medical University College, Tanzania

Background: Frailty is becoming increasingly prevalent in Low- and Middle-Income Countries (LMICs). However, little is known about the lived experience of older people with frailty in their interactions with the healthcare systems in LMICs. This study aimed to explore the experiences, attitudes and needs of hospitalised older people with frailty in a low-income setting, from the perspective of service users and providers.

Methods: A purposive sample of older people with frailty recently admitted to hospital, their carers and healthcare providers, were recruited from four hospitals in the Kilimanjaro Region of Tanzania. One-to-one and dyad interviews were conducted in Swahili, based around a structured topic guide. Recordings were transcribed and translated into English in an iterative process aimed at preserving the original meaning through "transliteration". Transcripts were analysed using a reflexive thematic paradigm.

Results: Interviews with 43 service users and 15 service providers highlighted the cultural norm of respect and value placed on older people; as such it is considered the role of everyone in society to provide care. However, many working age adults struggle with the competing responsibilities of supporting their parents and their children. Maintaining strong relationships with family and financial preparation were therefore considered critical to healthy ageing. The complex health problems and significant care needs of older people with frailty pose a considerable challenge during hospital admission. On the ward, family often take responsibility for personal care and feeding to reduce the work of healthcare providers. Economic worries and resource scarcity impact every part of the patient journey from struggles in accessing hospital services, to quality of care during admission and after discharge.

Conclusion: Frailty is understood as a communitywide issue in Tanzania, and family are expected to take a much larger role in care during acute hospital admission, partly mitigating the impact of resource scarcity.

Process evaluation of a home-based intervention to promote independence among older people living with mild frailty

Y Barrado-Martín¹, R Frost¹, J Catchpole¹, T Rookes¹, S Gibson², J Hopkins³, B Gardner⁴, R Gould¹, P Chadwick¹, C Jowett³, R Kumar³, V M Drennan⁵, R Elaswarapu³, K Kharicha⁶, C Avgerinou¹, L Marston¹, K Walters¹

1. University College London; 2. Teaching Hospitals NHS Foundation Trust; 3. Public Contributors; 4. University of Surrey; 5. Kingston University; 6. King's College London

Introduction: Frailty is a condition that makes it increasingly difficult for individuals to recover from adverse health events and gradually erodes independence. NHS interventions in England have focused on those with more severe frailty. We tested HomeHealth, a home-based, tailored, multi-domain (six-session) behaviour change intervention to promote independence in the over-65s living with mild frailty, in a RCT recruiting 388 people (intervention 195; control 193). HomeHealth was delivered by the voluntary sector in three diverse areas and addressed mobility, nutrition, socialising, and psychological goals, among other domains. We aimed to explore acceptability, participant engagement, and experiences of delivering and receiving the service.

Methods: Following a mixed-methods approach, we extracted quantitative data on types of goals and progress towards goals from Health and Wellbeing plans and appointment checklists. Between July 2022 and May 2023, we interviewed 49 older participants, 7 HomeHealth workers and 8 stakeholders. Older people were purposively sampled for diversity in socio-demographic characteristics, cognitive and physical functioning, intervention adherence and allocated HomeHealth worker. Interviews explored their motivations to engage; experience of participation, delivery and study support followed by their suggestions for improvement. We analysed qualitative data thematically and quantitative data descriptively.

Results: Most participants set mobility goals (49%), followed by a combination of goals (31%), and made moderate progress towards these. The intervention (completed by 93.3% participants) was positively received, boosted participants' confidence, and provided emotional support. Participants reported that sometimes behaviour was maintained post-intervention, but further appointments would have been welcomed to fill the gap in other services. However, some people found it difficult to identify goals to work on, particularly when they already felt independent and well supported.

Conclusions: Services to support older people with mild frailty are acceptable, have good engagement, and can lead to behaviour change, particularly among those who self-identify a need for change.

Relationship between morbidity, mortality and frailty syndrome in subjects aged 65 years or older in an emergency unit.

A B Zulfigar

France, University Hospital of Strasbourg

Introduction: The objective of the study was to investigate the relationship between morbidity, mortality and frailty as evaluated by the mSEGA scale, in subjects aged 65 years or older in the emergency department.

Methods: A single-centre retrospective cohort study was performed. We included patients aged 65 years and over, who were admitted to the emergency unit of the Chaumont Hospital (Haute-Marne department) for a medical and/or surgical reason between 01/07/2017 and 31/01/2018.

Results: A total of 255 subjects were included. The mean age was 82.1±8.2. The main reasons for admission were falls in 51 patients (20.0%), digestive issues (excluding hemorrhage) in 30 patients (11.8%), and "other" reasons in 61 patients (23.9%). Among the study participants, 78 patients (30.6%) scored ≤8 on the mSEGA frailty scale, 49 patients (19.2%) scored between 9 and 11, and 125 patients (50.2%) scored ≥12. Regarding post-emergency department referral, out of the total patients, 152 (59.6%) were hospitalized, and 103 (40.4%) were discharged. There were no reported deaths within the study period. The vital status of all subjects was known at the one-year mark. At that point, 63 out of 255 patients had passed away, and out of those, 30 patients had been readmitted to the emergency department either before or at the time of their one-year death. When analysing the 12-month survival rate based on frailty status, low-frailty patients had a survival rate of 87.2% (95% CI; [77.5-92.9]), while frail/very frail patients had a survival rate for low-frailty patients was 76.9% (95% CI; [65.9-84.8]), compared to 51.4% (95% CI; [43.8-58.5]) for very frail patients.

Conclusion: The use of the mSEGA frailty scale in the emergency department provides valuable prognostic information regarding the risk of readmission to the emergency department within 12 months.

Zulfiqar Frailty Scale (ZFS): Concordance Study with the Clinical Frailty Scale (CFS).

A B Zulfigar

France, University Hospital of Strasbourg

Introduction: We designed a new scale for the rapid detection of frailty for use in primary care, referred to as the Zulfiqar Frailty Scale (ZFS). Objective: To evaluate the performance of the "ZFS" tool to screen for frailty as defined in the Clinical Frailty Scale (CFS) criteria in an ambulatory population of patients at least 75 years old.

Method: A prospective study conducted in Alsace, France, for a duration of 6 months that included patients aged 75 and over was judged to be autonomous with an ADL (Activity of Daily Living) > 4/6.

Results: In this ambulatory population of 124 patients with an average age of 79 years, the completion time for our scale was less than two minutes, and the staff required no training beforehand. Sensibility was 67%, while specificity was 87%. The positive predictive value was 80%, and the negative predictive value was 77%. The Youden index was 59.8%. In our study, we have a moderate correlation between CFS and ZFS (r = 0.674 with 95%CI = [0.565; 0.760]; p-value < $2.2 \times 10-16 < 0.05$). The Pearson correlations between these two geriatric scores were all strong and roughly equivalent to each other. The kappa of Cohen (k) = 0.46 (Unweighted), moderate concordance between the ZFS and CFS scales according to Fleiss classification.

Conclusion: The "ZFS" tool makes it possible to screen for frailty with a high level of specificity and positive/negative predictive value.

"I didn't personally think it would change my life, but it has": The experience following emergency laparotomy for older people

A Price¹; L Pearce²; J Smith³; P Martin⁴; J Griffiths⁵

1. Department of Ageing and Complex Medicine, Salford Royal Hospital 2. Department of General Surgery, Salford Royal Hospital 3. Department of Psychological Sciences, Birkbeck, University of London 4. Department of Applied Health Research, University College London 5. Department of Nursing, Midwifery and Social Work, University of Manchester

Introduction: Older people living with frailty are at high risk of adverse clinical outcomes following emergency laparotomy, including early death, hospital readmission and functional decline. Despite this, there is a paucity of literature exploring patient experience of surgery in this group, particularly following hospital discharge. As a result, there is limited information to guide the development of service delivery models that support optimal post-operative recovery and improve overall experience.

Methods: Twenty older people, aged \geq 65 years, with a Clinical Frailty Scale score of \geq 4 and who had undergone emergency laparotomy were recruited from eight participating hospital sites. Participants were interviewed at 3 weeks following their surgery, or the earliest convenient date. Semi-structured interviews were undertaken either face to face or via telephone and explored the peri-operative and early recovery experience. Data were analysed using reflexive thematic analysis.

Results: Participants described physical, psychological, and social implications following emergency laparotomy which extended further than hospital discharge. Recovery was perceived to be an ongoing and slow process of returning to 'normal self' however participants displayed resilience towards achieving this by 'knuckling down' and 'pushing forward'. The experience of hospital care was generally positive, but lack of access to discharge advice and community follow up left some participants feeling 'abandoned' and uncertain once they returned home. Many were reliant on family support during this period.

Conclusions: Older people living with frailty experience multifaceted consequences of emergency laparotomy that result in a prolonged recovery period. Multi-disciplinary post-operative care pathways are essential in addressing the holistic care needs of this group following surgery. The provision of robust discharge information and enhanced access to support in the community could improve patient experience and facilitate ongoing recovery at home.

Exploring barriers to recruiting older people to a white-coat hypertension study.

E Mensah¹; K Ali^{1,2}; M Okorie^{1,2}; S Bremner³; C McAlister⁴; N Perry¹; C Rajkumar¹

1.Brighton and Sussex Clinical Trials Unit, University Hospitals Sussex NHS Trust, Brighton, UK; 2. Department of Medicine, Brighton and Sussex Medical School, University of Sussex, Brighton, UK; 3. Department of Primary Care and Public Health, Brighton and Sussex Medical School, Brighton, UK; 4. Brighton and Sussex Clinical Trials Unit, University of Sussex, Brighton, UK

Introduction: There is a recognised association between white coat hypertension (WCH) and adverse cardiovascular outcomes in older adults. However, there is no consensus on the management of WCH in this group. The objective of the Hypertension in the Very Elderly Trial (HYVET-2) study was to assess the feasibility of randomising 100 patients >75 years with WCH from General Practice in the UK to treatment or usual care. The study did not randomise any patients. In this follow up study, we sought to explore the reasons for not recruiting.

Methods: Using a mixed-methods study design, staff from 29 General Practice (GP) sites and the Clinical Research Network (CRN) in Kent, Surrey, and Sussex (KSS) were sent an online questionnaire about local research facilities and infrastructure, and HYVET-2 study methodology and target population demographics.

Results: Nineteen (19) individuals responded the questionnaires (15 primary care staff, 4 CRN staff). Using a framework approach, we identified six themes summarising challenges to HYVET-2 recruitment. These themes were: established approaches of primary care towards managing WCH in older people, target patient demographics, study design complexity, patient-facing study documents, limited research resources in primary care and identification of eligible patients using existing coding.

Conclusion: Our experience showed that recruiting older people to a WCH study from primary care was not feasible. A national scoping survey amongst primary care physicians in the UK, and a robust patient and public involvement (PPI) targeting older people with WCH might improve recruitment in future studies of WCH in older people.

Tumor necrosis factor- α , interlukin-6, and Visfatin levels in older patients with malnutrition

H H Huang^{1,2,3}

1. Department of Emergency Medicine, Taipei Veterans General Hospital; 2. Faculty of Medicine, National Yang Ming Chiao Tung University; 3. Institute of Emergency and Critical Medicine, School of Medicine, National Yang Ming Chiao Tung University

Introduction: Proinflammatory cytokine is associated with malnutrition status. Tumor necrosis factor- α (TNF- α) and interleukin-6 (IL-6) were pro-inflammatory cytokines stimulated by nutritional deficiency. Visfatin is an adipokine with a strong correlation with inflammation. The relationships of TNF- α , IL-6 and visfatin are not consistent, and no study have investigated them in the older patients with malnutrition.

Methods: This prospective study included patients aged \geq 75 years at the emergency department and all patients underwent Mini-Nutritional Assessment-Short Form (MNA-SF) and blood tests for fasting plasma TNF- α , IL-6 and visfatin levels.

Results: We enrolled 106 older patients with a mean age of 87.3 years, including 43 (40.5%) patients in at risk of malnutrition group (MNA-SF between 8 to 11), 24 (22.6%) patients in the malnutrition group (MNA-SF < 8), and 39 (36.7%) patients in normal group. Compared to the normal group, both at risk of malnutrition and malnutrition group had significantly lower Mini-Mental State Examination (MMSE). Furthermore, TNF- α was significantly higher in at risk of malnutrition group. In contrast, IL-6 was significantly higher in malnutrition group. Visfatin levels was not correlated to the malnutrition status. Both TNF- α and IL-6 negatively correlated with Barthel index and MMSE. Backward and stepwise multiple logistic regression analyses showed that the independent predictor for both at risk of malnutrition and malnutrition was MMSE.

Conclusion: The nutrition deficit status was correlated with proinflammatory cytokines, serum TNF- α and IL-6. The independent predictor of both at risk of malnutrition and malnutrition group was MMSE in older patients.

Frailty is associated with poor cardiopulmonary resuscitation outcomes in the COVID-19 pandemic

J Gurney^{1,2}

1. University of Edinburgh 2. NHS Fife

Background: This study aims to investigate the relationship between frailty and inhospital cardiopulmonary resuscitation (CPR) outcomes in the COVID-19 pandemic.

Methods: The study was carried out in a tertiary hospital in Scotland and included all patients over the age of 18 who had an in-hospital CPR attempt between April 2020 and March 2022. Patients were identified via the pre-existing National Cardiac Arrest Audit Database which was collected prospectively. Data collected from this included age, sex, initial arrest rhythm, return of spontaneous circulation (ROSC) and in-hospital mortality. The electronic and paper patient notes were retrospectively reviewed to calculate a Rockwood clinical frailty scale (CFS) and Charlson comorbidity index (CCI). The data was stratified in to frail (CFS ≥5) and non-frail (CFS <5) groups.

Results: 65 patients were included in the study. In univariate analysis, there was a significant difference between the frail and non-frail groups in age (p=0.006), ROSC (p=0.02) and survival to discharge (p=0.004). Only 10 out of 34 (29.4%) frail patients had ROSC and of those only 3 (8.8%) survived to discharge compared to 12 out of 31 (35.3%) of non-frail patients. In a binary logistic regression, there was a significant association between frailty and both ROSC (adjusted OR 3.31 [95% CI: 1.12-9.78}) and survival to discharge (adjusted OR 6.33 [95% CI: 1.48-27.13]) and no significant association with age, CCI or sex.

Conclusion: The findings support the relationship between frailty and poor CPR outcomes independent of age and co-morbidity during the COVID-19 pandemic.

How can health care professionals understand and incorporate spirituality into Comprehensive Geriatric Assessment?

L Turner^{1,2}

1. King's College London, London. 2. St Augustine's College of Theology, West Malling

Introduction: Little is known about how Health Care Professionals (HCPs) conducting Comprehensive Geriatric Assessment (CGA) assess spiritual needs. The aim of this study was to better understand how UK HCPs understand and incorporate assessment of spirituality into CGA for community dwelling frail older people.

Methods: Semi-structured interviews were undertaken with HCPs who regularly undertake CGA in the community as well as Anna Chaplains (ACs) whose remit is to provide chaplaincy to community dwelling older people. An inductive approach was taken using a topic guide to structure the interviews. Thematic analysis was undertaken using NVIVO. Ethics approval was granted through St Augustine's College of Theology.

Results: Three HCPs and two ACs were interviewed. Three themes emerged. Firstly, that spiritual assessment needs time, trust and skill and cannot be established using checklists. Assessment hinges on building a rapport between the patient and HCP. HCPs and ACs suggested potential questions that could support assessment of spiritual needs. Secondly, supporting spirituality is focused on sustaining identity, fostering hope and encouraging spiritual growth. Finally, health care professionals lacked confidence and understanding in how to recognise and meet spiritual needs. Several suggestions were made as to how to address this.

Conclusions: All participants agreed that incorporating assessment of spirituality into CGA was important but that doing so effectively requires understanding and skill. The questions suggested by participants mapped well onto existing models of spirituality in ageing and frailty. Study findings could be used to develop training for HCPs undertaking CGA.

Thyroid dysfunction and its relationship with cardiometabolic risk in a South American cohort, cross-sectional study.

M Medina; M Amaya; L Dulcey; J Gomez; J Vargas; A Lizcano; J Teran ; C Hernandez; M Ciliberti ; C Blanco

Department of Internal Medicine Autonomous University of Bucaramanga - research hotbed

Introduction: A growing body of evidence suggests that metabolic syndrome is associated with endocrine disorders, including thyroid dysfunction. Thyroid dysfunction in patients with metabolic syndrome may further increase the risk of cardiovascular disease, thus increasing mortality. This study was conducted to assess thyroid function in patients with metabolic syndrome and to assess its relationship to components of metabolic syndrome.

Methods: A cross-sectional study was carried out among 170 geriatric patients. Anthropometric measurements (height, weight, waist circumference) and blood pressure were taken. Fasting blood samples were analysed for glucose, triglycerides, high-density lipoprotein (HDL) cholesterol, and thyroid hormones (triiodothyronine, thyroxine, and thyroid-stimulating hormone).

Results: Thyroid dysfunction was observed in 31.9% (n = 54) of the patients with metabolic syndrome. Subclinical hypothyroidism (26.6%) was the main thyroid dysfunction, followed by overt hypothyroidism (3.5%) and subclinical hyperthyroidism (1.7%). Thyroid dysfunction was much more common in women (39.7%, n = 29) than in men (26%, n = 25), but not statistically significant (p = 0.068). The relative risk of having thyroid dysfunction in women was 1.525 (CI: 0.983-2.368) compared to men. Significant differences (p = 0.001) were observed in waist circumference between patients with and without thyroid dysfunction and HDL cholesterol that had a significant negative correlation with thyroid-stimulating hormone.

Conclusion: Thyroid dysfunction, particularly subclinical hypothyroidism, is common among patients with metabolic syndrome and is associated with some components of metabolic syndrome (waist circumference and HDL cholesterol). Keywords: metabolic syndrome, hypothyroidism, cardiovascular diseases.

Co-Producing an Intervention to Reduce Sedentary Behaviour in Community-Dwelling Older Adults Through Behaviour Change Theory

R Tadrous¹; A Forster¹; A Farrin²; P Coventry³; A Clegg¹

1. Academic Unit for Ageing and Stroke Research, the University of Leeds; 2. Leeds Institute for Clinical Trials Research, the University of Leeds; 3. Department of Health Sciences, the University of York

Background: Older adults are the fastest-growing and most sedentary group in society. With sedentary behaviour associated with deleterious health outcomes, reducing sedentary time may improve overall well-being. Adults aged ≥75 years are underrepresented in sedentary behaviour research, and tailored strategies to reduce sedentary time may be warranted for this subset of older adults. The development of an intervention to reduce sedentary behaviour in adults aged ≥75 years using co-production and behaviour change theory is reported.

Methods: Four co-production workshops with community-dwelling older adults aged ≥75 years were held between October-December 2022. The intervention development process was informed by the Behaviour Change Wheel (BCW) and Theoretical Domains Framework (TDF). Audio recordings and workshop notes were iteratively analysed, with findings used to inform subsequent workshops.

Results: The co-production group consisted of six community-dwelling older adults aged ≥75 years and two researchers. The developed intervention consists of four components (activity monitoring, educational material, group sessions and researcher follow-up), maps to 24 behaviour change techniques and targets barriers to reducing sedentary time. Participants were receptive of the co-production process.

Conclusions: Integrating co-production with the BCW can provide several benefits, with the BCW providing structure to the intervention development process, and co-production increasing the likelihood of the developed intervention being viewed as feasible by older adults. Furthermore, coding intervention components to the BCW may further our understanding of what approaches are successful or unsuccessful at influencing behavioural change. Transparent reporting of the intervention development process may benefit researchers developing interventions with older adults. Future research will pilot the co-produced intervention.

Interventions to Reduce Sedentary Behaviour in Community-Dwelling Older Adults: A Mixed Method Review

R Tadrous¹; A Forster¹; A Farrin²; P Coventry³; A Clegg¹

1. Academic Unit for Ageing and Stroke Research, the University of Leeds; 2. Leeds Institute for Clinical Trials Research, the University of Leeds; 3. Department of Health Sciences, the University of York

Introduction: Sedentary behaviour has been associated with several deleterious health outcomes and older adults are the fastest-growing and most sedentary group in society. This review aimed to systematically review quantitative and qualitative studies examining interventions to reduce sedentary behaviour in community-dwelling older adults.

Methods: This mixed-method systematic review (PROSPERO registration number: CRD42021264954) considered quantitative articles (randomised-controlled trials (RCTs) and cluster RCTs), qualitative articles (semi-structured interviews and focus groups) and mixed-method studies that explored interventions to reduce sedentary behaviour in community-dwelling older adults. Medline, Embase, Cochrane Central Register of Controlled Trials, Web of Science, Cinahl, SportDiscus and PEDRO were searched from inception to March 2023. Articles were appraised using the Mixed Method Appraisal Tool. Quantitative evidence was meta-analysed, qualitative evidence was thematically synthesised and both were combined in a mixed-method synthesis.

Results: Forty-one studies (15 RCTs, 21 qualitative and 5 mixed-method studies) were included. Interventions were somewhat effective at reducing sedentary time (-29.10 mins/day, 95% CI -51.74, -6.46). Three analytical themes were identified (what sitting means to older adults, expectations of ageing and social influence in older adults). The mixed-method synthesis identified that existing interventions have been limited by a recruited sample that is not representative of the wider population of older adults, and outcome measurement and intervention content that is not consistent with older adults' priorities.

Conclusions: Future research should focus on inclusive recruitment strategies to recruit under-represented populations (such as adults aged 75 years and above), incorporate outcome measures that are valued by older adults, and incorporate older adults' preferences in intervention content.

Comparative performance of six multimorbidity indices to discriminate intrinsic capacity impairments among older adults

C Yang¹; X Cao¹; Y Mo²; J Zhang¹; X Wang³

1. School of Nursing, Sun Yat-sen University, Guangzhou, China; 2. Cicely Saunders Institute of Palliative Care, Policy & Rehabilitation, King's College London, London, UK; 3. School of Nursing, Central South University, Changsha, China

Introduction: Optimal intrinsic capacity (IC) is crucial for preserving the functional abilities of older adults. The presence of multimorbidity is closely associated with IC impairments. Various multimorbidity indices have been developed for diverse health outcomes. This study aimed to compare the performance of six commonly used multimorbidity indices to discriminate IC impairments among community-dwelling older adults.

Method: We used data from a multidimensional geriatric assessment program including 627 community-dwelling older adults in five cities of Hunan, China. Six multimorbidity indices were extracted from the data, including disease counts, Functional Comorbidity Index (FCI), the Deyo Charlson comorbidity index, two indices (total score and comorbidity index) derived from the Cumulative Illness Rating Scale-Geriatric (CIRS-G), and medication counts. The IC was measured with five individual domains, i.e., locomotion, vitality, sensory, cognition, and psychological capacity. Individuals were regarded as having IC impairments if they had impairments in one or more domains. Associations between multimorbidity indices and IC impairments were examined using logistic regression analyses. The discriminative ability of multimorbidity indices for IC impairments was compared using the c-statistics.

Results: A total of 374 (59.6%) participants had IC impairments. All multimorbidity indices were significantly associated with IC impairments after adjusting for confounding factors. All indices showed acceptable discriminative power (c-statistic ranged from 0.711 to 0.759) for IC impairments. The comorbidity index derived from CIRS-G resulted in the highest c-statistic, followed by the total score of CIRS-G and FCI.

Conclusions: Our study results suggest that multimorbidity indices differed in their ability to discriminate IC impairments. The comorbidity index derived from CIRS-G performed better than other multimorbidity indices included in this study. The comorbidity index has the potential as a simple proxy measure of indicating the need for interventions to optimise IC for older adults in community settings.

1851. Scientific Presentation - Parkinson's Disease

Increasing number of deaths related to Parkinson's disease (PD) and Parkinsonism

V Adhiyaman, P Hobson

Department of Geriatric medicine, Glan Clwyd Hospital, Rhyl, North Wales

Introduction: The burden of PD has exponentially risen from 2.5 million in 1990, to 6.1 million in 2016 (PD Collaborators. Lancet Neurol. 2018; 17(11):939-53). This is due to ageing population, increased longevity, increased duration of the disease and improved diagnosis. The aim of our study was to identify the trend on deaths related to PD and Parkinsonism over the last decade.

Methods: We collected our data from the Office of the National Statistics, using codes G20 (PD), G21 (Secondary Parkinsonism) and G22 (Parkinsonism classified elsewhere), to extract the number of deaths coded under these conditions from 2013 to 2021. The data was only available for England and Wales.

Results: Total number of deaths including all codes from 2013 to 2021 were 4518, 4950, 5542, 5734, 5936, 6508, 6207, 7414 and 7117. Deaths coded under G.20 are far higher compared to deaths coded under the others.

Conclusion: The number of deaths related to PD has been gradually increasing and has nearly doubled over the last 9 years. Although Covid 19 may have contributed to this increase over the last two years, there is an overall rising trend. We think this is primarily due to people with PD living longer leading to an increased prevalence and duration of the condition. This is linked to sarcopenia, frailty, immobility, cognitive impairment and dysphagia contributing to increased mortality in later years. Another reason could be due to more accurate documentation in death certificates. Even though there has been concerns that deaths certificates have not been accurately coded to include PD, (Hobson, Meara. 2018; 8(2):e018969), there is probably an improvement after the introduction of Medical Examiner services. It is important to recognise the increasing burden of PD to enable us to plan and invest in resources to improve the care of these patients.

1685. Scientific Presentation - Pharmacology

Efficacy and safety of AKT inhibitor and anti-androgen therapy in metastatic castration-resistant prostate cancer

T Nahar¹; I Savin²; N Chohan³; M Bantounou⁴; N Kumar⁵; I McEwan⁴

- 1. Queen's University of Belfast; 2. Imperial College London; 3. Lancaster University;
- 4. University of Aberdeen; 5. University of College London

Background: Metastatic castration-resistant prostate cancer (mCRPC) has a poor prognosis with current treatment options including chemotherapy and anti-androgen (AA) medication. However, downregulating androgen-receptor signalling using AAs can upregulate the PI3K/AKT/mTOR pathway, promoting tumour cell survival. This creates a rationale for co-targeting both these pathways. This systematic review aimed to investigate AKT inhibitors and AA combination therapy.

Methods: A systematic search was performed using PRISMA guidelines. Primary outcomes included objective response rate (ORR), prostate-specific antigen (PSA) response rate, adverse events (AEs), overall survival (OS), and radiographic progression-free survival (rPFS). Quality was assessed using the risk of bias tool and certainty of evidence with GRADE.

Results: Five studies were included with 761 patients and a median age of 67-70 years. Meta-analyses showed a pooled ORR of 44% (95%CI:19-73%) and a pooled PSA response rate of 51% (95%CI:21-80%). Nearly all patients (97.0%; 738/761) experienced AEs, with severe AEs (≥ grade 3) occurring in 65.8% (501/761) of patients. The most common AE was diarrhoea at a pooled prevalence of 66% (95%CI: 45-82%), and the most common SAEs were rash (11%, 95%CI:5-23%) and hyperglycaemia (11%, 95%CI:4-24%). One study showed a 16% reduction in rPFS (OR:0.84; 95%CI:0.71-0.99; p=0.044) and a greater reduction of 23% in PTEN-loss patients (OR:0.77; 95%CI:0.61-0.98;p=0.034). Another study also showed a greater reduction in rPFS in PTEN-loss (HR:0.39; 90%CI:0.22–0.70) versus no PTEN loss (HR:0.84;90%CI:0.51–1.37). One study showed a 9% reduction in OS (OR:0.91; 95%CI:0.65-1.27), and another a 28% reduction (90%CI:0.47–1.11; p=0.22).

Conclusion: The pooled estimates for AE show consistency with other studies. AEs of any grade were common with the majority experiencing at least 1 AE. Phase II/III trials noted that combined therapy reduced the risk of rPFS, with the response higher in the PTEN-loss subgroup, with a modest but not significant increase in OS.

The effectiveness of structured physical activity on agitation for people living with dementia: a rapid review

A McCartney¹; J Crosswell¹; J Hoe²; S B Rafnsson²

1. Whitstable Medical Practice, Kent; 2. The Geller Institute of Ageing and Memory, School of Biomedical Sciences, University of West London

Background: Managing agitation and other behavioural and psychological symptoms of dementia (BPSD) is a significant challenge and impacts on quality of life for people living with dementia. The priority is to find effective non pharmacological interventions as drug treatments can have significant side effects.

Objectives: This review evaluates the effectiveness of structured physical activity on agitation in people living with dementia

Methods: A rapid review of the literature was carried out following PRISMA guidelines. Four electronic databases were searched (Cochrane CENTRAL, MEDLINE, CINAHL and Embase) looking for interventional studies that used a structured physical activity programme in people with a diagnosis of dementia, studied the effects of this activity on BPSD and compared this with a control group that did not follow an exercise programme.

Results: From 112 identified articles, 13 were included in this review, involving a total of 1546 participants. The results were analysed and synthesised according to the type of exercise intervention (aerobic, multicomponent or strength training) and by the frequency and intensity of the intervention. Quality assessment using CAPS guidelines indicated four studies as higher quality with seven being of moderate quality. The results showed that aerobic exercise in particular appears to be effective in reducing agitation and those studies with higher adherence to exercise tended to demonstrate more positive effects on agitation and BPSD.

Conclusions: There is evidence that physical activity can be effective in the reduction of agitation in older adults with a dementia diagnosis. Further research is needed to clarify the type of intervention that is most beneficial and strategies to make physical activity more acceptable and available to older people with dementia need to be es established.

Incidence of cavum septum pellucidum on CT brain in patients referred from memory clinic, an observational pilot study

C Cardle¹; R Jampana²

1 Clinical Fellow, Queen Mary University of London, Malta Campus; 2 Consultant, Dept of Neuroradiology, Institute of Neurological Sciences, Glasgow

Background: Septum pellucidum is a double-membrane separating the frontal horns of the lateral ventricles of the brain. [1] Cavum septum pellucidum (CSP) refers to a potential space between these membranes. CSP is associated with some psychiatric disorders. [2] Radiological CSP has been evaluated as a possible in-vivo biomarker for chronic traumatic encephalopathy (CTE), a neurodegenerative condition affecting, particularly, retired athletes who experienced repetitive, low impact head trauma. [3]

Method: Our study evaluated the incidence of radiological CSP among a cohort undergoing investigation for cognitive impairment in memory clinic. A list of patient Community Health Index (CHI) numbers corresponding to patients referred to CT brain from a community memory clinic in North West Glasgow between October 2019 and March 2020 was generated. Approval for use of imaging for research purposes was granted by local imaging department. Images were viewed by first author following a session from second author on basic relevant anatomy. Positive cases were defined as those with a visible CSP.

Results: There were twenty-eight (n=28) cases in total. CSP was observed in one (n=1) case. Radiological CSP has been suggested as a potential biomarker for CTE. While this study does not involve review of the clinical or personal history of the subjects, it does include a cohort with clinically-relevant symptoms. We included CT only, while current evidence makes observations on MRI [3]. Locally CT is more available and the initial assessment of such patients uses CT in the first instance.

Conclusion: Further evidence is required to establish CSP as a reliable in vivo biomarker of CTE. [1] Das et al, in StatPearls [Internet], 2022 [2] Wang et al, J Neuropsychiatry Clin Neurosci. 2020; 32(2):175-184 [3] Alosco et al Neurotherapeutics. 2021; 18(2):772-791

Long-term condition reviews in General Practice: The experiences of people with Dementia and their informal carers

J Cole; H M Parretti; S Hanson; M Hornberger

University of East Anglia

"I would imagine it needed a review..." A Qualitative Study Exploring the Experiences of People with Dementia and their Informal Carers of Long-term Condition Reviews in Primary Care

Introduction: Multimorbidity is common for people with dementia (PWD) and is associated with increased healthcare utilisation and poorer outcomes. Part of the management of long-term conditions (LTCs) occurs through annual LTC reviews conducted in primary care. Little is known about the experiences or needs of people with dementia and informal carers in regard to LTC reviews.

Aim: To explore the experiences of PWD and their informal carers of the review and management of LTCs in primary care.

Method: Qualitative research study, protocol informed by discussion with people with lived experience as an informal carer. Institutional ethical approval (ref ETH2122-1035, University of East Anglia) was granted 25/3/2022. Semi-structured interviews were conducted with PWD and informal carers recruited through Join Dementia Research and local (to Norfolk, UK) charities. Thematic analysis was undertaken with reference to Braun and Clarke (2006).

Results: 16 participants were interviewed: two PWD, 10 informal carers and two informal care/PWD dyads. Our findings fall into four main themes: 1) What matters to people; medication optimisation and holistic care 2) What is a review; the diversity of experiences 3) The importance of communication and 4) Preference for shared decision making.

Conclusion: Consideration should be given to ensuring patients and carers are aware when a LTC review will take place and providing an opportunity to be involved, thus allowing shared decision making and patient centred care. Further research into the clinician experience and their views on patients' needs and how to meet them is required to inform how LTC reviews for people with dementia can be optimised.

Determinants of hospital readmissions in older people with dementia: A scoping review.

B Browne; K Ali; N Tabet

Brighton and Sussex Medical School (BSMS), UK.

Introduction: In the UK, fifty-three percent of hospitalised older people with dementia have multimorbidity, and are at an increased risk of hospital readmission within 30 days from discharge. Between 20-40% of these readmissions are preventable [1]. Current research focused on the biological causes of readmissions. However, older people with dementia have additional psychosocial factors increasing their risk of readmission. The aim of this scoping review was to identify psychosocial determinants within the context of known biological factors.

Methods: Electronic databases MEDLINE, EMBASE, CINAHL and PsychInfo were searched from inception until July 2022. Quantitative and qualitative studies in English including adults aged 65 years and over with dementia, their care workers and informal carers were considered if they investigated readmission. An inductive approach was adopted to map determinants of hospital readmission. Identified themes were described as narrative categories.

Results: Seventeen studies including 7,194,878 participants met our inclusion criteria from a total of 4736 articles. Sixteen quantitative studies included observational cohort and randomised controlled trial designs. One American study was qualitative. Ten studies were based in the USA, and one study each from Taiwan, Australia, Canada, Sweden, Japan, Denmark, and The Netherlands. Large hospital and insurance records provided data in over 2 million patients in one American study. Identified psychosocial determinants included inadequate hospital discharge planning, limited interdisciplinary collaboration, and socioeconomic inequalities among ethnic minorities. Biological determinants included reduced mobility and accumulation of comorbidities. Use of antipsychotic medications might explain the interplay between biological and psychosocial determinants.

Conclusion: Poorly defined roles and responsibilities of health and social care professionals and poor communication during care transitions increase the risk of readmission in older people with dementia.

Reference: 1. Godard-Sebillotte C, Strumpf E, Sourial N, et al L. Primary care continuity and potentially avoidable hospitalization in persons with dementia. J Am Geriatr Soc. 2021;69(5):1208-20.

1897. Scientific Presentation - Stroke

Older stroke survivors and rehabilitation therapists' views on home-based resistance exercise for upper limbs.

K Ali¹; M Shafizadeh²; N Nasr²; T Balchin³; J Hart²; J Kelley²

1 Brighton and Sussex Medical School; 2 Sheffield-Hallam University; 3 Action for Rehabilitation from Neurological Injury (ARNI) Institute

Introduction: Upper limb recovery after stroke depends on participating in personalised task-specific exercise programmes. However, older adults with stroke find it challenging to maintain an optimal level of engagement with such exercise programmes due to personal and environmental factors. The aim of this study was to explore the views of stroke survivors and rehabilitation therapists on home-based resistance exercises for upper limbs.

Method: A qualitative study of semi-structured virtual and in-person interviews was conducted between January and March 2023 in England. Participants were 11 older adults >65 years (6 females (55%), with chronic stroke (>1 year after a stroke) and moderate to severe disabilities. Twenty rehabilitation therapists were also interviewed (3 physiotherapists, and 17 Action for Rehabilitation from Neurological Injury (ARNI) instructors). The group was asked about perceived personal and environmental barriers and facilitators as well as expectations of resistance exercises in relation to upper limb neurorehabilitation programmes. Interview sessions were audio recorded for transcription and thematic data analysis. The study was approved by Sheffield Hallam University ethics committee (reference number: AA43961583).

Results: Both groups mentioned that the main barrier to performing upper-limb exercises is weakness in the paretic arm affecting grip strength with consequent adverse impact on adherence to a home-based programme and poor patient motivation. Patients also reported safety concerns such as dropping equipment and being dependent on a carer to undertake regular exercises. Stroke survivors preferred a program that activates the paretic arm and is relevant to their daily functional activities. They preferred simple exercise instructions and demonstrations through visual aids and video materials. Patients also valued regular feedback on adjusting their exercise dose, monitoring progress over time, and ongoing encouragement.

Conclusions: Our study showed that designing home-based resistance exercises for upper limb in older stroke survivors should be individualised, functionally orientated, and motivational.

1898. Scientific Presentation - Planned and ongoing trials

Feasibility study of a hospital deprescribing intervention: CompreHensive geriAtRician-led MEdication Review (CHARMER)

S Scott¹; J Martin-Kerry¹; M Pritchard²; D A Alldred³; A B Clark²; A Hammond²; K Murphy¹; A Colles²; V Keevil⁴; I Kellar⁵; M Patel^{2,6}; E Sims²; J Taylor⁷; D Turner²; M Witham^{8,9}; D Wright¹; D Bhattacharya¹

1. Leicester University; 2. University of East Anglia; 3. Leeds University; 4. Cambridge University Hospitals; 5. Sheffield University; 6. Norfolk and Norwich University Hospital; 7. York University; 8. NIHR Newcastle Biomedical Research Centre; 9. Newcastle University

Introduction: CompreHensive geriAtRician-led MEdication Review (CHARMER) is a behaviour change intervention to support geriatricians and pharmacists to proactively deprescribe inappropriate medicines with older adults in hospital. The intervention comprises: formulating a deprescribing action plan, workshops, benchmarking reports and weekly briefings between geriatricians and pharmacists. We assessed feasibility and acceptability of the CHARMER intervention and study processes.

Method: A two-arm purposive allocation feasibility study was undertaken in four hospitals (three intervention, one control) in England in 2022. Data were collected to check completeness and quality, and assess intervention fidelity. Rapid qualitative analysis of staff and patient interviews, intervention implementation observations (action plan launch, pharmacist workshop and geriatrician videos), and study meeting minutes was undertaken.

Results: Study data were feasible to collect, of sufficient completeness and quality. Geriatrician and pharmacist principal investigators managed intervention implementation. They were able to implement most intervention components with ease and fidelity. Principal investigators felt that dedicated support for intervention implementation would better equip them with the resource and expertise to fidelitously implement all intervention components. Detailed instructions for preparing the action plan and how it might be delivered were desired. Geriatricians and pharmacists who received the intervention found it acceptable. Pharmacists felt that the weekly briefings encouraged them to dedicate time to review medicines and raise with geriatricians, opportunities to deprescribe. Geriatricians indicated that participating in CHARMER allowed them to focus on deprescribing conversations with patients and they involved junior doctors more in the deprescribing process.

Conclusion(s): The CHARMER intervention and trial processes were feasible and acceptable. Revisions to support intervention implementation include providing a template action plan for hospitals to adapt; funds for a project manager one day a week to work with CHARMER principal investigators for three-months to oversee implementation, and support from Eastern Academic Health Science Network in the definitive trial (winter 2023).

AUTHORS' INDEX

ALL-11 C	40.71	D 1	F0	Familian I	112		100 130
Abbott, C Abbott, L	48, 71	Brown, J	58	Faraday, J	113	Huang, H H	100, 128
	66	Brown, N	113	Farquharson, A	13	Hughes, A	82
Abou Sherif, S	82	Browne, B	140	Farrin, A	132, 133	Humphrey, J	38
Abu Rabia, M	45	Buckell, J	5	Fattahi, A	85	Hunt, C	46
Adenwalla, F	49	Bucknall, M	110, 111	Fawcett-Jones, S	7	Hurst, H	121
Adhiyaman, V	22, 108, 135	Bullock, L	110, 111	Fayyaz, A	86	Hussien, Y	90
Aggarwal, P	101	Burberry, D J	47	Fernandes, R	29	Illala A	2.4
Ahmed, A	17	Burgess, A J	47	Ferris, T	76	Illsley, A	24
Ajibola, I	95	Burgon, C	7	Findlay, A	45	Ingham, C	53
Akande, A	30	Butler, L	53	Fisher, G	104	Ingram, O	46
Akdag, G	20			Forster, A	132, 133	Irvine, J	12
Alexander, H	69	Cao, X	134	Foster, M	51		
Alexander, R	65	Cardle, C	138	Fox, J	53	Jabir, Z	40
Ali, K	11, 117, 127, 140, 141	Carolan, C	45	Foxley, H	68	Jacobs, G	30
Alićehajić-Bečić, Đ	40, 64, 84, 89	Carrick, J	55	Freby, S	114	Jamaludin, E A	18, 114
Alkaissy, R	86	Carruthers, C	30	Frost, J	18, 114	James, K H	47
Alldred, D A	142	Carty, L	14	Frost, R	123	Jampana, R	138
Allfree, R	60	Catchpole, J	123			Janani, A	7
Amaya, M	131	Cattell, E	51	Galvin, K	120	Jenkins, C	91
Amin, M	112	Cavanagh, A	48	Gan, L	22	Jenkins, R	49
Amusan, M	79	Chadwick, P	123	Gandee, A	39	Johnson, D	25
Anand, K	36	Chatterjee, A	60	Ganjam, S	52	Johnston, C S	83
Anketell, R	34	Chauduri, S	27	Garbuzov, M	3	Jones, A J D	41
Ankobia, A	106	Cheng, Z C D	81	García, M P	20	Jones, L	88
Apostolova, L G	13	Chin, K	23	Gardner, B	123	Joomye, S	45
Ardayfio, P	13	Chithiramohan, T	21	Garnett, R	5	Jowett, C	123
Arnetorp, S	14	Chohan, N	136	Gash, G	66	Justo, N	14
Ashcroft-Quinn, S	97	Ciliberti, M	131	Gealer, M	62, 67		
Asiwe, R	79	Clark, A B	142	Georgiakakis, E	34	Kamalathasan, S	17
Asumang, J	39	Clarke, E	84	Ghaffari, E	55	Kaneshamoorthy, M	112
Avgerinou, C	4, 123	Clegg, A P	4, 16, 132, 133	Gibson, S	123	Kebede, A	120
Aylward, A	116	Clift, E	68	Gierula, J	17	Keevil, V	142
		Cockcroft, E	116	Godin, J	8	Kellar, I	142
Babar, L	33	Cole, J	139	Gomez, J	131	Kelley, J	141
Badawi, A	52	Cole, S	56	Goodwin, V	6, 15, 18, 114, 119	Kelly, D	72
Bafadhel, L	80	Colles, A	142	Gosney, M	66	Kelly, S	49
Baguneid, C	42	Collier, A	55	Gould, D	57, 76	Kemp, P	98
Balchin, T	141	Collins, E C	13	Gould, R	123	Kerse, N	9
Baleanu, A F	20	Collins, K	47	Greenaway, A-M	60	Khanom, S	96
Bali, K	118	Colquhoun, K	65, 72	Griffiths, J	126	Kharicha, K	123
Ball, G	58	Cooper, C	101	Grimstead, A	49	Khatun, M	96
Bantounou, M	136	Cooper, H	52	Grundy, P	36	Khinder, S	39
Barhakur, U	51	Coventry, P	132, 133	Gruneir, A	118	Kilasara, J	105, 107, 122
Barnes, R	5	Coxon, G	116	Gunson, I	110, 111	Kilgour, A H M	83
Barrado-Martin, Y	123	Craig, T	116	Gupta, A	17	Kingstone, T	110, 111
Barrera, V	103	Crocker, T	18	Gurney, J	129	Knowles, B	46
Basharat, B	86	Crofts, J	42	Gurung, P	77	Knox, V	78
Bashir, T	98	Crosswell, J	137	Guthrie, K	44	Kondo. M	76
Batchelor, J	62, 67	Curran, D	106	Gutillic, K	77	Kotak, S	43
Bazo-Alvarez, J C	4	Currie, H	33	Hackney, A	58		136
Begum, A	70	Currie, n	33	Haf, M	37	Kumar, N Kumar, R	123
	71	Darwish, M	88	Hall, A	18, 114		120
Begum, H					· ·	Kymre, I G	120
Beishon, L Bellhouse, E	21 65	Davidson, S L	105, 122	Hama, B	24	Laraman I	70
Bendahan, D H	27	Davies, A Davies, E A	49 47	Hammond, A Hancock, H	142	Laraman, J Laskou, F	70 101
Ben-Shlomo, Y	19	i i		Hand, A	16	· ·	17
		Davies, R	108	· ·	113	Latto, R	106
Bethel, A	18, 114	Davison, S L	107	Handalage, C	76	Lecrenier, N	
Bethel, S	84	Day, J	116	Hanson, S Hansson, O	139	Leli, H	62, 67
Bevilacqua, G	101	De Bhaldraithe, S	45	· '	13	Lewis, L	73
Bhattacharjee, S	120	De Rohan, C	82	Hardy, J	105, 107, 122	Lim, A	79
Bhattacharya, D Birch, C Y	142 109	De Silva, R Del Din, S	94	Harrison I	76 76	Lim, S C Lindsay-Perez, A	103
Birch, C Y Birchenough, S		Dening, T	18 7 21	Harrison, L Hart, D	76 20	Lindsay-Perez, A Lizcano, A	23 131
Birchenough, S Bird, B	51 27	Dening, I Dennehy, E B	7, 21 13	Hart, J	20 141	Lizcano, A Lloyd, K	131
				1			
Bird, R Blackburn, S	17 39, 82	Dennison, E M Desai, B	101 21	Hassan, H Hawkes, O	2 37	Loke, Y Loulaki, M	94, 102 73
					71	· ·	
Blanco, C	131	Dewar, R	53	Healy, J		Lu, M	13
Bloom, I	101	Dineshkumar, K	63	Hedges, P	62, 67	Lu, Y	14
Bollen, J C	18, 114	Dinsdale, E	57	Heffernan, E	7	Lyimo, G	105, 107, 122
Boncey, K	25	Doherty, T M	106	Henderson, E J	19	Lyndon, H	18
Bowden, A	76	Dotchin, C L	105, 107, 122	Henshaw, H	7	NAI	22
Bowyer, R C E	20	Downey, T	72	Hernandez, C	131	Macaulay, J	32
Boyd, L	26	Draper, P	62, 67	Hewertson, E	36	MacFarlane, J	53
Breckons, M	122	Drennan, V M	123	Hickey, B	21	Madan, S	78
Bremner, S	127	Dube, S	14	Hillarious, A	42	Mahmoud, A	18, 114
Brenchley, C	55	Dudley, I	33	Hiu, S	16	Maitland, R	65
Breuer, T	106	Dulcey, L	131	Ho, T H	100	Mariki, L	122
Briggs, M	121	Duric, D	63	Hobson, P	135	Marlor, R	78
Bristow, E	48	Et	00	Hodges, G	33	Marsh, L	74
Bristow-Smith, M	41	Edwards, S	90	Hoe, J	137	Marshall, E	52
Britton, A	49	Elaswarapu, R	123	Hollingworth, W	19	Marston, L	123
Brodie, L	92	Elliot, C	53	Hope, S	6, 15, 29	Martin, J	55
Brooks, D A	13	England, S	44	Hopkins, J	123	Martin, P	126
Broome, E	7	Evams, R	14	Hopkins, L	49	Martin, S	79
Brown, A	1	Evans, C D	13	Hornberger, M	139	Martin-Kerry, J	142
Brown, B	113	Evans, K	14	Hoskins, R	115	Maruthan, S	31
		Evley, R	21	Hota, S	27	Matthews, H	66

Mattishent, K	94, 102	Price, A	126	Stothard, C	76
McAlister, C	127	Pritchard, M	142	Straus, J	7
McBain, L	9	Punniamoorthy, M	70	Straw, S	17
McCafferty, R	62, 67	Putland, E	7	Stross, M	70
McCarthy, M	54			Subramaniam, H	21
McCartney, A	137	Quarm, M L	59, 83	Swinnerton, E	53
McColl, A	25, 60	Quint, J	14	Syed, M	82
McDonald, C	16				
McEwan, I	136	Rafnsson, S B	137	Tabet, N	140
McIntosh, A	52	Rahman, S	80	Tadros, G	117
McIntyre, R	39	Raja, M	120	Tadrous, R	132, 133
McKelvie, S	55	Rajamani, A	21	Tako, A	21
McKenna, M	97	Rajeevan, T	74	Tan, LLS	81
McManus, R	5	Rajkumar, C	127	Tan, S Y	81, 103
McNulty, R	14	Rakhawy, M Ramsey, S	117 121	Tan, W	95 103
McPherson, M	3	Ranchhod, D	9	Tan-Pantanao, R Tarrant, C	21
Medina, M Melrose, R	131 87	Randall, T	105, 107, 122	Taylor, B	61
Memery, T	1	Rasheed, R	96	Taylor, J	142
Mensah, E	127	Rawoo, R	95	Taylor, K	6, 15
Metcalfe, C	19	Rees, J	116	Taylor, S	14
Milczanowska, W	20	Ritchie, C	13	Tazeen, U	87
Miles, G	10	Robb, T J	55	Teh, R	9
Miller, C	57	Roberts, C	88	Teo, M	72
Mintun, M	13	Roberts, M V	97	Teran, J	131
Mitchell, C	27	Robinson, S	84	Theou, O	8
Mizoguchi, R	34	Robinson, T	21	Thomas, D	115
Mo, Y	134	Rockwood, K	8	Thomas, L	49
Moore, D T	105	Rookes, T	123	Tilley, C	112
Moore, S	35	Rowland, D	113	Timms, A	30
Morelli, F	50	C-1 **	117	True, S	104
Morgan, J	1	Sabry, N	117	Truman, M	95
Morley, N	18, 114, 119	Safdar, N Z	17	Tun, Z L	87
Mrittika, S	71	Safeer, S	27	Turnbull, J	59
Msangi, W	122	Sage, S	56	Turner, D	142
Mukaetova-Ladinska, E	21	Saharia, R	87 13	Turner, L	130
Mukokwayarira, C	76	Salloway, S Samy, F	72	Twiddy, L	48
Mullins, A	36 142	Sanders, T	119	Uhrenfeldt, L	120
Murphy, K Murphy, R	118	Sandic-Spaho, R	120	Urasa, S	105, 107, 122
Murray, A	105, 107, 122	Sathiananthamoorthy, S		Olasa, s	103, 107, 122
Muliay, A	103, 107, 122	Savin, I	136	Van't Hoff, C	25
Nahar, T	136	Sawney, P	84	Vargas, J	131
Nair, S	57, 76	Sayer, A A	16	Virdee, S	38
Nagvi, H	61	Scampion, C	1	Von Zglinicki, T	16
Nar, A	8	Schiff, R	23	Voss, S	115
Nasr, N	141	Scott, S	142	,	
Navaneetharaja, N	94, 102	Seeley, J	56	Wadge, S	20
Nawwara, R	117	Seenan, P	72	Wagg, A	118
Nelson, E	12	Seow, C C D	81	Waldon, M	73
Nery, E S M	13	Sessani, M	33	Walker, R W	105, 107, 122
Nessa, A	20	Setchell, R	48	Walters, K	4
Newman, C	75	Sethi, D	28	Walters, K	123
		Shafizadeh, M	141	Walton, B	116
Nguyen, H	14				
Ni Lochlainn, M	20	Shah, K	85	Wang, H	13
Ni Lochlainn, M Nicholson, K	20 16	Shah, K Shah, S	2	Wang, X	134
Ni Lochlainn, M Nicholson, K Nicolson, P	20 16 33	Shah, K Shah, S Shahin, M	2 117	Wang, X Ward, C	134 29
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D	20 16 33 45	Shah, K Shah, S Shahin, M Shamsad, S	2 117 80	Wang, X Ward, C Warmoth, K	134 29 116
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A	20 16 33 45	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A	2 117 80 39	Wang, X Ward, C Warmoth, K Warner, A	134 29 116 48
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F	20 16 33 45 1 36	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S	2 117 80	Wang, X Ward, C Warmoth, K Warner, A Wason, J	134 29 116
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A	20 16 33 45	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A	2 117 80 39 13	Wang, X Ward, C Warmoth, K Warner, A	134 29 116 48 16
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F	20 16 33 45 1 36	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A	2 117 80 39 13 20	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G	134 29 116 48 16 23
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N	20 16 33 45 1 36 108	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E	2 117 80 39 13 20 50	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H	134 29 116 48 16 23 32
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N	20 16 33 45 1 36 108	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N	2 117 80 39 13 20 50 113 5 93	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L	134 29 116 48 16 23 32 121 13
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V	20 16 33 45 1 36 108 54 127 73	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L	2 117 80 39 13 20 50 113 5 93	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D	134 29 116 48 16 23 32 121 13 4
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D	20 16 33 45 1 36 108 54 127 73 14	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A	2 117 80 39 13 20 50 113 5 93 92 98	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C	134 29 116 48 16 23 32 121 13 4 101 58
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M	20 16 33 45 1 36 108 54 127 73 14 4 55	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A	2 117 80 39 13 20 50 113 5 93 92 98 3	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K	134 29 116 48 16 23 32 121 13 4 101 58 20
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D	20 16 33 45 1 36 108 54 127 73 14	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L	2 117 80 39 13 20 50 113 5 93 92 98 3 16	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C	134 29 116 48 16 23 32 121 13 4 101 58 20 26
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M	20 16 33 45 1 36 108 54 127 73 14 4 55 49	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U	20 16 33 45 1 36 108 54 127 73 14 4 55 49	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V	20 16 33 45 1 36 108 54 127 73 14 4 55 49	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, M Wilson, N	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, M	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, M	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, M Wilson, N Wilson, R	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, M Patel, M Patel, M Patel, M Patel, M Pattison, T	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D Smith, J Smith, M Smith, M Smith, N Smith, N Smith, N	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, M Wilson, N Wilson, R Wilton, R	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pattison, T Paveley, A	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53 23	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, N Smith, N Smith, N Smith, R Solomon, P	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 113	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, M Wilson, N Wilson, R Wilton, R Winfield, A	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pateley, A Payne, H	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53 23 68	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, N Smith, N Smith, N Smith, R Solomon, P Sparks, J D	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 113 13	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, N Wilson, N Wilson, R Wilton, R Winfield, A Wing, J	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pattison, T Paweley, A Payne, H Pearce, L	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53 23 68 126	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, M Smith, M Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, I	2 117 80 39 13 20 50 113 5 93 92 98 8 3 16 142 13 28 55 13 126 19 50 10 113 113 113 113 114 115 116 117 117 117 117 117 117 117	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, N Wilson, N Wilson, R Wilton, R Winfield, A Wing, J Witham, M D	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pattison, T Paveley, A Payne, H Pearce, L Pendry-Brazier, D	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53 23 68 126 19	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, N Smith, N Smith, N Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, I Stapleton, L	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 13 13 71 46 30 74	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, M Wilson, N Wilson, R Winfield, A Wing, J Witham, M D Witte, K K Wong, L Woodhill, S	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81 51
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, M Patel, M Patel, M Pately, A Payne, H Pearce, L Pendry-Brazier, D Perry, N	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36,62,67,90,91,101 142 53 23 68 126 19 127	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, N Smith, N Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, I Stapleton, L Stapley, S	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 13 13 71 46 30 74 79	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, E Williams, A Wilson, R Wilson, R Winfield, A Wing, J Wittham, M D Witte, K K Wong, L L	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81 51 84
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pattison, T Paveley, A Payne, H Pearce, L Pendry-Brazier, D Perry, N Peter, E B Petersen, I	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53 23 68 126 19 127 63 14 4	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, N Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, L Stapleto, L Stapley, S Stein, K	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 113 13 71 46 30 74 79 116	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, N Wilson, N Wilson, R Winfield, A Wing, J Witte, K K Wong, L Woods, S Wren, J	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81 51 84 17
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pattison, T Paweley, A Payne, H Pearce, L Pendry-Brazier, D Perry, N Peter, E B Petersen, I Petho, H	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36,62,67,90,91,101 142 53 23 68 126 19 127 63 14 4 31	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, M Smith, M Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, I Stapleton, L Staplety, S Stein, K Steves, C J	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 13 13 71 46 30 74 79 116 16, 20	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, R Wilton, R Wilton, R Wing, J Witham, M D Witte, K K Wong, L Woodhill, S Woods, S Wren, J Wright, D	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81 51 84 17 142
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, M Pattison, T Paveley, A Payne, H Pearce, L Pendry-Brazier, D Perry, N Peter, E B Peters, J Petersen, I Petho, H Pollock, L	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36, 62, 67, 90, 91, 101 142 53 23 68 126 19 127 63 14 4 31 116	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, M Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, I Stapleton, L Stapley, S Stein, K Steves, C J Stirzaker, A G	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 13 13 71 46 30 74 79 116 16, 20 59	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, N Wilson, N Wilson, R Winfield, A Wing, J Witte, K K Wong, L Woods, S Wren, J	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81 51 84 17
Ni Lochlainn, M Nicholson, K Nicolson, P Niranjan, D Nixon, A Norridge, F Nyunt, N O'Donnell, C Okorie, M Olden, S Olson, V Osborn, D Osei-Banahene, M O'Shea, N Pabani, U Palin, V Papp, D Parker, H Parretti, H M Patel, H P Patel, M Pattison, T Paweley, A Payne, H Pearce, L Pendry-Brazier, D Perry, N Peter, E B Petersen, I Petho, H	20 16 33 45 1 36 108 54 127 73 14 4 55 49 112 17 17 51 139 36,62,67,90,91,101 142 53 23 68 126 19 127 63 14 4 31	Shah, K Shah, S Shahin, M Shamsad, S Sharma, A Shcherbinin, S Sheedy, A Shekarchi-Khanghahi, E Shenton, F Sheppard, J Sheshi, N Shield, L Shrestha, A Shroufi, A Simms, L Sims, E Sims, J R Singh, K Singh, S Skovronsky, D M Smith, J Smith, M Smith, M Smith, M Smith, R Solomon, P Sparks, J D Speare, C Springbett, P Stapleton, I Stapleton, L Staplety, S Stein, K Steves, C J	2 117 80 39 13 20 50 113 5 93 92 98 3 16 142 13 28 55 13 126 19 50 10 13 13 71 46 30 74 79 116 16, 20	Wang, X Ward, C Warmoth, K Warner, A Wason, J Watson, G Wear, H Wentworth, L Wessels, A M West, R M Westbury, L D Wharton, C Whelan, K White, C Whitehead, K Whitney, J Wilkinson, D Williams, E Williams, L Williams, R Wilton, R Wilton, R Wing, J Witham, M D Witte, K K Wong, L Woodhill, S Woods, S Wren, J Wright, D	134 29 116 48 16 23 32 121 13 4 101 58 20 26 57 18, 93, 114 78 88 108 34, 39 16 78 68 44 27 16, 98, 142 17 81 51 84 17 142

Yang, C Yates, M Yokota, R Yong, H W Q Young, C Young, G Young, J

Zaki, AZamir, H
Zhang, J
Zimmer, J A
Zulfiqar, A B

69 92 134

13 124, 125