



Royal College
of Physicians

FFFAP

Falls and Fragility Fracture Audit Programme (FFFAP)

National Hip Fracture Database
(NHFD) annual report 2014



In association with:

Commissioned by:





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This report was prepared by the members of the National Hip Fracture Database (NHFD) workstream delivery team.

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Falls and Fragility Fracture Audit Programme

The NHFD 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 Falls Pathway workstream. FFFAP aims to improve the delivery of care for patients having falls or sustaining 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, the Royal College of Nursing 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). Their 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.

The Royal College of Physicians

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Who is this report aimed at?

The work reported here is intended to meet the needs of a wide range of individuals and organisations, including:

- patients and carers
- healthcare professionals
- NHS managers
- commissioners
- policymakers
- patient organisations.

The report has been designed in four parts.

- 1 A short **summary report**, which seeks to present our key findings in a concise review of recent developments in hip fracture care in England, Wales and Northern Ireland.

This is particularly suited to NHS managers, hospital chief executives, commissioners and policymakers who are seeking to understand the priorities of their local service, and to see how this can be improved to best meet the needs of their patients.

An individualised version of this report – including details of month-on-month performance – will be provided to the clinical lead and chief executive in each hospital so that they can view their local performance alongside this summary report.

- 2 The more detailed **extended report** presents a step-by-step review of the patient's pathway through initial assessment, anaesthetic and operation, rehabilitation and discharge.

This includes an audit of care against standards defined by the National Institute for Health and Care Excellence (NICE), and a review of the outcomes achieved in each hospital. These outcomes are set against those for other units around the country, allowing healthcare professionals to review the care being given to patients within their hospital.

Regional tables summarising key performance indicators allow benchmarking of practice at each hospital against regional and national figures. These will also be of interest to patients, their carers and patient organisations.

- 3 A third report – **My hip fracture care** – is being prepared for publication later this year.

This will draw upon the annual report's findings to provide a non-technical explanation of the care offered to patients sustaining a hip fracture so that they, their families and carers can understand how care is organised, how this has changed over the years since the National Hip Fracture Database was set up, and how care varies around the country.

- 4 A fourth report – **NHFD Commissioners' Report** – is being prepared for publication later this year.

This will draw upon the annual report's data to provide a description of how care varies between clinical commissioning groups and Welsh local health boards as measured against a set of indicators included in the CCG Outcome Indicators and NHS Outcomes Framework.

Summary report

The National Hip Fracture Database (NHFD) is a clinically led, web-based quality improvement initiative commissioned by the Healthcare Quality Improvement Partnership (HQIP) and managed by the Royal College of Physicians (RCP).

All 182 eligible hospitals in England, Wales and Northern Ireland are now regularly submitting data to NHFD, the largest hip fracture database in the world, with:

- a third of a million cases recorded since its launch in 2007
- over 95% of all new hip fracture cases being documented
- 5,700 records being added every month.

This report describes casemix, care and outcomes for 64,838 people who were admitted with a hip fracture between 1 January 2013 and 31 December 2013, along with a casemix-adjusted analysis of 30-day mortality for the three calendar years 2011–13.

The NHFD was originally conceived as a way of auditing the care provided to patients against standards agreed by the British Orthopaedic Association (BOA) and the British Geriatrics Society (BGS).

As part of the Falls and Fragility Fracture Audit Programme (FFFAP) within the Clinical Effectiveness and Evaluation Unit at the RCP, the NHFD has now developed into a comprehensive quality improvement initiative and combines several elements:

- description of facilities and practice in different units around the country
- audit of practice against the NICE quality standard for hip fracture (QS16)
- performance evaluation to support Monitor's Best Practice Tariff (BPT)
- support for clinical governance in individual hospitals
- metrics to support patient safety monitoring
- identification of outlier hospitals in respect of patient outcome
- a framework to support local and national audit work
- an infrastructure for scientific and research work
- a resource of specialist information, expertise and networking.

These aspects of the work are each described in detail in the extended report, but key findings are summarised, reviewed and signposted in this summary report.

Key findings

1 Description of facilities and practice across the country

Audit of facilities in different hospitals has shown a year-on-year picture of investment in hip fracture care, with marked improvements in the availability of specialist nurses and senior orthogeriatricians across the country (Fig 1). However, 113 hospitals (62%) still report that they have no fracture liaison nurse, and eight hospitals (4.4%) have no orthogeriatric input.

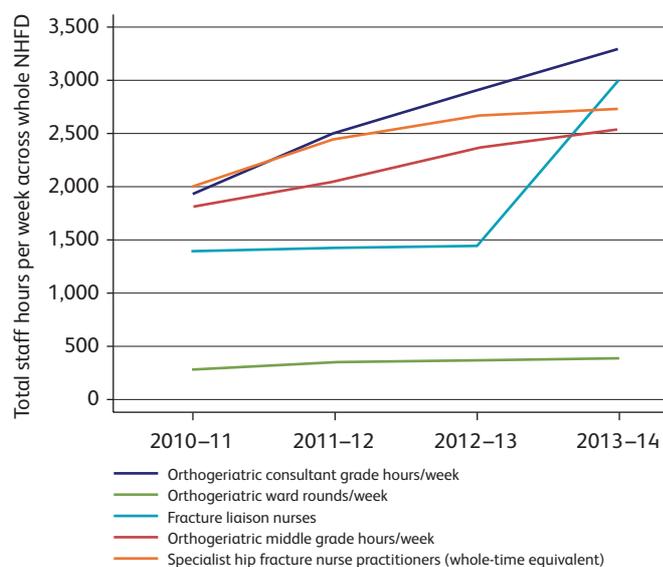


Fig 1 Facilities audit trends.

Despite the investment in hip fracture care in recent years, there remains huge variation between hospitals in key aspects of the patient experience, including how quickly patients are offered a bed on an appropriate orthopaedic or orthogeriatric ward (Fig 2).

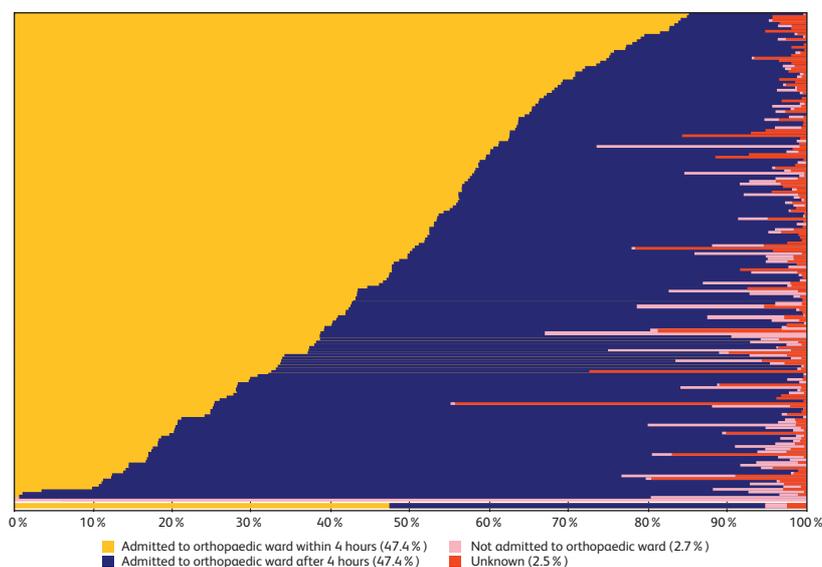


Fig 2 Admissions to orthopaedic ward.

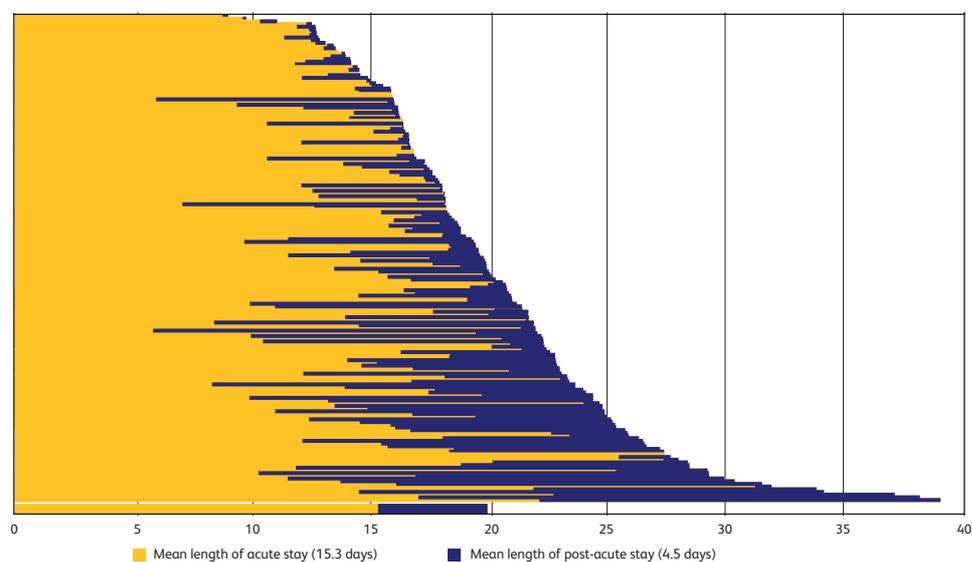


Fig 3 Length of stay.

Charts like this within the extended report provide detailed data on performance and outcome for individual hospitals.

Length of stay (LOS) is the main determinant of the initial economic impact of a hip fracture. Previous reports have documented progressive reductions in this, reflecting improvements in surgical care, rehabilitation, discharge planning and post-discharge care.

In 2013, the mean LOS in acute orthopaedic wards was 15.3 days, and overall LOS in the acute hospital was 19.8 days (Fig 3); both figures are essentially unchanged compared with those for 2012–13.

2 Audit of practice against the NICE quality standard for hip fracture (QS16)

NICE published its clinical guideline *The management of hip fracture in adults* (CG124) in 2011 and its quality standard (QS16) in 2012. The NHFD audits patient care against several of the QS16 standards.

Standard 3

People with hip fracture have their cognitive status assessed, measured and recorded from admission

The proportion of patients whose care meets this standard has improved markedly since it became a requirement for BPT in 2012.

The mean figure of 92.0% for 2013 represents a further improvement; in our last report, this figure was 87.8%.

Standard 5

People with hip fracture have surgery on the day of, or the day after, admission

The proportion of patients whose care meets this standard has improved progressively over the years since the first NHFD annual report.

The mean figure of 71.7% for 2013 represents a further improvement compared with the figure of 70.6% recorded for 2012–13 in our last annual report.

However, there remains unacceptable variation in performance around the country, with mean figures ranging from 13% to 91% (Fig 4).

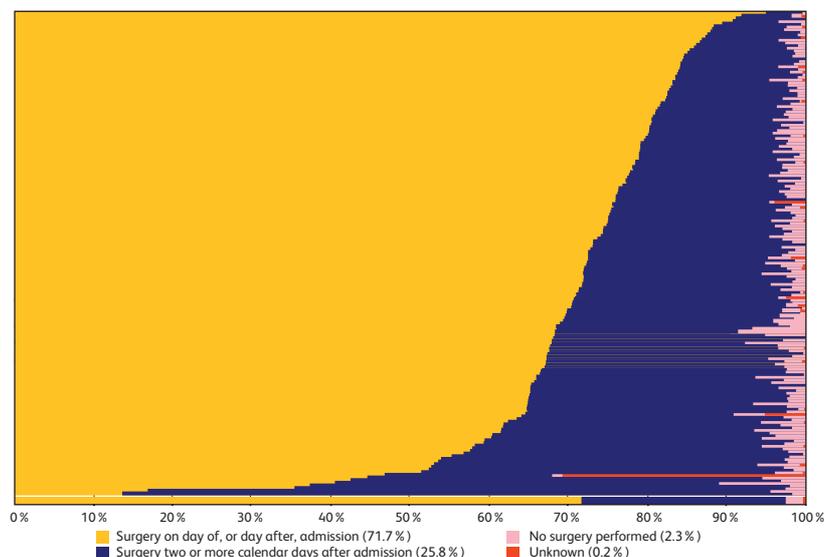


Fig 4 Surgery on day of, or day after, admission.

Standard 7

People with displaced intracapsular fracture receive cemented arthroplasty, with the offer of total hip replacement if clinically eligible

Cementing of arthroplasties has increased in line with the NICE recommendation, with a figure of 80.2% in 2013 compared with 77.2% in our last report.

We found that 19.1% of eligible patients (patients with displaced intracapsular fracture, who were ASA 1–2, with a normal mental test score, and able to walk outside using no more than a stick) received total hip replacement in 2013, a figure that is slightly lower than the 20.7% reported last year.

Standard 9

People with hip fracture are offered a physiotherapist assessment the day after surgery and mobilisation at least once a day unless contraindicated

The NHFD dataset is reviewed and updated each year. The dataset introduced in April 2014 (on which we will report next year) includes a new field, which records whether patients were mobilised out of bed on the day following surgery. This will allow us to profile how individual units' approaches to postoperative surgical care, transfusion, fluid management and physiotherapy affect their patients' ability to make a rapid recovery from injury and operation.

Standard 11

People with hip fracture are offered a multifactorial risk assessment to identify and address future falls risk, and are offered individualised intervention if appropriate

In 2013 we recorded 94.6% of patients as having received such assessment, an improvement from 93.4% in the last NHFD annual report.

Standard 12

People with hip fracture are offered a bone health assessment to identify future fracture risk and offered pharmacological intervention as needed before discharge

In 2013 we found that 79.4% of patients had been started on osteoporosis treatment, or referred for dual X-ray absorptiometry (DXA) scan or bone clinic assessment – a similar figure to the 79.5% reported last year.

A further 16.3% of patients were recorded as having been assessed but not treated – this figure is of concern, as it is higher than the 14.8% reported last year.

There was considerable variation between hospitals in both of these figures, and there is clearly a need for greater attention to bone protection therapies in some units if they wish to reduce the risk of patients being readmitted with recurrent hip or fragility fractures.

3 Performance monitoring to support BPT

The NHFD has successfully supported the first four years of ‘payment by results’ – the BPT initiative.

BPT rewards care that meets specified standards:

- surgery within 36 hours of admission
- shared care by surgeon and geriatrician
- admission using a care protocol agreed by geriatrician, surgeon and anaesthetist
- assessment by geriatrician within 72 hours of admission
- pre- and postoperative abbreviated mental test score (AMTS) assessment
- geriatrician-led multidisciplinary rehabilitation
- secondary prevention of falls
- bone health assessment.

Attainment of BPT has increased since it was introduced in 2010. In the last quarter of 2013, care for 64% of patients met all BPT standards – further improvement on the figure of 59% for the same period in 2012. In stark contrast, two English hospitals report that none of their patients received care that was eligible for BPT throughout 2013.

4 Support for clinical governance in individual hospitals

The NHFD website has always provided summary data for local teams to use: admission numbers, time to an orthopaedic ward, time to surgery, casemix, performance against NICE standards, and BPT attainment.

In 2013, the NHFD commissioned Crown Informatics as its web provider and this has enabled the development of a more interactive, user-friendly website (Fig 5). This is steadily being upgraded to provide graphical real-time information to support the monthly clinical governance meetings that are key to the hip fracture programme recommended in NICE CG124.

If individual hospitals keep data entry up to date, they will automatically be provided with run charts like those in Fig 5, which will help them to monitor key aspects of care such as time to theatre.

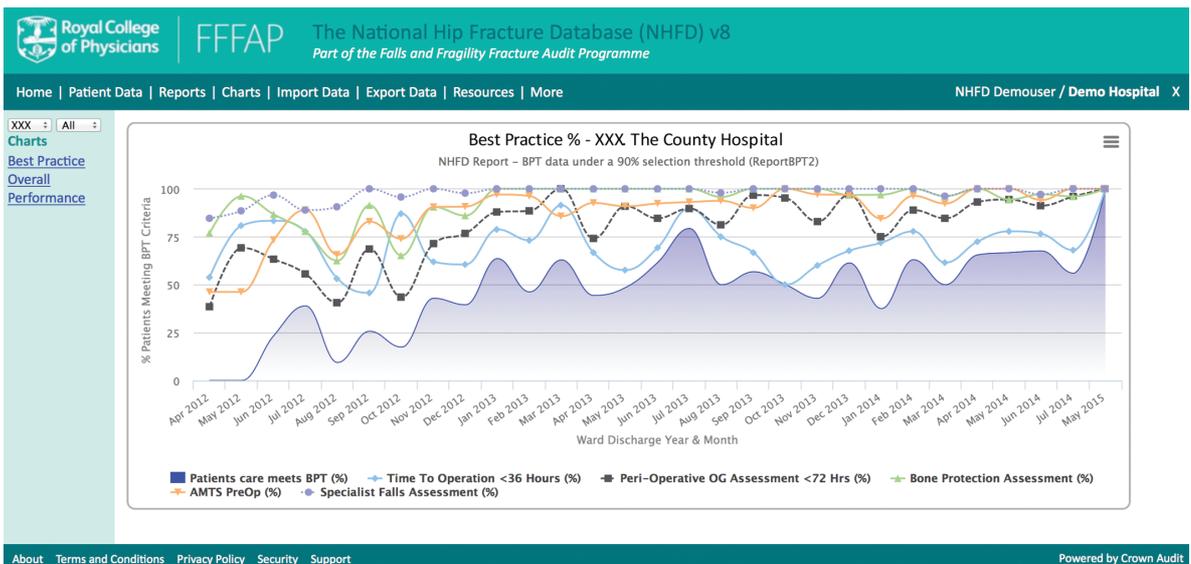
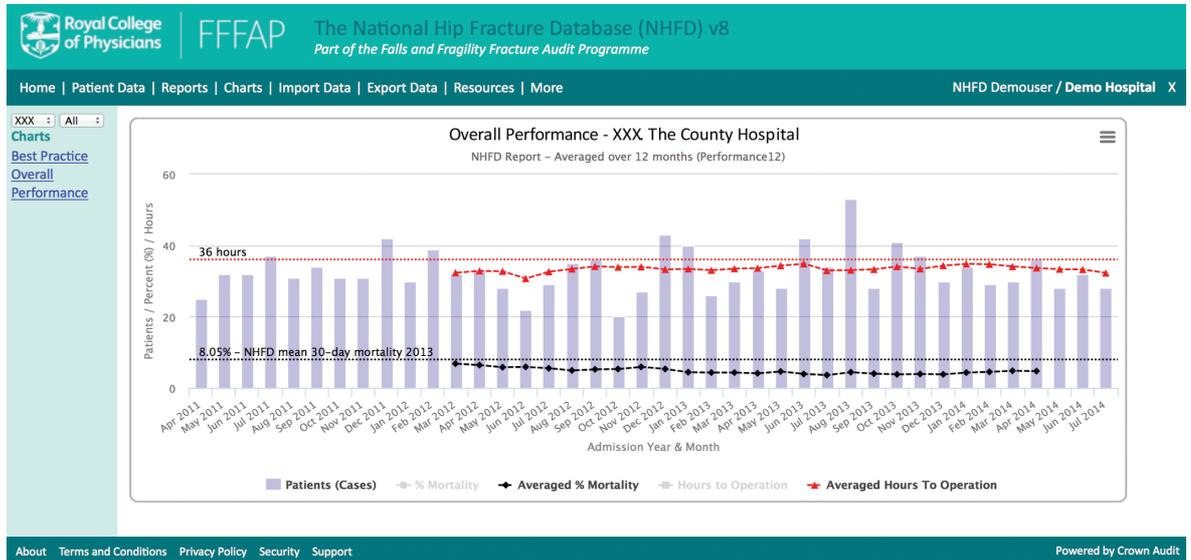


Fig 5 Screenshot of new online NHFD run chart of an individual hospital's performance.

5 Patient safety

In their report on safety in the NHS in England, *A promise to learn – a commitment to act* (August 2013), the National Advisory Group on the Safety of Patients in England noted 'There is no single measure of safety, but early warning signals can be valuable and should be maintained and heeded'.

The NHFD reports on a number of measures that relate not only to the quality of patient care, but also to the safe delivery of that care.

Inpatient falls

In 2013, 4.9% of hip fractures occurred while the patient was in NHS care. This amounts to approximately 3,000 hip fractures per year. Such injuries are particularly serious as the patient is often

already acutely unwell, perioperative care is more complex, and poor outcome and complications are more common.

Since April 2014, the NHFD dataset has improved the details of where hip fractures occur: the options are now 'on this hospital site', 'other hospital site of this trust' and 'other hospital trust'. This will complement local incident-reporting systems and support identification of hospital-acquired hip fractures. The measure is also proposed for domain 5 (patient safety) of the NHS outcomes framework for England.

Pressure ulcers

Ulcers can develop when pressure on the skin impairs its blood supply. Pressure ulcers occur in immobile patients, such as those with hip fractures, but should be preventable with good care (NICE CG179). Treatment generally consists of prolonged periods of wound care, but may involve minor or major surgery.

Subjectivity in the grading of pressure ulcers and differences in the length of time that people with hip fractures spend in acute wards make direct comparison between hospitals difficult. However, there should be greater consistency of approach to this major concern.

The percentage of patients reported as developing an ulcer fell from 3.3% to 2.9% in this year's report. The new NHFD run charts will provide hospitals and hip fracture services with valuable insight into emerging trends in their own units.

Return to theatre

Hip fracture operations should be of a standard that permits immediate mobilisation.

Occasionally, complications (including infection, dislocation and displacement of fixation) may require reoperation within 30 days of admission. Reoperation is always a serious undertaking. Currently only 1.1% of patients are recorded as having a return to theatre; however, the 51.0% of cases recorded as 'unknown' precludes useful reporting of comparative figures.

Hospitals should record their 30-day follow-up data, so that changes in reoperation rates and the procedures recorded can be used in clinical governance meetings to improve local outcomes.

6 Identification of outlier hospitals in respect of patient outcome

Self-reported data from individual hospitals are useful for local clinical governance, but comparisons of performance and outcome between hospitals need third-party validation. Individual NHFD records are therefore linked to national data sources to allow a reliable picture of total LOS and mortality.

In this report, we have collated 30-day mortality data for the three calendar years 2011–13. This longer time period is designed to improve our sensitivity to poor performance in units that admit fewer numbers of patients. This means that a hospital may remain an outlier for a year or two, even after major improvements in practice and performance. Changes to complex multidisciplinary care cannot become embedded overnight. The new NHFD run charts will help such units to monitor the details of their progress.

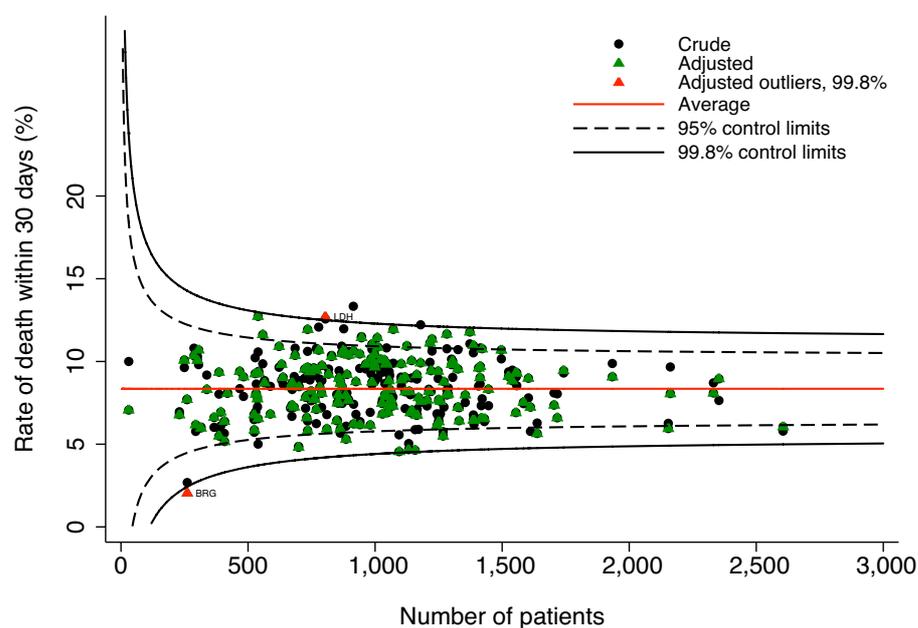


Fig 6 Casemix-adjusted 30-day mortality, 2011–13.

The Clinical Effectiveness Unit (CEU) at the Royal College of Surgeons of England (RCS) has developed models of casemix adjustment specific to hip fracture. These models have been used in analysing two key measures: death within 30 days of admission with hip fracture, and return to own home within 30 days.

These outcomes are reported in funnel plots that take account of a hospital's size.

Just three hospitals out of 182 (1.6%) triggered concern with significantly increased 30-day mortality – outside the funnel plot's three standard deviation (3 SD; 99.8%) limit (Fig 6). Two of these hospitals were subsequently excluded from this analysis after significant problems were identified with the quality of data that they had submitted.

The remaining outlier hospital has been contacted and offered support in reviewing its service to identify and address factors that might explain this finding.

7 A framework to support local and national audit work

Individual hospitals use their NHFD data as a framework on which to build more focused studies of local performance. Local audits of thromboprophylaxis, pain management, cognitive assessment and surgical technique have all been facilitated in this way.

On a regional basis, hospitals use the NHFD's standardised approach to recording of assessment, performance and outcome to support regional planning.

Nationally, in 2013 collaboration between the NHFD and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) led to the **Anaesthetic Sprint Audit of Practice (ASAP)** published earlier this year.

Anaesthetic Sprint Audit of Practice

This sprint audit profiled hospitals' compliance with standards for perioperative care described in the AAGBI guideline *Management of proximal femoral fractures 2011*.

The Anaesthetic Sprint Audit of Practice (ASAP) collected data on 16,498 patients who underwent anaesthesia and operation in 182 hospitals between 1 May 2013 and 31 July 2013. Additional anaesthetic data for 80% of these patients were collected using the NHFD's online system.

The audit identified striking inter-hospital variation in practice, suggesting that most units have yet to develop and implement standardised, evidence-based protocols for the assessment and management of this frail, high-risk group of patients.

- Over 90% of cases recorded both anaesthetist and surgeon as consultants or specialists and in only 0.4% of cases were both unsupervised trainees.
- Pain-relieving nerve blocks were administered to 56% of patients. This indicates an impressive adoption of this technique during recent years, particularly since its recommendation in NICE CG124.
- Some units administered spinal anaesthesia in over 80% of cases, while others used this approach in fewer than 10%.
- Variation was noted in use of intrathecal opioids, sedation, supplemental oxygen, and the drug dose used for spinal anaesthesia.

Follow-up of this cohort is in progress to evaluate the Nottingham Hip Fracture Score as an outcome predictor for hip fracture, and to establish how the intraoperative hypotension identified during ASAP affects individual patient outcome.

8 An infrastructure for scientific and research work

The NHFD provides a backbone upon which other work can be built. Ongoing academic work supported by the NHFD Scientific and Publications Committee includes follow-up of the ASAP patient cohort described above.

A study based on NHFD data showed that patients with hip fracture account for at least 1.5 million bed-days per year. This equates to the continuous occupation of 4,106 beds across the NHS at any one time – the equivalent of several district general hospitals just for this one condition.

Another analysis of 65,535 patient records from the NHFD was used to determine differences in outcome according to the type of anaesthesia. Of these, 30,130 patients received general anaesthesia, 22,999 received spinal anaesthesia and the remaining 12,406 received a combination of the two. There was no significant difference in 5-day or 30-day mortality between patients who received general anaesthesia and those who received spinal anaesthesia, even after adjustment for age and physical status.

In 2013, the NHFD Scientific and Publications Committee carried out a priority-setting exercise with NHFD lead clinicians to determine scientific priorities for using NHFD data. This exercise generated ten themes for further investigation:

- delay to surgery
- service modelling
- where should I have my hip fracture?
- recurrent hip fracture
- intracapsular hip fracture – a description of practice
- seasonal, day-of-the-week and diurnal patterns in presentation
- classification of different service models
- trends in incidence of hip fractures
- non-operative care
- where have all the English inpatients gone?

Researchers looking to collaborate with the NHFD in investigating these themes should contact the committee via NHFD@rcplondon.ac.uk.

9 A resource of specialist information, expertise and networking

A programme of regional meetings brings together people working in different specialties and hospitals to learn from each others' experiences.

Examples of how hospitals have used NHFD data locally to improve care of patients with hip fracture are presented at these regional meetings and summaries of some of these initiatives, like the one from Basildon below, are included throughout this report.

In 2007, a perioperative orthogeriatrician was employed by **Basildon and Thurrock University Hospital Trust** to provide shared care to patients with hip fracture. Weekly multidisciplinary meetings were instigated. Other initiatives included the introduction of fascia iliaca blocks in A&E and an increase in the use of spinal anaesthesia, rising from 15% last year to 35% this year. NHFD data have shown that, since the introduction of this joint care, 30-day mortality has fallen from around 15% in 2006 to 6.8% last year and 6.3% this year.

The NHFD website www.nhfd.co.uk hosts a wide range of resources, including assessment documentation developed by individual hospitals and innovative improvements to care. Additional resources include job descriptions and business cases for key staff members. Together, these will allow other units to adopt examples of good practice and innovation described in this and previous annual reports.

At **Kingston Hospital NHS Foundation Trust**, we used the NHFD online reports, in combination with the National Dementia CQUIN (Commissioning for Quality and Innovation), to drive improvement in quality of care for our patients with dementia and delirium, and their families and carers. We established the Forget-Me-Not dementia care quality scheme. This includes personalised, highly visible care preferences that alert staff to the needs of specific patients, 'carers' passports' to welcome carers as 'partners in care', and carer surveys to encourage feedback. Elements of the scheme have been quoted as examples of good practice in the Royal College of Nursing's *Triangle of care – carers included: a guide to best practice for dementia care*. Further improvements this year include projects to improve awareness of delirium among theatre staff and a study of anaesthetic techniques and rates of postoperative delirium.

Key recommendations

Policymakers need to:

- consider a programme of audit centred on the NICE quality standard (QS16) to establish which units have developed the hip fracture programme that NICE identified as key to improving performance, cost-effectiveness and addressing the patient perspective
- in Northern Ireland and Wales, look at drivers to improve time to theatre and access to orthogeriatric care in order to achieve LOS figures equivalent to those achieved in England as a result of BPT.

Chief executives, commissioners and clinical leads need to:

- address weaknesses in completion of 30-day follow-up for their local service that leave local staff uncertain about real-time performance within their unit; rates of reoperation and of pressure ulcers should be of particular focus
- examine the provision of secondary prevention services – fracture liaison nurses and on-site DXA facilities
- in England, look at how BPT should develop to encourage still greater improvement among hospitals
- consider the appropriateness of paying BPT to units where many patients are apparently assessed for osteoporosis, but then not treated.

Clinical staff need to:

- consider the strengths and weaknesses of their own service identified in the inter-hospital comparison charts, regional tables and funnel plots of this report
- use the new web-based run charts to inform the monthly clinical governance meetings that will be central to their local hip fracture programme.

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)**

