



Royal College
of Physicians

National Audit of
Inpatient Falls (NAIF)

Inpatient falls and fractures – one chance to get it right

The 2023 National Audit of Inpatient
Falls (NAIF) report on 2022 clinical data

1 January – 31 December 2022

In association with



Commissioned by

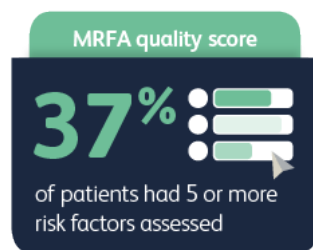


Report at a glance

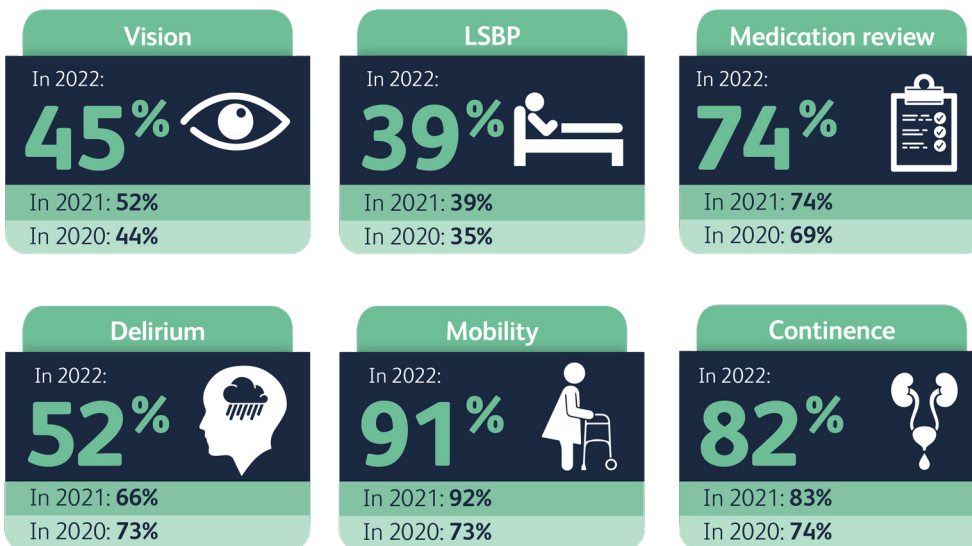
In 2022, 2,033 people sustained a femoral fracture as an inpatient; 1,669 (82%) were due to a fall and included as cases in the National Audit of Inpatient Falls.

Multi-factorial risk assessments

The audit looked at six components of multi-factorial risk assessments and showed that levels of assessment of lying and standing blood pressure (LSBP), vision and delirium still need improvement. In 2022 an MFRA quality score was introduced – 37% of patients had five or more of the risk factors assessed.

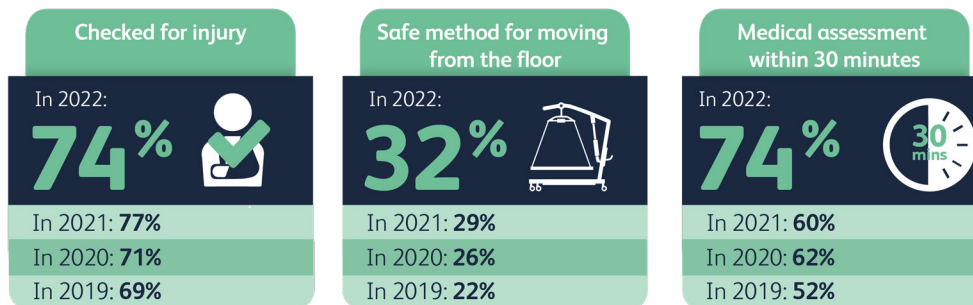


Proportion of cases with risk factor assessment



Post-fall management

The proportion of patients who are moved from the floor safely continues to gradually improve and the proportion of patients having a medical assessment within 30 minutes of the fall increased by 14 percentage points.



Recommendations

- 1 Trusts and health boards (HBs) should use their own data to inform the focus of local improvement activities.
- 2 Focused initiatives to improve the quality of MFRA should be implemented across trusts and HBs. We specifically recommend reviewing data on lying and standing blood pressure measurement and implementing targeted improvement projects where indicated.
- 3 As delirium is common in people who sustain inpatient femoral fractures the admission assessment processes should be reviewed to ensure effective delirium assessment and ongoing monitoring.
- 4 Review training and competency requirements to ensure that post-fall checks for injury are effective.
- 5 Ensure that processes are in place to hasten time to administration of analgesia after an injurious fall.

Methods

All NHS trusts in England and health boards (HBs) in Wales with inpatient beds are eligible to participate in the National Audit of Inpatient Falls (NAIF).

Clinical audit – how cases are identified

- > The National Hip Fracture Database (NHFD) identifies femoral fractures that occur in inpatient settings and refers cases to the local NAIF team.
- > The local NAIF team reviews each case to determine if the fracture was due to an inpatient fall.
- > Clinical audit data are collected from eligible cases – patients in NHS trusts in England and health boards in Wales.
- > This report presents the data from inpatient femoral fractures (IFFs) sustained between January and December 2022.

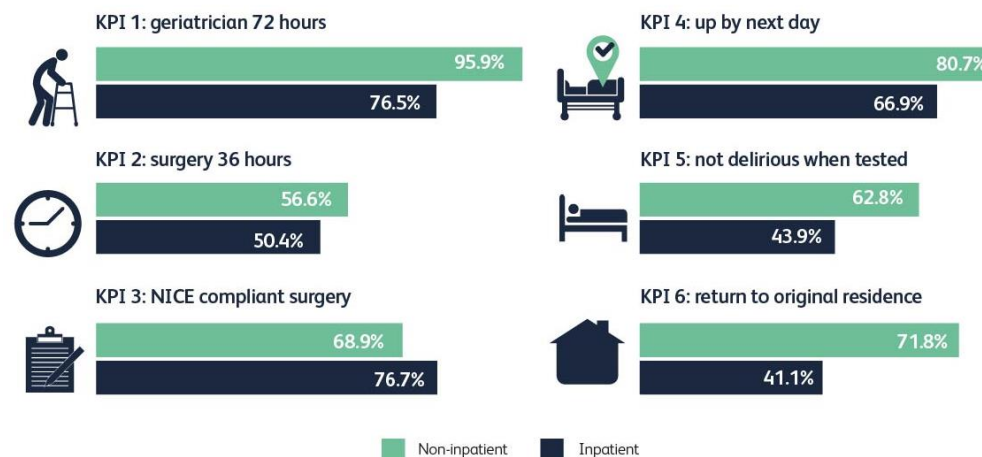
NAIF key performance indicators (KPIs) in the 2023 report

- > KPI 1: High-quality multi-factorial risk assessment (MFRA) prior to the fall
- > KPI 2: Check for injury before moving
- > KPI 3: Flat lifting equipment used to move the patient from the floor
- > KPI 4: Medical assessment within 30 minutes of the fall

Audit findings

More than 60,000 people sustained a femoral fracture in England and Wales in 2022 (NHFD). Of these, 2,033 occurred in inpatient settings. NHFD key performance indicator (KPI) achievement differs significantly between femoral fractures sustained in an inpatient setting (IFFs) and those sustained in a non-inpatient setting. Patients with an IFF waited longer to see a geriatrician, have surgery and get out of bed after surgery. They were also more likely to experience delirium postoperatively and less likely to be discharged to their usual place of residence (Fig 1). More than one in 10 (13%) people who sustained a femoral fracture as an inpatient died within 30 days of the fracture.

Fig 1. The six NHFD KPIs



Audit cases – key facts

Of the 2,033 femoral fractures classified in the NHFD as occurring in an inpatient setting (IFFs), 1,669 (82%) were known to have occurred as a result of a fall, indicating eligibility for NAIF data collection. The proportion of IFFs not thought to be due to a fall decreased from 21% in 2021 to 18% in 2022. As 95% hip fractures are known to occur as a result of a fall, this proportion likely reflects underreporting of falls (see Fig 2).

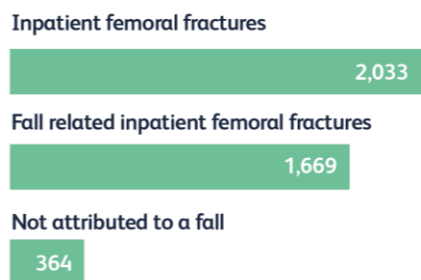


Fig 2. Audit cases in 2022.

Completion

Most audit questions were answered with >98% completion rate. Exceptions were the medication review question, which had a 95% completion rate, and time to MFRA, which had a 76% completion rate.

Characteristics of fall-related inpatient femoral fractures

Fall-related IFFs occurred a median of 9 days after admission. Similar to 2021, 80% of IFFs occurred on the first fall. In 2022, the ward type where the fall occurred was analysed by type of trust with four options: acute (1,358 IFFs), integrated (231), community (39) and mental health (32) as shown in Fig 3.

- > 49% IFFs occurred on medical wards (including admissions units) (n=812)
- > 21% IFFs occurred on older persons/frailty wards (n=349)

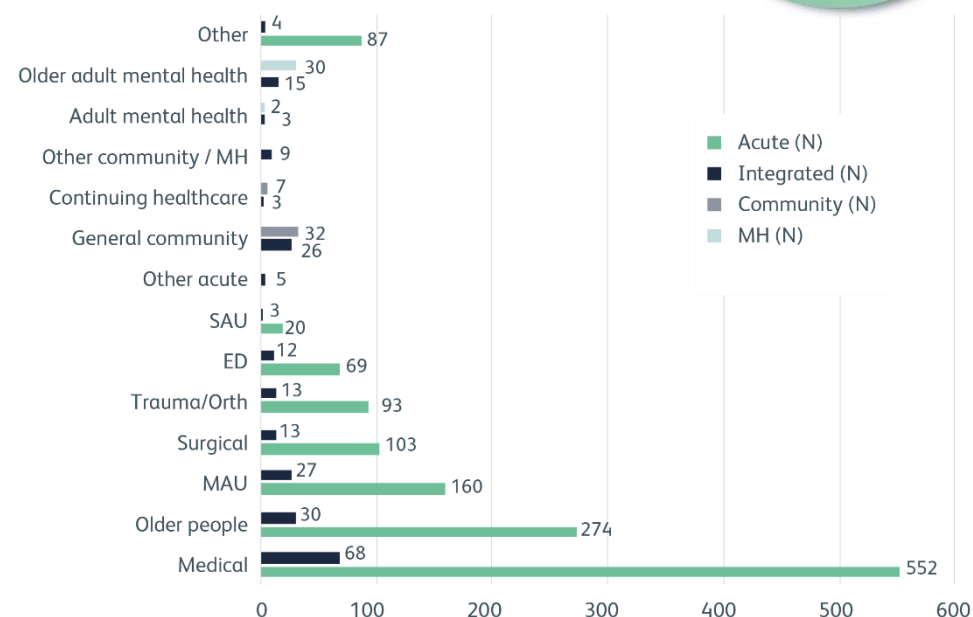


Fig 3. IFFs by trust type and ward type.

Falls prevention activity prior to fracture

In 78% of cases, a documented MFRA had been undertaken a median of 3 days before the fall-related IFF occurred.

What constitutes a high-quality MFRA?

The components of an MFRA are described in [NICE clinical guideline 161](#) and on our [webtool resource](#). NAIF looks at six components of MFRA (Fig 4). These [components](#) measure a range of falls risk factors that are potentially modifiable or require care plans to accommodate. Taking action after assessment is vital as assessment of risk will not prevent falls unless action is taken to address the identified risk factors.

The proportion of patients receiving each risk factor assessment prior to the IFF remained stable in 2022, with the exception of delirium, where there has been a **continuing reduction in documented assessment**.

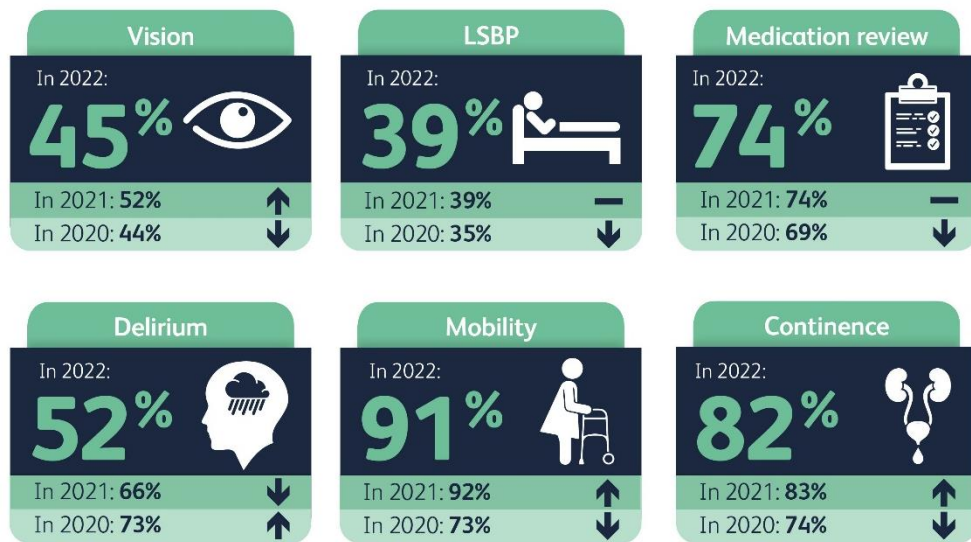


Fig 4. Proportion of cases with risk factor assessment.

KPI 1 – High-quality MFRA

This is a score calculated from adding together the six risk factor assessments for each patient. A maximum score of 6 indicates all assessment components were completed for that patient. A high-quality MFRA is defined as a score of 5 or more out of 6. Falls are multi-factorial, so an MFRA needs to include a range of components to be considered high quality.

- > 37% of patients had an MFRA quality score ≥ 5 (in 2021 this was 31%).

Focus on lying and standing blood pressure (LSBP)

In 2022, we requested LSPB data, as documented in the patient records. Participants were asked to enter the systolic and diastolic blood pressure and pulse after 5 minutes supine, and then after 1 and 3 minutes standing (Fig 5).

LSBP data was only available for 27% of NAIF cases (447/1,669). It was recorded 6 days before the fall that caused the fracture and indicates that full LSBP (Fig 5) is recorded in very few patients compared with the responses to the MFRA question on LSBP (Fig 4).

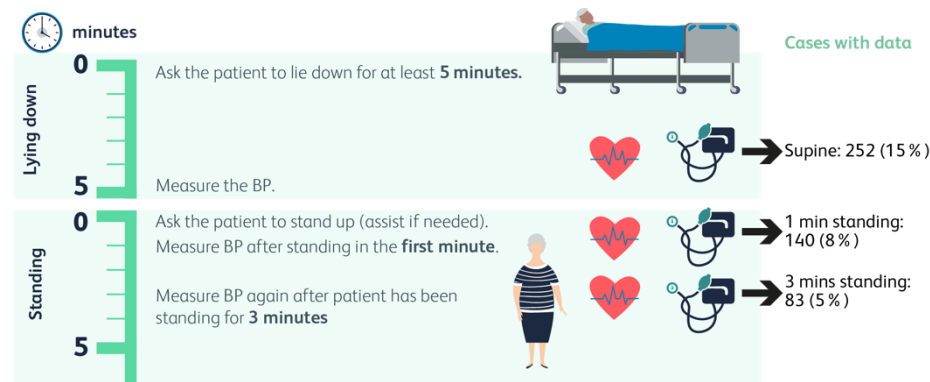


Fig 5. LSBP data recorded.

Of the cases where data were provided, a 20 mmHg drop in BP was observed in 28% of cases (102/364).

Focus on delirium assessment

In 2022, we requested data for 4AT assessments as recorded in the patient records. 4AT scores were entered for 357 patients (21%) and were recorded 7 days before the fall that caused the fracture.

- > The median 4AT score was 3
- > 45% of patients had a 4AT score > 4 indicating delirium (162/357)

Prevalence of risk factors is high in those who sustain an IFF

In cases where assessment took place, risk factors were identified in the following proportions (Fig 6):

Care plans in place

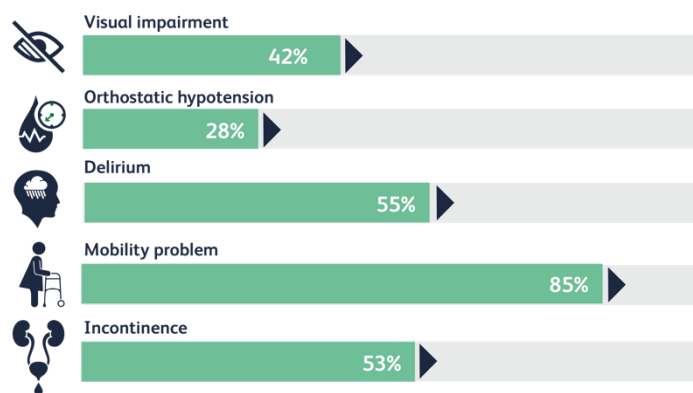


Fig 6. Prevalence of risk factors identified.

Where risk factors were identified, the following proportion of patients had care plans in place (Fig 7):

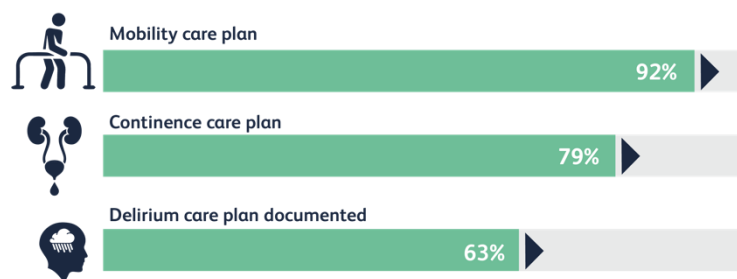


Fig 7. Care plan in place where risk factors identified.

Post-fall management

Actions taken after a fall have the potential to influence outcomes and patient experience. If a post-fall check indicates there may be a femoral fracture, this should initiate the use of flat lifting techniques, rapid access to pain relief and prompt diagnosis and management of the fracture.

KPI 2: Check for injury before moving

There have been steady improvements in the proportion of patients who had a check for injury before moving (Fig 8). However, in 33% of cases where a check was conducted, an injury was not suspected (all patients had a femoral fracture). This is the same proportion as in 2021.

This year we requested data on the time when the post-fall check was undertaken. This was provided in 63% cases (1,040/1,653).

- > Median time from fall to post-fall check for injury was 8.5 minutes.

KPI 3: Safe lifting equipment used to move the patient from the floor

Flat lifting equipment was used in 32% patients, indicating that the majority of patients who sustain an IFF are not moved from the floor following best practice (see Fig 8).

KPI 4: Medical assessment within 30 minutes of the fall that caused the IFF

74% of cases had a medical assessment within 30 minutes of the fall that caused the IFF (Fig 8). This has improved by 14 percentage points since 2021 and 22 percentage points since 2019.

In 2022 we requested data on the time of the post-fall medical assessment, which was completed in 78% of patients (1,289/1,648).

- > Median time from fall to medical assessment was 30 minutes.



Fig 8. KPI 2, 3 and 4 performance.

Pain relief after the fracture

Analgesia was prescribed for 76% of patients after the fall that caused the IFF. None of the patients in the audit received analgesia within 30 minutes; the median time to administration was 2 hours after the fall.

Harm reported after the fracture

In 75% of cases, severe harm was attributed to the fall that caused the fracture (a further 1.4% were recorded as death). This suggests most organisations are adopting the approach [recommended by NHS England](#) of attributing severe harm to a femoral fracture sustained in hospital.

Delay to hip fracture care

Delays to hip fracture care were reported in 25% of cases (413/1,646). This year, we asked about the time taken to X-ray and transfer for hip fracture care.

- > Median time from fall to X-ray was 5 hours in 1,464/1,669 patients.
- > Median time from fall to transfer to orthopaedic care was 17 hours in 1,300/1,669 patients.
- > Median time from fall to transfer to acute site (where applicable) was 13 hours in 178/1,669 patients.

Post-fall reviews

A hot debrief – a rapid debrief that takes place as soon as possible after the fall – was undertaken in **40% of patients**, and in 20% of patients, it was done on the same shift as the fall occurred.

After action reviews, a structured multidisciplinary debrief took place **after 53% of femoral fractures** and was held within 5 working days of the fall in 27% of patients.

Recommendations

Recommendation 1

Trusts and HBs should use their own data to inform the focus of local improvement activities.

This report provides an overview of falls prevention activity and post-fall management for patients with IFF across England and Wales. To inform the focus of improvement activities, trusts and HBs should:

- > review the recommendations from this report against trust/HB priorities for falls prevention and management
- > examine trust/HB level key performance indicators using the [webtool live data](#) and trust reports.

We recommend that actions should be discussed in the trust/HB falls steering group and disseminated to relevant stakeholders. This report and the local action plan should be shared with the executive and non-executive director who has responsibility for falls. Trusts and HBs should use recognised improvement methods such as plan, do, study, act (PDSA) to implement action plans.

More information about conducting improvement projects can be found in the [NAIF quality improvement workbook](#).



Fig 9. The plan, do, study, act cycle.

Recommendation 2

Focused initiatives to improve the quality of MFRA should be implemented across trusts and HBs. We specifically recommend reviewing data on lying and standing blood pressure measurement and implementing targeted improvement projects where indicated.

MFRA is recommended for all inpatients aged >65 both in [NICE clinical guideline 161](#) and the recently published [World Falls Guidelines](#). Most IFFs occur on the first inpatient fall, highlighting the need for effective proactive prevention.

Older people in hospital are at high risk of deconditioning, which can lead to long-lasting functional impairment and loss of independence. Attempting to prevent falls by restricting activity is not recommended and instead patients should be encouraged to move around and stay

active. MFRA is a way in which factors contributing to the risk of falling can be addressed so that patients can keep moving as safely as possible.

Orthostatic hypotension (OH), defined as a drop in systolic blood pressure within 3 minutes of standing of >20 mmHg, is a common cause of fainting (syncope) and light-headedness (pre-syncope) in older people. People in hospital are at higher risk of OH due to dehydration, infection and immobility. Data collected in this audit suggest one-third of people who sustained an IFF had OH recorded before the fall. Many cases of OH can be addressed with simple interventions such as medication changes and optimising hydration. Additionally, where staff are aware a patient has OH, they can support with education or advice and tailor the level of supervision provided while mobilising.

We recommend that the measurement and documentation of lying and standing blood pressure and associated interventions form part of routine care for all older inpatients, in the same way that observations are taken to inform NEWS2 scores. Improvement projects should aim to achieve this by exploring current processes and barriers to implementation using process mapping and fishbone diagrams to develop locally tailored projects.

Recommendation 3

As delirium is common in people who sustain inpatient femoral fractures (IFFs), the admission assessment processes should be reviewed to ensure effective delirium assessment and ongoing monitoring.

Half of all inpatients (where assessment was performed) who had a IFF in 2022, were found to have delirium before the fall. There are many potential reasons why delirium might increase the risk of falling in hospital inpatients. Behaviours such as restlessness increase exposure to falling and reduced activity levels seen in hypoactive delirium may lead to deconditioning affecting muscle strength and balance. Impaired attention is associated with impulsive behaviour and delirium may impact other cognitive functions that enable a patient to safely negotiate an unfamiliar environment. In addition, gait and balance impairments have been noted to accompany episodes of delirium.

There is evidence that interventions addressing delirium may reduce inpatient falls.¹ Additionally, awareness of delirium is required to develop care plans that consider the degree of support a patient needs to maintain safe mobility, and how to meet their basic psychological needs. Due to the fluctuating nature of delirium, ongoing monitoring is vital. From 2023, NAIF has included a question about [NEWS2 scores](#) as the 'new confusion' question can be used to identify new delirium.

We recommend that all inpatients aged >65 are screened for delirium upon admission, monitored for changes during their inpatient stay, and have tailored delirium care plans when indicated. Improvement projects should aim to achieve this by exploring current processes and barriers to implementation using process mapping and fishbone diagrams to develop locally tailored projects.

¹ Hshieh T, Yue J, Oh E *et al.* Effectiveness of multicomponent nonpharmacological delirium interventions: a meta-analysis. *JAMA Intern Med* 2015;175:512–20.

Recommendation 4

Review training and competency requirements to ensure that post-fall checks for injury are effective.

Improvement projects should aim to address the quality of post-fall checks. This is necessary to ensure that injuries are detected, the patient can be moved from the floor safely and prompt treatment is provided.

We have developed a resource to support trusts and HBs with this process: [Supporting best and safe practice in post-fall management in inpatient settings](#) and recommend that this is used in improvement work.

Recommendation 5

Processes should be in place to hasten time to administration of analgesia after an injurious fall, to ensure patients who sustain a hip fracture in hospital are given analgesia within 30 minutes of falling.

It has been encouraging to see a consistent improvement in the prompt assessment of patients following the fall that caused the IFF. The next step is to improve how quickly patients receive analgesia after the fall. Currently, none of the patients who sustained a IFF in 2022 had analgesia administered within 30 minutes of falling, with most patients waiting 2 hours.

Patients in hospital might assume that the location of their fall would mean easier and quicker access to treatment. We would like to see this realised for this patient group, who have consistently poorer outcomes than those who fracture outside of the hospital.

We recommend that improvement projects focus on understanding the reasons for delays in the prescription / administration of analgesia after an injurious fall and tailor local approaches to address these delays.

Preliminary planning of improvement projects

Using our recommendations, local audit data and themes from local hot debriefs and after-action reviews (or other processes used to learn from falls), prioritise your focus for improvement projects:

First priority

Second priority

Third priority

The next step is to compose driver diagrams, process maps and fishbone diagrams to understand what improvement project interventions are most likely to be effective. Use the space below to note who will lead on this and list the stakeholders who should be included:

Next steps project leads

Stakeholders

Resources to support improvement

The sections below include links to and information on useful resources.

KPIs for NAIF

Real time trust/HB level NAIF KPI performance data for KPIs 2, 3 and 4 can be found on the [webtool](#). These 12-month data are updated quarterly.

Trust/HB reports

Trusts/HBs will be provided with individualised reports with their own data, alongside the national figures included in this report.

Support with multi-factorial falls risk assessment

- > [Description of MFRA](#)
- > [How to measure lying and standing blood pressure](#)
- > [Look out vision assessment tool](#)
- > [Look out vision assessment video](#)
- > [Falls in older people – NICE clinical guideline \(CG161\)](#)
- > [World Falls Guidelines](#)

Support with post-fall management

- > [Falls in older people – NICE quality standard \(QS86\)](#)
- > [Hip fracture: management – NICE clinical guideline \(CG124\)](#)
- > [Post-fall management resources](#)
- > [Hot debrief](#)
- > [After action review](#)

Support with healthcare improvement

- > [Quality improvement tools and resources](#)

Support for patients and healthcare champions

- > [How should your hospital prevent and respond to falls during your stay?](#)
- > [Information about inpatient falls for patients](#)

Training and development

- > [CareFall and FallSafe](#)
- > [Learning from inpatient falls – hot debrief](#)
- > [Learning from inpatient falls – after action review](#)
- > [How to get falls e-learning fixed into your organisation](#)

Abbreviations and definitions

The full FFFAP glossary is available on the [RCP website](#).

4AT	bedside questionnaire that helps practitioners to detect delirium
AHP	allied health professional
analgesia	an analgesic is a drug used to relieve pain
BP	blood pressure
CG	clinical guideline
HB	health board
IFF	inpatient femoral fracture
IQR	inpatient quality reporting
KPI	key performance indicator
LSBP	lying and standing blood pressure
median	the middle value of a set of numbers
MDT	multidisciplinary team
MFRA	multi-factorial falls risk assessment
NAIF	National Audit of Inpatient Falls
NEWS2	National Early Warning Score 2
NHFD	National Hip Fracture Database
NICE	National Institute for Health and Care Excellence
OBD	occupied bed days
OH	orthostatic hypotension
PDSA	plan, do, study, act
SPC	statistical process control

National Audit of Inpatient Falls report 2023

Citation for this report: Royal College of Physicians. *Inpatient falls and fractures – one chance to get it right: the 2023 National Audit of Inpatient Falls (NAIF) report on 2022 clinical data*. RCP, 2023.

This report was led by **Julie Whitney, NAIF clinical lead**, supported by the National Audit of Inpatient Falls team:

Kathleen Briers, FFFAP patient and carer panel representative

Tim Bunning, Crown Informatics

Sue Dewhirst, NHS England and Chair of the National Falls Prevention Coordination Group (NFPCG)

Rosie Dickinson, FFFAP programme manager

Sue Doyle, FFFAP patient and carer panel representative

Teena Chowdhury, RCP CQID deputy director

Emily Coll, FFFAP deputy programme manager

Maggie Fielding, FFFAP patient and carer panel representative

Sarah Howie, (subgroup) British Geriatrics Society consultant orthogeriatrician

Antony Johansen, NHFD clinical lead, orthogeriatrics

Kassim Javaid, (FFFAP board) FLS-DB clinical lead

Andrew Judge, professor and senior statistician, University of Bristol

Aasiyah Preston, FFFAP programme coordinator

Francesca Roberts, (subgroup) NAIF clinical fellow

Jonathan Roberts, Crown Informatics

Andrew Rochford, RCP improvement clinical director

Ninma Sheshi, FFFAP project manager

Julie Whitney, NAIF clinical lead

Julie Windsor, (subgroup) clinical lead – medical specialties / older people, NHS England Patient Safety

Data analysis by Bristol University www.bristol.ac.uk

NAIF data collection webtool and performance tables are provided by Crown Informatics www.crowninformatics.com

Falls and Fragility Fracture Audit Programme

The National Audit of Inpatient Falls (NAIF) is run by the Care Quality Improvement Directorate (CQID) of the Royal College of Physicians (RCP). It is part of the Falls and Fragility Fractures Audit Programme (FFFAP), one of three workstreams that also include the Fracture Liaison Service Database (FLS-DB) and National Hip Fracture Database (NHFD). The programme is commissioned by the Healthcare Quality Improvement Partnership (HQIP).

Healthcare Quality Improvement Partnership

The National Audit of Inpatient Falls is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and to increase the impact of clinical audit, outcome review programmes and registries on healthcare quality in England and Wales. HQIP commissions, manages and develops NCAPOP, comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh government and, with some individual projects, other devolved administrations and crown dependencies www.hqip.org.uk/national-programmes.

The Royal College of Physicians

The Royal College of Physicians is a registered charity that aims to ensure high-quality care for patients by promoting the highest standards of medical practice. It provides and sets standards in clinical practice, education and training, conducts assessments and examinations, quality assures external audit programmes, supports doctors in their practice of medicine, and advises the government, the public and the profession on healthcare issues.

www.rcp.ac.uk

Registered Charity No. 210508

Copyright

All rights reserved. Applications for the copyright owner's written permission to reproduce significant parts of this publication (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) should be addressed to the publisher. Brief extracts from this publication may be reproduced without the written permission of the copyright owner, provided that the source is fully acknowledged.

Copyright © Healthcare Quality Improvement Partnership 2023

National Audit of Inpatient Falls audit
(NAIF)

Royal College of Physicians
11 St Andrews Place
Regent's Park
London NW1 4LE

Tel: +44 (0)20 3075 1738

Email: falls@rcp.ac.uk

[www.rcp.ac.uk/projects/
national-audit-inpatient-falls-naif](http://www.rcp.ac.uk/projects/national-audit-inpatient-falls-naif)

www.rcp.ac.uk

@rcp_ffap
#NAIF

ISBN 978-1-86016-880-2



Royal College
of Physicians

National Audit of
Inpatient Falls (NAIF)