



Royal College
of Physicians

Falls and Fragility Fracture
Audit Programme (FFFAP)

National audit of inpatient falls

Audit report 2015

In association with:

Commissioned by:



British
Orthopaedic
Association



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HQIP
Healthcare Quality
Improvement Partnership

National Audit of Inpatient Falls audit report 2015

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Falls and Fragility Fracture Audit Programme

The National Audit of Inpatient Falls is commissioned by the Healthcare Quality Improvement Partnership (HQIP) and managed by the Royal College of Physicians (RCP) as part of the Falls and Fragility Fracture Audit Programme (FFFAP) alongside the Fracture Liaison Service Database (FLS-DB) and the National Hip Fracture Database (NHFD). FFFAP aims to improve the delivery of care for patients who have falls or sustain fractures through effective measurement against standards and feedback to providers.

Healthcare Quality Improvement Partnership

The Healthcare Quality Improvement Partnership (HQIP) is led by a consortium of the Academy of Medical Royal Colleges (AoMRC), the Royal College of Nursing (RCN) and National Voices. Its aim is to promote quality improvement, and in particular to increase the impact that clinical audit has on healthcare quality in England and Wales. HQIP hosts the contract to manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP). Its purpose is to engage clinicians across England and Wales in systematic evaluation of their clinical practice against standards and to support and encourage improvement in the quality of treatment and care. The programme comprises more than 30 clinical audits that cover care provided to people with a wide range of medical, surgical and mental health conditions.

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Contents

Executive summary	4
Introduction.....	4
Methodology	4
Key findings	5
Organisational audit	5
Falls per 1,000 OBDs.....	5
Clinical audit	5
Key indicators	6
Key recommendations	7
Where to now?	8
Introduction and background.....	9
Inpatient falls: the problem.....	9
The cost of inpatient falls	9
Preventing inpatient falls	9
National Audit of Inpatient Falls.....	10
Methods.....	11
Terminology.....	11
Audit participation	11
Governance of the audit	11
Information governance.....	12
Dataset development	12
Sampling method	12
Organisational audit	12
Clinical audit	12
Data quality	13
Data completeness.....	13
Recruitment of sites	13
Audit eligibility.....	14
Data collection.....	16
Webtool.....	16
Support and information for participating sites.....	16
Data analysis.....	16
Key indicators	16
Site performance.....	16
Results – organisational audit	18
Background details	18
Falls reporting.....	18

Falls per 1,000 OBDs.....	18
Reported falls per 1,000 OBDs	20
Organisational audit summary	26
Falls prevention policy.....	28
Falls risk screening / prevention tool	29
Formal assessment of cognition.....	30
MFRA	31
Bed rails	32
Post-falls protocol	32
Leadership and service provision	33
Walking aids	34
Results – clinical audit	35
Patient demographics	35
Comparison between patients admitted for a fall and those admitted for other medical reasons.....	37
Evidence of assessment and intervention in case notes.....	38
Clinical audit national summary tables	40
Bedside/patient observations	43
Comparison of organisational and clinical audits	45
Key indicators	47
References	60
Appendices	61
Appendix A – structure and governance.....	61
Inpatient falls subgroup	61
Inpatient falls advisory group.....	61
FFFAP board.....	61
Appendix B – sample size	62
Selected items from the pilot audit used for sample size calculation	62
Appendix C – exclusions and non-participation	64

Executive summary

Introduction

Inpatient falls are common and remain a great challenge for the NHS. Falls in hospital are the most commonly reported patient safety incidents, with more than 240,000 reported in acute hospitals and mental health trusts in England and Wales every year (that is over 600 a day).¹ All falls, even those that do not result in injury, can cause older patients and their family to feel anxious and distressed. For those who are frail, minor injuries from a fall can affect their physical function, resulting in reduced mobility, and undermining their confidence and independence. Some falls in hospital result in serious injuries, such as hip fracture (more than 3,000 per year) and serious head injuries, and these injuries can result in death.² Falls in hospitals are financially expensive, as they increase the length of stay and may require increased care costs upon discharge. In 2007, inpatient falls were thought to cost trusts alone £15 million, and will be more expensive now.³

Tackling the problem of inpatient falls is challenging. There are no single or easily defined interventions which, when done on their own, are shown to reduce falls. However, research has shown that multiple interventions performed by the multidisciplinary team and tailored to the individual patient can reduce falls by 20–30%. These interventions are particularly important for patients with dementia or delirium, who are at high risk of falls in hospitals.

Methodology

The audit was created to measure against the National Institute for Health and Care Excellence's (NICE's) guidance on falls assessment and prevention (NICE clinical guidance 161 (CG161)) and other patient safety guidance on preventing falls in hospital.³⁻⁸ The audit was open to all acute hospitals in England and Wales.

The **organisational audit** had three sections that were completed at hospital trust or health board level:

- section 1 – background details of the organisation including occupied bed days (OBDs) and number of falls
- section 2 – policies, protocols and paperwork
- section 3 – leadership and service provision.

The **clinical audit** was a snapshot of the care provided to a sample of up to 30 patients (15 consecutively admitted patients over 2 days) aged over 65, who were in hospital for over 48 hours, after being admitted for a non-elective reason. The clinical audit consisted of two sections:

- section 1 – evidence of assessment and intervention in case notes
- section 2 – observation at bedside / patient environment.

The participation rates for both audits were high, with 95.8% of eligible hospital trusts and local health boards (LHBs) participating in the organisational audit and 90.4% of eligible hospital trusts and LHBs participating in the clinical audit.

Key findings

Organisational audit

Many organisations had falls prevention policies and most policies included all the main areas of falls prevention. However, for many of these areas there was no association between what the policies included and the assessments that a patient received once they were admitted to hospital, as shown by our clinical audit data. One area where policy and practice aligned well was the continence assessment: 96% of organisations reported that their multifactorial falls risk assessment (MFRA) included an assessment of continence and 84% of patients had a continence assessment. The development of a falls prevention policy is recommended, but it must be linked to regular assessments of how well the policy is embedded and influencing clinical care.

Falls prevention policies should be written in light of key guidelines, such as NICE and National Patient Safety Agency (NPSA) guidelines, and embedded in other related hospital policies. Our audit shows that many organisations have related policies that have been written in isolation; 32% of organisations reported that there was no mention of 'falls prevention' in any of the following policies:

- delirium policy/protocol
- dementia policy/protocol
- mental capacity and deprivation of liberty safeguards (DoLS) policy/protocol
- bone health/osteoporosis/fracture prevention policy/protocol.

Additionally, 6.6% of organisations did not report that their falls prevention policies made any reference to key guidelines.

NICE clinical guidance specifically recommends that falls risk prediction tools are not used in hospital.⁴ These tools aim to identify patients as either 'at risk/not at risk' or at 'low/medium/high risk' but are not sufficiently predictive of who will fall in hospital. We found that 73% of organisations are still using these types of tools and therefore they may be focusing their attention away from some patients who are at risk of falling in hospital.

Falls per 1,000 OBDs

We report, for the first time, current falls rates across most hospitals in England and Wales. The average number of falls per 1,000 OBDs is 6.63, which is higher than previously reported averages (in a smaller cohort of organisations in 2010).¹ We also report current falls resulting in moderate harm, severe harm and death per 1,000 OBDs. These data have not been published previously, and so organisations will now be able to benchmark themselves against national averages and also to try to reduce these rates within their hospitals. The average number of falls resulting in moderate harm, severe harm and death per 1,000 OBDs is 0.19.

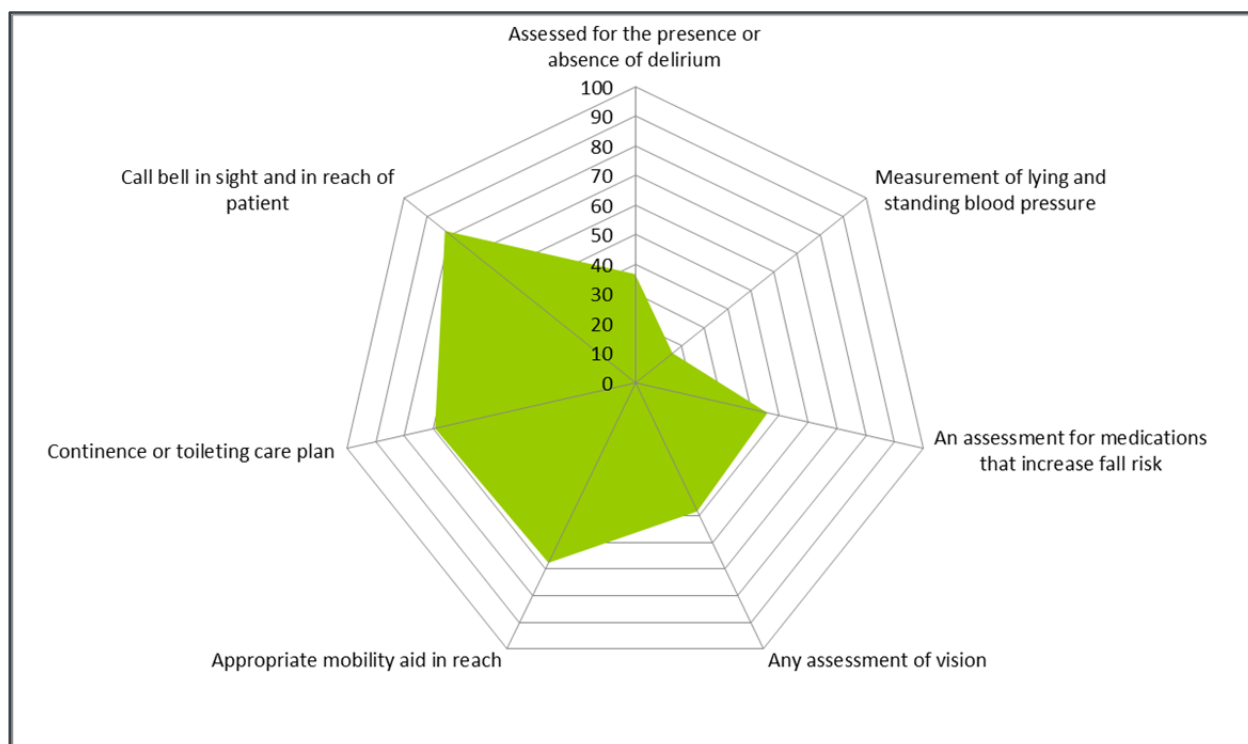
Clinical audit

Some organisations are managing to perform most of the elements of a successful falls prevention assessment, and some of these organisations have given us reports of how they have managed to achieve these good results. However, overall there is room for substantial improvement in most key areas of falls prevention, as shown in Fig 1.

The bedside assessment showed that most patients could access the call bell, had safe footwear (when appropriate) and their immediate environment was seen to be free from clutter. However, 32% of patients could not safely reach their walking aid, which may have limited their ability to mobilise safely when they attempted to move around independently.

Key indicators

Fig 1 Key indicators – national data



Key recommendations

Recommendations for trust and LHB boards

- 1 Falls steering group** – We recommend that all trusts and health boards have a board-level falls steering group that has representation from and reports to the organisation's board. This group should regularly review their data on falls and moderate harm, severe harm and deaths per 1,000 OBDs and assess the success of their practice against trends in these figures.
- 2 Falls multidisciplinary working group** – We recommend that all trusts and health boards have a falls multidisciplinary working group that meets regularly, and that they review the activities of this group to ensure it is fit for purpose and functioning appropriately. This group should monitor interventions to improve prevention of falls in hospital and use proven methods to embed these changes.
- 3 Do not use a fall risk prediction tool** – We recommend that trusts and health boards review their falls pathway to see whether they are still using a fall risk prediction tool. If they are, they should stop using it with immediate effect, regard the following groups of inpatients as being at risk of falling in hospital and manage their care accordingly as per NICE CG161:
 - a** all patients aged 65 years or older
 - b** patients aged 50–64 years who are judged by a clinician to be at higher risk of falling because of an underlying condition.*
- 4 Audit bed rail use** – We recommend that trusts and health boards regularly audit the use of bed rails against their policy and embed changes to ensure appropriate use.
- 5 Review multifactorial falls risk assessments (MFRAs)** – We recommend that all trusts and health boards review their MFRA and associated interventions to include all the domains in this audit. This will then need to be linked to quality improvement projects to ensure that what is included in the policy actually translates into what happens on the ward.

Key indicator recommendations

- 6 Dementia and delirium** – We recommend that all trusts and health boards review their dementia and delirium policies to embed the use of standardised tools and documented relevant care plans. Falls teams should work closely with dementia and delirium teams (if present) to ensure team working for these high-risk patients.
- 7 Blood pressure** – We recommend that all patients aged over 65 years have a lying and standing blood pressure performed as soon as practicable, and that actions are taken if there is a substantial drop in blood pressure on standing.
- 8 Medication review** – We recommend that all patients aged over 65 years have a medication review, looking particularly for medications that are likely to increase risks of falling.
- 9 Visual impairment** – We recommend that all patients aged over 65 years are assessed for visual impairment and, if present, that their care plan takes this into account.
- 10 Walking aids** – We recommend that trusts and health boards develop a workable policy to ensure that all patients who need walking aids have access to the most appropriate walking aid from the time of admission. Regular audits should be undertaken to assess whether the policy is working and whether mobility aids are within the patient's reach, if they are needed.
- 11 Continence care plan** – We recommend that all patients aged over 65 years have a continence care plan developed if there are continence issues, and that the care plan takes into account and mitigates against the risks of falling.
- 12 Call bells** – We recommend that all trusts and health boards regularly audit whether the call bell is within reach of the patient and embed change in practice if needed.

* Please note that only patients aged 65 or over were included in this audit. However, NICE CG161 also applies to people aged 50 to 64 who are admitted to hospital and are judged by a clinician to be at higher risk of falling because of an underlying condition, and all patients aged 65 and over.

Where to now?

Chief executives should challenge areas of poor performance identified in this report's regional tables. For example:

- *Why does the percentage of patients receiving a delirium assessment vary between 0% and 100% around the country?*

Clinical staff should use the findings of this report to identify which assessments and interventions recommended in NICE CG161 are not being consistently performed. This information can be used to formulate an action plan to address any issues. Utilising the full multidisciplinary team to embed changes has been shown to work most effectively.

Clinical staff and **hospital managers** should review the total number of falls and the number of falls with an outcome of harm per 1,000 OBDs.

- If your falls rate is much **lower** than the national average:
 - we recommend that you review the reporting processes as this may indicate issues with under-reporting non-injurious falls.
- If your number is **higher** than the national average:
 - we recommend that you review where these falls are taking place to see whether certain clinical areas seem to be having particular difficulty keeping their patients safe. Generally there are hot spots due to the nature of the patients, eg care of older people, general medicine and respiratory/thoracic medicine, among others. The risks and therefore the strategies have to be adapted to the particular problems in each area, but generally identifying delirium is a key factor.
- Consider starting **critical incident reviews** if these are not already set up when any person has recurrent falls or a fall with a fracture, and get this done quickly while memories are sharp.
- Ensure that the **multidisciplinary falls group** reviews the incidents to develop and share learning.

Introduction and background

Inpatient falls: the problem

Inpatient falls are common and remain a great challenge for the NHS. More than 240,000 patient falls are reported from hospitals and mental health units in England and Wales annually.¹

Given that inpatient falls are the most commonly reported patient safety incident, with more than 240,000 reported in hospital trusts and health boards in England and Wales every year (that is, more than 700 a day), inpatient falls pose a major concern for NHS care providers as a marker of quality of care. Worryingly, evidence from the National Hip Fracture Database (NHFD) indicates that more than 2,500 hip fractures occurred during a hospital stay in 2012–13.² As people aged over 65 account for more than half of inpatient bed days in the NHS, and longer hospital stays are likely following a fall, there is an urgent need to minimise the risk of falling, the risk of harm arising from inpatient falls, and any deficiencies in usual care.^{9,10}

The cost of inpatient falls

All falls, even those that do not result in injury, can cause older patients and their family to feel anxious and distressed. For those who are frail, minor injuries from a fall can affect their physical functions resulting in reduced mobility and undermining their confidence and independence. The likelihood of a longer hospital stay exposes older patients to harm such as falls and pressure ulcers that are potentially preventable.¹⁰

I was on the way to recovery, but I'd been in bed so long I was incredibly weak ... I went to wash my hands and I slipped. There's an immediate shock of landing on your back. Then the terrible thing was I realised I couldn't move through lack of strength. I couldn't reach the pull cords, and my voice was also very weak at the time, I couldn't shout. I was on a cold tile floor and I started to get cold, and that's when fear starts to strike you. That's a very fearful experience – you don't want to have that. Not pleasant. It made me cautious in a very hesitant way. It was a major thing for me ... it hit me psychologically. It's still there, still there, even 2 years on.

RCP, e-learning on preventing falls in hospital

The direct cost of falls in hospitals is around £15 million a year, which is equivalent to approximately £92,000 for an 800-bed acute hospital trust.³ The actual costs are likely to be higher when the costs of additional health, social and residential care that are often needed following discharge from hospital are taken into account.¹⁰

Preventing inpatient falls

Tackling the problem of inpatient falls is challenging. There are no single or easily defined interventions which, when done on their own, are shown to reduce falls. Patients with acute medical or surgical illnesses are at higher risk than when they are well. There is the added risk due to them being away from their normal environment and on a ward. This risk is amplified if the patient has visual or hearing loss or has dementia or delirium. Research has shown that multiple interventions performed by the multidisciplinary team and tailored to the individual patient can reduce falls by 20–30%. These targeted interventions may range from identifying visual deficits to identifying cardiac conditions that would benefit from the insertion of a pacemaker.⁴ To reduce the falls risk in hospital, policies and strategies need to reflect the frequent association with other conditions such as dementia or delirium, which compound issues around acute illness and chronic problems with gait or balance.

National Audit of Inpatient Falls

The Royal College of Physicians (RCP) conducted a national audit involving NHS trusts and health boards in England and Wales during May 2015. The aim was to provide reliable, relevant and timely data suitable to facilitate local improvements in clinical practice and patient safety work in acute hospitals in order to reduce inpatient falls. This report presents the aims, objectives, methods, findings and key recommendations of the 2015 National Audit of Inpatient Falls.

The 2015 National Audit of Inpatient Falls is part of the Falls and Fragility Fracture Audit Programme (FFFAP). Commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP), it builds upon previous pilot and feasibility audits.¹¹

This audit is a national snapshot of the landscape of falls prevention within NHS trusts and health boards in England and Wales from an organisational and clinical perspective. It can provide some evidence of quality improvement activities in the care of older patients in hospital who are at risk of falling and help to identify areas of good practice, as well as areas for improvement. The set of indicators used in this audit can help to support hospitals to monitor their progress locally, regionally and over time.

Methods

Terminology

Delirium is a common clinical syndrome that is characterised by disturbed consciousness, cognitive function or perception. It has an acute onset and fluctuating course.

Dementia is a progressive and largely irreversible clinical syndrome that is characterised by a widespread impairment of mental function that affects functional abilities.

Multifactorial falls risk assessment (MFRA) is an assessment with multiple components that aims to identify a person's risk factors for falling.

Multifactorial intervention is an intervention with multiple components that aims to address the risk factors for falling that are identified in a person's multifactorial assessment.

OBD (occupied bed day) – An occupied bed day is one which is occupied at midnight on the day in question.

Postural hypotension is a drop in blood pressure due to a change in body position when a person moves to a more vertical position: from sitting to standing or from lying down to sitting or standing. It matters because a drop in blood pressure may reduce the blood circulation to the brain.

Risk prediction tool / risk screening tool is a tool that aims to estimate a person's risk of falling, either in terms of 'at risk/not at risk', or in terms of 'low/medium/high risk'. Use of these tools is not recommended.

Site refers to the unit of participation for the audit. For the organisational audit, a site is a trust or health board. For the clinical audit, a site may be a trust/health board or a hospital.

Audit participation

There was a very high participation rate in the organisational audit (96%). Of 142 eligible hospital trusts and health boards (providers) that were invited to participate in the audit, 140 providers registered for the audit and 136 submitted valid organisational data.

The participation rate for the clinical audit was slightly lower than for the organisational audit, at 90% (n=179/198 eligible hospitals). Data for 5,174 patients were submitted by 188 hospitals, but 328 of these records were excluded from the analyses. The final clinical dataset used in the analyses consisted of 94% of all submitted patient-level data (n=4,846/5,174). Figure 2 provides a summary of participation and exclusion.

Governance of the audit

The National Audit of Inpatient Falls was commissioned by and accountable to HQIP as part of the 2015–2017 contract period. The audit is one of three workstreams managed by the FFFAP as part of the Clinical Effectiveness and Evaluation Unit (CEEU) of the RCP. A second round of data collection will take place in September 2016 after organisations have introduced interventions to improve services.

Delivery and performance of the audit was accountable to HQIP. It was managed by the CEEU and supported by a multidisciplinary and multiagency advisory group. Membership of this group reflected the breadth of clinical and service expertise needed to represent the different perspectives of hospital and community healthcare, social care, and advocacy for older people. A clinical lead provided direction (Appendix A).

Information governance

Section 251 approval was not sought, as no patient identifiable data were collected and no data were extracted from other recording systems. Although bedside observation was carried out, this was of equipment and other environmental aspects and not of patients. Patients were not questioned directly.

Dataset development

The audit criteria were based on the NICE guidance on falls assessment and prevention from 2013, the NICE guidance on delirium from 2010 and the NPSA guidance on the prevention and management of inpatient falls from 2007.³⁻⁵ Selection of the audit criteria was also informed by guidance on patient safety and clinical consensus from our advisory group / clinical research.^{8,12,13}

The methodology for this audit developed through two pilot tests in 2011 and 2014. The dataset was also developed over the pilot period based on advice from the National Advisory Group on Clinical Audit and Enquiries (NAGCAE), HQIP, the Imperial College Centre for Health Improvement and Research (CHIR) and the audit's advisory group. The advisory group refined the dataset for the 2015 national audit by incorporating feedback from the 2014 pilot.

Sampling method

Organisational audit

The organisational data were collected to ascertain accurate national falls rates per 1,000 OBDs and to allow comparison of falls prevention policies and managerial structures with the snapshot of clinical practice provided by the data from the clinical audit.

Organisational data were submitted at trust or LHB level to reflect the fact that nearly all sites have trust- or LHB-level policies. Two sites had to be excluded from our analysis because they were newly merged and did not have trust- or LHB-level policies in place.

Clinical audit

The objective of collecting patient-level data was to identify whether appropriate assessments and interventions to prevent falls had taken place within a reasonable time frame: NICE recommends that falls assessments and interventions start 'promptly' after admission.⁴ With input from clinicians in the advisory group, and referring to the research literature on implementation of interventions to prevent falls, we determined that data should be collected a minimum of 48 hours after admission. However, we wanted to avoid prospective data collection for all patients with an acute admission, as many (up to one-third) are discharged within 48 hours without having fallen. The inclusion criteria therefore were: patients aged 65 years or over, who were admitted acutely to the hospital on any ward (day 1 of admission) and remained inpatients on day 3 of admission. Patients were selected consecutively on admission time, to avoid sites selecting particular patients or particular wards.

Data for all patients were collected on this third day of admission, but two cohorts of patients were included, on 2 consecutive days, in order to capture sufficient numbers. On each of these days, the audit population consisted of the first 15 eligible patients (capped at 15 to avoid an excessive workload for larger hospitals). If fewer than 30 patients had met the admission criteria after 2 days, data collection was extended to a third day. The same patients were used for the case-note review and bedside

observations, so that it would be possible to explore the completeness of falls prevention management at patient level. The decision about the sample size for this audit was based on a power calculation using data on several key items from the 2014 pilot audit. Further details can be found in Appendix B.

Because the size and the technical and administrative organisation of trusts and health boards vary greatly between sites, some hospitals felt that it would be more appropriate for them to participate at trust level, but others felt it would be preferable for them to participate as individual hospitals, entering two, three or four sets of data per trust. As the purpose of the audit data collection is to enable local quality improvement, we considered that each trust was best placed to decide what would help them. Nine sites participated by trust and submitted patient-level data on eligible patients who consecutively entered multiple hospitals in their trust. One site participated by trust and submitted patient-level data on patients from only one hospital in their trust. The remaining 168 sites participated by hospital.

Data quality

Our initial data-cleaning processes identified that four trusts had submitted organisational data that were inconsistent, because the number of inpatient admissions was greater than the number of OBDs. All four trusts were contacted and all four confirmed that there had been errors in data entry, and provided the correct data. Once these data were corrected, we calculated the standard deviations and contacted all trusts who were one, two or three standard deviations away from the mean for either (a) the total number of falls per 1,000 OBDs or (b) the total number of falls per 1,000 OBDs with an outcome of moderate harm, severe harm or death.

a The total number of falls per 1,000 OBDs

Three of the four identified trusts that we contacted acknowledged errors in data collection and provided corrected data, which were used for the analysis. The fourth trust confirmed that the data they entered were correct, and these were included in our analysis as originally entered into the webtool.

b The total number of falls per 1,000 OBDs with an outcome of moderate harm, severe harm or death

One of the two identified trusts that we contacted acknowledged an error in data collection and provided corrected data, which were used for the analysis. The second trust confirmed that the data entered were correct, and these data were included in our analysis as originally entered into the webtool.

Data completeness

The organisational and clinical audits had high levels of completeness for most data items. The majority of questions in the organisational audit were answered by all participating providers. The largest proportion of missing answers was for question 2.6: 'Is falls prevention mentioned in and/or your falls prevention policy linked to any of the following policies?', which was not answered by 4.4% of providers (n=136). In the clinical audit, only two questions were not answered for more than 1% of patients (n=4,846) – question 1.9: 'Is it documented that the patient has an assessment for medications that increase fall risk?' (not answered for 1.4% of patients) and question 1.10: 'Is it documented that the patient has night sedation or other sedative medication administered since admission?' (not answered for 1.1% of patients).

Recruitment of sites

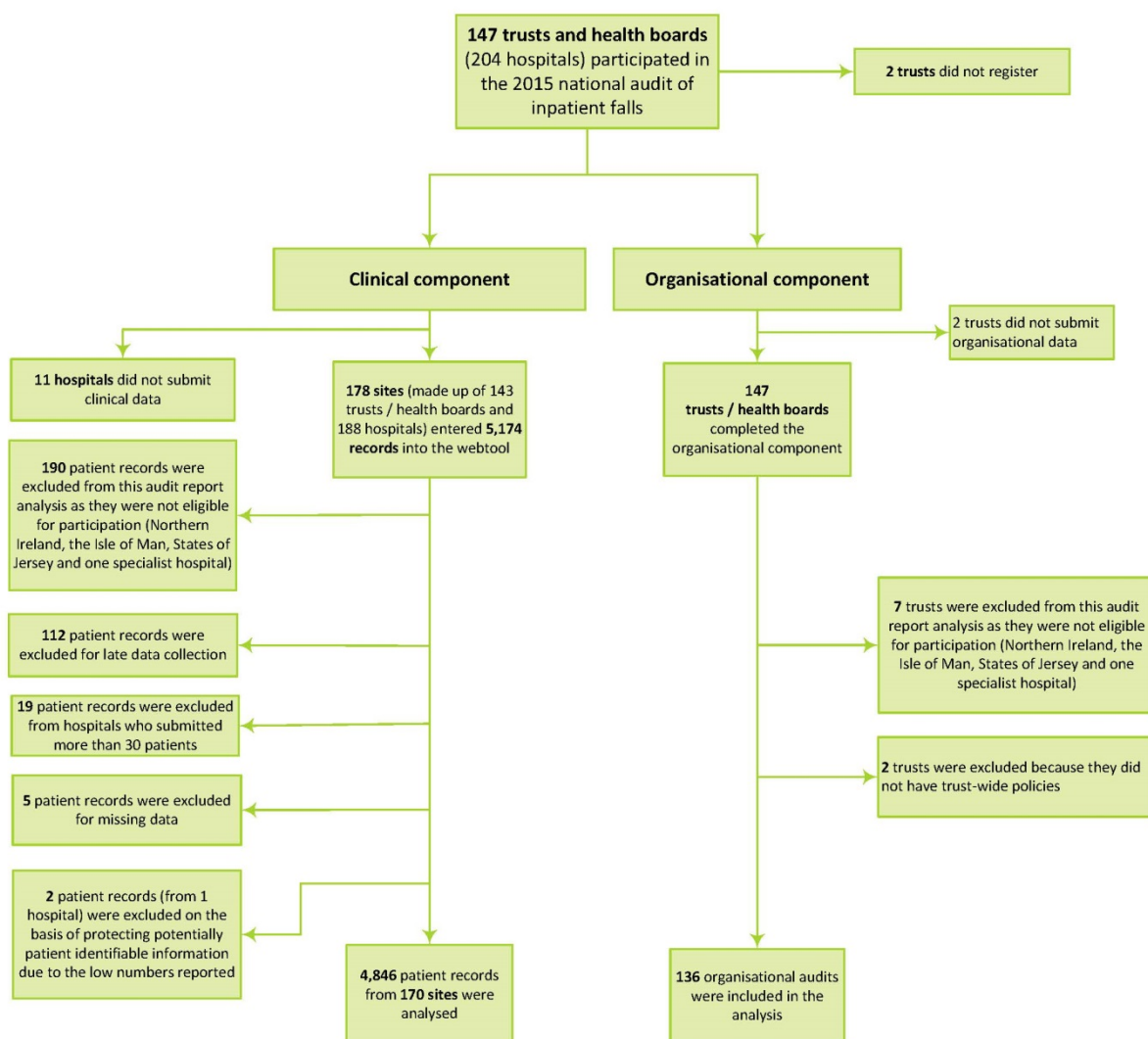
Sites were recruited via letters to their previous lead clinician from the pilot cycles and from the National Audit of Falls and Bone Health (NAFB). These letters were followed up with emails to the lead clinicians and audit leads. If this was unsuccessful, we also followed up with phone calls and approached contacts from the NHFD. Finally, we wrote to the chief executive officer (CEO), the medical director and the clinical audit manager of the remaining hospitals that had not registered.

Due to an overwhelming response from the falls community, we also collected data from seven hospitals in Northern Ireland, Jersey and Guernsey, and one specialist hospital, to enable them to participate in the audit for their own records. Their data are excluded from the national analysis in this report.

Audit eligibility

This audit was commissioned by HQIP for England and Wales, with all acute hospitals in England and local health boards (LHBs) in Wales eligible to take part.

Fig 2 Flow diagram of participation and exclusions



Data collection

Webtool

All data were entered into a secure webtool, which was designed so that each hospital could log in with an individual password and hospital code. Sites that were participating as a trust or LHB but submitting clinical data from multiple hospitals were still required to enter the data for each patient under the corresponding hospital for that patient. The webtool was designed to validate the data at the point of entry, by rejecting invalid responses. The organisational component was completed per trust or LHB, and each hospital could access the same organisational audit for their trust or LHB so that the data only needed to be entered once.

The webtool was open from 1–29 May for data entry. The organisational data could be entered at any time. The clinical data were collected on 12–14 May and could be entered at any time after this. One-week extensions were granted to sites that gave legitimate reasons for a delay. We also contacted sites for which data were missing after the webtool closed and gave them an additional week to correct their information.

Support and information for participating sites

Sites were sent the clinical audit proforma and protocol on 27 March 2015, along with a 'how to' data collection guide. This allowed them 6 weeks to prepare for the clinical collection, to schedule availability of required staff and to communicate with their informatics department.

Data analysis

Data analysis was conducted by the FFFAP's data coordinator, with guidance from the Clinical Effectiveness Unit (CEU) of the Royal College of Surgeons of England. The multidisciplinary advisory group was consulted to identify key findings and indicators of performance.

Key indicators

The purpose of key indicators is to provide a manageable presentation of data in the national report and to highlight key areas for improvement. However, all data are available to organisations online at www.rcplondon.ac.uk/fffap.

No research-based data are available to enable a weighting to be given – overall or for a particular patient – to the relative contribution of any one of the many factors that impact falls risk. However, we chose the following seven key indicators, as identified by our multidisciplinary advisory group, which includes patient representation, on the basis that they were indicative of good practice and achievable aims for quality improvement:

- assessment for the presence or absence of delirium
- assessment for medications that increase the falls risk
- measurement of lying and standing blood pressure
- assessment of vision
- continence or toileting care plan (for patients who have been assessed to have continence problems)
- appropriate mobility aid in reach of the patient
- call bell in sight and in reach of the patient.

Site performance

Data collected for this audit were self reported. We are therefore relying on organisations accurately reporting their findings. A small minority of trusts had results that were three standard deviations higher than the mean, and some reported 100% assessment and intervention for many of the key indicators.

When we have contacted these trusts, some replied giving excellent examples of how they achieved these good results; however, some have not responded. No trusts or LHBs reported results that were three standard deviations below the mean.

Results – organisational audit

Background details

Falls reporting

We asked all organisations to give us data on total OBDs and total number of falls reported. We also asked them to give us data on the total number of reported falls resulting in moderate harm, severe harm and death. National Reporting and Learning System (NRLS) definitions of severity of harm for patient safety incidents are shown in Table 1.

Table 1

NRLS – definitions of severity of harm for patient safety incidents applied to falls	
No harm	Where no harm came to the patient.
Low harm	Where the fall resulted in harm that required first aid, minor treatment, extra observation or medication.
Moderate harm	Where the fall resulted in harm that required hospital treatment or prolonged length of stay but from which a full recovery is expected.
Severe harm	Where the fall resulted in harm causing permanent disability or the person is unlikely to regain their former level of independence.
Death	Where death is directly attributable to the fall.

The data were then converted into falls per 1,000 OBDs and falls resulting in moderate harm, severe harm or death per 1,000 OBDs.

Falls per 1,000 OBDs

Organisations within the NHS vary in size and activity. Therefore, calculating reported falls per 1,000 OBDs can be used as a guide to benchmark with the reported rates from other NHS organisations. It should also be noted that some trusts and LHBs include only acute hospitals, while others combine acute hospitals, community hospitals and mental health units.

A low number of falls per 1,000 OBDs does not necessarily mean the trust or LHB performed well in the clinical audit. Trusts and health boards are advised to consider both their falls per 1,000 OBDs and their clinical results in light of the following caveats.

Reported rates of falls will also be affected by real differences in falls rates associated with patient casemix and differences in reporting requirements and practice between organisations.¹ Therefore comparisons need to be made with caution, as hospitals with higher than average reported rates of falls may have better reporting, or better falls prevention care for more vulnerable patients. Conversely, organisations with very low rates may have a poor culture of defining or reporting falls rather than having robust approaches for prevention of falls. Additionally, an individual trust or LHB with a wide discrepancy between a low comparative falls rate and a high comparative harm-related falls rate, compared with other providers, might suggest problems with reporting. It is possible that length of stay may influence the rate of falls; however, this is a research question and outside the remit of this audit.

Falls rates can be expected to vary between organisations due to differences in:

- local population demographics (eg hospitals serving towns that are popular retirement spots may have higher rates than hospitals serving a younger inner-city population)
- specialist services (eg services focused on rehabilitation or people with dementia are likely to have higher rates of falls)
- reporting culture (ie how consistently falls, especially no-harm falls, are reported)
- falls prevention activities (ie completion of MFRAs and interventions to reduce falls).

The NPSA calculated the mean rate of falls per 1,000 OBDs as:

- 5.6 for acute hospitals
- 8.6 for community hospitals
- 3.8 for mental health hospitals.¹

This was based on data from the NRLS of 73 organisations in 2005–6. This was the first time that rates of falls were reported for nearly all trusts and health boards in England and Wales. Our audit found a mean rate of falls per 1,000 OBDs of 6.63, which is clearly higher than previously reported rates. This may reflect increased rates of reporting, especially reporting of falls resulting in no harm.

Although variation in the rates of falls per 1,000 OBDs appears high, with the range being 0.82–19.20, the interquartile range (IQR) (5.46–7.7) shows less variation and indicates that some organisations reported particularly high or low numbers. We found the mean rate of falls resulting in moderate harm, severe harm and death to be 0.19. There is no previously reported rate to compare this with, as it is the first time these data have been published at trust or LHB level. The range of reported falls resulting in moderate harm, severe harm or death per 1,000 OBDs was 0.01–2.00 (IQR 0.11–0.21).

Reported falls per 1,000 OBDs

Tables 2–12 show the total number of falls per 1,000 OBDs and the total number of falls resulting in moderate harm, severe harm or death from 1 January to 31 December 2014 per 1,000 OBDs for all participating trusts and health boards in England and Wales.

Table 2

East Midlands	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Chesterfield Royal Hospital NHS Foundation Trust	0.10	8.67
Derby Hospitals NHS Foundation Trust	0.19	8.27
Northampton General Hospital NHS Trust	0.11	5.96
Nottingham University Hospitals NHS Trust	0.31	9.99
Sherwood Forest Hospitals NHS Foundation Trust	0.24	9.49
United Lincolnshire Hospitals NHS Trust	0.56	6.60
University Hospitals of Leicester NHS Trust	0.07	5.32

Table 3

East of England	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Basildon and Thurrock University Hospitals NHS Foundation Trust	0.12	5.97
Bedford Hospital NHS Trust	0.19	7.02
Cambridge University Hospitals NHS Foundation Trust	0.08	4.66
Colchester Hospital University NHS Foundation Trust	0.15	5.80
East and North Hertfordshire NHS Trust	0.11	3.75
Hinchingbrooke Health Care NHS Trust	0.15	6.28
Ipswich Hospital NHS Trust	0.10	7.42
James Paget University Hospitals NHS Foundation Trust	0.13	6.51
Luton and Dunstable University Hospital NHS Foundation Trust	0.14	5.49
Mid Essex Hospital Services NHS Trust	0.22	7.03
Norfolk and Norwich University Hospitals NHS Foundation Trust	0.10	7.62
Peterborough and Stamford Hospitals NHS Foundation Trust	0.28	8.71
The Princess Alexandra Hospital NHS Trust	0.17	7.28
The Queen Elizabeth Hospital Kings Lynn NHS Foundation Trust	0.15	7.74
West Hertfordshire Hospitals NHS Trust	0.37	4.29
West Suffolk NHS Foundation Trust	0.11	5.00

Table 4

London	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Barking Havering and Redbridge University Hospitals NHS Trust	0.11	5.93
Barts Health NHS Trust	0.06	4.38
Croydon Health Services NHS Trust	0.08	5.81
Epsom and St Helier University Hospitals NHS Trust	0.14	6.08
Guy's and St Thomas' NHS Foundation Trust	0.06	3.82
Homerton University Hospital NHS Foundation Trust	0.12	8.10
Imperial College Healthcare NHS Trust	0.05	5.18
King's College Hospital NHS Foundation Trust	0.05	3.11
Kingston Hospital NHS Foundation Trust	0.12	5.60
Lewisham and Greenwich NHS Trust	0.20	6.31
North Middlesex University Hospital NHS Trust	0.10	7.02
Royal Free London NHS Foundation Trust	0.17	4.34
St George's Healthcare NHS Foundation Trust	0.03	6.12
The Hillingdon Hospitals NHS Foundation Trust	0.11	5.37
The Whittington Hospital NHS Trust	0.04	3.23
University College London Hospitals NHS Foundation Trust	0.16	3.95
West Middlesex University Hospital NHS Trust	0.21	4.01

Table 5

North East	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
City Hospitals Sunderland NHS Foundation Trust	0.22	8.34
County Durham and Darlington NHS Foundation Trust	0.17	6.88
Gateshead Health NHS Foundation Trust	0.21	8.22
North Tees and Hartlepool NHS Foundation Trust	2.00	7.69
Northumbria Healthcare NHS Foundation Trust	0.29	9.60
South Tees Hospitals NHS Foundation Trust	0.13	6.25
South Tyneside NHS Foundation Trust	0.39	10.66
The Newcastle Upon Tyne Hospitals NHS Foundation Trust	0.15	7.07

Table 6

North West	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Aintree University Hospital NHS Foundation Trust	0.06	12.52
Bolton NHS Foundation Trust	0.12	4.79
Central Manchester University Hospitals NHS Foundation Trust	0.10	5.95
Countess of Chester Hospital NHS Foundation Trust	0.15	7.73
East Cheshire NHS Trust	0.16	7.91
East Lancashire Hospitals NHS Trust	0.15	7.25
Lancashire Teaching Hospitals NHS Foundation Trust	0.18	5.58
Mid Cheshire Hospitals NHS Foundation Trust	0.08	5.22
North Cumbria University Hospitals NHS Trust	0.26	8.02
Royal Liverpool and Broadgreen University Hospitals NHS Trust	0.14	5.54
Salford Royal NHS Foundation Trust	0.23	5.75
Southport and Ormskirk Hospital NHS Trust	0.13	3.71
St Helens and Knowsley Hospitals NHS Trust	0.18	9.75
Stockport NHS Foundation Trust	0.13	7.73
Tameside Hospital NHS Foundation Trust	0.17	8.46
University Hospital of South Manchester NHS Foundation Trust	0.13	6.72
University Hospitals of Morecambe Bay NHS Foundation Trust	0.17	9.96
Warrington and Halton Hospitals NHS Foundation Trust	0.14	5.92
Wirral University Teaching Hospital NHS Foundation Trust	0.16	3.89
Wrightington Wigan and Leigh NHS Foundation Trust	0.09	5.62

Table 7

South Central	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Buckinghamshire Healthcare NHS Trust	0.06	2.76
Hampshire Hospitals NHS Foundation Trust	0.17	6.67
Isle of Wight NHS Trust	0.39	7.88
Milton Keynes Hospital NHS Foundation Trust	0.18	5.96
Oxford University Hospitals NHS Trust	0.11	6.92
Portsmouth Hospitals NHS Trust	0.13	7.19
Royal Berkshire NHS Foundation Trust	0.37	7.07
University Hospital Southampton NHS Foundation Trust	0.17	7.30

Table 8

South East Coast	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Ashford and St Peter's Hospitals NHS Foundation Trust	0.10	3.58
Brighton and Sussex University Hospitals NHS Trust	0.06	3.28
Dartford and Gravesham NHS Trust	0.14	7.57
East Kent Hospitals University NHS Foundation Trust	0.18	6.29
East Sussex Healthcare NHS Trust	0.45	9.65
Frimley Health NHS Foundation Trust	0.31	6.39
Maidstone and Tunbridge Wells NHS Trust	0.23	7.22
Medway NHS Foundation Trust	0.21	5.63
Royal Surrey County Hospital NHS Foundation Trust	0.07	4.41
Surrey and Sussex Healthcare NHS Trust	0.33	5.43
Western Sussex Hospitals NHS Foundation Trust	0.18	7.14

Table 9

South West	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Dorset County Hospital NHS Foundation Trust	0.07	5.38
Gloucestershire Hospitals NHS Foundation Trust	0.08	7.17
Great Western Hospitals NHS Foundation Trust	0.19	8.33
North Bristol NHS Trust	0.33	7.03
Northern Devon Healthcare NHS Trust	0.32	19.20
Plymouth Hospitals NHS Trust	0.20	6.25
Poole Hospital NHS Foundation Trust	0.15	5.74
Royal Cornwall Hospitals NHS Trust	0.11	7.01
Royal Devon and Exeter NHS Foundation Trust	0.15	7.44
Royal United Hospitals Bath NHS Foundation Trust	0.08	5.73
Salisbury NHS Foundation Trust	0.25	7.34
South Devon Healthcare NHS Foundation Trust	0.06	3.93
Taunton and Somerset NHS Foundation Trust	0.10	6.31
The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust	0.19	8.96
University Hospitals Bristol NHS Foundation Trust	0.15	6.08
Weston Area Health NHS Trust	0.14	7.93
Yeovil District Hospital NHS Foundation Trust	0.16	9.19

Table 10

Wales	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Abertawe Bro Morgannwg University Health Board	0.03	5.51
Aneurin Bevan Health Board	0.39	8.65
Betsi Cadwaladr University Local Health Board	0.55	7.77
Cardiff and Vale University Health Board	0.12	5.49
Cwm Taf University Health Board	0.58	7.46
Hywel Dda Local Health Board	0.34	3.98

Table 11

West Midlands	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Burton Hospitals NHS Foundation Trust	0.16	4.15
George Eliot Hospital NHS Trust	0.28	5.46
Heart of England NHS Foundation Trust	0.30	8.29
Sandwell and West Birmingham Hospitals NHS Trust	0.32	5.18
Shrewsbury and Telford Hospital NHS Trust	0.19	5.27
South Warwickshire NHS Foundation Trust	0.47	7.46
The Dudley Group NHS Foundation Trust	0.07	4.51
The Royal Wolverhampton NHS Trust	0.18	6.62
University Hospitals Birmingham NHS Foundation Trust	0.13	7.46
University Hospitals Coventry and Warwickshire NHS Trust	0.13	7.42
Walsall Healthcare NHS Trust	0.10	3.92
Worcestershire Acute Hospitals NHS Trust	0.13	5.81
Wye Valley NHS Trust	0.18	5.35

Table 12

Yorkshire and the Humber	Falls resulting in moderate/severe harm or death per 1,000 OBDs	Falls per 1,000 OBDs
Airedale NHS Foundation Trust	0.24	11.14
Barnsley Hospital NHS Foundation Trust	0.15	6.69
Bradford Teaching Hospitals NHS Foundation Trust	0.01	0.82
Calderdale and Huddersfield NHS Foundation Trust	0.09	8.42
Doncaster and Bassetlaw Hospitals NHS Foundation Trust	0.21	5.25
Harrogate and District NHS Foundation Trust	0.32	8.58
Hull and East Yorkshire Hospitals NHS Trust	0.29	8.32
Leeds Teaching Hospitals NHS Trust	0.13	6.27
Mid Yorkshire Hospitals NHS Trust	0.23	7.08
Northern Lincolnshire and Goole NHS Foundation Trust	0.03	7.57
Sheffield Teaching Hospitals NHS Foundation Trust	0.19	7.29
The Rotherham NHS Foundation Trust	0.13	5.99
York Teaching Hospital NHS Foundation Trust	0.32	9.19

Organisational audit summary

Fig 3 Organisational audit summary (%)

This figure shows the percentage of 'yes' responses for questions in the policy, protocol, paperwork, and leadership and service provision sections of the organisational audit.

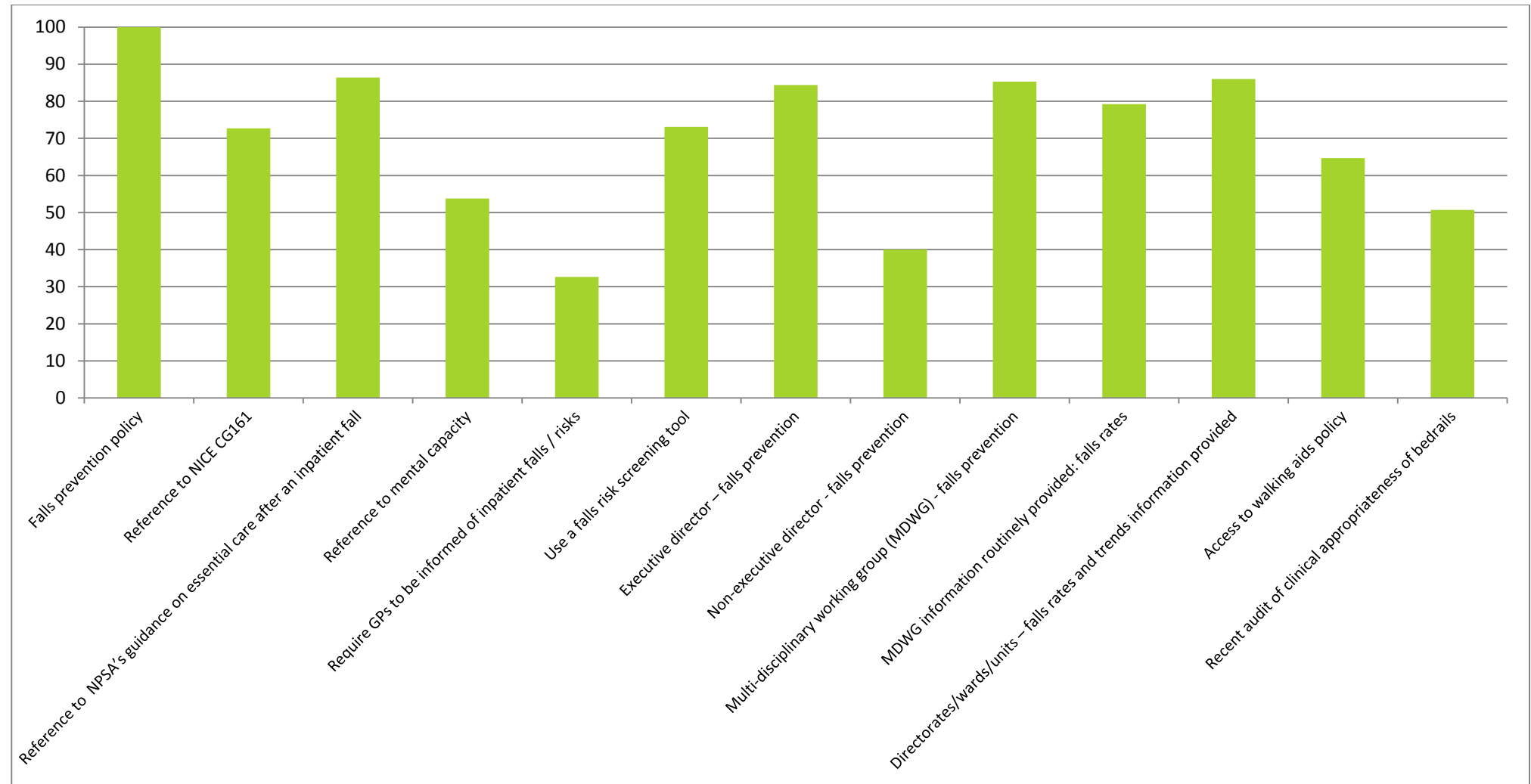
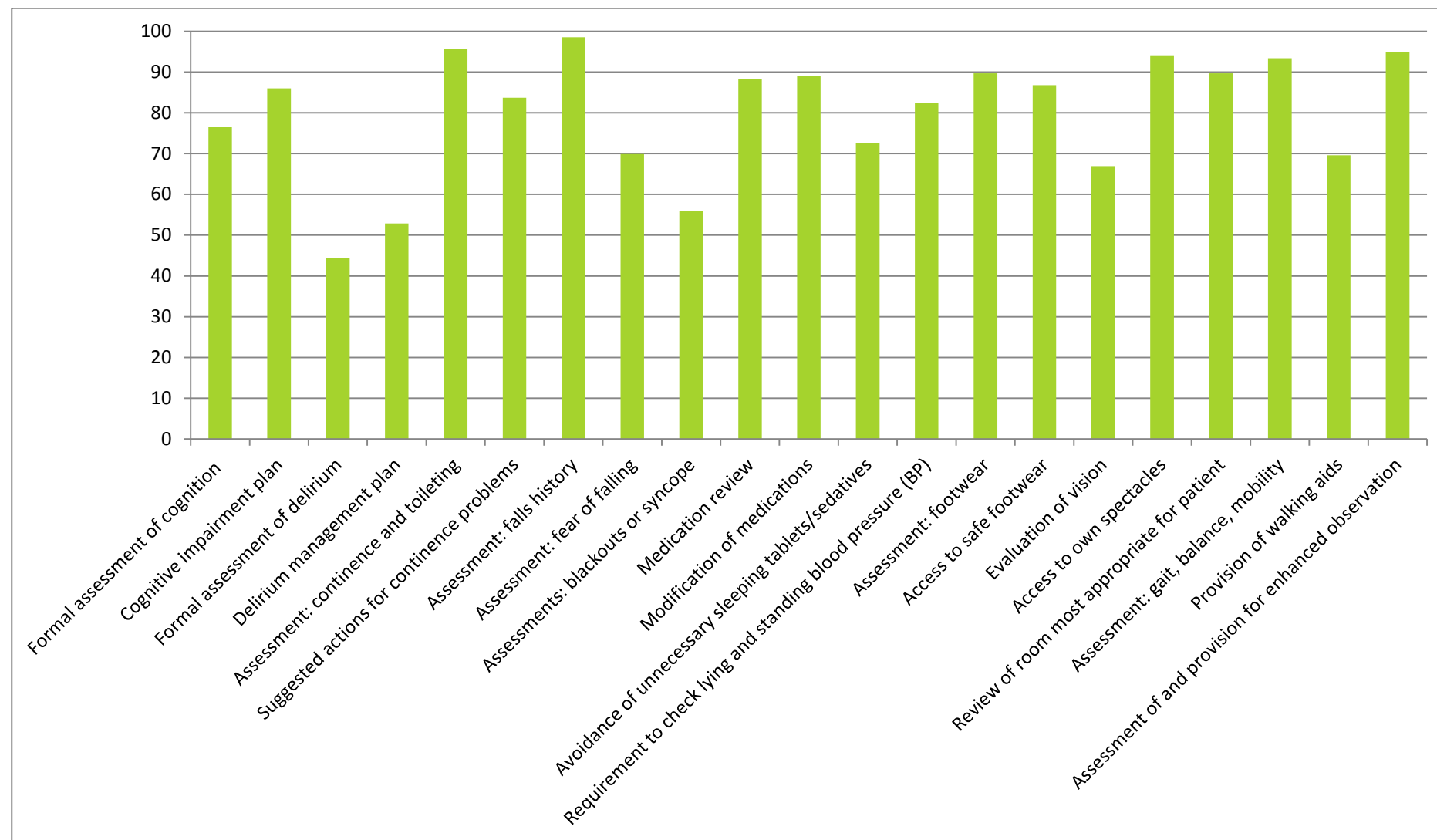


Fig 4 Organisational audit summary (%)

This figure shows the percentage of 'yes' responses for organisational audit questions that relate to the MFRA.



Falls prevention policy

From this audit, we see that all organisations in the country have a falls prevention policy (Table 13). The majority (94%) of these policies reference recent guidance on falls prevention in hospital, such as the guidance from NICE and the NPSA. However, it does appear that many (32%) of these policies are being written in isolation and do not link to any other clearly related policies, such as those on delirium, dementia and bone health. We recommend that these policies are reviewed, and that learning from linked policies is made clear to the staff who implement them.

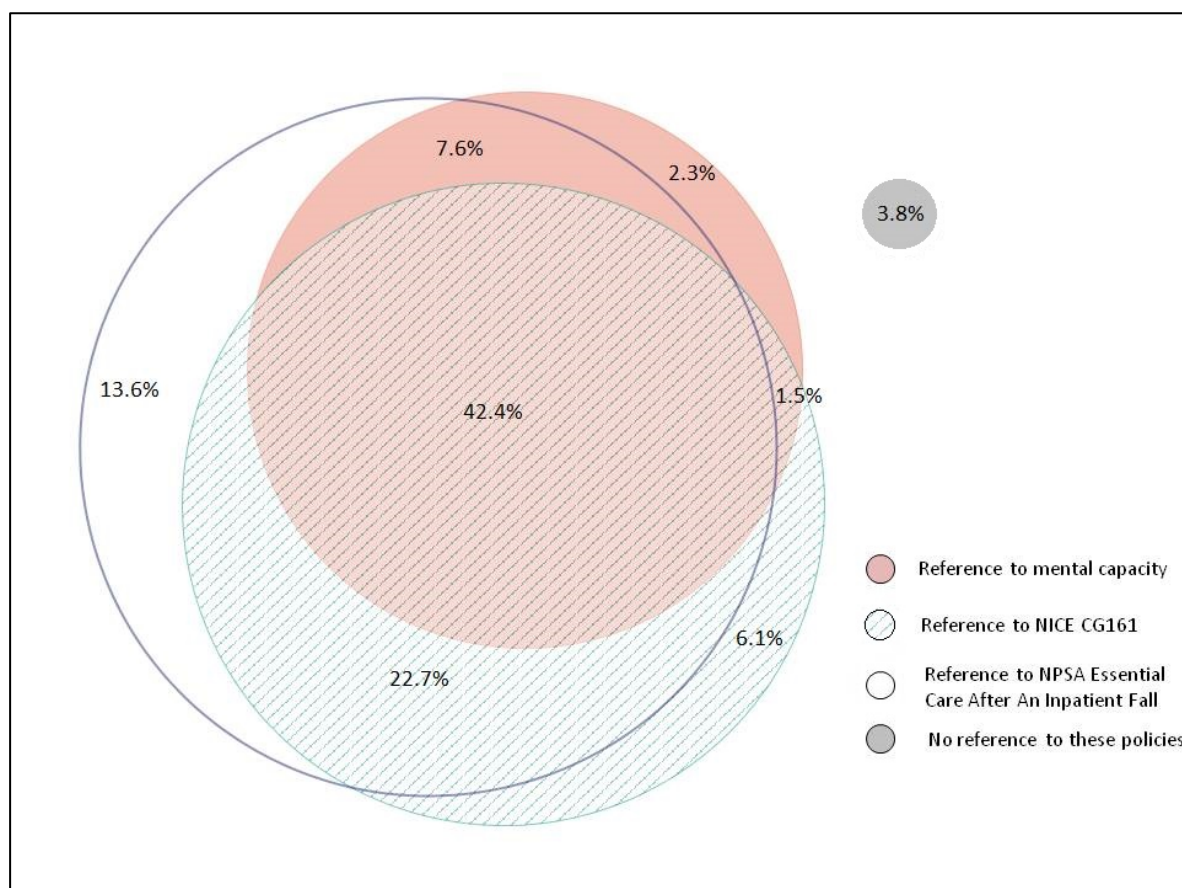
Table 13

	National
2.01 Do you have a falls prevention policy?	100% (136)
2.01b Does your falls prevention policy or policies require GPs to be informed of inpatient falls and/or identified falls risk?	32.6% (43)

Figure 5 summarises the results from question 2.01a: 'Does your falls prevention policy or policies include reference to:

- NICE Clinical Guideline 161 (CG161)?
- NPSA *Essential care after an inpatient fall*?
- mental capacity?

Fig 5 Falls prevention policy references



In total, 6.6% of organisations have did not report that their falls prevention policies made any reference to key guidelines (this includes four sites that left the question blank). In total, 3.8% of organisations that responded reported that they made no reference to key guidelines.

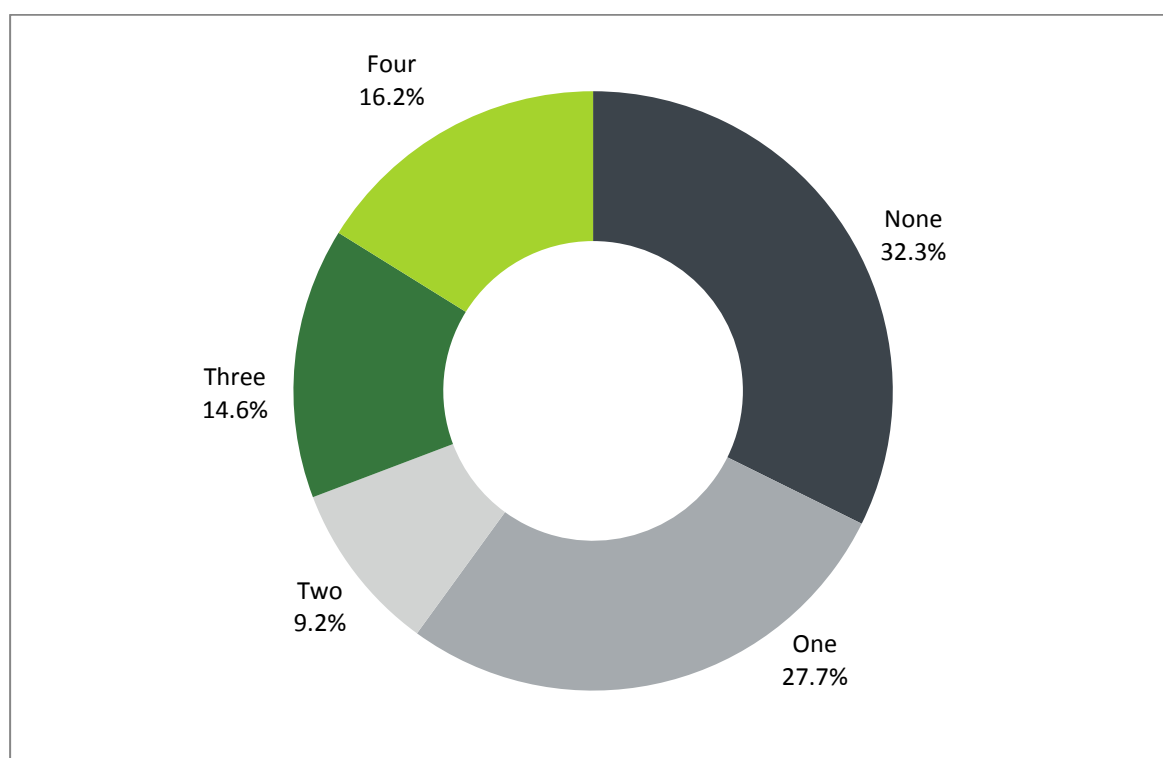
Question 2.06 of the audit asked: 'Is falls prevention mentioned in and/or your falls prevention policy linked to any of the following policies?

- delirium policy/protocol
- dementia policy/protocol
- mental capacity and deprivation of liberty safeguards (DoLs) policy/protocol
- bone health/osteoporosis/fracture prevention policy/protocol.'

For this question, organisations could select as many responses that were relevant.

Figure 6 shows how many of the four policies the organisations reported as being mentioned in or linked to their falls prevention policy.

Fig 6 Number of policies that 'falls prevention' is mentioned in or linked to



Falls risk screening / prevention tool

Table 14

	National
2.02 Does your trust use a falls risk screening tool?	73.1% (98)

We asked whether organisations used a falls risk screening tool. We clarified that this is a tool that aims to calculate a person's risk of falling, either in terms of 'at risk/not at risk', or in terms of 'low/medium/high risk', and so on. NICE CG161 states that all patients over the age of 65 who present to hospital should be considered at risk regardless of whether they have presented with a fall or not, and risk prediction tools should not be used. No published studies of risk prediction tools predicted risk at greater than 70% sensitivity, NICE therefore concluded that all inpatients aged 65 and older 'should have their care managed as if they are at risk of falling' on the basis that these patients 'often have

newly acquired risk factors (such as acute illness, delirium, cardiovascular disease, impaired mobility, medication or syncope syndrome) and are exposed to unfamiliar surroundings, which puts them at increased risk of falling during their inpatient stay'.¹⁴

In 2013, NICE recommended that the following groups of inpatients should be regarded as being at risk of falling in hospital and their care should be managed accordingly:

- 1 all patients aged 65 years or older
- 2 patients aged 50 to 64 years who are judged by a clinician to be at higher risk of falling because of an underlying condition.

From this audit, it is clear that most organisations (73%) are still using these types of risk prediction tools and therefore may not be using an MFRA for all at risk of falling in hospital. However, when we compare organisations that use such a tool against those that do not, there appears to be little difference in assessments and interventions. We recommend that all organisations take action to remove these risk prediction tools and assess all appropriate patients, putting in place measures to reduce their risk of falls.

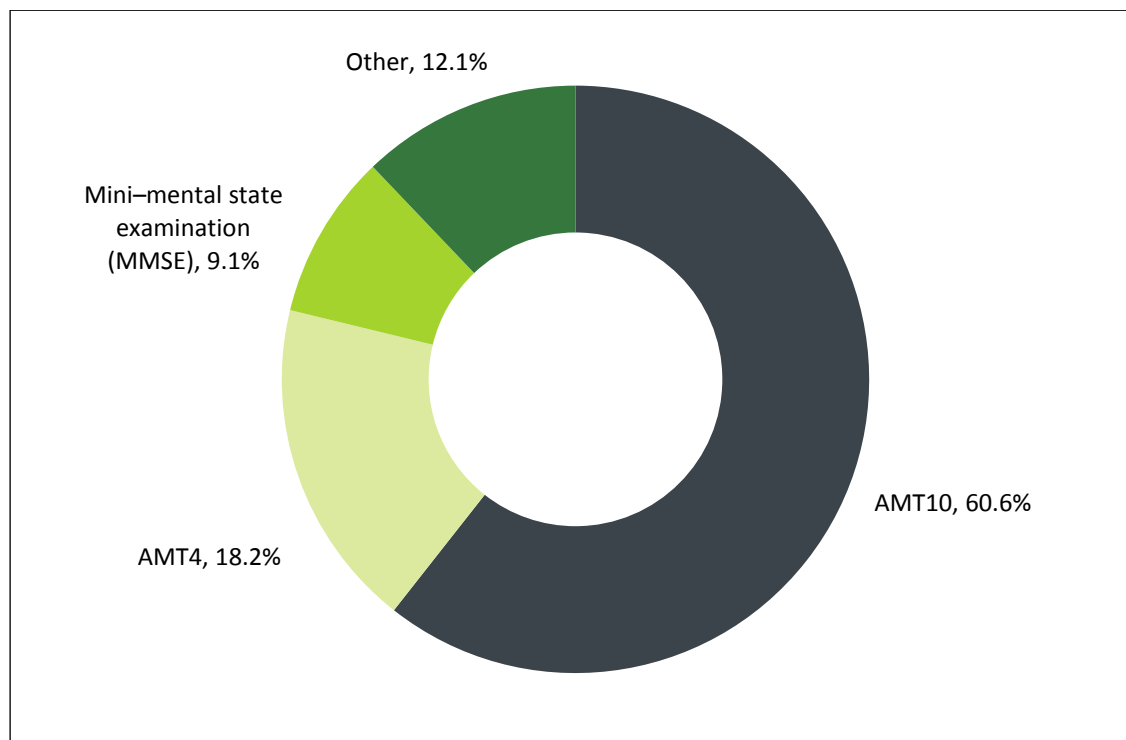
Formal assessment of cognition

Table 15

Does your inpatient MFRA have:	National
2.03a A formal assessment of cognition?	76.5% (104)

Figure 7 shows which cognitive assessment tools organisations reported using. Five organisations reported using a formal assessment of cognition tool but did not report which tool they used.

Fig 7 Formal assessment of cognition tools used



MFRA

Table 16

2.03 Does your inpatient MFRA documentation include:	National
A formal assessment for delirium using confusion assessment method (CAM), or other tool?	44.4% (60)
Assessment of continence and toileting?	95.6% (130)
Assessment of a history of falls?	98.5% (134)
Assessment for fear of falling?	69.9% (95)
Assessment of a history of blackouts or syncope?	55.9% (76)
Assessment of footwear?	89.7% (122)
Review of all medication for medications that increase falls risk?	88.2% (120)
Any assessment of gait, balance and mobility?	93.4% (127)
A requirement to check lying and standing BP?	82.4% (112)
An evaluation of vision?	66.9% (91)

Table 17

2.04 Does your inpatient multifactorial falls intervention include:	National
A care plan to support the patient with cognitive impairment eg 'This is me' (tailored to the patient, not generic)?	86.0% (117)
A delirium management plan?	52.9% (72)
Suggested actions when problems with continence are identified?	83.7% (113)
Access to safe footwear?	86.8% (118)
Modification of medications that increase falls risk?	89.0% (121)
Avoidance of unnecessary sleeping tablets/sedative medication	72.6% (98)
Provision of appropriate walking aids 7-days a week?	69.6% (94)
Ensuring that patients have access to their own spectacles?	94.1% (128)
A review of room/bed space most appropriate for the patient?	89.7% (122)
An assessment of and provision for enhanced observation?	94.9% (129)

Provision of written information on falls for the patient?	80.9% (110)
Provision of written information on falls for family/informal carers?	76.5% (104)
Provision of written information on falls in any non-English language?	27.9% (38)

All organisations appear to use some form of MFRA. This is an assessment with multiple components that aims to identify a person's risk factors for falling. There appears to be wide variation in which risks are identified and, similarly, which risks are addressed when they are identified. There appears to be low inclusion of delirium risk assessment tools and delirium management plans, which is of concern because these patients are often at high risk of falling. However, it is most noticeable that although many organisations indicated that they included most relevant risks in their MFRA, there is very little correlation between these policies and what actually happens at a patient level (see Tables 29–45). For example, although 81% of organisations have reported that they offer written information to reduce falls in hospital, the clinical audit showed that only 11% of patients received written information. We recommend that all organisations review their MFRAs and associated interventions to include all the domains in this audit. This should then be linked to quality improvement projects to ensure that what is included in the policy actually translates into practice.

Bed rails

Table 18

2.05 Has your trust carried out an audit of the clinical appropriateness of bedrail use for individual patients within the past 24 months?	National
Yes we have carried out an audit.	50.7% (68)
We use bedrails but have not carried out an audit.	49.3% (66)
We never use bedrails.	0

Twenty two per cent of patients who fall in hospital do so from their bed.⁷ The NRLS recognised that the use of bedrails can be challenging. This is because bedrails are not appropriate for all patients and can create a barrier to independence that may result in a greater risk of falls to mobile but confused patients who try to climb over bedrails.⁷ However, a systematic review of the scientific literature indicated that falls from beds with bedrails 'are usually associated with lower rates of injury'.⁷ As a result, the NRLS recommended that organisations produce policies on the use of bed rails and then audit and evaluate the clinical appropriateness of their use of bed rails.⁷ Only half of the organisations in our audit reported that they had carried out a recent bedrail audit. This raises concerns about whether bedrails are being used appropriately and in compliance with the individual organisation's policy.

Post-falls protocol

Table 19

	National
2.07 Does your trust have a post-falls protocol?	100% (136)

It is pleasing to see that all organisations now have a post-fall policy, which is clearly in line with the recently published NICE quality standard on assessments following a fall (QS86).⁶ This audit did not investigate the actions taken after a fall but QS86 clearly recommends that regular trust or LHB-level audits should occur.

Leadership and service provision

Table 20

3.01 Does your trust have an executive director who has specific roles/responsibilities for leading falls prevention (can be as part of a wider remit for patient safety)?	National
Yes	84.4% (114)
No	9.6% (13)
Not known	6.0% (8)

Table 21

3.02 Does your trust have a non-executive director (or other board member) who has specific roles/responsibilities for leading falls prevention (can be as part of a wider remit for patient safety)?	National
Yes	40.0% (54)
No	39.3% (53)
Not known	20.7% (28)

Table 22

	National
3.03 Does your trust have a standing multidisciplinary working group or steering group or subgroup specifically for falls prevention, which has met at least four times a year over the last 2 years? As a minimum, this group must contain a nurse, doctor, AHP and manager as part of its membership.	85.3% (116)
3.03a Is information on rates of falls (expressed as falls per OBD) routinely presented and discussed at most or all meetings of the central falls prevention group?	79.2% (103)
3.04 Is information on falls rates <i>and</i> trends routinely provided to individual directorates, wards, units or departments at least quarterly?	86.0% (117)

Most organisations (84%) have an executive director who has a specific role for falls prevention (Table 20), but 60% did not have or did not know whether they had an interested non-executive director (Table 21). We would recommend all organisations have a trust or LBH-level falls steering group with representation from and reporting to the trust board.¹⁵

Most organisations did have a standing multidisciplinary working group, steering group or subgroup specifically for falls prevention, which had met at least four times a year over the last 2 years. A small proportion of organisations (15%) did not. However, when we looked at the data, there was very little

difference in terms of the falls prevention actions that were undertaken between those organisations that had a working group and those that did not. An effective falls working group will review falls rates and injuries, review serious incidents looking for common themes and use proven methods for changing practice to ensure improved falls prevention activities. We recommend that all organisations have a regular falls working group and that they review the activities of this group to ensure that it is fit for purpose and functioning appropriately.

Walking aids

Table 23

	National
3.05 Is it policy that all inpatient wards/units have access to walking aids for newly admitted patients (or patients whose mobility needs have changed) 7 days per week?	64.7% (88)

It is clear that if a patient uses a walking aid normally or needs a new walking aid at the time of admission then they will need access to this immediately after they are admitted to hospital. It is recommended that all organisations develop a policy to ensure that this occurs and that they audit against this policy regularly.

Results – clinical audit

Patient demographics

Table 24

	National
Patient age	Min: 65 Max: 106 Mean: 80.4

Table 25

	10 May	11 May	12 May
Date of admission	2,146	2,128	572

Table 26

	Male	Female
Gender	46.2% (2,238)	53.8% (2,608)

Table 27

	National
Medical	57.3% (2,761)
Surgical	22.3% (1,075)
Admissions unit eg acute medical unit (AMU), clinical decision unit (CDU) or equivalent	15.9% (765)
Other	4.5% (220)

There was a large age range (65–106 years), and 54% of audited patients were female. Most audited patients were admitted on either Sunday 10 May or Monday 11 May, but a few hospitals collected data on Tuesday 12 May because they had not reached the required 30 patients on the previous 2 days. One hospital missed the first day of data collection and collected all data on 11 and 12 May. The majority of patients were on medical wards (57%), but some were on surgical wards (22%) or still on the admissions unit (16%) when they were audited. There was little evidence of differences in falls assessments and interventions between patients who were admitted onto different types of wards.

Most patients (76%) were admitted for other reasons and not specifically as a result of a fall. Twenty-three per cent of audited patients had been admitted due to a fall, which is reflective of admissions at this age. The Royal Society for the Prevention of Accidents (RoSPA) estimates that one in three people aged 65 years and over experience a fall at least once a year.⁴

At **Portsmouth Hospitals**, specialist clinicians worked together with a falls and fragility clinical nurse specialist to implement a carefully designed pathway that ensures that all patients entering the hospital are assessed and managed for their falls risk.

We introduced the FallSafe programme just over 3 years ago. It provided the framework needed to understand the importance of a multidisciplinary approach. Many elements of falls prevention were already part of our routine care, but the quality improvement and culture change emphasis in FallSafe provided a perfect opportunity to reach beyond nursing staff and to engage more effectively with the wider ward team. Nurses who were already established in the role of Falls Link on each ward were designated as FallSafe champions and given responsibility for increasing awareness of good falls management.

We worked together across different professional groups to develop several clever ideas to implement on the wards. Our **Falls Foot Logo** was introduced several years ago and is now widely recognised. It is available as a badge and a magnetic sign, and is printed in falls-related sections of documentation. A **chart of culprit medications** was developed by nurses and pharmacists and is stuck onto all the drug trolleys. Our pharmacists have a high awareness of falls risk and a good relationship with ward doctors, which means that they can implement an effective system for medication reviews. One of our pharmacists had the idea to design a little **rubber stamp** of our Falls Foot Logo. The stamp fits within a line on the drug chart and can be used to make sure the doctor reviews culprit drugs.

Physiotherapists are excellent at recognising and responding to patients' mobility issues, particularly with regard to falls prevention. They share their assessments effectively with the wards, especially those that have introduced **magnetic boards** over each bed, where moving and handling instructions can be posted.

Our **regular teaching commitment** has been key to sustaining our successful programme of effective falls management. All new trust employees have a falls teaching session as part of their induction. Registered nurses are expected to attend patient safety updates every 2 years. We promote the e-learning programmes Preventing Falls in Hospital and CareFall, as well as offering ad hoc training tailored to specialty and bespoke sessions that reflect content of thematic analysis of reported falls events across the trust.

We are delighted with our work so far, and our audit results have helped us to identify areas where we need to consolidate and continue our strategy. Some areas still need further clarity and a better way of ensuring that all elements are in place, particularly measuring lying and standing blood pressure. We also need to settle on a delirium assessment that can be applied across the trust.

Debbie Sutton – research coordinator (falls)
Dr Sue Poulton – orthogeriatrician
Dr Ike Ugboma – geriatrician

Comparison between patients admitted for a fall and those admitted for other medical reasons

Just less than a quarter of patients who were included in the audit were admitted to hospital because of a fall (23.5%; n=1,140/4,846). On average, these patients were older than patients who were admitted for reasons other than a fall, $p<0.0001$ (average age of 83 years old versus 80 years old, respectively).

The audit contained 23 questions on multifactorial assessment and intervention to prevent falls. Certain elements of assessment and intervention for prevention of falls were statistically significantly more frequently reported for patients admitted because of a fall than for patients admitted for other reasons (Table 28). For example, a greater proportion of patients who were admitted for a fall (72.9%) were assessed for cognitive impairment than other patients (53.0%). Similarly, lying and standing blood pressure were measured for only a minority of all patients: 29.9% of patients admitted for a fall received this assessment compared with only 11.7% of other patients.

Table 28 Assessments and interventions received by patients for falls prevention, $p<0.001$ unless otherwise indicated (n=4,846)

Number of patients who:	All patients, n=4,846				
	Admitted as a result of a fall (n=1,140*)		Not admitted as a result of a fall (n=3,688*)		Invalid* % of all patients
	n	%	n	%	
1.01 Were asked about any history of falls	1,008	91.4	2,736	78.0	4.9
1.02 Were assessed for cognitive impairment	784	72.9	1,777	53.0	8.6
1.03 Were assessed for the presence or absence of delirium	417	41.9	1,075	35.0	16.1
1.05 Were assessed for a fear of falling**	558	53.5	1,585	48.2	10.6
1.6a Received a mobility care plan***	763	81.4	1,942	78.0	22.9
1.7 Had a record of use of walking aids	914	90.7	2,658	85.6	15.1
1.8 Had their lying and standing blood pressure measured	261	29.9	317	11.7	26.0
1.9 Received an assessment for medications that increase falls risk	605	58.0	1,281	41.9	15.3
1.9a Received a medication review with regard to falls risk	423	82.5	652	67.9	22.1
1.12 Had a falls care plan, or equivalent	757	69.2	1,953	61.7	12.1
1.13 Had evidence in their case notes that they were given written information about falls risk****	147	13.6	328	10.5	13.4
1.14 Had evidence in their case notes that they were given oral information about falls risk	280	26.1	616	19.9	13.9

*Eighteen patients, for whom it was unknown whether they had been admitted to hospital because of a fall, were excluded from the analyses. Other patients were excluded if the question was answered as 'not applicable' or an answer was missing.

** $p=0.003$; *** $p=0.029$; **** $p=0.007$

Where appropriate, comparisons of mean values between patient groups were calculated using the Mann–Whitney test for non-normally distributed data. Comparisons of percentages between patient groups were calculated using the chi-square test.

Evidence of assessment and intervention in case notes

All patients' notes were audited for all the key elements of an MFRA, and the results are outlined below. Most patients (81%) had been asked about recent falls, and the level of mobility was recorded for nearly all patients (95%). A mobility care plan was recorded in the notes for most patients with mobility problems (79%). Many hospitals failed to routinely assess for dementia (42%) or to develop a care plan for those with cognitive impairment (67%). Delirium was assessed even less routinely, with only 37% of patients being assessed, and only 47% of those assessed as having delirium had a delirium care plan tailored to their needs.

Not all falls risks in hospital are modifiable, but some patients may have a decrease in blood pressure on standing that increases their risk of falling. This can be modified by medication review and careful maintenance of fluid balance. The measurement of lying and standing blood pressure usually takes only 5–10 minutes, but this was recorded for only 16% of patients. Some hospitals managed to record this in most appropriate patients. However, this is clearly an area where many hospitals can improve.

Other simple measures were being well recorded in some hospitals but not in others. An example is assessment of vision and development of a relevant care plan for patients with visual impairment. Another example is medication review specifically looking at medications that might increase the risk of falls. Many prescribers do not routinely record reasons for medication changes, so it is not always possible to know whether a medication change was explicitly related to falls risk. However, medication review is of sufficient importance in the reduction of falls for failure to document reasons for a change in medication change to be a patient safety risk.^{16,17} It is pleasing to note that new or short-term night or other sedation was started in very few patients (3.3%).

The falls team at **East Kent Hospital** has worked hard over the last 2 years to engage staff to improve assessment and knowledge of lying and standing measurement of blood pressure on the wards. The MFRA was updated in 2014 to the falls risk assessment care plan (FRACP) in accordance with NICE guidance. The FRACP clearly defines assessment of blood pressures, explaining that the assessment should be completed within 6 hours of admission.

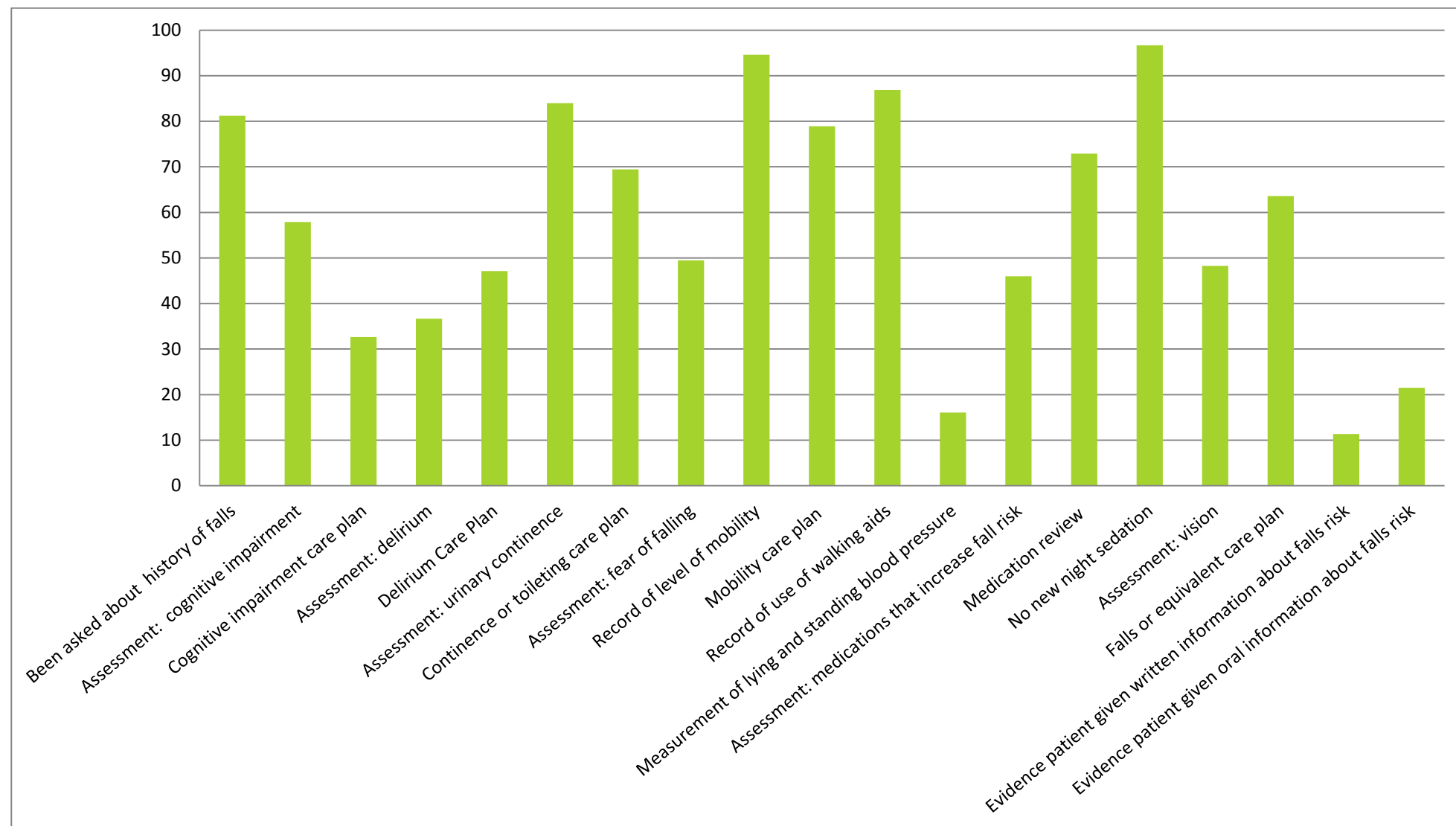
We have really worked on our 'Falls Link Nurse' system. This link provides direct education to members of staff in their areas and there are regular audits performed by the staff in their area and they take responsibility for the results. The link workers are trained by the clinical nurse specialist (CNS) in both falls and osteoporosis and the CNS also provide training for both the preceptorship nurses and healthcare assistant inductions. Education for the junior doctors is led by the falls consultant.

Learning through datix feedback and root cause analysis (RCA) has proved to be a key change in culture and attitude towards blood pressure assessment. The staff on the wards now really understand the importance of measuring the blood pressures and what to do if there is a substantial drop.

Emma Bull – CNS falls and osteoporosis at Kent and Canterbury Hospital

Fig 8 Clinical audit: summary of findings

This figure shows the percentage of 'yes' responses for questions in the evidence of assessment and intervention in case notes section of the clinical audit.



Clinical audit national summary tables

The auditors were asked to review the clinical notes (medical, nursing and therapies), including those at the end of the bed or in the patient vicinity, as well as the electronic record, and answer the questions shown in Tables 29–41.

Table 29

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
been asked about any history of falls	4,846	81.2% (3,757)	18.8% (871)	4.0% (193)	0.5% (25)	86.7%	17.5%

Table 30

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
had any assessment of cognitive impairment (eg abbreviated mental test (AMT))	4,846	57.9% (2,571)	42.1% (1,872)	7.5% (365)	0.8% (38)	60.0%	27.5%
Is it documented that the patient has: ^	Total patient records	Yes*	No*	N/A – intervention not required	Missing	Median*	IQR*
a care plan to support the patient with cognitive impairment?	2,571	32.6% (381)	67.4% (787)	53.6% (1,379)	0.9% (24)	25.0%	45.0%

Table 31

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
been assessed for the presence or absence of delirium or a documented diagnosis of delirium	4,846	36.7% (1,496)	63.3% (2,585)	15.5% (751)	0.3% (14)	33.9%	38.1%
Is it documented that the patient has: ^	Total patient records	Yes*	No*	N/A – intervention no required	Missing	Median*	IQR*
a delirium care plan (tailored to patient, not generic)	1,496	47.1% (252)	52.9% (283)	63.5% (950)	0.7% (11)	31.0%	75.0%

*Calculated using only 'yes' and 'no' answers.

^Answers calculated using only patient records where the preceding assessment question was answered as 'yes'.

Table 32

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
any assessment of urinary continence/frequency/urgency	4,846	84.0% (3,894)	16.0% (743)	3.7% (180)	0.6% (29)	86.7%	20.2%
Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – intervention not required	Missing	Median*	IQR*
a continence or toileting care plan (tailored to patient, not generic)	3,894	69.4% (1,480)	30.6% (652)	44.9% (1,749)	0.3% (13)	70.0%	35.4%

Table 33

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
any assessment of fear of falling	4,846	49.4% (2,150)	50.6% (2,198)	9.8% (473)	0.5% (25)	50.0%	66.5%

Table 34

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
a record of level of mobility	4,846	94.6% (4,441)	5.4% (255)	2.7% (132)	0.4% (18)	96.4%	9.5%
Is it documented that the patient has: [^]	Total patient records	Yes*	No*	N/A – Intervention not required	Missing	Median*	IQR*
a mobility care plan (tailored to patient, not generic)	4,441	78.9% (2,712)	21.1% (724)	22.0% (975)	0.7% (30)	83.3%	22.7%

Table 35

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess (eg unable to get out of bed)	Missing	Median*	IQR*
a record of use of walking aids	4,846	86.9% (3,583)	13.1% (542)	14.4% (697)	0.5% (24)	89.6%	13.9%

*Calculated using only 'yes' and 'no' answers.

[^]Answers calculated using only patient records where the proceeding assessment question was answered as 'yes'.

Table 36

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
measurement of lying and standing blood pressure	4,846	16.1% (579)	83.9% (3,022)	24.8% (1,200)	0.9% (45)	12.5%	18.1%

Table 37

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
an assessment for medications that increase falls risk	4,846	45.9% (1,893)	54.1% (2,227)	13.6% (657)	1.4% (69)	41.1%	33.6%
Is it documented that the patient has: ^	Total patient records	Yes*	No*	N/A – intervention not required	Missing	Median*	IQR*
a medication review (beyond medicine reconciliation) with regard to falls risk	1,893	72.9% (1,079)	27.1% (401)	21.5% (407)	0.3% (6)	83.3%	41.7%

Table 38

Is it documented that the patient has:	Total patient records	Yes*	No night sedation given*	Missing	Median*	IQR*
new night sedation or other sedative medication	4,472 [◇]	3.3% (147)	96.7% (4,274)	1.1% (51)	3.3%	4.1%

[◇]This calculation excludes patients who were already on long-term sedatives (374).

Table 38 indicates that 96.7% (4,274) of patients were not given a new sedative.

Table 39

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
any assessment of vision and/or need for visual aids, including spectacles	4,846	48.3% (2,210)	51.7% (2,370)	4.8% (233)	0.7% (33)	49.1%	52.1%

*Calculated using only 'yes' and 'no' answers.

^Answers calculated using only patient records where the proceeding assessment question was answered as 'yes'.

Table 40

Is it documented that the patient has:	Total patient records	Yes*	No*	N/A – impossible or inappropriate to assess	Missing	Median*	IQR*
a falls care plan, or equivalent (tailored to patient, not generic)	4,846	63.6% (2,721)	36.4% (1,557)	10.9% (526)	0.9% (42)	68.4%	35.3%

Table 41

	Total patient records	Yes*	No*	N/A	Missing	Median*	IQR*
Is there evidence that the patient and/or their family/carer was given written information about falls risk or falls prevention?	4,846	11.4% (479)	88.6% (3,735)	12.6% (611)	0.4% (21)	0.0%	11.9%
Is there evidence that the patient and/or their family/carer was given oral information about falls risk or falls prevention?	4,846	21.5% (900)	78.5% (3,289)	12.8% (620)	0.8% (37)	11.1%	25.1%

NICE CG161 recommends that patients are given both oral and written information. Out of the patient records analysed in Table 41, only 6.5% (314) were given both oral and written information.

*Calculated using only 'yes' and 'no' answers.

Bedside/patient observations

The auditors were asked to assess the bedside area of each patient who was audited. The call bell was in reach for 82% of patients, and 87% of patients had safe footwear, if relevant. While the immediate environment was deemed to be free from clutter or other hazards most of the time (88%), this may be paradoxically increasing risk to patients, as 32% of patients who needed a walking aid could not reach it. The number of patient records that were analysed in each question was 4,846.

Table 42

	Yes*	No*	N/A – patient unable to use call bell	Missing	Median*	IQR*
Is a call bell in sight and in reach of the patient?	82.3% (3,675)	17.7% (790)	7.5% (362)	0.4% (19)	85.4%	19.5%

*Calculated using only 'yes' and 'no' answers.

Table 43

	Yes*	No*	N/A – patient in bed	Missing	Median*	IQR*
Is safe footwear on the patient's feet?	86.7% (2,594)	13.3% (399)	37.7% (1,827)	0.5% (26)	88.9%	15.7%

Table 44

	Yes*	No*	N/A – patient bed bound	Missing	Median*	IQR*
Is the immediate environment (including route to nearest toilet) free from clutter/trip/slip hazards?	88.3% (3,563)	11.7% (473)	16.0% (773)	0.8% (37)	90.9%	13.8%

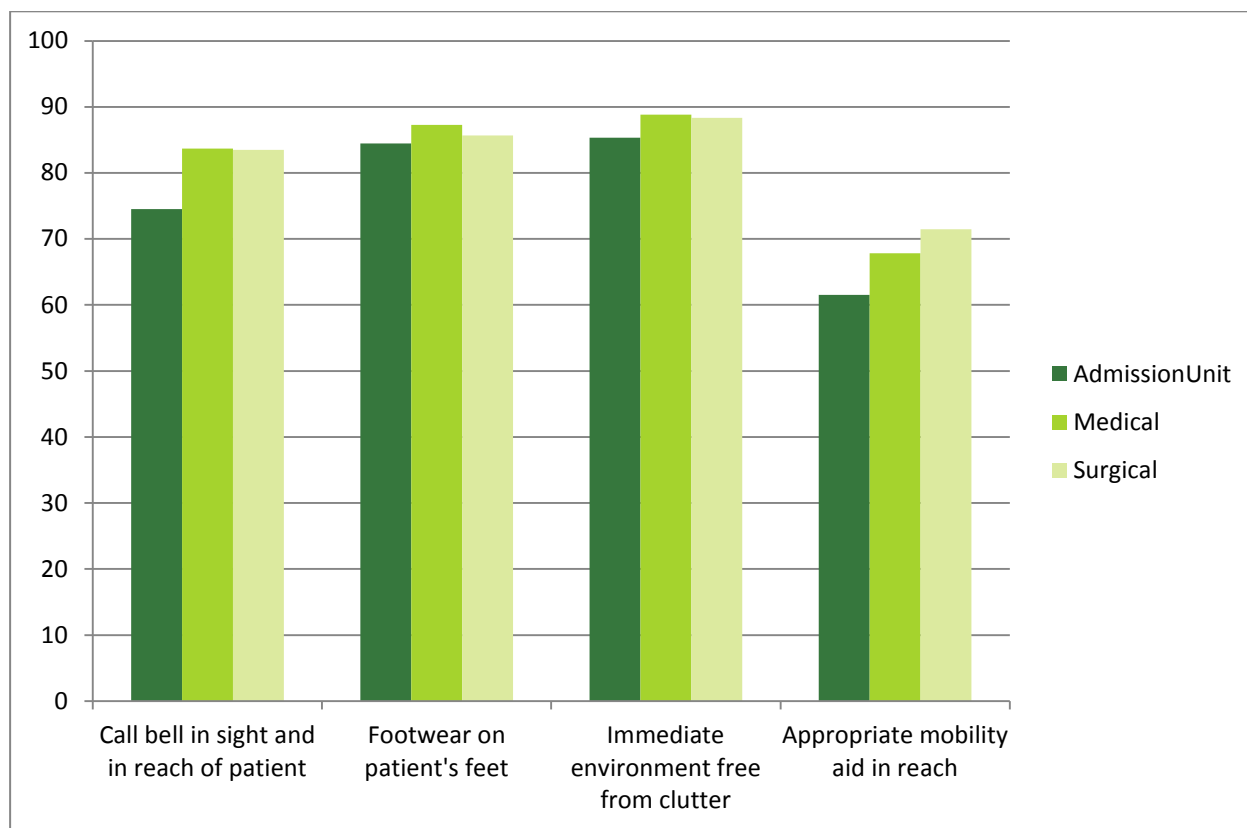
Table 45

	Yes*	No*	N/A – patient bed bound or documented to be mobile without any aid	Missing	Median*	IQR*
Is the appropriate (based on Section 1 or 2) mobility aid in reach?	67.6% (1,569)	32.4% (753)	51.4% (2,493)	0.6% (31)	66.7%	29.5%

*Calculated using only 'yes' and 'no' answers.

There is a trend to show that the bedside environment on admissions units is slightly less safe. For example, there were fewer call bells and mobility aids in reach (see Figure 9).

Fig 9 bedside/patient environment observation (%)



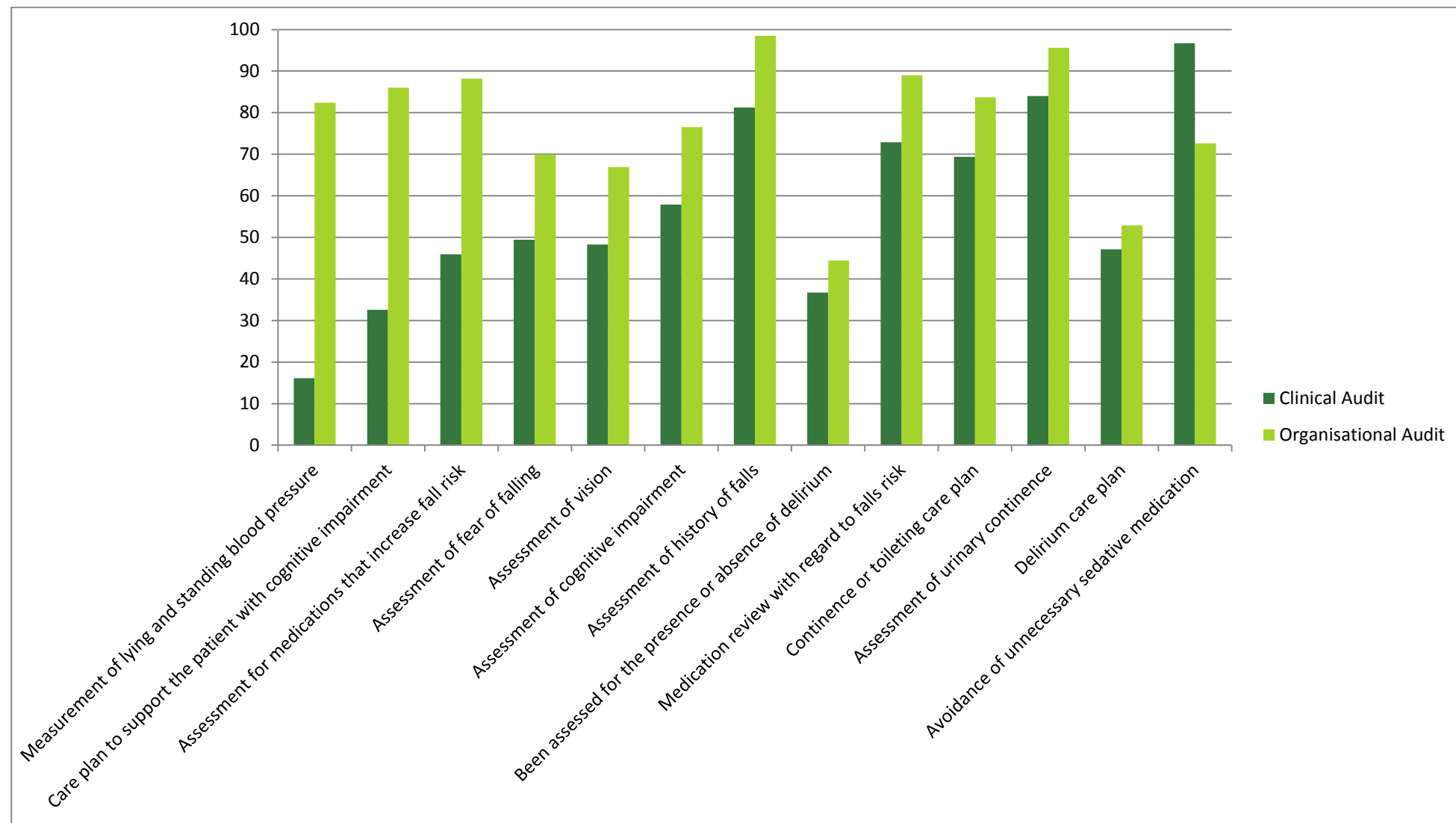
This figure shows how many patients on each ward type had a call bell in sight and in reach, safe footwear on their feet, a clutter free environment and the appropriate mobility aid in reach.

Comparison of organisational and clinical audits

Figure 10 confirms that there is wide variation between what a trust or LHB says it does in its falls prevention policy and what actually happens in clinical practice. The widest gaps are between the aspiration to develop dementia and delirium care plans, to perform a lying and standing blood pressure and to undertake a medication review with regard to falls risk. These domains however are very important in falls prevention and are being achieved by some organisations. These domains are clearly areas where a trust, LHB or hospital should concentrate resources, using mechanisms such as 'plan, do, study, act' (PDSA) to embed real changes at a ward and patient level.

Fig 10 Comparison of the clinical audit versus the organisational audit (%)

This figure shows the percentage of 'yes' in the clinical audit and the corresponding questions in the organisational audit.



Key indicators

We collected data on whether patients had been assessed for all the risk factors of falls identified by NICE CG161 and whether there had been appropriate interventions to prevent falls.¹⁴ However, some risks were felt to be particularly indicative of good practice and achievable aims for quality improvement. These were chosen by our multidisciplinary advisory group, which includes patient representation. These seven key indicators are shown in Tables 46–56.

For all these indicators, we should be aiming for 100% of responses showing assessment and interventions of the relevant falls risks. We chose cut-off values of 0–49% (red), 50–79% (amber) and 80–100% (green), to enable organisations to see where they need to concentrate their interventions and action plans. We also show data comparing organisations using sparkline indicators, so that organisations can compare themselves nationally. The sparkline indicators are calculated using Z scores, which are used to look at the dispersion (spread) of data. They are calculated using the mean and standard deviation values of the dataset. The Z score indicates whether an individual site's performance is above or below the average performance of all sites for each of the seven indicators, and by how much the site's performance is above or below average (described in standard deviations from the mean). The blue blocks indicate areas where patients are receiving better falls prevention approaches than the national average, and the red blocks indicate areas below the national average. The size of the blocks indicates how far an organisation is away from the mean. The full site-level audit results are available to download for all measures from www.rcplondon.ac.uk/fffap.

Key to proportion of patients who received assessment/intervention
80–100%
50–79%
0–49%

Table 46

East Midlands														
Site name	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Chesterfield Royal (CHE)	7.4	26.9	57.7	25.0	100.0	100.0	96.6							
Grantham And District General Hospital (GRA)	66.7	50.0	33.3	100.0	100.0	100.0	100.0							
Kettering General Hospital (KGH)	19.2	16.7	41.7	53.8	61.1	76.9	96.3							
King's Mill Hospital (KMH)	48.3	30.8	36.0	60.0	85.7	92.3	100.0							
Leicester Royal Infirmary (LER)	39.1	20.0	36.4	17.9	58.3	46.7	81.5							
Lincoln County Hospital (LIN)	46.4	15.0	42.3	96.7	73.3	70.0	76.7							
Northampton General Hospital (NTH)	50.0	6.7	40.7	27.6	36.4	72.7	81.5							
Nottingham City Hospital (CHN)	60.7	12.0	30.8	33.3	73.3	50.0	88.5							
Pilgrim Hospital (PIL)	66.7	10.5	79.2	85.7	93.3	85.7	96.6							
Royal Derby Hospital (DER)	15.0	33.3	39.3	39.3	78.6	60.0	84.6							
University Hospital Queens Medical Centre (UHN)	71.4	35.0	96.6	55.2	85.0	88.2	82.1							

Table 47

East of England														
Site name	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Addenbrooke's Hospital (ADD)	72.0	9.5	92.0	76.9	100.0	69.2	100.0							
Basildon Hospital (BAS)	37.5	20.0	24.1	13.3	58.3	38.5	70.8							
Bedford Hospital (BED)	31.6	22.7	48.1	83.3	85.7	69.2	71.4							
Broomfield Chelmsford (BFH)	38.5	20.0	61.1	0.0	100.0	83.3	100.0							
Hinchingbrooke Hospital (HIN)	100.0	22.7	100.0	95.5	57.1	100.0	100.0							
James Paget Hospital (JPH)	50.0	5.0	37.0	32.1	50.0	63.2	93.1							
Lister Hospital (LIS)	37.5	33.3	80.0	33.3	66.7	91.3	93.3							
Luton & Dunstable Hospital (LDH)	15.4	22.7	30.4	44.8	75.0	73.7	79.3							
Norfolk and Norwich Hospital (NOR)	56.7	32.0	37.5	56.7	80.0	95.0	96.6							
Peterborough City Hospital (PET)	43.3	48.1	34.5	89.3	61.1	85.7	90.0							
Princess Alexandra Hospital (PAH)	20.0	3.8	21.4	13.8	25.0	30.0	71.4							
Queen Elizabeth Hospital (King's Lynn) (QKL)	21.7	6.9	11.5	86.7	26.7	13.3	73.3							
The Ipswich Hospital (IPS)	50.0	0.0	44.8	75.9	62.5	54.5	62.5							
Watford General Hospital (WAT)	0.0	18.5	16.0	3.6	55.0	75.0	90.0							
West Suffolk Hospital (WSH)	8.3	5.3	72.4	53.3	83.3	61.5	93.1							

Table 48

London														
	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Site name														
Barking, Havering and Redbridge University Hospitals NHS Trust (RF4)	37.0	22.2	60.7	56.7	73.7	75.0	73.3							
Barnet General Hospital (BNT)	4.3	0.0	88.9	71.4	50.0	81.3	77.8							
Croydon University Hospital (CRY)	53.8	40.0	64.3	22.2	93.8	53.3	88.9							
Ealing Hospital (EAL)	21.7	12.5	39.1	12.0	70.0	85.7	83.3							
Hillingdon Hospital (HIL)	20.0	5.9	50.0	17.9	46.2	30.8	48.1							
Homerton Hospital (HOM)	25.0	22.2	72.7	8.3	60.0	42.9	45.5							
King's College Hospital (KCH)	68.2	10.0	33.3	3.8	63.6	60.0	89.5							
Kingston Hospital (KTH)	42.9	4.2	17.4	56.7	44.4	15.4	73.1							
Newham General Hospital (NWG)	13.6	0.0	16.7	40.9	92.3	50.0	100.0							
North Middlesex Hospital (NMH)	10.0	7.1	25.0	96.2	25.0	82.6	64.3							
Northwick Park Hospital (NPH)	28.6	16.0	28.0	14.8	42.9	77.8	59.3							
Princess Royal University Hospital (Bromley) (BRO)	75.0	12.5	25.0	16.0	40.0	63.6	93.1							
Queen Elizabeth Hospital, Woolwich (GWH)	57.7	33.3	40.0	7.4	72.2	64.3	100.0							
Royal Free Hospital (RFH)	34.5	19.0	46.2	40.0	53.8	50.0	70.4							
Royal London Hospital (LON)	15.4	0.0	14.3	15.0	100.0	85.7	85.2							
St George's Hospital (GEO)	56.0	14.3	38.5	17.9	58.3	55.6	58.3							
St Mary's Hospital, Paddington (STM)	66.7	9.5	28.6	36.4	56.3	60.0	71.4							
St Thomas' Hospital (STH)	79.3	23.1	48.1	65.5	88.9	70.0	93.3							
University College Hospital (UCL)	53.3	16.7	30.8	66.7	90.9	95.0	77.8							
University Hospital Lewisham (LEW)	18.5	8.3	3.8	37.9	92.9	87.5	96.6							
West Middlesex University Hospital (WMU)	38.5	36.4	66.7	55.2	55.6	84.6	72.4							
Whipps Cross Hospital (WHC)	11.1	22.7	4.2	16.7	33.3	56.3	80.0							
Whittington Hospital (WHT)	67.9	26.3	53.3	60.7	76.0	16.7	73.3							

Table 49

North East														
Site name	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Darlington Memorial Hospital (DAR)	95.7	50.0	75.0	60.9	100.0	94.4	96.7							
Friarage Hospital (FRH)	58.3	0.0	33.3	63.6	87.5	75.0	90.9							
James Cook University Hospital (SCM)	45.8	16.7	82.1	96.3	50.0	47.1	84.2							
North Tyneside Hospital (NTY)	57.7	38.9	31.8	28.0	85.7	58.3	96.7							
Queen Elizabeth Hospital, Gateshead (QEG)	17.9	4.8	20.0	51.7	27.3	88.2	96.2							
South Tyneside District Hospital (STD)	34.5	15.0	62.1	13.8	76.5	76.9	63.3							
Sunderland Royal Hospital (SUN)	72.4	70.8	100.0	100.0	63.6	80.0	93.1							
The Newcastle Upon Tyne Hospitals NHS Foundation Trust (RTD)	31.0	3.6	82.8	80.0	92.3	83.3	96.7							
University Hospital of North Durham (DRY)	7.1	28.6	20.7	18.5	40.0	78.9	92.0							
University Hospital of North Tees (NTG)	32.0	16.7	59.3	79.3	71.4	92.9	87.0							
Wansbeck General Hospital (ASH)	69.2	31.8	59.3	79.3	72.7	62.5	86.2							

Table 50

North West														
Site name	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continece CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continece CP	Call bell
Arrowe Park Hospital (WIR)	12.5	0.0	31.3	90.0	40.0	80.0	85.7							
Countess of Chester Hospital (COC)	25.0	4.0	30.8	39.3	71.4	78.9	82.8							
Furness General (FGH)	4.2	20.0	43.5	28.6	100.0	47.4	100.0							
Lancashire Teaching Hospitals NHS Foundation Trust (RXN)	30.8	30.4	50.0	39.3	66.7	88.2	89.3							
Leighton Hospital (LGH)	42.3	42.1	44.0	51.7	61.5	0.0	96.7							
Macclesfield District General Hospital (MAC)	92.9	15.0	37.5	24.1	75.0	46.7	55.6							
Manchester Royal Infirmary (MRI)	32.1	7.7	31.0	0.0	75.0	88.9	66.7							
North Cumbria University Hospitals NHS Trust (RNL)	69.0	30.4	75.9	57.1	92.9	87.5	85.2							
Royal Albert Edward Infirmary (AEI)	90.0	6.7	93.3	100.0	73.9	83.3	60.0							
Royal Blackburn Hospital (BLA)	41.7	26.3	45.0	26.9	54.5	77.8	92.6							
Royal Bolton Hospital (BOL)	53.3	45.8	42.3	75.0	86.7	72.7	86.2							
Royal Lancaster Infirmary (RLI)	5.6	4.8	20.0	45.8	69.2	25.0	71.4							
Royal Liverpool University Hospital (RLU)	59.1	29.2	89.3	86.7	100.0	92.0	100.0							
Salford Royal Hospital (SRH)	42.9	0.0	40.0	41.4	86.7	66.7	86.2							
Southport and Formby District General (SOU)	60.0	11.1	53.6	69.0	40.0	20.0	85.7							
Stepping Hill Hospital (SHH)	31.0	20.8	25.0	31.0	57.9	70.0	71.4							
Tameside General Hospital (TGA)	63.0	11.1	82.8	86.7	75.0	54.5	88.5							
Trafford General Hospital (TRA)	66.7	66.7	66.7	0.0	100.0	100.0	100.0							
University Hospital Aintree (FAZ)	6.9	26.1	17.2	62.1	61.5	38.5	85.7							
Warrington District General Hospital (WDG)	23.8	3.8	52.2	30.0	53.8	41.7	60.7							
Whiston Hospital (WHI)	59.3	11.8	36.8	96.6	84.2	30.8	100.0							
Wythenshawe Hospital (WYT)	12.0	13.3	52.4	34.5	84.6	77.8	88.9							

Table 51

South Central														
Site name	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Buckinghamshire Healthcare NHS Trust (RXQ)	18.5	4.5	41.7	24.1	45.5	60.0	77.8							
Hampshire Hospitals NHS Foundation Trust (RN5)	3.6	11.8	42.3	60.0	55.0	89.5	84.0							
John Radcliffe Hospital (RAD)	48.0	18.2	39.3	70.0	81.8	66.7	86.2							
Milton Keynes General Hospital (MKH)	53.6	9.1	30.8	28.6	77.8	86.4	96.3							
Queen Alexandra Hospital (QAP)	69.2	26.3	93.3	93.3	100.0	100.0	100.0							
Southampton General Hospital (SGH)	27.8	16.7	70.0	61.1	78.6	91.7	92.6							
St Mary's Hospital, Newport (IOW)	41.2	0.0	88.9	16.0	63.6	63.6	96.2							

Table 52

South East Coast														
	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continece CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continece CP	Call bell
Site name														
Conquest Hospital (CGH)	23.5	0.0	33.3	65.2	66.7	69.2	95.8							
Darent Valley Hospital (DVH)	17.4	0.0	29.4	22.2	62.5	100.0	85.7							
East Surrey Hospital (ESU)	33.3	66.7	27.6	60.7	28.6	100.0	66.7							
Eastbourne DGH (DGE)	69.0	10.7	36.7	93.1	47.1	6.3	65.5							
Frimley Park Hospital (FRM)	31.6	23.1	38.1	29.6	94.1	86.7	100.0							
Kent and Canterbury Hospital (KCC)	60.0	65.2	88.2	91.7	66.7	84.6	92.0							
Maidstone and Tunbridge Wells NHS Trust (RWF)	56.0	8.3	24.1	14.8	75.0	72.7	86.2							
Medway Maritime Hospital (MDW)	46.4	50.0	73.9	60.7	66.7	100.0	91.7							
Queen Elizabeth the Queen Mother Hospital (QEQ)	65.0	50.0	66.7	88.0	70.6	76.9	88.5							
Royal Surrey County Hospital (RSU)	13.6	10.0	41.7	7.1	66.7	100.0	77.8							
Royal Sussex County Hospital (RSC)	46.4	22.7	9.1	100.0	53.8	50.0	70.8							
St Peter's Hospital (SPH)	77.3	61.5	76.9	72.4	83.3	88.2	76.0							
St Richard's Hospital (STR)	83.3	63.6	16.7	100.0	55.6	75.0	85.7							
William Harvey Hospital (WHH)	37.9	45.5	45.8	0.0	36.4	18.2	55.6							
Worthing Hospital (WRG)	100.0	66.7	72.7	86.7	66.7	85.7	100.0							

Table 53

South West														
	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continece CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continece CP	Call bell
Site name														
Bristol Royal Infirmary (BRI)	34.5	6.9	16.7	13.3	77.8	42.9	50.0							
Cheltenham General Hospital (CHG)	13.3	8.3	31.8	48.3	50.0	66.7	83.3							
Derriford Hospital (PLY)	10.0	11.1	20.7	31.0	29.4	45.5	66.7							
Dorset County Hospital (WDH)	66.7	33.3	75.0	75.0	60.0	66.7	100.0							
Gloucestershire Royal Hospital (GLO)	7.7	0.0	21.7	96.7	57.9	80.0	76.7							
North Devon District Hospital (NDD)	28.6	0.0	87.0	84.6	90.9	66.7	92.0							
Poole General Hospital (PGH)	50.0	16.0	27.3	23.3	64.7	50.0	72.4							
Royal Bournemouth General Hospital (BOU)	29.2	21.7	81.0	62.1	60.0	66.7	89.7							
Royal Cornwall Hospital (RCH)	50.0	12.5	30.4	3.4	84.6	80.0	92.9							
Royal United Hospital Bath (BAT)	93.1	25.0	40.7	0.0	53.3	30.8	79.3							
Salisbury District Hospital (SAL)	30.0	23.1	41.4	75.9	100.0	73.3	82.8							
Southmead Hospital (BSM)	35.7	3.6	16.7	37.9	33.3	63.6	75.0							
Taunton & Somerset Hospital (MPH)	13.0	10.5	52.4	7.4	53.8	50.0	78.6							
The Great Western Hospital (PMS)	15.0	16.7	61.9	32.0	75.0	75.0	73.1							
Torbay Hospital (TOR)	15.4	9.1	40.0	10.7	71.4	46.2	85.7							
Weston General Hospital (WGH)	0.0	3.3	18.5	90.0	26.7	47.1	96.3							
Wonford Hospital (WON)	43.3	7.1	43.3	3.3	64.3	70.0	83.3							
Yeovil District Hospital (YEO)	13.3	15.4	26.7	70.0	47.4	66.7	66.7							

Table 54

Wales														
Site name	Percentage score							Sparkline indicator						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Bronglais General Hospital (BRG)	5.6	5.6	44.4	22.2	100.0	66.7	86.7							
Cardiff and Vale University Health Board (7A4)	14.3	8.0	31.6	11.1	62.5	54.5	96.6							
Glan Clwyd DGH Trust (CLW)	15.8	0.0	69.0	25.9	40.9	72.7	86.2							
Glangwili General Hospital (GLH)	0.0	3.6	96.6	10.0	46.7	66.7	85.7							
Morriston Hospital (MOR)	6.9	8.0	20.8	55.2	84.2	42.9	93.1							
Nevill Hall Hospital (NEV)	13.0	16.0	25.9	53.3	82.6	77.8	75.9							
Prince Charles Hospital (PCH)	10.0	0.0	55.6	65.5	85.7	62.5	76.0							
Prince Philip Hospital (PPH)	8.3	13.3	10.0	76.9	66.7	75.0	58.3							
Princess Of Wales Hospital (POW)	11.1	0.0	8.0	3.8	25.0	27.8	75.9							
Royal Glamorgan (RGH)	22.2	11.5	24.0	14.3	53.8	55.6	54.2							
Royal Gwent Hospital (GWE)	18.5	0.0	60.7	50.0	42.1	66.7	82.1							
Singleton Hospital (SIN)	11.5	0.0	11.5	0.0	38.5	42.9	50.0							
Withybush General Hospital (WYB)	51.7	4.3	29.6	83.3	57.1	80.0	79.3							
Ysbyty Gwynedd Hospital (GWY)	11.1	0.0	8.3	32.1	63.2	50.0	78.6							

Table 55

West Midlands														
Site name	Percentage score							Sparkline						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Birmingham Heartlands Hospital (EBH)	21.4	5.6	55.6	66.7	100.0	86.4	96.4							
City Hospital (DUD)	0.0	3.6	23.3	37.9	50.0	30.0	78.6							
County Hospital (Stafford) (CHM)	37.5	13.3	100.0	92.0	85.7	60.0	87.0							
County Hospital Hereford (HCH)	50.0	16.7	44.4	34.5	33.3	47.4	89.7							
George Eliot Hospital (NUN)	18.2	9.1	55.0	83.3	87.5	94.4	90.9							
Good Hope General Hospital (GHS)	20.0	21.1	48.1	17.2	90.9	66.7	90.0							
Manor Hospital (WMH)	100.0	90.0	100.0	100.0	100.0	100.0	100.0							
New Cross Hospital (NCR)	26.9	4.0	16.7	12.0	54.5	54.5	71.4							
Princess Royal Hospital, Telford (TLF)	6.7	7.7	8.3	64.3	85.7	40.0	41.7							
Queen Elizabeth Hospital, Edgbaston (QEB)	30.0	4.5	44.8	58.6	80.0	92.3	88.9							
Queens Hospital (BRT)	34.5	4.2	28.0	46.4	77.8	100.0	88.9							
Royal Shrewsbury Hospital (RSS)	8.3	0.0	57.1	46.7	81.8	100.0	81.3							
Royal Stoke University Hospital (RSH)	33.3	22.2	89.7	62.1	20.0	33.3	75.9							
Russells Hall Hospital (RUS)	8.3	12.5	25.0	100.0	72.7	93.3	92.3							
Sandwell District Hospital (SAN)	15.0	3.4	37.5	3.4	33.3	0.0	50.0							
The Alexandra Hospital (RED)	40.0	0.0	56.3	79.2	100.0	87.5	100.0							
University Hospital Coventry (UHC)	33.3	20.0	36.0	79.3	61.5	70.0	72.4							
Warwick Hospital (WAR)	45.5	19.2	38.5	30.8	61.1	86.7	74.1							
Worcestershire Royal Hospital (WRC)	40.0	0.0	35.7	11.5	61.5	25.0	84.6							

Table 56

Yorkshire and the Humber														
Site name	Percentage score							Sparkline						
	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell	Delirium	BP	Medication	Vision	Mobility aid	Continence CP	Call bell
Airedale General Hospital (AIR)	11.1	0.0	82.1	78.6	95.5	25.0	100.0							
Barnsley District General Hospital (BAR)	23.1	4.5	63.3	27.6	44.4	71.4	79.3							
Bradford Royal Infirmary (BRD)	75.0	5.3	35.7	53.6	83.3	76.9	92.0							
Calderdale and Huddersfield NHS Foundation Trust (RWY)	7.1	18.2	20.7	3.4	45.0	80.0	69.0							
Diana, Princess of Wales Hospital (GGH)	25.0	3.8	61.9	20.0	50.0	85.7	76.0							
Doncaster and Bassetlaw Hospitals NHS Foundation Trust (RP5)	13.8	4.3	6.9	46.4	46.2	16.7	85.7							
Harrogate District Hospital (HAR)	25.0	6.3	52.0	55.2	78.6	83.3	90.0							
Hull Royal Infirmary (HRI)	37.5	23.8	44.0	46.2	64.7	50.0	64.3							
Northern General Hospital (NGS)	51.7	13.0	76.7	63.3	33.3	89.5	76.9							
Pinderfields General Hospital (PIN)	73.3	8.3	29.6	80.0	30.0	20.0	72.4							
Rotherham General Hospital (ROT)	27.3	0.0	16.7	63.6	57.1	73.3	92.9							
Scarborough General Hospital (SCA)	25.0	3.4	73.1	44.8	58.3	42.1	63.0							
Scunthorpe General Hospital (SCU)	56.0	8.3	52.4	56.5	40.0	66.7	76.9							
St James's University Hospital (SJL)	50.0	47.6	59.1	63.0	66.7	50.0	85.2							
York District Hospital (YDH)	36.8	0.0	96.7	13.3	83.3	77.8	66.7							

City Hospitals Sunderland provides a falls and syncope service using tilt tests and other neurocardiovascular testing. We trained a **specialist nurse** in neurocardiovascular investigations and falls prevention 5 years ago. This nurse has embedded training of healthcare assistants in to measurement of postural blood pressure. She also visits high-risk ward areas and checks patient care plans and re-iterates the techniques for measuring postural blood pressure.

The **trust's Falls Reduction Group** uses evidence from the NHS Safety Thermometer to take action, with a strong emphasis on supporting orthogeriatrics and working with wards that have a high numbers of patient falls. Following each group meeting, the service delivers a **trust-wide 'headlines' email** to ensure that clinical staff focus on the action plan to reduce falls. The focus has recently been on the measurement of postural BP, identification of high-risk medications and the introduction of 'safe slippers'.

A combination of staff **training**, ongoing ward-based **support** by a **credible expert**, sharing important messages across disciplines and keeping falls rates at the centre of the hospital falls group, has driven sustained improvement in measuring lying and standing blood pressure and other falls interventions.

Dr Andy Davies, consultant physician and Mrs Judith Hunter MBE, head of nursing and patient safety



Sister Allison Henderson providing in-ward training to a healthcare assistant.

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Appendices

Appendix A – structure and governance

Inpatient falls subgroup

Shelagh O’Riordan, falls clinical lead, RCP

Khim Horton, independent researcher/consultant

Julie Windsor, patient safety lead older people and falls, NHS England

Julie Whitney, physiotherapist and National Institute for Health Research (NIHR) clinical lecturer, AGILE, clinical interest group of the Chartered Society of Physiotherapy

Sunil Rai, FFFAP data coordinator, RCP

Rowena Schoo, falls workstream and FLS-DB project coordinator, RCP

Carmen Tsang, Clinical Effectiveness Unit, Royal College of Surgeons of England

Naomi Vasilakis, falls workstream and FLS-DB project manager, RCP

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Alison Doyle, falls and fracture prevention clinical nurse specialist, Royal College of Nursing

Damian Gormley, consultant geriatrician, Northern Ireland

Khim Horton, independent researcher/consultant

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Catherina Nolan, occupational therapist, College of Occupational Therapy

Shelagh O’Riordan, falls clinical lead, RCP

Daniel MacIntyre, population health services manager, Public Health England

Chris Peter, consultant in emergency medicine, Royal College of Emergency Medicine

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Jonathan Trembl, consultant geriatrician, British Geriatrics Society

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Alan White, Patient and Carer Network, RCP

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Jane Youde, consultant geriatrician, British Geriatrics Society

FFFAP board

Chris Boulton, NHFD project manager, RCP

Rhona Buckingham, Clinical Effectiveness and Evaluation Unit (CEEU) operations director, RCP

Tim Chesser, British Orthopaedic Association

David Cromwell, Clinical Effectiveness Unit, Royal College of Surgeons of England

Kassim Javaid, FLS-DB clinical lead

Antony Johansen, NHFD clinical lead, orthogeriatric medicine

Finbarr Martin, FFFAP programme chair and clinical lead

Shelagh O’Riordan, falls workstream clinical lead

Roz Stanley, FFFAP programme manager

Kevin Stewart, CEEU clinical director, RCP

Naomi Vasilakis, falls workstream and FLS-DB project manager

Rob Wakeman, NHFD clinical lead, orthopaedic surgery

Helen Wilson, British Geriatrics Society

Appendix B – sample size

Inevitably, there will be a balance between the number of data items collection, the number of patients per hospital and the workload for local clinical auditors. The number of data items needs to be sufficient to cover the key standards of evidence-based practice. The number of patients needs to be sufficient for statistical analyses to reach adequate power. The workload needs to be manageable for busy clinicians who will be collecting audit data while still delivering their usual clinical work.

There is a trade-off between the sample size for optimal estimates of practice at the level of the hospital (such as for binary answers to specific audit questions eg 'Is the call bell in sight and in reach of the patient?') and the workload imposed on the auditors. For this type of question, the confidence interval (CI) reduces as the sample size increases, but also depends on the mean rate. Assuming a proportion of 0.5, with each incremental rise in sample size from 20 to 40 to 80 to 120, the CI falls from 46% to 32% to 23% to 19%.

For the 2014 pilot audit, we determined that a sample size of 40 patients per site was sufficient to produce a reasonable estimate of proportions. However, many smaller hospitals were unable to recruit 20 patients aged older than 70 on each day, and the mean number of patients who meet the patient criteria was 28 per site.

To enable more sites to have a sufficient sample size for the national audit, we extended the age of patients from older than 70 to older than 65. This would allow the inclusion of patients who are at lower risk of falls but are still considered to be 'at risk' by NICE CG161.¹⁴

We also changed the sample size to 30 patients on the basis of a power calculation using data from the 2014 pilot audit.

Selected items from the pilot audit used for sample size calculation

For all clinical data tables, answers in **bold** are those that are considered adherent to the recommendations in NICE CG161, or related clinical guidelines.¹⁴ The key response categories suitable for inter-site comparisons for each of the three questions are adherence versus non-adherence.

Table 57

1.2 Any assessment of cognition (eg AMT)	Total
No, but – impossible or inappropriate to assess the patient for this.	10% (219/2,175)
No – patient could have been assessed but was not assessed.	38% (830/2,175)
Yes – patient was assessed, no problem found, and no need for intervention.	32% (694/2,175)
Yes – patient was assessed, problem found, need for intervention.	20% (432/2,175)

Table 58

2.1 Falls care plan, or equivalent (tailored to patient, not generic)	Total
No, but – patient assessed and no intervention required.	21% (459/2,175)
No – patient assessed but did not receive intervention, or was not assessed and no intervention.	35% (768/2,175)
Yes – patient assessed and intervention documented.	44% (948/2,175)

Table 59

2.6 Mobility care plan (tailored to patient, not generic)	Total
No, but – patient assessed and no intervention required.	24% (532/2,175)
No – patient assessed but did not receive intervention, or was not assessed and no intervention.	32% (700/2,175)
Yes – patient assessed and intervention documented.	43% (943/2,175)

The variation of adherent responses by site is shown in Table 59.

Table 60

Question	Adherent (% of total responses)	Non-adherent (% of total responses)	Median (IQ range) adherent responses by site	Median total responses (number of sites)
1.2 Any assessment of cognition	68	32	14 (8–25)	24 (77)
2.1 Falls care plan or equivalent	65	35	16 (9–24)	24 (77)
2.6 Mobility care plan	67	32	17 (11–25)	28 (77)

Using a proportion of 0.67 (from above actual responses in the 2014 pilot audit), with each incremental rise in sample size from 20 to 30 to 40 to 80, the CI falls from 39% to 31% to 27% to 20%.

Limiting inter-site comparisons to sites that submit data for at least 30 patients, the confidence of estimates of adherence by site is probably insufficient to allow definitive benchmarking between sites, except where these differences are very marked. However, as the desirable rate of adherence is approaching 100%, the range of responses in the pilot audit suggests that a sample size of 30 per site will certainly be sufficient in most cases to conclude confidently that adherence is suboptimal (this is based on the confidence intervals for a site that submits 30 patients and has a proportion of adherence of 0.67, producing a CI of 0.49 to 0.81).

Appendix C – exclusions and non-participation

Table 61 Exclusions

Clinical audit
Northern Ireland and the Islands (7 sites) (183 patient records)
Belfast City Hospital (BFT) Noble's Hospital (NOB) Antrim Area Hospital (ATM) Ulster Hospital (NUH) Daisy Hill Hospital (DSY) Craigavon Area Hospital (CRG) Jersey General Hospital (SHJ)
Non-acute (1 site) (7 patient records)
The Walton Centre (WTC)
Data collected as late/incorrect (5 sites) (112 patient records)
Colchester General Hospital (COL) Epsom Hospital (EPS) Royal Berkshire Hospital (RBE) St Helier Hospital (SHC) Wexham Park Hospital (WEX)

Organisational audit
Excluded – did not have trust wide policies (2 trusts)
University Hospitals of North Midlands NHS Trust London North West Healthcare NHS Trust
Northern Ireland and the Islands (6 trusts / health boards)
Belfast Health and Social Care Trust Isle of Man Department of Health and Social Care Northern Health and Social Care Trust South Eastern Health and Social Care Trust Southern Health and Social Care Trust States of Jersey Health and Social Services
Non-acute (1 trust)
The Walton Centre NHS Foundation Trust

Table 62 Non-participation

Clinical audit
Registered but did not submit data (11 hospitals)
Castle Hill Hospital (CHH) Central Middlesex Hospital (CMH) Charing Cross Hospital (CCH) Frenchay Hospital (FRY) Hammersmith Hospital (HAM) Horton General Hospital (HOR) Maelor Hospital (WRX) Neath Port Talbot Hospital (NGH) Princess Royal Hospital (Haywards Heath) (PRH) Southend Hospital (SEH) Bassetlaw District General Hospital (BSL)
Contacted but did not register (2 trusts)
Blackpool Teaching Hospitals NHS Foundation Trust Chelsea and Westminster Hospital NHS Foundation Trust

Organisational audit
Contacted but did not register (2 trusts)
Blackpool Teaching Hospitals NHS Foundation Trust Chelsea and Westminster Hospital NHS Foundation Trust
Registered but did not complete the organisational component (2 trusts)
Southend University Hospital NHS Foundation Trust Kettering General Hospital NHS Foundation Trust

Falls and Fragility Fracture Audit Programme (FFFAP)

A suite of linked national clinical audits, driving improvements in care; managed by the Royal College of Physicians

- > **Falls Pathway Workstream**
- > **Fracture Liaison Service Database (FLS-DB)**
- > **National Hip Fracture Database (NHFD)**

