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2022
23rd International Conference on Falls and Postural Stability

9 September 2022

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Book of Abstracts

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PLATFORM (13.30-13.40)

1152. SP - Scientific Presentation - SP - Falls (Falls, fracture & trauma)

Does Dizziness Predict Falls? A Longitudinal Study Using Data from the English Longitudinal Study of Ageing (ELSA)

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Introduction: Falls represent a significant social and economic problem, and 1/3 of people over 65-years old fall every year. Dizziness affects approximately 1/3 of older adults and is thought to be linked with an increased falls risk. However, previous studies have not considered other known falls risk factors, when making these assertions. The current study aimed to ascertain if dizziness is an independent risk factor for falling.

Method: Data was analysed from ELSA over a 10-year period (2004/5-2014/5) to determine if the severity of dizziness reported by participants was associated with increased falls risk over this period. Participants were asked at baseline "how often do you experience dizziness when walking on a level surface?". They were followed up biennially to ascertain falls reported. Falls were classified as any fall, recurrent fall (>1 fall in 2 years), injurious fall (requiring medical assistance) or new fall (fall following no previous reports of falling).

Results: A logistic regression model showed that, when accounting for known risk factors for falling (Participant's age, sex, medical history, frailty level (Fried phenotype), functional ability (Short Physical Performance Battery), physical activity level, and previous falls history), those reporting dizziness were significantly more likely to report recurrent or any falls in the following 2 (OR 1.529, p=0.001/OR 2.01,p=0.047) and 4 (OR 9.313, p=0.018/OR3.305,p=0.027) years and recurrent falls at 6 years (OR 9.384, p=0.021) than those never reporting dizziness. However, no association was observed at any stage with other categories of falls: new falls or injurious falls.

Conclusions: Dizziness is independently predictive of recurrent falls over a 6-year period. Recurrent falls are more likely to result in significant morbidity and mortality and associated personal and economic consequences. Routine inquiry regarding dizziness and its severity may enable earlier intervention of falls prevention measures.

PLATFORM (13.40-13.50)

1277. SP - Scientific Presentation - SP - Falls (Falls, fracture & trauma)

How To Prevent Medication-Related Falls? Recommendations by the Global Falls Guideline Working Group on Medication-Related Falls

L Seppala[1]; S Hartikainen[2]; L Mallet[3]; T Masud[4]; J Ryg[5]; M Petrovic[6]; N van der Velde[1]

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Introduction: Recommendations by the global task force on falls prevention and management are expected to be available in September 2022. One of the working groups (WG) focusses on medication-related falls. This WG aimed to develop evidence-based recommendations for medication-related falls prevention.

Methods: First, a systematic review and meta-analysis on effectiveness of medication reviews and deprescribing as a single intervention for falls prevention was conducted. Second, the WG summarized the literature on 1) whether medications are risk factors, 2) how medication review should be conducted and 3) whether multifactorial falls prevention strategy should include medication review. Third, the drafted recommendations were discussed in the WG meetings and have been revised by world-wide experts.

Results: In our systematic review, no significant associations between medication reviews in any of the geriatric care settings and fall outcomes were found. However, there was a trend for a lower number of fallers in the meta-analysis assessing medication reviews in long-term care (Risk Ratio 0.86 (95% Cl 0.72-1.02, I2=0%, 5 studies). Thus, WG conditionally recommends that in long-term care residents, if multifactorial intervention cannot be conducted due to very limited resources, the falls prevention strategy should still always include rational deprescribing. According to our literature summary, multifactorial falls interventions are associated with reduced falls rate. One of the common components of multiple interventions associated with reduction in fall risk was basic fall risk assessment including medication review. Therefore, WG recommends that medication review should always be part of the multifactorial falls prevention strategy. Other preliminary recommendations include assessing risk of falls before prescribing FRIDs to older adults and using a validated, structured screening and assessment tool to identify FRIDs.

Conclusion: The WG has formulated several recommendations which can potentially reduce medication-related falls and these preliminary recommendations will be further evaluated by world-wide experts in a Delphi-process.

PLATFORM (13.50-14.00)

1170. CQ - Clinical Quality - CQ - Clinical Effectiveness

Better Bone Health for People with Parkinson's

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1 Older Persons' Unit, Royal United Hospitals Bath NHS Foundation Trust; 2 School of Neuroscience and Psychology, University of Glasgow; 3 Excellence Network Team, Parkinson's UK; 4 Medicine for the Elderly, Stobhill Hospital, NHS Greater Glasgow and Clyde; 5 Bronllys Hospital, Powys Teaching Health Board; 6 University Hospitals Coventry and Warwick; 7 Parkinson's Service, Princess of Wales Hospital, Cwm Taf Morgannwg University Health Board; 8 University of Bristol; 9 Community Neuro-Rehabilitation Service

Introduction: People with Parkinson's are at least twice as likely to have osteoporosis, and sustain fractures (hip and major osteoporotic fractures), as those unaffected. Despite this, many are not routinely assessed for fracture risk. In the 2019 UK Parkinson's Audit, bone health was assessed in only 47.6% of 6256 patients.

Method: We invited NHS Parkinson's services to join a UK-wide improvement initiative. They were supported to pilot and implement a bespoke bone health algorithm, linked to guidance on investigation and management. Anonymised data was collected on-line. We used quality improvement methodology to identify and overcome barriers.

Results: 43 services submitted data on 1131 Parkinson's patients, mean age 75.3 years old (SD 8.8); 56.8% were male. The duration of Parkinson's was on average 5.8 years. 50% had a history of falls and 37% had previous fractures. Rapid initial assessment identified 73% of cases as requiring more detailed scoring, which was largely done using the Fracture Risk Assessment Tool (FRAX). Mean FRAX risk scores for major osteoporotic fracture were 14.2% (SD 10.4), and for hip fracture were 7.6% (SD 8.9). 19.5% of cases had DXA scans requested. Specific bone health (anti resorptive) treatments were newly started in 10.7% of all cases: oral bisphosphonates (7.3%), parenteral bisphosphonates (2.9%), denosumab (0.8%). The proportion of cases on anti-resorptive bone treatment increased by 67%, from 16% of cases at baseline, to 26.7% after assessment, with similar proportion increases in men (63%) and women (71%).

Conclusion(s): We have developed a streamlined approach that supports routine bone health assessment for people with Parkinson's, that results in targeted investigation and increased preventive treatment. The effect of the project on assessment rates will be measured in the 2022 UK Parkinson's national audit.

1249. SP - Scientific Presentation - SP - Falls (Falls, fracture & trauma)

Developing the principles of falls management in care homes- an expert consensus process

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Background: Falls are a concern to care home residents, relatives and staff. Managing risk of falling requires an individualised approach tailored for each resident with involvement from care home staff and the wider health and social care system. However, there is variation in how falls are managed across UK care homes. Greater understanding of the core components that care homes use and deliver in falls management programmes is needed to support widespread implementation of best practice. A consensus development process was therefore undertaken to determine the key principles of falls management programmes for UK care homes.

Methods: Expert consensus was undertaken comprising: a scoping review of grey literature to draft a set of principles; an online nominal group with care staff and clinicians to discuss the principles and areas of disagreement; and an online survey to establish agreement on final principles.

Results: Eight domains were identified from the scoping review with 31 draft principles developed. 10 care home staff participated in the online nominal group and survey with agreement established on 35 principles of falls management within the domains of overarching approach, assessments, interventions, training, time points, involvement of the wider system, governance, and reporting.

Conclusions: The development of a set of core principles provides guidance to support care homes in the key areas of falls management. Further research is needed to develop implementation strategies appropriate to this context and explore how to embed these principles in every day practice.

PLATFORM (14.10-14.20)

1262. SP - Scientific Presentation - SP - Falls (Falls, fracture & trauma)

Developing a falls management tool for adults with intellectual disabilities - stakeholder views

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Background: 'Action Falls' is a falls management tool that identifies risk factors and supports action to reduce risks. It is clinically used for older adults however needs adapting for adults with intellectual disabilities (AWID) who have specific reasons why they might fall. A programme of work is underway to revise the 'Action Falls' programme for AWID with the first stage of the work to gather views from key stakeholders.

Methods: Semi-structured interviews were undertaken with healthcare professionals, carers supporting AWID and AWID. A group interview was undertaken at a community group for AWID. The interviews explored views on the first draft of the programme and were analysed using framework analysis.

Results: 14 healthcare professionals (HCP), 8 carers (CAR) and 3 AWID took part in individual interviews. A further 10 AWID took part in a group interview over 3 visits. The findings included: 1. HCP highlighted the importance of multidisciplinary working, identifying challenges in team working and service provision at individual and organisational levels. 2. HCP suggested potential risk due to reduced engagement and equipment use, whereas AWID identified a strong desire for involvement in care decisions and CAR expressed challenges in accessing information, and ability to undertake suggested actions. 3. AWID and CAR emphasised the importance of risks posed by independence, anxiety, and changes in environment. 4. Use of technology, familiarity and addressing consequences of fear of falling were key themes advocated by AWID and CAR in risk reduction, with CAR highlighting need for AWID self-care awareness.

Conclusion: The views of key stakeholders have identified the need for the 'Action Falls' programme to support AWID in the management of falls. Development of the tool needs to consider the impact of risk perception and anxiety surrounding falls and ensure the voice of AWID are integral within completion of the tool.

PLATFORM (14.20.14.30)

1274. SP - Scientific Presentation - SP - Falls (Falls, fracture & trauma)

Effects of neuromuscular electrical stimulation (NMES) in acutely hospitalised adult patients - A systematic review

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Introduction: Hospitalised patients are at high risk of loss of muscle mass and function as a consequence of a period of immobilisation. These adverse outcomes can be attenuated by resistance exercise, but performing and adhering to the required exercise program can be challenging and difficult for this population. The technique of neuromuscular electrical stimulation (NMES) may be employed as an alternative to exercise in preventing or reversing the loss of muscle mass and/or function. Therefore, the objective was to examine the evidence for the effects of NMES applied to one or more limbs in acutely hospitalised adult patients

Method: MEDLINE, EMBASE, Cumulative Index to Nursing & Allied Health (CINAHL) and the Cochrane library were searched for relevant studies. Inclusion criteria: randomized controlled trials (RCTs) of hospitalised adult patients (aged ≥ 18 years) comparing NMES alone or with other interventions to control or other usual interventions. Our primary outcome of interest is muscle strength. Two reviewers independently screened the titles and abstracts, then full texts against the eligibility criteria. Data extraction, critical appraisal and synthesis were conducted using Review Manager (RevMan) software. Quality of evidence and rating were assessed by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) tool. Meta-analysis was conducted where possible, otherwise a synthesis without meta-analysis was conducted, based on the volume of evidence, its quality and effect sizes observed.

Results: The search strategy yielded a total of 2514 titles and 15 articles satisfied the eligibility criteria. These studies showed that NMES can maintain or increase muscle strength. Moreover, Eight RCTs involving 335 patients were included in the meta-analysis. Pooled analysis showed that there was an effect in favour of NMES, however, the effect was considered small [standardized mean difference (SMD): 0.33; 95% CI: -0.01, 0.68].

Conclusion: NMES is shown to help maintain and improve muscle strength.

1092. CQ - Clinical Quality - CQ - Patient Safety

Medicines Optimisation: Adherence pharmacist impact on patients at high risk of falls

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1. Lead Orthopaedic Pharmacist Musgrave Park Hospital; 2. Consultant Pharmacist Older People Belfast HSC Trust; 3. NI Centre Postgraduate Learning & Development

Introduction: Falls are the largest cause of emergency admissions for older people. Polypharmacy (taking 4 or more medications) significantly increases the risk of falling due to increased number & intensity of side-effects including cognitive impairment. We can measure anticholinergic side effects (anticholinergic burden) which particularly enhance the risk of falling by measuring the Anticholinergic Effect on Cognition (AEC) score (1) and the ageing brain care- anticholinergic cognitive burden scale (2).

Method: 30 patients were reviewed at the patient's home during a structured, in depth medication review by the medicines adherence pharmacist with: • Calculation of Anticholinergic Burden score (ACB) using both medichec (1) calculation tool and the ageing brain care- anticholinergic cognitive burden scale (2) • Lying/ standing manual BP measurement • Bone health review • Completion of a falls risk assessment tool (FRAT) (2,4) • Calculation of a modified medication appropriateness index score in 20 patients.

Results:
• The ACB scores reduced by 51.7%(medichec tool) and 40.1%(ageing brain care scale) p<0.05 • 6 patients identified as having postural hypotension.   • Calcium and vitamin D initiation recommended in 7 and 20 patients respectively. • 8 patients referred into the BHSCT falls prevention service. • Average MAI score pre pharmacist review was 12.25, this dropped to 1.25 post review (p<0.05)

Conclusion: The pharmacist review had a statistically significant impact (p<0.05) on the anticholinergic score which will reduce the anticholinergic burden known to increase risk of falls & dementia. The MAI pre and post review reduced, indicating a reduction in polypharmacy. The pharmacist assessment highlighted patients that have other risk factors for falls & fractures, ie postural hypotension & reduced calcium intake & vitamin D deficiency. Hypertensive crisis was detected in 1 patient, and profound hypotension in another leading to urgent hospital admission with sepsis.

References: 1. The anticholinergic effect on cognition (AEC) tool. South London & Maudsley NHS Foundation www.medichec.com 2. Aging Brain Care Scale -Aging Brain Program of the Indiana University Center for

Medicines Optimisation: Adherence Pharmacist Impact on patients at high risk of falls

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Medicines Optimisation in Older People

HSC Belfast Health and Social Care Trust
caring supporting improving together

Background:

Falls are the largest cause of emergency admissions for older people and lead to injury, loss of confidence & independence and occasionally death. 1 in 20 people living in community experience fracture of admission after a fall. The highest risk of falls are for those aged ≥65 years. 30% of people aged ≥65 years, living at home will fall at least once a year.

Polypharmacy (taking four or more medications) significantly increases the risk of falling due to increased number & intensity of side-effects including cognitive impairment. We can measure anticholinergic side effects (anticholinergic burden) which particularly enhance the risk of falling by measuring the Anticholinergic Effect on Cognition (AEC) score[1] and the ageing brain care- anticholinergic cognitive burden scale[2]

Aim:

To explore the impact of an extended medication adherence assessment by the pharmacist, optimising patient's medications to manage their falls and fracture risk, to
- reduce patient's anticholinergic burden score
- identify patients with postural hypotension
- conduct a bone health review, initiating calcium supplementation where appropriate and identifying patients deficient in vitamin D
- increase number of appropriate referrals to falls prevention services
- determine the impact of a medicine review on the appropriateness of patient's medication

Method:

30 patients were reviewed at the patient's home during a structured, in depth medication review by the medicines adherence pharmacist with:
- Calculation of Anticholinergic Burden score (ACB) using both medichec[1] calculation tool and the ageing brain care- anticholinergic cognitive burden scale[2]
- Lying/ standing manual BP measurement
- Bone health review
- Completion of a falls risk assessment tool (FRAT)[2,4]
- Calculation of a modified medication appropriateness index score

Main outcome measures

The main outcome measures were patient's anticholinergic burden score (ACB), lying/ standing BP, calcium intake and vitamin D level check and subsequent recommendation to prescribe if appropriate, falls risk assessment tool score (FRAT)[3,4].
Medication Appropriateness Index (MAI) score in 20 patients

Results:

- The anticholinergic burden scores calculated using the medichec calculation tool were reduced by 51.7% whereas the anticholinergic burden scores calculated using the ageing brain care scale were reduced by 40.1%. $p < 0.05$
- 6 patients were identified as having postural hypotension.
- Calcium and vitamin D initiation was recommended in 7 and 20 patients respectively.
- 8 patients were referred into the BHSCT falls prevention service.
- Average MAI score pre pharmacist review was 12.25, this dropped to 1.25 post review, an average ↓ of 90%. $p < 0.05$ (Figure 1)
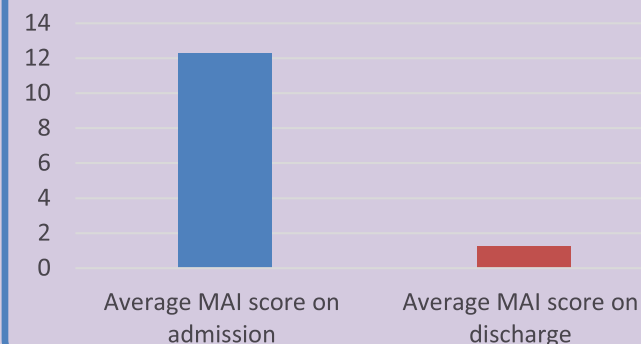
Discussion:

The pharmacist review had a statistically significant impact ($p < 0.05$) on the anticholinergic score which will reduce the anticholinergic burden known to increase risk of falls & dementia. The MAI pre and post review reduced, indicating a reduction in polypharmacy which is known to increase risk of falls. The pharmacist assessment highlighted patients that have other risk factors for falls & fractures, ie postural hypotension & reduced calcium intake & vitamin D deficiency. Hypertensive crisis was detected in 1 patient, & profound hypotension in another leading to urgent hospital admission with sepsis.

Conclusion:

The extended medication adherence assessment reduces falls risk in the older population which will reduce morbidity and mortality in this vulnerable group. The pharmacist assessment highlighted patients that have other risk factors for falls and fractures i.e. inadequate calcium/ vitamin D intake, and factors in the FRAT questionnaire e.g. history of falls, fear of falls, issues with balance. Lying and standing manual BP measurement identified several patients with hypotension or hypertension, two of which required urgent treatment.

Figure 1: Graph showing difference in average MAI score pre and post adherence pharmacist review

Average MAI score on admission — Average MAI score on discharge

References
1. The anticholinergic effect on cognition (AEC) tool. South London & Maudsley NHS Foundation www.medichec.com
2. Aging Brain Care Scale -Aging Brain Program of the Indiana University Center for Aging Research, 2021
3. MOOP Falls Risk Assessment and Medication Review Tool. N. Ireland Medicines Optimisation Older People Team. 2019
4. FRAT Falls Risk Assessment Tool. Penninsula Health 1999

1093. CQ - Clinical Quality - SP - Falls (Falls, fracture & trauma)

Audit of Inpatient Falls and Quality of Post Falls Assessment

A Hipsey; M Singh

St Mary's Hospital, Isle of Wight

Background: There are over 240,000 inpatient falls reported to the National Reporting Learning System every year, costing the NHS over £2 billion and contributing to a large degree of morbidity and mortality. This includes potentially avoidable intracranial bleeds and hip fractures. This audit assesses the quality of post falls assessment to provide improvement strategies to make care safer and more effective in hospitals.

Aims: To ensure all inpatient falls are assessed by a medical professional as per NICE guidance. To ensure a reasonable post fall observation and management period is fully documented. To ensure that all falls, regardless of perceived injury are referred to a doctor for medical assessment

Methods: Data was collected retrospectively using notes from 50 patient falls in a 3 month period. Data was collected to assess the proportion of falls reviewed by a doctor, and evidence of a neurological examination, GCS, nature of the fall, MSK, general examination and management plan as per NICE guidelines.

Results: 30% of falls showed that patients were examined from a medical perspective to investigate causes of the fall. 25% of patients had no medical examination after the fall. 70% had a GCS recorded, less than 20% had a documented anticoagulation status. 50% of falls had any management plan. This does not meet NICE guidelines.

Conclusion: There is no clear structure for doctors when assessing inpatient falls. The lack of documentation, assessment of anticoagulation status and limited amount of imaging increases the risk of patients having unidentified morbidity post fall. Recommendations: A proforma was designed in January 2021 and reaudited in June 2021. To include CT head imaging guidelines on the proforma. To take an MDT approach to teach health professionals how to conduct an assessment and importance of escalation. To collaborate with falls prevention team to improve post falls care.

Audit of Inpatient Falls and Quality of Post Falls Assessment

By Alice Hipsey JCF, Manjinder Singh JCF

Background

240000 inpatient falls reported to the National Reporting Learning System every year, costing the NHS over £2 billion and contributing to a large degree of morbidity and mortality[1]. This includes potentially avoidable intracranial bleeds and hip fractures[2]. This audit assesses the quality of post falls assessment to provide improvement strategies to make care safer and more effective in hospitals.

Aims

- Ensure all inpatient falls are assessed by a medical professional as per NICE guidance
- Ensure a reasonable post fall observation and management period is fully documented
- Ensure that all falls, regardless of perceived injury are referred to a doctor for medical assessment

Methods

Data was collected retrospectively using notes from 50 patient falls in a 3 month period. Data was collected to assess the proportion of falls reviewed by a doctor, and evidence of a neurological examination, GCS, nature of the fall, MSK, general examination and management plan as per NICE guidelines.

Results

Figure 1 — Doctor Review

Figure 2 — Medical assessment of falls

Figure 3 — Percentage of Assessed Falls with a Management Plan
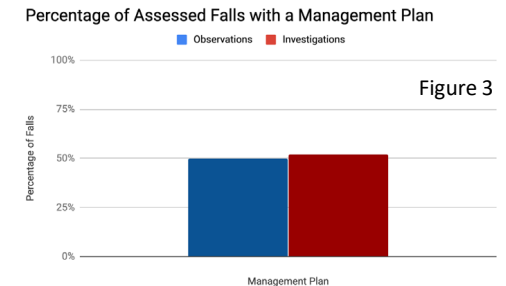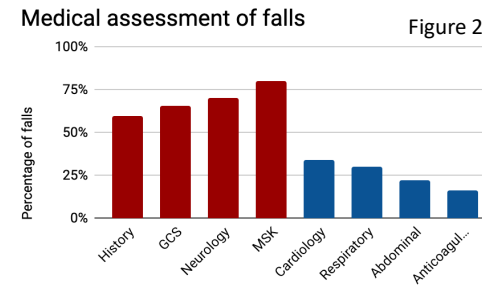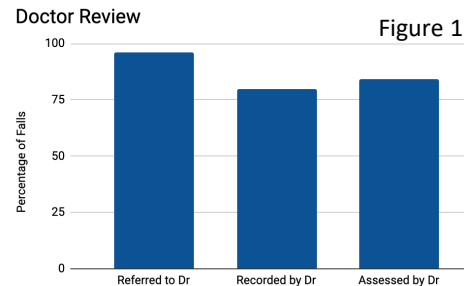
Fig 1 shows proportion of falls referred to a doctor, and proportion assessed by a doctor. 96% were referred but only 80% of falls had documentation of a review/examination. 26% had no medical examination after the fall.

Fig 2 shows the elements of the medical assessment that were conducted post fall. The red columns are those specifically mentioned in NICE guidance (nature of fall, GCS, neurology, MSK), and the blue are those that make up a general medical review. 70% had a GCS recorded. 16% had a documented anticoagulation status

Fig 3 shows proportion of assessments that mentioned any need for investigations and proportion for management plans. Only 50% of falls had any management plan

Conclusion

According to NICE guidelines, 100% of inpatient falls should be reviewed by a doctor and have a minimum of GCS and MSK examination recorded. Anticoagulation status is particularly important in inpatient falls as it can determine the need for a CT head.
This project demonstrated there is no clear structure for doctors when assessing inpatient falls , which can increase the chance of an unidentified morbidity post fall. In the future it would be useful to have data on the adverse outcomes post fall and correlation to reviews.

Recommendations

- Design a falls proforma
- Include CT head imaging guidelines on the proforma
- To take an MDT approach to teach health professionals how to conduct an assessment and importance of escalation
- To collaborate with falls prevention team to improve post falls care

1. NHS Improvement. (2017) *The incidence and costs of inpatient falls in hospitals: summary*
2. National Patient Safety Agency. (2011). *Rapid Response Report NPSA/2011/RRR001. Essential care after an inpatient fall.*

1123. CQ - Clinical Quality - CQ - Clinical Effectiveness

Falls Assessment and Prevention in the Health and Aging Unit (HAU) in a Large Central London Teaching Hospital

R Evans[1]; MS Tursini[1]; H Howard[2]; E Lewin[3]

1. King's College Hospital, London; 2. Medway Hospital; 3. Darent Valley Hospital

Introduction: Falls are a common in the ageing population, with 30% of over 65s and 50% of over 80s suffering with at least one fall a year. NICE has produced guidelines advising on the multifactorial assessment that should be carried out in patients presenting to hospital who have had a fall in the community. We aimed to evaluate how well the HAU department at King's College Hospital was completing the multifactorial falls assessment as described in the NICE guidelines on falls prevention and identify specific areas for improvement.

Method: A retrospective review of 80 inpatients admitted on a randomly chosen week into the HAU at King's College Hospital. Clinical notes were reviewed for evidence of eight specific assessments and four interventions. An electronic proforma was created and posters were displayed in key clinical areas. Staff were surveyed for perceived barriers to the completion of the assessments and interdepartmental education was provided to overcome these. We then re-audited our performance following our interventions and tested for statistical significance change using a chi square test.

Results: In HAU, some aspects of the falls assessment are completed thoroughly, while others, such as FRAX scores and lying-standing blood pressures, were not performed consistently. Following our interventions, we demonstrated a statistically significant improvement in the percentage of patients receiving the full multifactorial risk assessment, particularly an increase in visual assessment (29% to 36%) and FRAX score calculation (21% to 34%)

Conclusion: In HAU at KCH, falls assessment are generally carried out thoroughly. There were identifiable assessments that were repeatedly not performed. However, following interdepartmental discussions and teaching we demonstrated an improvement in our performance.

Falls Assessment in the Health and Ageing Unit (HAU) in a Large Central London Teaching Hospital

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NHS
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BGS British Geriatrics Society Improving healthcare for older people

Background and Aim

Falls are a common hospital presentation in the ageing population, with 30% of over 65s and 50% of over 80s suffering with at least one fall a year. A fall can lead to negative physical and psychological sequelae and falls are estimated to cost the NHS more than £2.3 billion per year. NICE has produced guidelines advising on the multifactorial assessment that should be carried out in patients presenting to hospital following a fall in the community, in order to prevent subsequent falls in the future and further hospital admissions.

The aim of this project is to evaluate how well the department at King's College Hospital was completing the multifactorial falls assessment as described in the NICE guidelines on falls prevention and identify specific areas for improvement.

Method:
A retrospective review of all inpatients, over the age of 65, admitted on a randomly chosen week into the Health and Ageing unit at King's College Hospital in October 2020. Patients were screened and included if they were identified as presenting with a fall or having a history of falls in the preceding 12 months. Electronic patient notes were then reviewed for evidence of completed assessments as set out by NICE guidelines. The performance of the department was then re-audited for patients admitted in a random week in June 2021 following the interventions. The results were tested for statistically significant change using a chi square test.

Interventions

Teaching session
- To share findings with the department, remind of the guidelines and give suggestions on how to improve assessments

Creation of Posters
- To display around HAU as a visual reminder

Creation of an electronic proforma
- to be used to aid falls assessments and ensure all elements completed prior to discharge

Survey of staff on HAU
- To identify barriers to completing the assessment

Assessments Screened for:

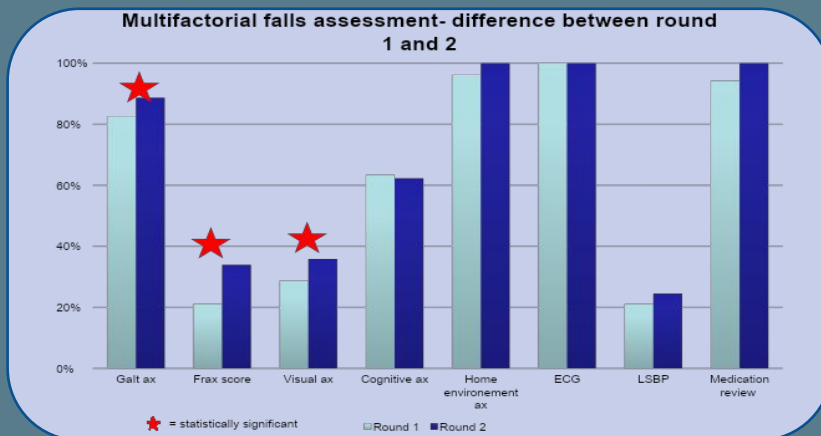- Gait Assessment
- Medication Review
- Visual Assessment
- Cognitive assessment
- FRAX score
- Home environment assessment
- ECG
- Lying/standing BP

Multifactorial falls assessment- difference between round 1 and 2

(bar chart: Gait ax, Frax score, Visual ax, Cognitive ax, Home environement ax, ECG, LSBP, Medication review; Round 1, Round 2; ★ = statistically significant)
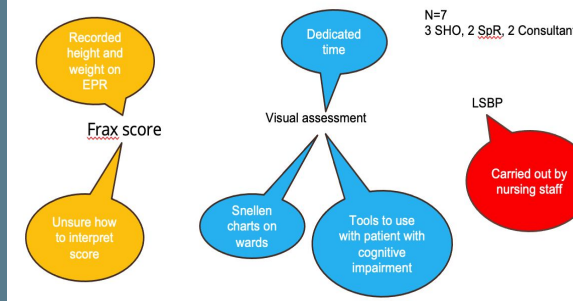
Results

Statistically significant improvements demonstrated in gait assessment (83% to 89%), visual assessment (29% to 36%) and FRAX score calculation (21% to 34%)
- All other areas improved or were unchanged, but with no statistical significance

Outcomes

✔ An assessment for risk factors/cause should be done for all patients at high risk of falls or admitted with a fall followed by any interventions deemed necessary

✔ This project demonstrates how surveying staff can help us understand why certain aspects of our practice are not being carried out consistently and how continuous education can improve our care for patients

Results of staff survey looking into barriers

N=7
3 SHO, 2 SpR, 2 Consultant

- Frax score: Recorded height and weight on EPR; Unsure how to interpret score
- Visual assessment: Dedicated time; Snellen charts on wards; Tools to use with patient with cognitive impairment
- LSBP: Carried out by nursing staff

The staff survey demonstrated the following barriers to completing a comprehensive falls assessment:

1. Limited time available to complete assessments
2. Lack of clarity on which member of the MDT was responsible for completing the different assessments
3. Not having all the elements required to complete an assessment (e.g. Snellen chart for vision assessment, height and weight measurement for FRAX score)
4. Lack of knowledge on how to perform and interpret certain assessments (e.g. performing LSBP, interpreting FRAX score)

Improvements for the future

- Establish project as a rolling audit to continue reviewing and overcoming barriers to falls assessments
- Approach other members of the MDT team to increase awareness and longevity of audit
- Integrate Multifactoral Falls assessment into the electronic notes system

1135. SP - Scientific Presentation - SP - BMR (Bone, Muscle, Rheumatology)

Zoledronic Acid Utilisation in Osteoporotic Patients Following Hip Fractures

Maxwell Renna; Phoebe Scarfield; Paul Moore; Fionna Martin; Samantha De Silva

Guy's & St. Thomas' NHS Foundation Trust

Introduction: Osteoporosis is characterised by reduced bone density and increases the risk of sustaining low-impact and fragility fractures. Approximately 25% of the population will suffer a fragility fracture in their lifetime with the mainstay of pharmacological treatment for osteoporosis being bone strengthening medications, with NICE recommending oral bisphosphonates first line. However, poor adherence with oral regimens due to complex drug regimens, lack of follow-up, contraindications and the cost of monitoring bone markers has prompted pragmatic shifts away from them. This was magnified in the COVID pandemic where surveillance and monitoring were temporarily suspended. However, parenteral bisphosphonates are safe, have a low patient treatment burden with fewer administration costs and are increasingly becoming first line choice in older adult services across the country. This project aimed to review our current protocols and assess if there was a change towards injectable bisphosphonate therapy similar to other centres.

Methods: A retrospective review of 1034 patients with neck of femur (NOF) fractures from internal databases and the national hip database was performed from 2016-2021 at a major London tertiary centre. Data on bone strengthening therapy and dropout rates were collected and compared to other centres.

Results: 35% of patients were initiated on oral bisphosphonates in 2016, compared to 2.3% in 2021. Currently, 53.8% of patients with new (NOF) fractures are started on IV zoledronic acid. No patients initiated on IV zoledronic acid stopped their therapy when contacted for follow-up, whereas 32% of patients taking alendronate stopped or switched their medication by the time of follow-up.

Conclusion: Although there is no significant difference in the efficacy of bone strengthening therapies, intravenous bisphosphonates increase compliance to therapy and are becoming a pragmatic first line therapy in many centres. However, more evidence on the cost effectiveness of this therapy is needed prior to guideline changes.

Zoledronic Acid Utilisation in Osteoporotic Patients Following Hip Fractures

Maxwell Renna, Phoebe Scarfield, Paul Moore, Fionna Martin, Samantha De Silva

Guy's & St. Thomas' NHS Foundation Trust

Background

Osteoporosis is characterised by reduced bone density, increasing the risk of sustaining low-impact and fragility fractures[1].

Approximately 25% of the population will suffer a fragility fracture in their lifetime with the mainstay of pharmacological treatment for osteoporosis being bone strengthening medications, with NICE recommending oral bisphosphonates first line treatment[2,3].

However, poor adherence with oral regimens, complex drug regimens and variable levels of treatment monitoring has prompted pragmatic shifts away from them. Services are meant to run 3- and 12-month drug monitoring, but workforce and service issues were magnified in the COVID pandemic where surveillance and monitoring were either services were redeployed or had reduced activity[4].

Parenteral bisphosphonates are safe, have a low patient treatment burden with fewer administration costs and are increasingly becoming first line choice in older adult services across the country, alongside Denonsumab[5].

Aims

This project aimed to review our current protocols and assess if there was a marked change towards injectable bisphosphonate therapy like other centres have reported.

Methods

A retrospective review of 1034 patients with neck of femur (NOF) fractures from internal databases and the national hip database was performed from 2016-2021 at a major London tertiary centre. Data on bone strengthening therapy and dropout rates were collected and compared to other centres.


Proportion of centres in the UK that treated patients with injectable bone protection
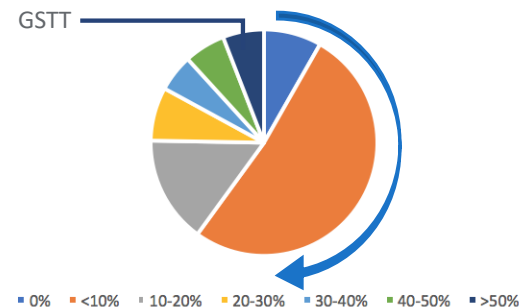
Results

35% of patients were initiated on oral bisphosphonates in 2016, compared to 2.3% in 2021. Currently, 52.6% of patients with new (NOF) fractures are started on injectable therapy (either Zoledronate or denosumab). 13.5% were not initiated on any bone strengthening therapy post operatively as they were pending follow-up. 3.8% were already on injectable therapy prior to admission.

32% of patients taking alendronate stopped or switched their medication by the time of follow-up.

Oral vs Injectable Therapy at GSTT
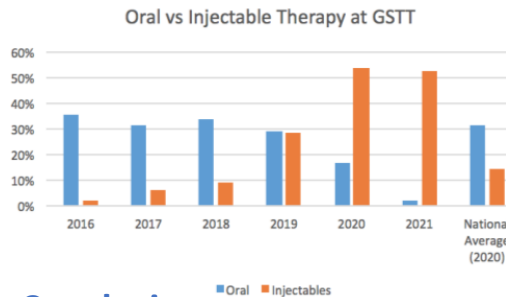
Conclusion

Although there is no significant difference in the efficacy of bone strengthening therapies, injectable bone strengthening medications increase adherance to treatment and are becoming a pragmatic first line therapy in many centres.

Oral vs Injectable Therapy Nationwide
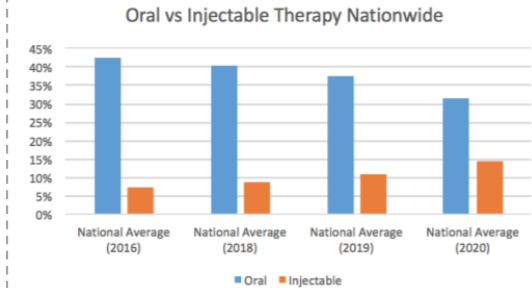
Moreover, increased numbers of patients continuing injectables are likely due to the COVID pandemic and reducing the number of in person appointments, but there is a national shift to parenteral therapy.

However, more evidence on the cost effectiveness of these therapies is needed prior to guideline changes.

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1148. SP - Scientific Presentation - SP - Pharm (Pharmacology)

The introduction and evaluation of a Pharmacy service to reduce admissions related to falls at Prince Philip Hospital

B Evans

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Background: To reduce falls-related admissions, a three-month service development was instigated in Prince Philip Hospital Minor Injuries Unit. This service focussed on identifying patients at greatest risk of falls, reviewing their medicines, and making interventions where necessary.

The objectives were to: • Develop and use criteria for triaging patients after a fall • Develop and use an assessment tool for medicines reviews of high-risk patients (and make interventions as necessary) • Ascertain whether a reduction in the number of falls, falls-related hospital admissions and an improvement in medication appropriateness has occurred.

The triage criteria and review tools were developed with reference to the wider literature. The frailty pharmacist triaged patients (identified initially via admission records) using the criteria. All patients categorised as high risk were invited to have a review conducted (using the assessment tool), with interventions (medication recommendations and onward referrals) discussed with the prescriber.

Method: Data analysis was largely descriptive but included determining mean before and after Medication Appropriateness Index scores, mean before and after number of falls and mean before and after number of falls related admissions. A t-test was used to determine whether a significant difference existed ($p<0.05$). In total, 65 patients were triaged with 35 of those subsequently categorised as high-risk for falls and further admissions.

Results: Using the review assessment tool, 71.43% (25/35) were identified as having one or more inappropriately prescribed medicines. In terms of interventions, 133 were made (3.8 per patient, on average) and the Medication Appropriateness Index improved by 21.8% following review (mean score was 9.43 before review and 1.8 after review; $p<0.0005$). Finally, from the hospital records, the number of falls related readmissions per patient reduced on average by 3.56% ($p<0.0005$).

Conclusion: The service appeared to be valuable in identifying high-risk patients, inappropriate prescribing, and ultimately contributes to reducing hospital related falls admissions.

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The introduction and evaluation of a Pharmacy service to reduce admissions related to falls at Prince Philip Hospital

Background

Falls in the frailty population is a growing public health concern due to an increase in life expectancy and the number of older adults living independently in the community. Studies from the British Geriatric Society show that 30% of people living in the United Kingdom over the age of 65 years have experienced at least one fall per annum. Furthermore, it is the most common cause of accidental death in people aged over 75 years (British Geriatric Society, 2017). With advancing age and frailty there is an increased possibility of multimorbidity and associated prescribing of potentially inappropriate medicines, which may contribute to falls. Patients taking four or more prescribed medicines, regardless of pharmacologic classification, are at an increased risk for falls (Prescqipp, 2014). Falls may be due to recent medication changes but are more commonly attributed to long term drug therapy without appropriate review.
Evidence suggests that a medication review by a clinical pharmacist as part of a holistic falls review can reduce the risk of falls (British Geriatrics Society, 2019). This project aims to add to the existing evidence-base around the value of a pharmacist-led holistic falls medication review.
Until recently, all patients who attended PPH Minor Injuries Unit (MIU) with injuries following a fall were triaged by advanced nurse practitioners and treated for their injuries. If deemed necessary, they would refer the patient to the hospital physiotherapist for a mobility assessment and if identified as safe for discharge they would be discharged home with their care handed back to their GP. Further investigations into the cause of the falls or medication reviews were not in routine practice.
To reduce falls-related admissions, a three-month service development was instigated in Prince Philip Hospital Minor Injuries Unit (MIU). This service focussed on identifying patients at greatest risk of falls, reviewing their medicines, and making interventions where necessary. This project is innovative as it integrates the emergency and acute sectors with primary care, it also focusses specifically on a high-risk population that may struggle to access other service provision.

Project aim and objectives

Aim: Develop and evaluate the introduction of a Pharmacy service to reduce falls related admissions, caused by inappropriate polypharmacy to Prince Philip Hospital Minor Injuries Unit.
The objectives were to:
• Develop and use criteria for triaging patients after a fall
• Develop and use an assessment tool for medicines reviews of high-risk patients (and make interventions as necessary)
• Ascertain whether a reduction in the number of falls, falls-related hospital admissions and an improvement in medication appropriateness has occurred

Methods

The triage criteria and review tools were developed with reference to the wider literature. The frailty pharmacist triaged patients (identified initially via admission records) using the criteria. All patients categorised as high risk were invited to have a review conducted (using the assessment tool), with interventions (medication recommendations and onward referrals) discussed with the prescriber. Data analysis was largely descriptive but included determining mean before and after Medication Appropriateness Index scores, mean before and after number of falls and mean before and after number of falls related admissions. A paired samples t-test was used to determine whether a significant difference existed (p<0.05).

Results

In total, 65 patients were triaged using the developed tool with 35 of those subsequently categorised as high-risk for falls and further admissions. Using the review assessment tool, 71.43% (25/35) patients were identified as having one or more inappropriately prescribed medicines. We saw that the main type of medicine-related problem was medication use without indication, and that antidepressants, analgesics, and hypnotic medications were the most frequent inappropriate medications prescribed. In terms of interventions, **133 were made (3.8 per patient, on average)**. The nature of these interventions is provided below in Table 1. **The Medication Appropriateness Index improved by 21.8%** following intervention as demonstrated below in Figure 1. The mean score at baseline was 9.43, standard deviation 8.438 and the mean score after intervention was 1.8 and standard deviation 2.386. **There was a statistically significant difference of 7.63 (95% CI, 4.973 to 10.284), t(34) = 5.838, p <0.00005**

Table 1. The number and type of interventions identified during the reviews

| Area of related need	Total related problems identified
Clinical (including medication stopped, switched, dose reduced, observation monitoring, haematological/biochemical investigations, specialist referral, health care professional referral, referred for further investigation)	92
Adherence and compliance (including medication counselling, assessments for compliance aids, inhaler counselling)	25
Access (including medicines administration, community pharmacy access, stock piling, repeat prescription ordering)	16
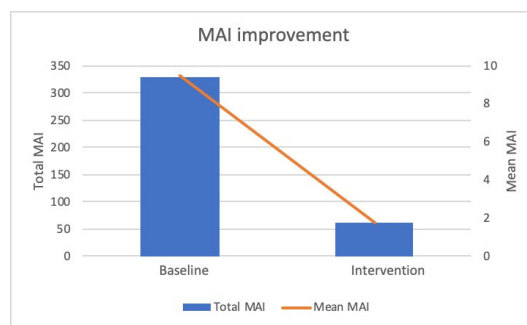
Figure 1. MAI Improvement

In total 33 patients (94.29%) reported a reduced number of falls in the 3 months after intervention compared to 3 months prior to intervention as demonstrated below in Figure 3.
Patients reported number of falls at baseline (4.14 ± 3.623) and after the interventions (1.14 ± 1.700), **a statistically significant mean difference of 3 (95% CI, 2.10656 – 3.89344) t(34) = 6.824, p < 0.0005.** The number of falls related hospital admissions decreased in 30 patients (85.71%). The number of falls related hospital admissions per patient reduced on average by 1.23 (3.56%) as demonstrated below in Figure 3. Patients hospital falls admissions rate at baseline (1.54 ± 0.852) and after the interventions (0.31 ± 0.631), **a mean statistically significant difference of 1.23 (95% CI, 0.88419-1.57295), t(34) = 7.250, p < 0.0005.**
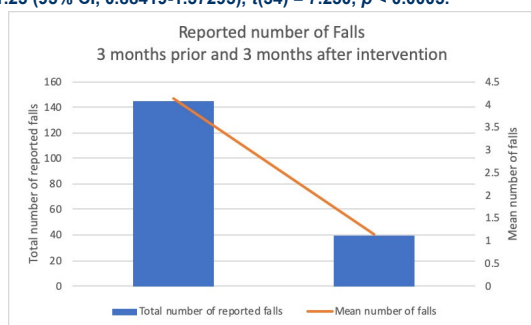

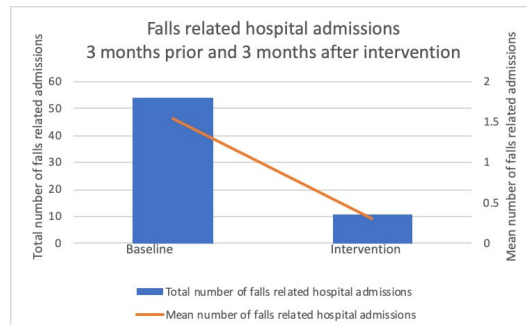**Figure 2. Reported Falls**

Figure 3. Falls related hospital admissions

Savings generated from the medication reviews, totalled **£3,280.60 per annum**. These savings derived from stopping medicines, dose reductions, formulation changes, specifically switching liquid to tablets, reducing quantities to avoid over ordering and stock piling, and reducing ordering frequencies for when required medicines for example salbutamol inhalers and glyceryl trinitrate sprays.
This study found that **43 Minor Injuries Unit attendances were avoided** due to the availability of intervention by a specialist pharmacist service. Using the King's Fund (The King's Fund, 2019) data for patients who attends an urgent care centre, savings calculated from 43 attendances at MIU that were avoided, this cost at its lowest level of investigation is **£1,935 and highest level of investigation could reach £17,200.**

Conclusion

This service development and evaluation has exposed the risks of falls and associated adverse events that can occur in elderly patients with comorbidities who receive multiple medicines for chronic illness. While this service evaluation was based on a small number of patients, it has provided a useful starting point to support decision-making for a potential rollout of the service across the health board.
This project justifies why a comprehensive drug review should be embedded into the falls prevention service and it has provided evidence to support the integration of a clinical pharmacist into the falls' prevention team.

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1159. CQ - Clinical Quality - CQ - Clinical Effectiveness

Improving a citywide falls service pathway by the introduction of an integrated falls service multi-disciplinary team (MDT) meet

J Brayshaw[1]; H Smith[2]; G Sutton[3]; C Wilkinson[3]

1. Leeds Community Healthcare NHS Trust (LCH); 2. NHS Leeds CCG; 3. Leeds Teaching Hospitals NHS Trust (LTHT)

Background: Historically, falls patients were assessed by the therapy-led Community Falls Service or at the Geriatrician-led hospital-based Falls Clinic, with some patients being seen by both services. This could result in duplication, and frail older people making unnecessary visits to hospital. In 2021, the falls pathway was reviewed to enable more complex falls patients to be assessed and managed in the community through a more integrated approach, supporting care closer to home in line with the NHS Long-Term Plan.

Method: The LTHT Older People's Medicine service, LCH Community Falls Service, and the CCG Medicines Optimisation team collaborated to develop virtual falls MDT meetings, enabling provision of specialist advice and support and arranging investigations as required. Community Falls Service patients were identified for discussion at the MDT meetings, with shared decision-making on the patient's individualised management plan, in conjunction with the patient. PDSA cycles were employed to test the feasibility, implementation and effectiveness of a virtual integrated falls service MDT meeting involving a falls ACP (Physiotherapist), Geriatrician and Consultant Pharmacist.

Results: The pilot MDT meetings reviewed 72 patients. 23 patients (32%) were followed up at subsequent MDT meetings. 48% patients reviewed required medicine changes, and of these, 67% were directly actioned by the pharmacist on the GP system. 6 (12%) out of 8 patients identified as requiring referral to the hospital-based Falls Clinic agreed to attend, demonstrating a 68% reduction in the need for referral during the pilot.

Conclusion: A fortnightly virtual MDT meeting to review community falls patients was feasible and effective to enable timely specialist advice for the Community Falls Service. This allowed more patients to be treated in their own homes, improving the patient experience and avoiding unnecessary visits to hospital, but also enabled timely changes in medicines-related falls and improved treatment of orthostatic hypotension.

Improving a citywide falls service pathway by the introduction of a virtual integrated falls service multi-disciplinary team (MDT) meeting

Brayshaw J[1], Smith H[2], Sutton G[3] and Wilkinson C[3]

1. Leeds Community Healthcare NHS Trust (LCH)
2. NHS Integrated Care Board (ICB) in Leeds, West Yorkshire ICB
3. Leeds Teaching Hospitals NHS Trust (LTHT)

Background

Historically, falls patients in Leeds were assessed by the therapy-led Community Falls Service or at the Geriatrician-led hospital-based Falls Clinic, with some patients being seen by both services. This could result in duplication, and frail older people making unnecessary visits to hospital. In 2021, the falls pathway was reviewed to enable more complex falls patients to be assessed and managed in the community through a more integrated approach, supporting care closer to home in line with the NHS Long-Term Plan.

Method

The LTHT Older People's Medicine service, LCH Community Falls Service, and NHS Leeds CCG Medicines Optimisation team collaborated to develop virtual falls MDT meetings, enabling provision of specialist advice and support and arranging investigations as required. Community Falls Service patients were identified for discussion at the MDT meetings, with shared decision-making on the patient's individualised management plan, in conjunction with the patient.

PDSA cycles were employed to test the feasibility, implementation and effectiveness of a virtual integrated falls service MDT meeting involving a falls ACP (Physiotherapist), Geriatrician and Consultant Pharmacist.

Key Points: Less hospital visits
Timely medicine changes

Results

Patients Reviewed by Falls Service MDT n= 72
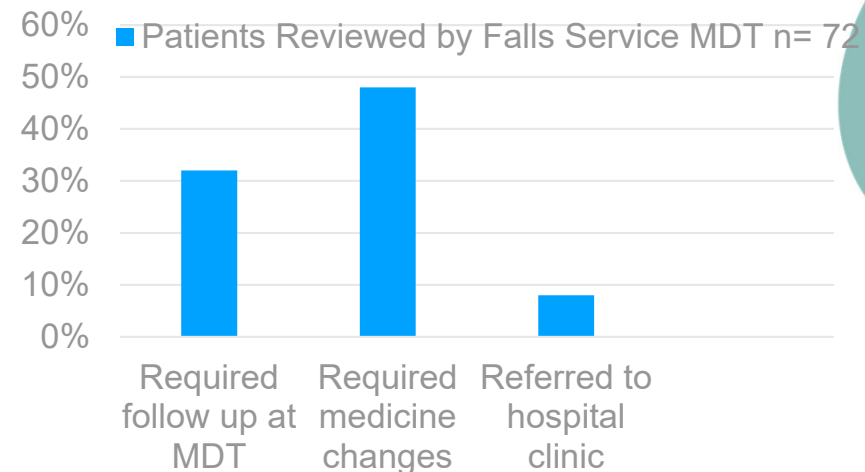
67% medicine changes were directly actioned on the GP system in Primary Care by the pharmacist.

Conclusion

A fortnightly virtual MDT meeting to review community falls patients was feasible and effective to enable timely specialist advice for the Community Falls Service. This allowed more patients to be treated in their own homes, improving the patient experience and avoiding unnecessary visits to hospital, but also enabled timely changes in medicines to reduce medicines-related falls and improve treatment of orthostatic hypotension.

1163. CQ - Clinical Quality - CQ - Patient Centredness

A first look at the effectiveness of dance classes as a form of strength and balance intervention in older adults.

E King; C Wood; K Sayer; A Denning-Kemp; G Jones

Older Persons Assessment Unit Physiotherapy Department, Guys and St Thomas NHS Foundation Trust

Introduction: A collaboration between the Older Person's Assessment Unit (OPAU) Physiotherapy Department and Breathe Arts Health Research (BAHR) was established to evaluate the effectiveness of dance as an intervention to improve older people's strength and balance (SAB). This provided an opportunity to encourage a wider variety of patient participation in falls prevention activity, using dance as an alternative to standard SAB exercise groups. Research has shown benefits of dance for conditions such as Parkinson's Disease, but there is minimal research into dance for older adults.

Method: Referrals to the Dance class came from qualified physiotherapists, following comprehensive assessment and informed consent. One-hour classes were held weekly, over a ten-week period, and facilitated by a dance specialist and a physiotherapist. Safety was assessed using normal adverse event reporting protocols. Outcome measures (OM) were collected for all participants (October 2019 to March 2022, n=59), including tests for ambulatory function (Timed Up and Go (TUAG) test), gait speed over 6m (GS), balance (Turn-180°) and self-reported concerns about falling (Falls Efficacy Scale International, FES-I). Complete cases were analysed.

Results: 36 datasets were analysed. Average participant age was 77 years, and 32 (89%) were female. No adverse events were reported during the intervention period. Mean TUAG pre-intervention was 17.84s, improving to 14.97s post-intervention, with a mean change of 0.42s (± 8.71). GS improved by 0.15m/s (±0.19) on average, demonstrating a minimally clinically important change. Median FES-I score change was 4.5 and there was no change in the Turn-180°.

Conclusion: Preliminary data shows these Dance classes to be safe, and participants had an improvement in gait speed and confidence, and a falls risk reduction. Future comparative work will establish whether dance is as effective as specific SAB exercises to reduce risk of falls and improve patient outcomes.

A first look at the effectiveness of dance classes as a form of strength and balance intervention in older adults. (ID: 1163)

Emily King[1], Carrie Ann Wood[1], Katie Sayer[1], Alex Denning-Kemp[1], Gareth Jones[1]

[1] Older Persons Assessment Unit Physiotherapy Department, Guys and St Thomas NHS Foundation Trust

BREATHE ARTS HEALTH RESEARCH

NHS Guy's and St Thomas' NHS Foundation Trust

Introduction

A collaboration between the Older Person's Assessment Unit (OPAU) Physiotherapy Department and Breathe Arts Health Research (BAHR) was established in 2017 to evaluate the effectiveness of dance as an intervention to improve older people's strength and balance (SAB).

This provided an opportunity to encourage a wider variety of patient participation in falls prevention activity, using dance as an alternative to standard SAB exercise groups. Research has shown benefits of dance for conditions such as Parkinson's Disease [1,2,3] but there is minimal research into dance for older adults.

Aims

To review the impact of dance as an alternative strength and balance intervention for patients in OPAU.

Methods

An honorary contract was set up with the BAHR team to complete exercise classes within our Older Person's Assessment Unit. Patients were referred, with consent, to the Dance class by qualified physiotherapists from departments within Guy's and St. Thomas' (GSTT). These hour long classes were held weekly, over a ten-week period, and were facilitated by a dance specialist and a physiotherapist. Safety was assessed using normal adverse event reporting protocols. Exercises were tailored to the ability levels of the participants to challenge at an appropriate level.

The following Outcome Measures (OM) were collected for all participants:
- Timed Up and Go (TUAG)
- Gait speed over 6m (GS)
- 180° Turn
- Falls Efficacy Scale International (FES-I)

SCAN ME

Results

Data was collected between October 2019 and March 2022 including 8 cohorts (n=59) with an average age of 77 years, and 32 (89%) were female. 39 complete cases were analysed with 20 excluded as incomplete. No adverse events were reported during the intervention period. The mean change in TUAG post intervention was 0.42s (see Graph 1). The other outcome measures used are detailed in Table 1 below. The only minimally clinically important change was demonstrated in the changes in GS with an improvement of 0.15m/s on average. Following the class, our BAHR gathered qualitative feedback from patients in the form of a telephone call (see Picture 1).

Timed Up and Go Scores
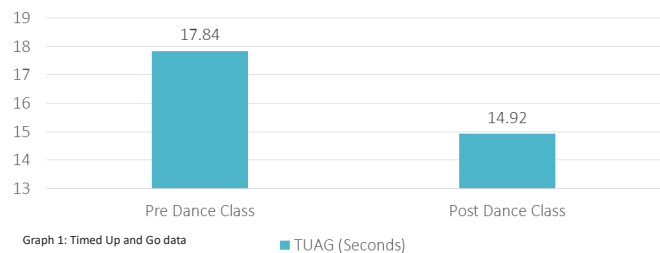
Graph 1: Timed Up and Go data

■ TUAG (Seconds)

	Gait Speed (m/s)			Falls Efficacy Scale - International			180° Turn (steps)		
	Pre	Post	Difference	Pre	Post	Difference	Pre	Post	Difference
	0.71	0.86	+0.15	39	34.5	-4.5	4.67	3.75	-0.92

Table 1: Outcome Measures

"I don't use my stick or crutch at home now, I have improved so much"

"Being in a chair day in, day out, it is amazing to be with people laughing"

"I got more confident with walking"

Picture 1: Patients comments following completing the classes

Conclusion

Preliminary data shows these Dance classes to be safe with participants demonstrating improvements in gait speed, confidence and falls risk.

Next Steps

Future work aims to address the following questions:
- Are dance classes as effective as our specific SAB group classes as an intervention for falls prevention?
- Can we permanently incorporate Dance as an intervention within our portfolio for our older adults at risk of falls?
- How can we integrate dance classes into the community following completion of the 10 weeks within our service?

We will also be using the Rehab Treatment Specification System [5] to describe science behind dance as a rehabilitation intervention.

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Acknowledgements

1164. CQ - Clinical Quality - CQ - Improved Access to Service

Preliminary outcomes of an online bone health exercise intervention

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Older Person's Assessment Unit, Guy's Hospital, Guy's & St Thomas' NHS Trust

Introduction: Physical activity is important in the management of osteoporosis. It promotes bone strength and health (BH), reduces falls risk, and is essential in the overall management of at-risk patients alongside pharmacological and lifestyle interventions. In our local area, this patient population were found to have a limited understanding and availability of BH exercise interventions, as well as low confidence in independently undertaking prescribed exercises. Therefore, in this project we designed a physiotherapy-led BH exercise intervention and assessed its effectiveness on physical outcomes, participants' confidence and understanding of exercise for BH.

Methods: Patients attending the multidisciplinary BH clinic between January 2020 and December 2021 (n=42) were assessed by a physiotherapist for suitability for a one-hour, 12-week exercise intervention (max 12 sessions) which was based on published guidelines [National Osteoporosis Society, 2018]. Cardiovascular fitness (60s sit-to-stand; STS60), gait speed (6m; 6MGS), muscle strength (handheld-dynamometer), motor control (timed-up-and-go; TUAG), and balance (four stage balance test, and 180° turn) were all assessed pre/post exercise intervention. Complete data sets were analysed. A post-completion telephone survey provided qualitative data which are narratively reported.

Results: Twenty-three data sets were analysed (mean(±SD) 73(±11) years; 18(78%)♀, mean attendance 11.5(±0.67) sessions). There were clinically meaningful mean improvements in STS60 (4.35(±5.87) repetitions), 6MGS (0.14(±0.14)m/s), and TUAG (-1.19(±2.7)s). Qualitative data (n=15) revealed the class was helpful, 12(80%) participants reported perceived improvements in strength and steadiness, and 13(87%) increased confidence. All participants reported increased awareness of benefits of exercise, with plans in place to continue independently.

Conclusions: These preliminary findings show that a 12-week BH exercise intervention provides meaningful change in strength and balance. There was increased awareness of the importance of exercise for BH. Future work will use this data to design and execute experimental work to provide clinical evidence of efficacy.

Preliminary outcomes of an online bone health exercise intervention

Kirsty Skinner, Carrie-Ann Wood, Katie Sayer, Alexandra Denning-Kemp, Gareth Jones.
Older Person's Assessment Unit, Physiotherapy team
ID 1164

NHS
Guy's and St Thomas'
NHS Foundation Trust

Introduction:
Osteoporosis and its associated fragility fractures are common conditions globally, contributing significantly to morbidity, mortality and healthcare spending[1].

Physical activity and exercise have an important role in the management of osteoporosis, promoting bone strength and reducing falls risk, and should be integral to the overall treatment plan for patients at risk, alongside pharmacological management and positive lifestyle changes.

A gap in local services for promotion and provision of exercise specifically for bone health (BH) was identified. Previous work found there to be a lack of education and knowledge regarding exercise and lifestyle related to BH in the at risk population.

Additionally, patients reported lack of confidence to complete prescribed exercises independently. In response to this, an online, physiotherapy-led BH exercise class was created.

Aim:
To determine if a physiotherapy-led exercise intervention is effective in improving physical outcomes, participants' confidence and understanding of exercise for BH.

Method:
Patients attending the multidisciplinary BH clinic between January 2020 and December 2021 were assessed by a physiotherapist for suitability for one-hour, 12-week exercise intervention (max 12 sessions) which was based on published guidelines[2] (Figure 1).
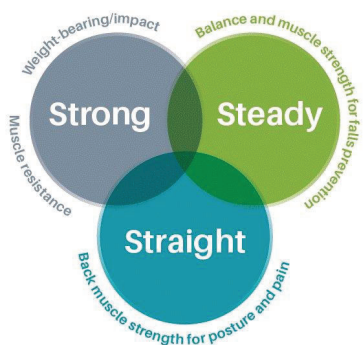
Figure 1: Physical activity and exercise themes – Strong, Steady and Straight (Royal Osteoporosis Society)

Data collection:
Cardiovascular fitness (60s sit-to-stand; STS60), gait speed (6m; 6MGS), dynamometry (hand grip strength), motor control (timed-up-and-go; TUAG), and balance (four stage balance test and 180° turn) were all assessed pre and post exercise intervention. Only complete data sets were analysed.

A post-completion telephone survey (n=8) provided qualitative data which are narratively reported.

Results:
Forty-two patients were identified as appropriate for the class. Outcomes from twenty-three participants (mean age = 72.7 years; Females =18/23) were used in the data analysis of the primary outcomes. Mean class attendance was 11.52 sessions.

Improvements were seen in all outcome measures (figure 2) with meaningful changes in STS60 (figure 3), GS (figure 4) and TUAG (figure 5).

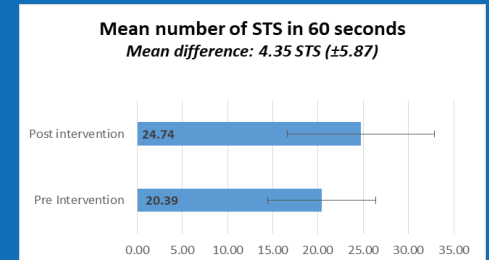| Outcome Measures	Pre Intervention	Post Intervention	Difference
4 point balance test	3 (± 0.85)	3.73 (± 0.62)	0.73 (± 0.81)
180 turn (steps)	3.39 (± 0.78)	2.78 (± 0.95)	-0.61 (±0.84)
Grip Strength L (kg)	18.99 (±7.49)	23.1 (±14.2)	3.93 (±11.08)
Grip Strength R (kg)	19.65 (±7.84)	24.7 (±12.19)	4.83 (±10.64)

Figure 2. Pre and post intervention outcome measures

Mean number of STS in 60 seconds
Mean difference: 4.35 STS (±5.87)

Post intervention 24.74
Pre Intervention 20.39

Figure 3.

Mean Gait Speed (over 6m) (m/s)
Mean difference: 0.14 m/s (±0.61)

Post intervention 1.44
Pre intervention 1.29

Figure 4.

Mean Timed Up & Go (seconds)
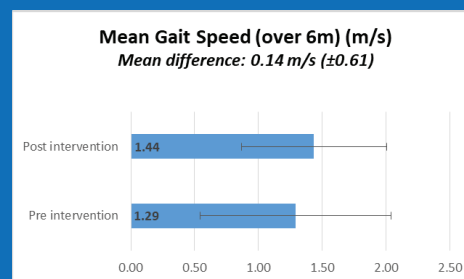*Mean difference: -1.19s (±2.7)*
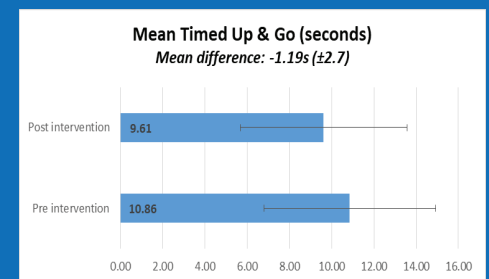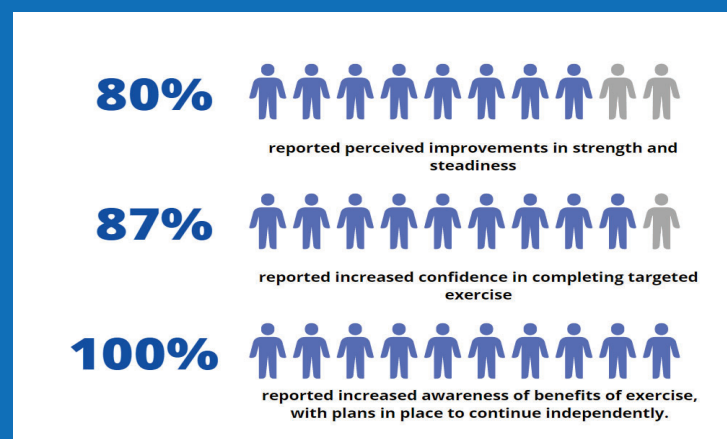
Post intervention 9.61
Pre intervention 10.86

Figure 5.

In the post completion telephone survey, participants reported the class to be helpful (see figure 6), with improved understanding of exercise for BH.

80% reported perceived improvements in strength and steadiness

87% reported increased confidence in completing targeted exercise

100% reported increased awareness of benefits of exercise, with plans in place to continue independently.

Conclusion:
These preliminary findings show that a 12-week BH exercise class has benefits for strength and balance, with meaningful changes for all participants. There was increased awareness of the importance of exercise for BH. The results however cannot be more widely interpreted due to the small sample size, and further data collection and evaluation is recommended.

References:
1 NICE Impact: Falls and fragility fractures (July 2018).
2 Strong, Steady, Straight: An expert consensus statement on physical activity and exercise for osteoporosis. Royal Osteoporosis Society (December 2018).

1248. SP - Scientific Presentation - SP - Falls (Falls, fracture & trauma)

Audit: Review of falls-risk increasing medications (FRIMs) post inpatient falls

V L Cheong[1,2]; D Bhaskaran[1]; G Sutton[1]

1. Leeds Teaching Hospitals NHS Trust; 2. School of Healthcare, University of Leeds

Background: Falls are the most frequently reported incident affecting hospital inpatients, with nearly 250,000 falls occurring annually in English hospitals1. It is recommended that all patients should have their medications reviewed after a fall2. The audit's aim was to establish if medication reviews were completed in post-fall clinical reviews.

Methods: A retrospective review of charts of reported inpatient falls within Specialty and Integrated Medicine wards, between 1st August 2021 and 31st January 2022. Data collected include: documented reason for falls according to clinical assessment, falls-risk increasing medications (FRIMs) prescribed at the time of fall, and any changes to FRIMs post-fall.

Results: Twenty-two patients were reviewed: 64% (n=14) were female; mean age 84.4 years +/- 5.3. The documented reasons for falls included: deconditioning (n=3), postural hypotension (n=4), dizziness (n=3), delirium (n=3).   Prescribed FRIMs were categorised into 3 traffic light categories2: red (high-risk), amber (medium-risk), and yellow (possible cause). Fifteen (68%) patients were prescribed ≥1 FRIM. 14(64%) patients were prescribed ≥1 red medication; 10(46%) prescribed ≥1 amber medication; and 5(23%) prescribed ≥1 yellow medication. Red medications prescribed included: anti-hypertensives (n=10), antidepressants (n=5), opioids (n=2). FRIM reviewed and changed post-fall occurred in 7 patients (32%): 3 had FRIM stopped, 1 had FRIMs dose reduced, 3 had non-FRIM medication stopped (anticoagulant).

Conclusion: Our audit showed that 4 out of 15 patients (27%) had their FRIM changed after an inpatient fall. This presents a missed opportunity to prevent further falls. We aim to carry out quality improvement initiatives to increase the uptake of medication review post falls.

Review of falls-risk increasing medications (FRIMs) post inpatient falls
Could we do more?

VL CHEONG[1,2]; D BHASKARAN[1]; G SUTTON[1].

[1]Leeds Teaching Hospitals NHS Trust; [2]School of Healthcare, University of Leeds

INTRODUCTION

The World Health Organisation (WHO) stated that falls are the second leading cause of unintentional injury deaths with older people suffering the greatest number of fatal falls[1]. Fall-related injuries can have adverse consequences such as disability, reduced independence and mobility, increased likelihood of admission to long-term care facilities, and higher mortality risk[2].

Indeed, falls are the most frequently reported incident affecting hospital inpatients, with nearly 250,000 falls occurring annually in English hospitals[3]. A systematic review found that inpatient falls rate within geriatric units globally, ranged from 10.9-18.0 falls per 1000 bed days[4].

It is recommended that all patients should have their medications reviewed after a fall[5].

The aim of this audit was to establish if medication reviews were completed in post-fall clinical reviews.
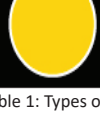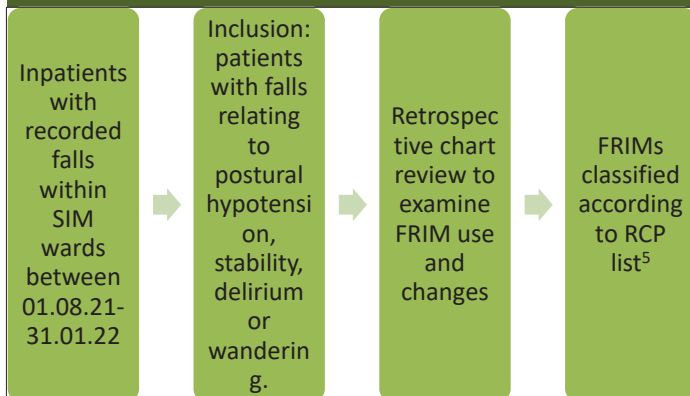
METHODS

| Inpatients with recorded falls within SIM wards between 01.08.21- 31.01.22 | → | Inclusion: patients with falls relating to postural hypotension, stability, delirium or wandering. | → | Retrospective chart review to examine FRIM use and changes | → | FRIMs classified according to RCP list[5] |

RESULTS

Twenty-two patients were reviewed: 64% (n=14) were female; mean age 84.4 years +/- 5.3. The documented reasons for falls included: deconditioning (n=3), postural hypotension (n=4), dizziness (n=3), delirium (n=3).

Prescribed FRIMs were categorised into 3 traffic light categories[5]: red (high-risk), amber (medium-risk), and yellow (possible cause). Fifteen (68%) patients were prescribed ≥1 FRIM. Of these, most (13/15) were taking a combined number of FRIMs. The breakdown of FRIM risk classification are outlined in Table 1. Other medications thought to increase falls risk but was not on RCP list were: medications with high anticholinergic burden, hypoglycaemic agents (e.g. insulin, sulphonylurea) and Parkinson's medications.

FRIM reviewed and changed post-fall occurred in 7 patients (47%): 3 had FRIM stopped, 1 had FRIMs dose reduced, 3 had non-FRIM medication stopped (anticoagulant).

Traffic light status	Definition	Distribution of FRIM risk categories amongst those who were prescribed a FRIM (n=15)	Examples of FRIMs prescribed
(red)	High-risk- can commonly cause falls, alone or in combination	14 (93.3%)	Angiotensin Converting Enzyme inhibitors (ACEIs) (n= 3); Beta-blockers (n= 7); antidepressants (n=5); opioids (n=2).
(orange)	Medium risk: can cause falls, especially in combination	10 (66.7%)	Calcium channel blockers (n=8); Angiotensin receptor blockers (n=2); Diuretics (n=3); Serotonin Selective Reuptake Inhibitor (SSRIs) (n=1)
(yellow)	Possibly causes falls, particularly in combination	5 (33.3%)	Anti-muscarinics (n=1); Anti-epileptic (n=3); Acetylcholinesterase inhibitors (n=1).

Table 1: Types of FRIMs prescribed according to risk classification.

CONCLUSIONS

- Our audit showed that of those who were prescribed a FRIM, 47% had their FRIM changed after an inpatient fall.
- Most (93%) of the FRIMs prescribed belonged to the high risk category (red).
- Moreover, 59% of patients were prescribed >1 FRIM.
- There may be an under-delivery of medication review and deprescribing following an inpatient fall, which is a missed opportunity in future fall prevention.
- There were other medications not on the RCP list that were thought to increase falls risk when not optimised.
- There is a need for an update to the RCP list to facilitate comprehensive medication review for falls prevention.

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[3] NHS Improvement. National Audit of Inpatient Falls 2020. Accessed: National Audit of Inpatient Falls 2020 - data.gov.uk
[4] Cameron ID, Dyer SM, Panagoda CE, Murray GR, Hill KD, Cumming RG, Kerse N. Interventions for preventing falls in older people in care facilities and hospitals. Cochrane Database of Systematic Reviews 2018, Issue 9. Art. No.: CD005465. DOI: 10.1002/14651858.CD005465.pub4. Accessed 18 August 2022.
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1269. CQ - Clinical Quality - CQ - Clinical Effectiveness

Improving the recording of lying and standing blood pressures in patients at risk of falls

H Lwin; H Tun; B Simon

University Hospitals of Leicester NHS Trust

Introduction: Falling is the main cause of hospitalisation in older people. On admission to hospital all patients at risk of falls should receive a risk assessment and care plan. As part of this, postural hypotension, one of the main causes of falls, needs to be assessed by measuring lying and standing blood pressures (LSBP). When identified, it can be prevented by simple measures. By correctly performing these blood pressure measurements, this will reduce the risks of falls, the impact on mobility and subsequent admissions. Our quality improvement project (QIP) demonstrated that these BP measurements are not always recorded correctly.

Aim: To assess the knowledge of standardised LSBP measuring in healthcare professionals, to identify the people at risk of developing postural hypotension and fall by improving these BP recordings particularly in Geriatric and General Medicine wards in Leicester Royal Infirmary.

Method: A survey included 50 junior doctors and 50 nurses/health care assistants in each cycle of audit. It was focused on the steps and interpretation of LSBP recordings and gave defined responses for each question. Implementations were carried out through PDSA cycles over a period of 8 months.
Cycle 1: Poster providing guidance and reference at doctors' office and nurses' station
Cycle 2: Putting paper documentation of the LSBP records in patients' medical notes and assessing if these were correctly performed
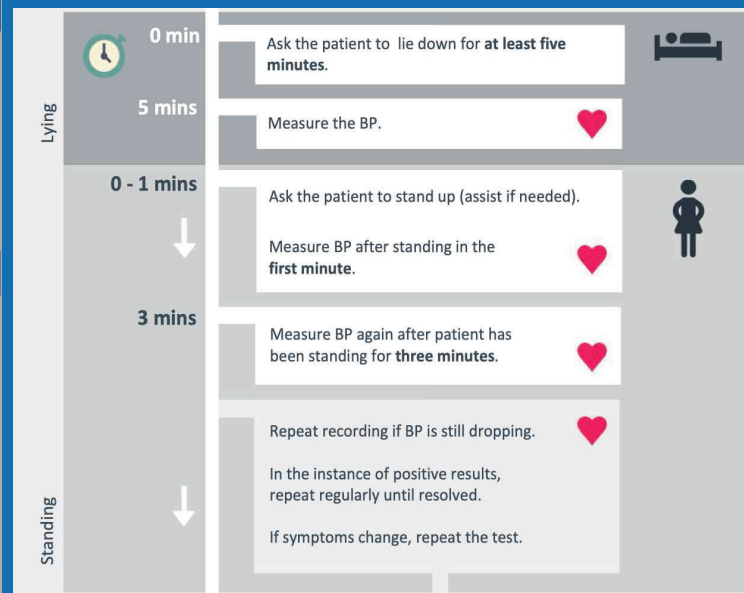Cycle 3 (in progress): Putting information stickers on blood pressure machines
Education and feedback sessions in each cycle

Results: The survey showed that there is significant improvement from 20% to 60% in accurate recording of LSBP and increased knowledge of healthcare professionals after second cycle.

Conclusion: Significantly positive outcomes resulted from this quality improvement project by promoting the knowledge of healthcare professionals and it has a positive impact on fall prevention especially in the elderly.

Improving the recording of lying and standing blood pressures in patients at risk of falls

H Lwin ; H Tun ; B Simon

NHS University Hospitals of Leicester NHS Trust
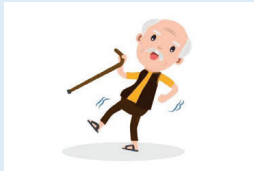
INTRODUCTION

o Fall is one of the main causes of hospitalization in the elderly.

o On admission to hospital all patients at risk of falls should receive a risk assessment and care plan.

o As part of this, postural hypotension, one of the main causes of falls, needs to be assessed by measuring lying and standing blood pressures (LSBP).

o By correctly performing LSBP, it can effectively reduce the risks of falls and subsequent admissions.

AIM

o To assess healthcare professionals' knowledge on standardized LSBP

o To identify people at risk of developing postural hypotension and fall by improving these BP recordings in Geriatric and General Medicine wards in Leicester Royal Infirmary.

METHODS

o A survey including 50 junior doctors and 50 nurses/health care assistants in each cycle of audit and focused on the steps and interpretation of LSBP recordings.

o Implementations were carried out through PDSA cycles over a period of 8 months.

• Cycle 1 : Poster providing guidance and reference at doctors' office and nurses' station

• Cycle 2: Putting paper documentation of the LSBP records in patients' medical notes and assessing if these were correctly performed

• Cycle 3(in progress) : Putting information stickers on blood pressure machines

• Educate and feedback sections in each cycles.

Is lying and standing blood pressure always measured accurately?

Simple yet effective measure to prevent falls
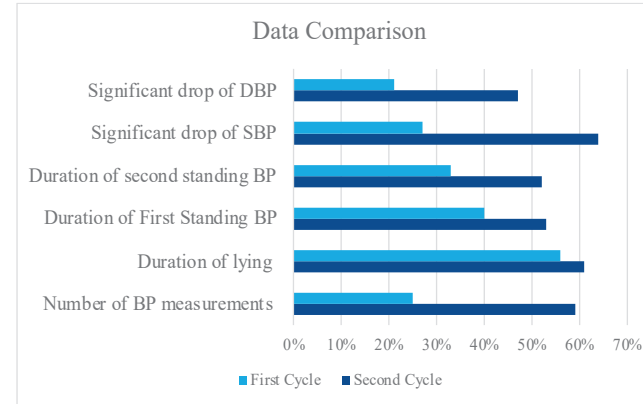
Multidisciplinary approach can make a big difference.

Lying

0 min — Ask the patient to lie down for **at least five minutes.**

5 mins — Measure the BP. ♥

0 - 1 mins — Ask the patient to stand up (assist if needed).
Measure BP after standing in the **first minute.** ♥

3 mins — Measure BP again after patient has been standing for **three minutes.** ♥

Standing

Repeat recording if BP is still dropping. ♥

In the instance of positive results, repeat regularly until resolved.

If symptoms change, repeat the test.

NHS University Hospitals of Leicester NHS Trust

Procedure for measuring Lying and Standing BP

➢ Use a manual machine if possible
➢ Lie down 5 min. Take BP 1.
➢ Stand up. Take BP 2 in 1 min.
➢ After 3 min , take BP 3.

NHS University Hospitals of Leicester NHS Trust

A positive result is -

➢ A drop in systolic BP of 20 mmHg or more.
➢ A drop to below 90mmHg on standing
➢ A drop in diastolic BP of 10mmHg with symptoms

RESULTS

Data Comparison

Significant drop of DBP
Significant drop of SBP
Duration of second standing BP
Duration of First Standing BP
Duration of lying
Number of BP measurements

0% 10% 20% 30% 40% 50% 60% 70%

■ First Cycle ■ Second Cycle

Improvement in correct measurement of LSBP between first and second cycles

o The survey showed that there is significant improvement from 20% to 60% in accurate recording of LSBP and increased knowledge of healthcare professionals after second cycle.

SUMMARY

o Significant positive outcomes were resulted from this quality improvement project by promoting the knowledge of healthcare professionals and it has a positive impact on fall prevention especially in the elderly.

1273. CQ - Clinical Quality - CQ - Patient Centredness

Lying and Standing Blood Pressure Measurement Audit in Elderly Patients Admitted with Falls and Acute Hip Fractures at HRI

F Nazir[1]; B A Raja Azhar[1]; U Tazeen[2]

1. Hull University Teaching Hospitals Trust; 2. Dept of Elderly Care, Hull Royal Infirmary

Introduction: Falls cost the NHS more than £2.3 billion per year approximately. NICE recommends during admission, offer elderly patients, admitted with a fall and hip fracture, a formal, acute, orthogeriatric or orthopedic ward-based Hip Fracture assessment. Current Trust policy in HUTH is that elderly patients admitted with fall and acute hip fracture should have an Orthogeriatric assessment and LSBP measurement on Day 5 Post Op. This should be documented and medical team informed of the results, who should then undertake a medication review if needed. An audit was carried out on the Orthogeriatric wards in HRI, during the month of November, 2021 which showed that only 5% of such patients had LSBP checked during admission. Results of the audit were relayed to the relevant wards and LSBP stickers were introduced in patient notes. Re-audit was done in March 2022 to evaluate compliance with LSBP measurements.

Method: Data was collected on patients admitted to Orthopedics wards in the month of March 2022. Elderly patients (male and female) >65 years of age, admitted with fall (irrespective of cause) and acute hip fracture were included in the study. Observation charts and patient's medical notes were reviewed for LSBP measurements. 37 patients were included in the Re-audit.

Results: All 37 patients had their LSBPs checked on Day 5 showing a massive improvement since the last audit and introduction of the LSBP stickers in patient notes. Out of total 37 patients, 10 patients were identified to have a deficit in their LSBP. All deficits were reported to the medical team and appropriate actions were taken to optimize medications in all the cases.

Conclusion: Introduction of LSBP stickers and nursing staff education resulted in significant improvement in LSBP measurement (in relevant cases) in accordance with NICE guidelines and local Trust policy.

LSBP Measurement Audit in Elderly Patients Admitted With Falls and Acute Hip Fractures at HRI.

Nazir F[1], Raja Azhar BA[1] and Tazeen U[2]
1. Hull University Teaching Hospitals Trust 2. Dept of Elderly Care, Hull Royal Infirmary

Background

- A fall is an event that results in a person coming to rest inadvertently on the ground or other lower level [1]

- Falls cost the NHS more than £2.3 billion per year approximately and have a negative impact on a patient's life [2]

- NICE recommends during admission, offer patients admitted with a fall and hip fracture a formal, acute, orthogeriatric or orthopaedic ward-based Hip Fracture assessment [3] Orthostatic hypotension is associated with increased number of falls in older adults and increased morbidity and mortality [4,5]

- Current Trust policy in HUTH is that patients (above age 65) admitted with fall and acute hip fracture should have an Orthogeriatric assessment and LSBP measurement on Day 5 Post Op.

- This should be documented and medical team informed of the results, who should then undertake a medication review if needed.

- An audit was carried out on the Orthogeriatric wards in HRI, during the month of November, 2021. Audit showed that only 5% of patients had their LSBP checked during admission despite being advised to do so by the Medical Orthogeriatric team.

- Results of the audit were relayed to the relevant wards, educational sessions were conducted for nursing staff and junior doctors on importance of LSBP. LSBP stickers were introduced to be put in patient notes where indicated.

- Plan was to do a re audit in March 2022 to evaluate compliance with LSBP measurements in patients being admitted with falls and acute hip fractures.

Setting

- Data was collected on patients admitted to Orthopaedics wards in the month of March 2022.
- Elderly patients (male and female) >65 years of age, admitted with fall (irrespective of cause) and acute hip fracture were included in the study.

Aims & Objectives

- Aim of this re audit was to evaluate whether LSBPs were being checked regularly on elderly patients admitted with falls and acute hip fractures to Orthopaedic wards in Hull Royal Infirmary following on from the findings of the first audit which showed poor compliance.
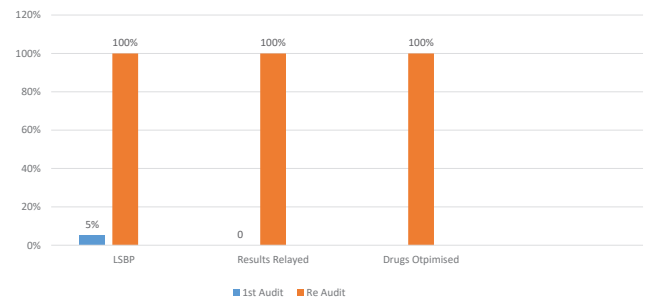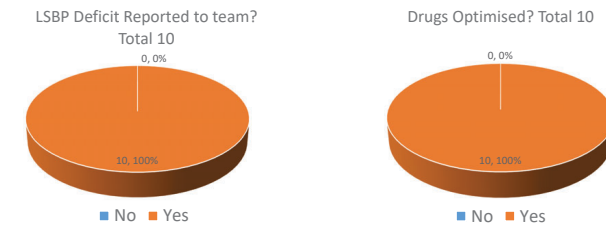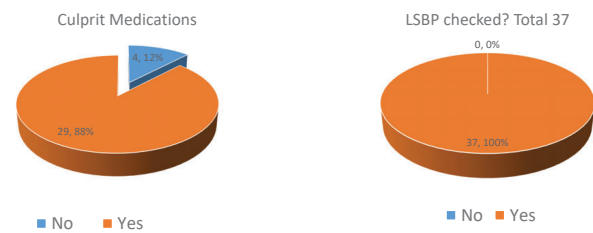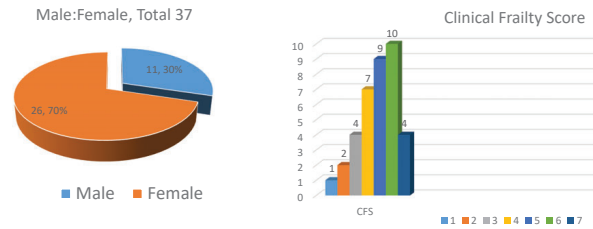
Methodology

- Data was collected retrospectively on patients admitted to Orthopaedics wards in the month of March 2022.

- Elderly patients (male and female) >65 years of age, admitted with fall (irrespective of cause) and acute hip fracture were included in the study.

- 40 patients were included in the study, however 3 were excluded due to incomplete data.

- 26 female and 11 male patients.

- Observation charts and patient's medical notes were reviewed for LS BP measurements.

Results (1)

- Out of 37 patients, 22 had 1 fall (including the one leading to admission) in the last 6 months where as 12 patients had more than 1 fall in the preceding 6 months.

- Out of 37 patients, 4 patients (whether they had postural drop or not) did not have any medications that were recognised to cause postural hypotension.

- All of the 37 patients had their LSBPs checked on Day 5 showing a massive improvement since the last audit and following introduction of the LSBP stickers in patient notes.

- Out of total 37 patients, 10 patients were identified to have a deficit in their LSBP. All these deficits were reported to the medical team and appropriate actions were taken to optimise medications in all 10 patients.

Results (2)

Male:Female, Total 37

Clinical Frailty Score

Culprit Medications

LSBP checked? Total 37

LSBP Deficit Reported to team? Total 10

Drugs Optimised? Total 10

Recommendations

- Consider Re-audit in few months time to ensure adherence to local and NICE guidelines.
- Nursing staff and junior doctors' education sessions during local induction.
- Continued use of LSBP stickers in notes of elderly patients who have been admitted with falls and acute hip fractures.
- Audit results and Poster presentation.

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1019. SP - Scientific Presentation - SP - BMR (Bone, Muscle, Rheumatology)

Risk factors for osteoporosis in elderly rheumatological patients from a hospital in Venezuela

L Dulcey[1]; J Theran[2]; H Moreno[3]; R Caltagirone[4]; M Tarazona[5]; C Aguas[6]

1. Internal Medicine Service of los Andes University, 2. Medicine Service of University of Bucaramanga, 3. Internal Medicine Service of los Andes University, 4. Internal Medicine Service of los Andes University, 5. Medicine Service of University of Bucaramanga, 6. Medicine Service of Santander University

Introduction: Osteoporosis is the most common cause of fractures, affecting 20% of postmenopausal women in the United States. The lifetime risk of fracture after age 50 is 40% for women and 13% for men. In view of the fact that patients with rheumatological diseases are at greater risk for the development of osteoporosis, either due to the natural history of their disease or due to the side effects of the medications used.

Methods: We set out to carry out a retrospective study aimed at determining the presence of risk factors in patients between 65 and 85 years of age who attended the Rheumatology service of the Universidad de los Andes in Merida Venezuela in the period from 2015 to 2018 in order to be able to characterize them and generate strategies that allow better orienting the care of these patients.

Results: The main group of patients was constituted by the female gender and the group older than 80 years. The main rheumatological pathology was Rheumatoid Arthritis. The 2 main risk factors for the development of osteoporosis were the use of steroids followed by obesity.

Conclusions: The main type of osteoporosis was non-severe among the general group with osteoporosis. The main group of rheumatological patients were those affected by rheumatoid arthritis, being the entity most associated with osteoporosis. 12% of the patients with rheumatic disease and osteoporosis did not have appropriate therapy.

Risk factors for osteoporosis in elderly rheumatological patients from a hospital in Venezuela.

L Dulcey1; J Theran2; H Moreno3; R Caltagirone4; M Tarazona5; C Aguas6.
1. Internal Medicine Service of los Andes University, 2. Medicine Service of University of Bucaramanga, 3. Internal Medicine Service of los Andes University, 4. Internal Medicine Service of los Andes University, 5. Medicine Service of University of Bucaramanga, 6. Medicine Service of Santander University

Introduction

Osteoporosis is the most common cause of fractures, affecting 20% of postmenopausal women in the United States. The lifetime risk of fracture after age 50 is 40% for women and 13% for men. In view of the fact that patients with rheumatological diseases are at greater risk for the development of osteoporosis, either due to the natural history of their disease or due to the side effects of the medications used.

Methods

We set out to carry out a retrospective study aimed at determining the presence of risk factors in patients between 65 and 85 years of age who attended the Rheumatology service of the Universidad de los Andes in Merida Venezuela in the period from 2015 to 2018 in order to be able to characterize them and generate strategies that allow better orienting the care of these patients.

Results

The main group of patients was constituted by the female gender and the group older than 80 years. The main rheumatological pathology was Rheumatoid Arthritis. The 2 main risk factors for the development of osteoporosis were the use of steroids followed by obesity.

Conclusions

The main type of osteoporosis was non-severe among the general group with osteoporosis. The main group of rheumatological patients were those affected by rheumatoid arthritis, being the entity most associated with osteoporosis. 12% of the patients with rheumatic disease and osteoporosis did not have appropriate therapy.

1275. SP - Scientific Presentation - SP- Planned and ongoing trials

Dual-Task Gait Assessment for the Prediction of Falls in Community-Dwelling Older Adults: A Scoping Review Protocol

L Houten[1,2]; D Beck Jepsen[3]; K Robinson[1]; T Masud[4]

1. Centre for Rehabilitation and Ageing Research, Academic Unit of Injury, Inflammation and Recovery Sciences, School of Medicine, the University of Nottingham, Nottingham, UK. 2. Nottingham CityCare Partnership, Community Interest Company, Nottingham, UK. 3. Geriatric Research Unit, Department of Clinical Research, University of Southern Denmark, Odense, Denmark. 4. Department of Healthcare for Older People, Nottingham University Hospitals NHS Trust, Nottingham, UK

Background: Falls are common and frequently have a significant impact on older peoples' lives. However, there is no reliable way to identify people at risk of falling prior to their first fall. The dual-task paradigm – completing a task while walking – has shown promise in its ability to predict falls in older adults. However, different types of task have been studied with no consensus on which task type or method is optimal.

Aims:
- Identify research gaps by describing task instructions in studies investigating the ability of dual-task gait assessment to predict falls in community-dwelling older adults.
- Assess studies' quality and provide recommendations for future research.

Methods: MEDLINE, CINAHL, Embase, Web of Science, AMED and Cochrane Database of Systematic Reviews will be searched using terms combining the themes: falls, older adults, dual-tasking, community-dwelling, and predictive studies. Experimental studies which investigate dual-task gait assessment, have a primary outcome of falls, are written in English, and available in full text will be included. Articles will be excluded if they investigate participants who are hospitalised, institutionalised, or younger than 60; assess dual-task balance only; are not experimental in design (e.g., book chapters, case studies, editorials); or where the details of tasks used cannot be obtained. Quality will be assessed using the Prediction Model Risk of Bias Tool, which includes 20 questions in the domains: participants, predictors, outcome, and analysis.

Results: Tables, diagrams, summary statistics and a narrative review will describe the distribution of tasks used and any research gaps. Quality assessments will be presented and discussed to highlight areas of consistent high and low quality.

Impact: Future studies into the prediction of falls in community-dwelling older adults using dual-tasking can be designed from the results of this review to address gaps in the literature and any areas of low quality.

Dual-Task Gait Assessment for the Prediction of Falls: A Scoping Review Protocol

Laura Houten
Dr. Ditte Beck Jepsen
Dr. Katie Robinson
Prof. Tahir Masud

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? Problem

- There is no reliable way of predicting which community-dwelling older adults will fall before their first one [1]
- Dual-task gait assessment shows promise in predicting falls, but can't be recommended due to study limitations [2]
- Many different tasks can be added to walking, so it is difficult to compare them to find the most predictive one

⊕ Aims

- Describe task instructions given in previous studies to identify research gaps or overlap
- Assess studies' quality and provide recommendations for future research.

What is dual-task gait assessment?

4
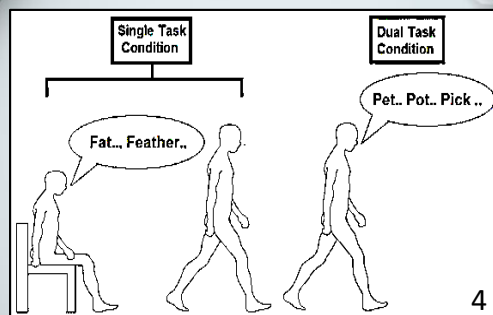
Completing a task while walking. Changes in gait and task performance can be measured.

▤ Methods

Databases

MEDLINE, CINAHL, Embase, Web of Science, AMED, Cochrane

Grey Literature

- ProQuest Dissertations and Theses A&I
- Reference lists
- Articles recommended by experts

Inclusion Criteria

- Community- dwelling older adults
- Investigates dual-task gait assessment's association with falls
- Any experimental, quasi-experimental or observational design
- English language
- Full text
- Describes dual-task testing protocol

Exclusion Criteria

- Inpatient/residential setting
- Mean age <65 or all participants are <60
- Dual-task balance assessment
- Qualitative design, conference abstracts, media articles, book chapters, letters
- Insufficient detail on testing protocol and unavailable from author

Analysis

- Outline different types of task that have been studied
- Describe methods for task completion, gait assessment, falls data collection, falls definition
- Quality assessment using PROBAST tool [3]

✺ Impact

Instructions for different task types can be refined in consensus studies	Recommendations will be made on how to improve study quality

Better quality studies that can be accurately compared to test whether or not dual-task gait assessment is effective in falls prediction

References
1. National Institute for Health and Care Excellence (CG 161). NICE Clin Guidel. 2013;(June 2013):53.
2. Muir-Hunter SW, Wittwer JE. Physiotherapy. 2016;102(1):29-40.
3. Moons KGM, Wolff RF, Riley RD, et al. Ann Intern Med. 2019;170(1):W1-W33.
4. Mishra R kinker, Thrasher AT. Gait Posture. 2021;84:11-16.

1279. SP - Scientific Presentation - SP - N & N (Neurology & Neuroscience)

Using a virtual reality balance task to explore neural correlates of balance in older adults with dementia: A pilot study

Rupinder K Bajwa[1,2]; Rob A Dineen[1,3,4]; Rowan H Harwood[6]; Veronika Van der Wardt[2,5]

1.Mental Health and Clinical Neuroscience, School of Medicine, University of Nottingham; 2.Injury, Recovery and Inflammation Sciences, University of Nottingham; 3.NIHR Nottingham Biomedical Research Centre; 4.Sir Peter Mansfield Imaging Centre University of Nottingham; 5.Department for Primary Care, Rehabilitative and Preventative Medicine, Philipps University of Marburg, Germany; 6.School of Health Sciences, University of Nottingham

Introduction: Balance deficits in dementia are linked to increased falls risk, leading to injury, fear of falling, reduced activity, and loss of independence. The neural mechanisms involved in balance in this population are not well understood. Functional MRI (fMRI) is a non-invasive neuroimaging technique which detects haemodynamic changes associated with neural activity at rest or during experimental tasks. This study piloted a novel virtual reality (VR) based balance fMRI task in older adults with MCI and dementia.

Methods: The aims of the study were to assess MRI scanning tolerability, explore participants' task experience, investigate differences in whole brain and regional activation between VR supported imagined walking, obstacle avoidance and instability conditions, as well as exploring the relationship between regional activation for each task condition and performance on balance assessments. Participants were aged 65 and over, had a diagnosis of mild cognitive impairment (MCI) or dementia.

Results: 45 participants were recruited (mean age = 81, mean MoCA=20) 36 datasets were included in subsequent analyses. 35 participants completed the tolerability questionnaire, mean score for overall experience was 4/5. 25 participants provided written feedback about their task experience. Whole brain analyses showed activation in visual and motor cortices across the task conditions, but no significant differences in activation between conditions. Static and dynamic balance performance were associated with motor regions during walking and instability conditions and anterior cingulate cortex during the obstacle avoidance condition.

Discussion: Scanning procedures were well tolerated, perceived task difficulty was mixed, some participants found it easier to engage with the task than others. The application of VR based tasks with fMRI is feasible and a potentially useful technique to improve knowledge around the neural mechanisms involved in balance dysfunction in dementia.

USING VIRTUAL REALITY BALANCE TASK TO EXPLORE NEURAL CORRELATES OF BALANCE IN OLDER ADULTS WITH DEMENTIA: A PILOT STUDY

Authors
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NIHR Nottingham Biomedical Research Centre
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School of Health Sciences, University of Nottingham.
Department for Primary Care, Rehabilitative and Preventative Medicine, Philipps University of Marburg, Germany

INTRODUCTION

- Balance deficits in dementia are linked to an increased risk of falls, leading to injury, fear of fall, reduced activity and loss of independence.
- Neural correlates of balance dysfunction in this population in poorly understood and under studied.
- Functional MRI (fMRI) is a non-invasive neuroimaging technique which detects haemodynamic changes associated with neural activity at rest or during experimental tasks

OBJECTIVES

Pilot a novel virtual reality based balance fMRI task in older adults with Mild Cognitive Impairment (MCI) and dementia

METHODS AND ANALYSIS

Participants:
- Aged 65 and over
- MCI or dementia
- Enrolled on PrAISED RCT (Promoting Activity, Independence and stability in MCI and dementia)

PrAISED
Promoting Activity, Independence and Stability in Early Dementia and Mild Cognitive Impairment

VR based balance fMRI task
- Participants watch videos through VR style googles and imagined themselves in the video.
- Three conditions; **walking**, **obstacle navigation** and **postural instability**
- Each video lasted 22 seconds and repeated 3 times.
- participants completed MRI tolerability questionnaire and gave written feedback on their task experience

Data analysis
- Whole brain activation during each condition
- Differences in whole brain activation between conditions
- Explored association between region activation during task conditions and performance on balance assessments (BERG and TUG)

Using a virtual reality-based balance task in combination with fMRI to study the neural mechanisms involved in postural stability is **feasible and well tolerated** by older adults with Mild Cognitive Impairment (MCI) and dementia.

Images from the task videos (scan QR codes to watch the videos):
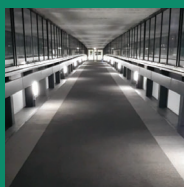
1. Walking
2. Obstacle navigation
3. Postural instability

SCAN ME SCAN ME SCAN ME

RESULTS

Participant characteristics:
- n=45
- mean age = 81
- mean MoCA score = 20
- Gender (M:F) = 35:10
- MCI:Dementia = 10:35

MRI tolerability:
Average rating for overall scanner experience was 4/5

★★★★☆

Task experience:
- Framework analysis approach to investigate predefined themes of interest and explore data driven themes
  - **Video clarity**, generally participants reported that video was clear to see
  - **Task difficulty**, some participants found the task more challenging than others

Whole brain activation
- *Walking condition*
  - activation in visual cortex, middle frontal and precentral gyri
- *Obstacle navigation condition*
  - activation in visual cortex and middle frontal gyrus
- *Postural instability condition*
  - activation in visual cortex and right superior parietal lobule
- No significant differences in activation between the conditions were noted.

Relationship between regional task activation and balance assessment performance:

Condition	Outcome	ROI	β	SE	Std B	95% confidence interval	
						Lower	Upper
Walking	BBS	Left SMA**	-11.04	3.92	-.435	-19.01	-3.08
		Left PMC*	-7.72	3.72	-.35	-15.30	-.151
		Left ACC*	-5.82	2.49	-.372	-10.89	-.756
		Right SMA**	-9.06	3.12	-.446	-15.40	-2.73
		Right PMC**	-8.45	2.69	-.474	-13.93	-2.98
		Right ACC*	-7.41	3.42	-.349	-14.36	-.466
	TUG	Left SMA*	13.51	4.98	.427	3.38	23.64
		Left PMC*	10.89	4.65	.378	1.44	20.35
		Left ACC*	8.17	3.09	.418	1.89	14.45
		Right SMA**	11.09	3.96	.438	3.03	19.15
		Right PMC*	10.40	3.42	.468	3.44	17.35
Obstacle navigation	BBS	Left IFG*	9.69	3.93	.390	1.71	17.67
		Right IFG*	6.913	2.72	.400	1.39	12.43
Postural instability	BBS	Left SMA**	-12.85	4.33	-.454	-21.65	-4.06
		Left PMC*	-15.37	4.41	-.513	-24.33	-6.41
		Right PMC***	-14.41	3.61	-.565	-21.75	-7.08
	TUG	Left PMC*	16.03	6.50	.394	2.80	29.26
		Right SMA*	10.82	4.74	.363	.977	20.27
		Right PMC**	17.30	4.85	.528	7.44	27.17

Table 1 SMA = Supplementary Motor Area; PMC = Premotor cortex; ACC = Anterior Cingulate Cortex; IFG = Inferior Frontal Gyrus
*p<.05; **p<.01; ***p<.001

CONCLUSION

- Scanning procedures and fMRI task were generally well tolerated.
- Application of VR based balance tasks with fMRI in older adults with memory problems is feasible.
- During task conditions activation was noted in visual and frontal, motor areas
- VR tasks and fMRI useful techniques to study neural correlates of uncover neural mechanisms of postural instability in dementia.

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1280. CQ - Clinical Quality - CQ - Patient Safety

Use of a post fall proforma to improve assessment and documentation following inpatient fall

J Wood; E Quinlan; E Lockwood; J Hosty; V Barradell; J Tsui; D Hills

Doncaster Royal Infirmary

Introduction: Inpatient falls are the most reported safety incident in NHS hospitals. No fall should be deemed harmless, as even minor injuries may lead to reduced confidence, longer stays and are a major factor in patients being discharged into care. Within our hospital we noted inconsistent assessment and documentation of inpatient falls, leading to variability in patient care. We aimed to produce a proforma that provided a consistent and reliable method for assessment and documentation of inpatient falls, and also prompted consideration of potential causes, indicated investigations and future falls risk.

Methods: NPSA "slips, trips and falls" was reviewed to identify key points for a multifactorial falls risk assessment. Relevant NICE guidance was incorporated to aid decisions regarding imaging and observations. We identified (via DATIX) and reviewed documentation of 44 falls between 6/2/21-24/3/21. 13 sets were excluded. After meetings with the relevant stakeholders a new proforma was designed and trial wards identified. Teaching sessions were provided to junior doctors regarding falls reviews and utilisation of the proforma. 40 falls were then identified between 21/5/21-1/8/21 (6 were excluded, no proforma used) and the documentation was assessed and compared.

Results: The median age of patients in both cohorts were similar (83years pre-proforma and 84years post-proforma). The proforma improved documentation of fall description (90.3% to 100%), GCS documentation (45.2% to 97.1%) , ABCDE assessment (19.4% to 56%), Next-of-kin being informed (38.7% to 97.1%) and utilisation of NICE guidance regarding head injuries (57.1% to 100%). An unexpected improvement was reduced time between fall and medical review by 46.4% (70minutes to 37.5minutes).

Conclusion: Our study has shown that the introduction of a well-designed proforma led to a dramatic improvement in the assessment and documentation of inpatient falls. We recorded significant improvements in descriptions of falls and utilisation of recommended assessments, investigations and documentation.

Use of a Post Fall Proforma to Improve Assessment and Documentation Following Inpatient Falls

J Wood; E Quinlan; E Lockwood; J Hosty; V Barradell; J Tsui; D Hills

NHS
Doncaster and Bassetlaw Teaching Hospitals
NHS Foundation Trust

Introduction: Inpatient falls are the most reported safety incident in NHS hospitals. Within our hospital we noted inconsistent assessment and documentation of inpatient falls, leading to variability.
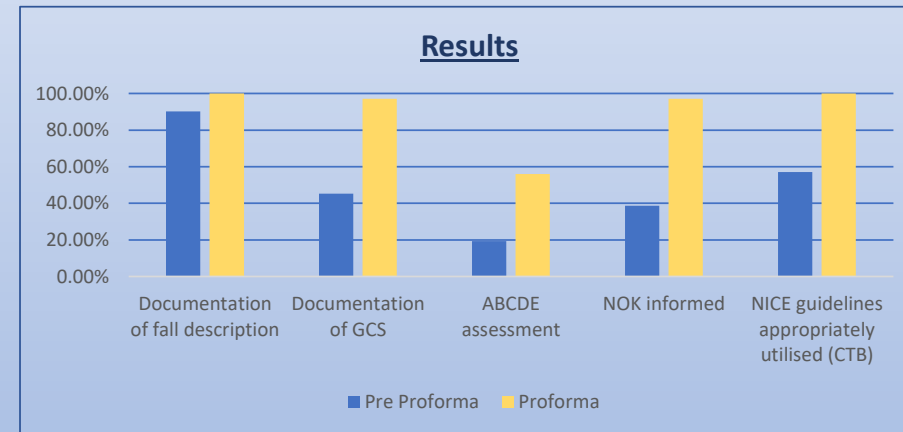
We aimed to produce a proforma that provided a reliable method for assessment and documentation of inpatient falls. The proforma would also prompt the assessor to consider potential causes, order indicated investigations and initiate measures to reduce future falls risk. NPSA "slips, trips and falls" and NICE guidelines were utilised to create our proforma.

Method:
1. Identified (via DATIX) and reviewed documentation of 44 falls between 06/02/2021 - 24/03/2021. (13 excluded).
2. Designed proforma.
3. Teaching sessions organised with Junior Doctors and Nurses. Focused on thorough falls reviews and utilisation of proforma.
4. 40 falls were then identified between 21/05/2021 - 01/08/2021 (6 excluded, no proforma used)
5. Documentation assessed and compared.

Proforma key details:

- Double sided A4 with yellow border for easy recognition.
- Filed in the current medical notes.
- Nursing and Doctors to document all details related to fall on form
- Prompts to record time / date.
- Prompts for key history, observations, examination findings and investigations.
- Box for day team to acknowledge fall.

Results

Chart: Pre Proforma vs Proforma across categories: Documentation of fall description, Documentation of GCS, ABCDE assessment, NOK informed, NICE guidelines appropriately utilised (CTB).

Unexpected Improvement: Time between fall to medical review reduced from 70mins pre-proforma to 37.5mins with proforma (on average).

Conclusion: Our study has shown that the introduction of a well-designed proforma led to a dramatic improvement in the assessment and documentation of inpatient falls. We recorded significant improvements in descriptions of falls and utilisation of recommended assessments, investigations and documentation.

1281. CQ - Clinical Quality - CQ - Patient Centredness

Falls Recovery in the community a non medical led intervention creating a lifetime approach to physical activity after a fall

P Hedges; M Gealer; L Horne

Paul Hedges level 4 postural stability instructor and health lead at Saints foundation a premiere league football charity delivering community interventions

Introduction: Saints foundation deliver a community-based falls prevention service that is medically backed and CCG funded but succeeds in removing the medical model from a specialist service. Using a hybrid of in person and remote delivery models we have seen some astounding results in both falls rates and patient confidence.

Methods: Utilising a team of falls experts delivering a 12-week intervention using community social housing venues to create a comfortable safe environment. Our transport team are able to coordinate patients to the venues that are unable to self transport and return them to their homes following the class. With a fit and frail triage at referral point patients are placed in the most effective session that allows for progression and regression but maintains engagement. Patients have the opportunity to engage for up to 39 weeks and then are able to access our community classes which use the same venues and allow for a lifetime engagement in activity.

Results: Data collection March 2020-June 2021 sample size 73 methodology FES-I, Campaign to end Loneliness and EQ5D3L. Positive results were recorded in the following areas 47% reduction in pre and post-test FES-I scores, pre-engagement 42% had fallen with 52% hospital conveyance rate post engagement 22% with a 25% conveyance rate. With QOL an 11% reduction in reported problems and 40% improvement in having better health, 42% of participants agreed/strongly agreed that they were more active, 38% reported an increase in life satisfaction with 74% agreeing that delivery team inspire them to do their best.

Conclusions: This approach has a major positive impact on existing fallers and reduces the impact of those that do fall, being able to deliver a structured evidence-based programme away from a medical setting in local community's creates a lifetime habit of activity.

Falls Recovery in the Community:

a non-medical led intervention, creating a lifetime approach to physical activity after a fall.

SAINTS FOUNDATION

In 2020/21 Southampton had a rate of 2,919 per 100,000 emergency hospital admissions due to falls in people aged 65+, compared with a national rate of 2,023 per 100,000.

NICE guideline quality statement 8 highlights that the right type of exercise, namely an integration of strength and balance exercises, can be used as an effective part of a multi-factorial approach to reducing reoccurring and first-time falls.

Based on this information, Saints Foundation (https://www.southamptonfc.com/saints-foundation), who use the power and passion of the Southampton FC to transform lives in and around Southampton, in response to a tender from Southampton CCG, developed a local falls reduction project.

The project would like to thank Southampton CCG for funding the project, the Community Independence Service for their support with referrals (and encouraging us to submit this abstract) Southampton City Council for providing venues free of charge and Southampton FC for their ongoing support of Saints Foundation.

Target Population: all patients registered with a GP practice in Southampton City CCG who have had a fall and received a comprehensive falls assessment and individuals who have been identified as frail, at risk of having a fall, or have a fear of falling.

Intended Impact: to reduce the number of injurious falls within Southampton

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The service receives referrals from the Community Independence Service. Participants are then triaged into a 12-week rotation of strength and balance group exercise classes, with two cohorts 'frail' and 'advanced' – participants can progress (or if needs be regress) into different classes between the two cohorts. There is a class capacity of 10/12 participants per class and these are free to the participant at the point of use.

Participants are Berg assessed at the beginning of each 12-week rotation and on the final class and at these time points also complete a self-evaluation. Key mechanisms are:

Transport: participants are provided with the option of free transport (a minibus) to and from the venues, which are located across the city at various venues.

Group setting: sessions include a 'tea and chat' element to encourage social interaction and enhance participant enjoyment

Non-medical atmosphere: instructors are in Southampton FC kit, and classes take place in community venues

Highly trained (PSI), friendly staff team: the staff team are PSIs and follow a strict session structure, however, their behaviours focus on providing a friendly and welcoming environment

Exit routes: once participants complete the 12 week rotation they are signposted into ongoing free physical activity and social isolation prevention classes:
https://www.southamptonfc.com/saints-foundation/projects/health/senior-saints

Research Question: Is this programme successful at reducing injurious falls amongst the target population?

Evaluation Methodology: Between March 2020-June 2021 73 participants of the programme took part in the evaluation, which consisted of a pre and post intervention survey. The evaluation consisted of the following tools:

- ONS Life Satisfaction Scale
- Falls Efficacy Scale – International
- Self-Reported Fall Frequency Log
- EQ 5D 3L
- Space for Qualitative Impact and Improvement Responses

Evaluation weaknesses: We were not able to form a counterfactual group for this study but would look to implement this as a next step in the evaluation. Falls data and hospital admission data was collected directly from participants, rather than through hospital records.

Fear of Falling FES-I
Since taking part in the programme, 47% of participants reduced their fear of falling as measured through the FES-I scale. Although the base size was small, the group which recorded the largest reduction in their FES-I score was those who had regularly used their exercise manual.

| Falls Efficacy Scale I	Overall (n = 73)	
	Pre	Post
Low Concern (16-19)	0%	7%
Moderate Concern (20-27)	21%	27%
High Concern (28-64)	79%	66%
% reporting a reduction in their FES-I score	47%	

Falling Falls Log Prior to taking part in the programme, 42 (58%) of participants had had a fall, with 58% of that group needing to go hospital as a result of that fall. Since taking part in the programme, only 16 participants have fallen (22%), with only 25% of that group needing to go to hospital as a result of that fall.

Falls Log	Number of falls		Number of falls resulting in a hospital admission	
	Pre	Post	Pre	Post
All participants	42	16	24	4

"Had helped me to try to be positive, exercising has helped my confidence massively."

"… its been lovely being able to have a chat on a regular basis and i feel safer knowing i can call for advice."

Life Satisfaction ONS
61% of participants who had a low baseline score on the ONS life satisfaction scale (defined as below 5 n = 33) recorded an increase in their life satisfaction between pre and post intervention, with the mean increasing from 3.5 at pre intervention to 4.8 at post intervention.

Baseline Mean: 3.5
Post Intervention Mean: 4.8
Low Baseline Sub Group (Below 5 n = 33)
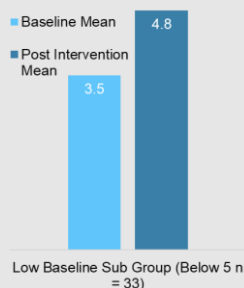
Quality of Life EQ 5D 3L
We saw overall health improvements across two domains; mobility (-11% reported problems) and usual activities (-4% reported problems). For the self-care and anxiety / depression domains we recorded an increase in reported problems, with the pain/discomfort domain remaining stable.

	Mobility		Self-Care		Usual Activities		Pain / Discomfort		Anxiety / Depression	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Level 1 (no problems)	9	17	46	41	22	25	17	17	37	34
Level 2 (some problems)	63	55	26	29	47	42	47	46	31	32
Level 3 (extreme problems)	0	0	0	2	3	5	8	9	4	6
Number reporting some problems	63	55	26	31	50	47	55	55	35	38
Change in numbers reporting some problems	-8		+5		-3		+-0		+3	
% change reporting problems	-11%		-7%		-4%		0%		+4%	

Whilst further evaluation is needed, initial results show that the Falls Recovery programme may be effective in:

- Reducing fear of falling
- Increases mobility and ability to perform usual activities,
- Increasing life satisfaction for those with low satisfaction
- Ultimately reducing an older adults likelihood to have a fall that results in a hospital admission

More research is needed to establish attribution with more certainty and to establish if different levels of efficacy are seen for different demographic sub-groups.

Next steps for the programme include trialling the reverse of this project, with a non-clinical exercise expert focusing on introducing functional movement at the earliest opportunity within a hospital setting (University Hospital Southampton Trust).

Authors   Marion Gealer mgealer@saintsfoundation.co.uk   Paul Hedges phedges@saintsfoundation.co.uk   Lucy Horne lhorne@saintsfoundation.co.uk

1044. CQ - Clinical Quality - CQ - Patient Centredness

Fragility fracture risk assessment in the Older Person's Rapid Access Clinic (OPRAC): A Quality Improvement Project

O Dumenci; M Alhilani; S Malani

Department of Care of the Elderly, Charing Cross Hospital, Imperial College Healthcare NHS trust, London, UK.

Background: One-in-two women and one-in-five men > 50 years are expected to have an osteoporotic fracture during their lifetime. However, despite this 1-in-5 women who have broken a bone, break 3 or more before being diagnosed, highlighting the importance of early diagnosis.

Aim: NICE recommends a fragility fracture risk assessment in all women aged > 65 and men > 75 years. However, during our review of patients attending OPRAC, we found that only 3% of patients had an assessment done. Therefore, the primary aim of this project was to improve risk assessment of fragility fractures in this setting.

Methods: We analysed the data for patients attending OPRAC between 23.09.20-23.10.20 and 01.05.21-15.06.21. We captured 35 and 51 patients respectively and sought to identify what proportion of the population had an accurate height, weight and fragility fracture assessment. We carried out our QIP using the PDSA cycle. Our interventions consisted of departmental teaching, posters and inclusion of fracture risk assessment in our induction handbook.

Results: The risk assessment went up from 3% to 33% post-intervention and documentation of height and weight went up from 74% to 98%.   We retrospectively calculated the FRAX score for every single patient to assess whether the patients were receiving the appropriate treatment according to their risk score. What was consistent across both cycles was that if a patient had a risk assessment done, they were far more likely to have the correct treatment - 89% and 82% in cycles 1 and 2 vs. 54% and 30% in those who didn't have an assessment.

Conclusion: The above highlights what we already know about the importance of early diagnosis and treatment of osteoporosis. The interventions we have implemented have made a difference however further incorporation of fragility fracture assessments in clinical protocols is needed to bring about sustained change.

Improving fragility fracture risk assessment in the Older Person's Rapid Access Clinic

OZBIL DUMENCI, MICHEL ALHILANI, SARAH SUH, SANGAM MALANI

Department of Care of the Elderly, Charing Cross Hospital, Imperial College Healthcare NHS Trust, London, UK.

Introduction:

➤ One-in-two women and one-in-five men >50 years are expected to have an osteoporotic fracture during their lifetime.

➤ Despite this, 1-in-5 women who have broken a bone break 3 or more bones before being diagnosed

➤ NICE recommends a fragility fracture risk assessment in all women aged >65 and men >75 years. Yet, only 3% of patients who attended the Older Person's Rapid Access Clinic (OPRAC) were found to have had this assessed during our review.

➤ The primary aim of this project was to therefore improve the risk assessment of fragility fractures in this setting.

Methods:

➤ We analysed the data for patients attending OPRAC between 23.09.20-23.10.20 and 01.05.21-15.06.21.

➤ We captured 35 and 51 patients respectively and sought to identify what proportion of the population had an accurate height, weight and fragility fracture assessment.

➤ We carried out our QIP using the PDSA cycle.

➤ Our interventions consisted of departmental teaching, posters and inclusion of fracture risk assessment in our induction handbook.

Conclusion:

➤ The above highlights what we already know about the importance of early diagnosis and treatment of osteoporosis.

➤ The interventions we have implemented have made a difference however further incorporation of fragility fracture assessments in clinical protocols is needed to bring about sustained change.

Results:

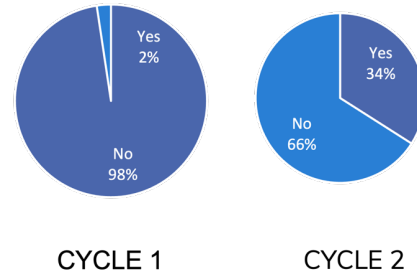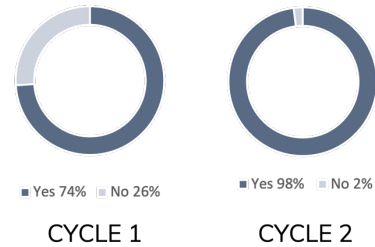**Figure 1: Proportion of patients who had a Fragility Fracture Risk Assessment: 2% → 34%**

CYCLE 1   CYCLE 2

Figure 2: Proportion of patients with a recent height & weight

■ Yes 74% ░ No 26%   ■ Yes 98% ░ No 2%

CYCLE 1   CYCLE 2

➤ The risk assessment went up from 2% to 34% post-intervention (**Figure 1**) and documentation of height and weight went up from 74% to 98% (**Figure 2**).

Figure 3: Percentage of cases appropriately managed with and without risk assessment across both cycles
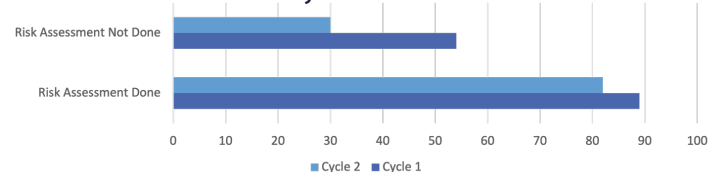
➤ We retrospectively calculated the FRAX score for every single patient to assess whether the patients were receiving the appropriate treatment according to their risk score. What was consistent across both cycles was that if a patient had a risk assessment done, they were far more likely to have the correct treatment - 89% and 82% in cycles 1 and 2 vs. 54% and 30% in those who didn't have an assessment (**Figure 3**).