



British Orthopaedic Association



Royal College
of Physicians



HQIP
Healthcare Quality
Improvement Partnership

National Hip Fracture Database

National report 2013 – Summary





National Hip Fracture Database National report 2013

**Prepared on behalf of the Clinical Effectiveness
and Evaluation Unit at the Royal College of Physicians**

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This report and the NHFD Annual Report 2013 are also
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www.nhfd.co.uk

CONTENTS

About this summary report	4
Executive summary	5–6
Introduction	7
The National Hip Fracture Database	8–9
Quarter by quarter BPT criteria compliance and BPT achievement: 2010–2013	10
The 2013 National Report	11
Progress so far	12
Performance	12
Mortality	12
Return home	14
Length of stay	15–16
Future development of the NHFD	17
Improving ascertainment	16
Improving follow up	17
Improving descriptions of care	18
The NHFD and Anaesthetic Management	19
The NHFD and NICE Quality Standard 16	20
The NHFD and Clinical Commissioning Groups	21
Using audit to improve care – Good practice examples	22–27
Appendix A – Participating Hospitals	28–29
Acknowledgements	30



About this summary report

This brief summary of the National Hip Fracture Database 2013 Report serves as a digest of the key findings from the more detailed NHFD Annual Report 2013. That Report, a public document which can be downloaded as a pdf e-report from the NHFD website, provides a wealth of comparative information on casemix, care and outcome on 61,508 cases from 180 hospitals across England, Wales and Northern Ireland together with considerable technical and statistical detail – and is therefore of most interest to clinicians and managers in participating hospitals, to national and regional health organisations, and to commissioners of care.

This summary document seeks only to provide a concise and accessible overview that shows how the National Hip Fracture Database seeks to fulfil its principal aim of improving hip fracture care; and how clinical teams, supported by NHFD data and feedback, have achieved measurable improvements in the quality and cost-effectiveness of the care they provide.

Again, we emphasise that much more detail – including that on fracture type and surgical fixation; on individual hospital performance and comparative performance at regional level; and on the statistical methods used in data analysis – can be accessed in the e-version of the Report (available at www.nhfd.co.uk)

Executive summary

The National Hip Fracture Database (NHFD) is a clinically led, web-based audit of hip fracture care and secondary prevention. All 186 eligible hospitals in England, Wales and Northern Ireland are now regularly uploading data.

The NHFD is the largest and fastest-growing national hip fracture audit in the world with:

- Over quarter of a million cases recorded since its launch in 2007
- 95% of all cases occurring annually being documented by the NHFD
- 5,500 records being added every month

This report covers casemix, care and outcomes of 61,508 cases submitted between 1 April 2012 and 31 March 2013 by 180 hospitals meeting the case threshold of 100 (or a high percentage submission rate in smaller hospitals).

Care is audited against standards defined by the British Orthopaedic Association (BOA) and British Geriatrics Society (BGS), and comparison with the same six standards from our 2012 National Report shows that this year:

- 50% of patients are admitted to an orthopaedic ward within four hours (down from 52% in 2012)
- 86% receive surgery within 48 hours (improved from 83%)
- 3.5% are reported as having developed pressure ulcers (improved from 3.7%)
- 47% are reported as assessed pre-operatively by an orthogeriatrician (up from 43%)
- 69% are discharged on bone protection medication (unchanged)
- 94% received a falls assessment prior to discharge (up from 92%)
- Our results are set alongside data from national data sources to allow a more comprehensive picture of total length of stay and mortality.

Casemix adjusted reporting on two key measures (30 day mortality, and return to own home by 30 days) is used to compare different hospitals' outcomes.

These outcomes are drawn against the mean and standard deviation according to the size of the unit and in the case of 30-day mortality, protocols have been developed to check the quality of data for outlying hospitals, and to feed back information that might help them in reviewing their clinical service.

Five hospitals triggered an 'alert' in terms of significantly increased 30 day mortality in this analysis, and their performance was reviewed with reference to the data submitted over the three year period 2010–13.

For three hospitals this 'alert' needs to be viewed alongside reassuring figures for previous years, but two were confirmed to exhibit a consistent cause for concern.



These two hospitals showed a consistent pattern, significant at a 95% level of confidence.

Clinicians and managers have used NHFD participation to prompt, monitor and evaluate clinical and service developments to improve the quality and cost effectiveness of hip fracture care. The report includes brief summaries of successful innovations that might encourage similar developments elsewhere.

In England, the NHFD has successfully supported the first four years of the Department of Health's Best Practice Tariff (BPT) initiative, which rewards the achievement of specified standards:

- surgery within 36 hours
- shared care by surgeon and geriatrician
- care protocol agreed by geriatrician, surgeon and anaesthetist
- assessment by geriatrician within 72 hours
- pre- and post-operative abbreviated mental test score assessment
- geriatrician-led multi-disciplinary rehabilitation
- secondary prevention of falls
- bone health assessment

Participation in BPT has steadily increased between 2010 and 2013.

A temporary fall at the start 2012–13 reflected the additional challenge of a requirement to perform the abbreviated mental test, but in the last quarter 60% of patients have achieved BPT – a marked improvement on the 55% figure for the same period in 2011–12.

This National Report describes 61,508 admissions with hip fracture across England, Wales and Northern Ireland. We show that this equates with the continuous occupation of over 4,000 beds across the NHS.

It is clear that the NHFD serves as a vital means of auditing the management of a condition which costs one and a half billion pounds each year.

Introduction

This year marks the 50th anniversary of Bobby Irvine and Michael Devas' description of the first collaborative approach to the care of frail older people with hip fracture. The geriatric orthopaedic unit they set up in Hastings was the first of many such services which were developed to meet the needs of these patients.

Other enthusiasts subsequently put together informal or formal arrangements suited to the particular pressures in different parts of the country – with diverse patterns of referral, liaison and collaborative care emerging over the years. Many different models evolved, so that it is only in the last few years that an evidence base has emerged to prove the benefits associated with such collaborative working.

This fifth National Report of the NHFD gives us an opportunity to salute the legacy of Devas and Irvine.



The National Hip Fracture Database

In 2005 the success of collaboration between the BOA and the BGS in providing training for junior surgeons and geriatricians led these organisations to champion a change in approach to the care of older people with hip fracture in this country. Their joint publication of the Blue Book – ‘The care of patients with fragility fracture’ – proposed six quality standards which remain central to the organisation of care for this vulnerable group of individuals.

Health organisations were challenged to provide prompt admission to orthopaedic wards, early surgical repair of the fracture, protection against pressure ulcers, routine access to acute orthogeriatric assessment and support, and assessment for bone protection therapy and falls prevention to avoid future falls and fractures.

At the same time the BOA and the BGS proposed an independent, clinically-led, web-based audit – to monitor the quality and outcome of the care provided to individual patients, and to help individual trauma units to improve the organisation of their services.

With start-up funding from industry sources the NHFD was launched in 2007. In 2009 the NHFD was recognised by the National Clinical Audit Advisory Group for central funding, and the programme secured Healthcare Quality Improvement Partnership (HQIP) funding until 2014.

From 2012 the NHFD moved to be managed as part of the Falls and Fragility Fracture Audit Programme (FFFAP) within the Royal College of Physicians in London, benefitting from links with the other FFFAP work-streams addressing the development of Fracture Liaison Services and the prevention of falls in institutional care settings.

As organisations redesign their services, the number of hospitals treating acute hip fractures has reduced slightly. All 186 eligible hospitals in England, Wales, Northern Ireland and the Channel Islands are registered with NHFD, and all now regularly contribute data.

The NHFD’s ability to detail casemix, performance and outcome, prompted the selection of hip fracture as a topic for the Department of Health’s BPT initiative in England. This offers additional payment when the NHFD records that a patient’s care meets agreed standards – surgery within 36 hours, jointly agreed care protocols, shared care, cognitive assessment, geriatrician-led peri-operative assessment and multi-disciplinary rehabilitation, and secondary prevention including falls and bone health assessment.

Since the start of BPT in April 2010 we have seen a steady rise in the number of participating hospitals, of cases submitted, and of cases meeting the tariff standards.

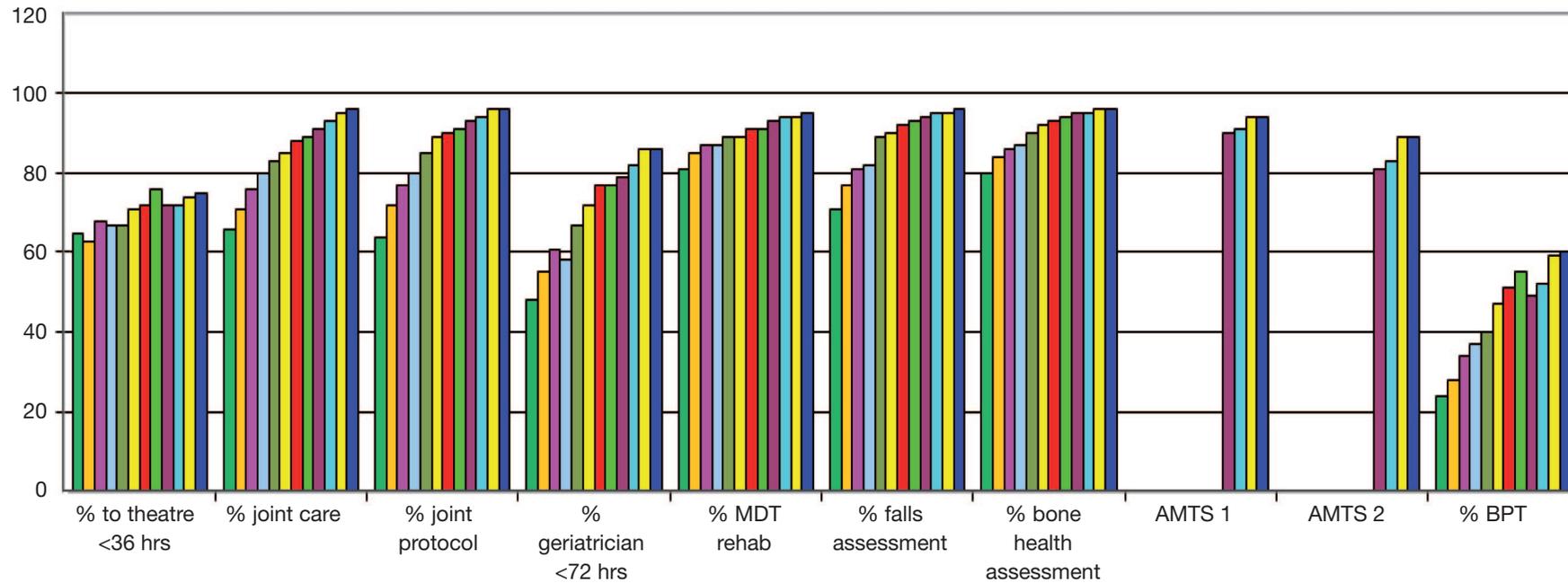
Individual trauma units upload casemix, clinical performance monitoring, and outcome details into a simple web-based tool. These data are analysed throughout the year, so clinicians and healthcare managers can use the same web-site to monitor their monthly and annual performance against the six standards of the Blue Book and to benchmark their performance against other units on a regional or national basis.

With a tendency towards increasing specialisation and centralisation of trauma services many patients will be admitted to units that are some way from their home, and may move to rehabilitation wards and community rehabilitation beds before their eventual discharge. The development of clinical pathways across different hospitals, Trusts, and other organisations is crucial if such care is to be efficiently organised and if patients are to be offered continuity of clinical care. The development of orthogeriatric clinical networks has been an additional benefit of units' collaboration in the NHFD.

The NHFD project coordinators have organised a series of well-attended regional meetings, to bring together clinicians and managers to share expertise, and improve the quality and cost-effectiveness of the care they provide. The NHFD web-site offers additional support; case studies, good practice examples, model job descriptions, and business plans, so that by sharing information individual clinicians can benefit from others' experience.

The success of all this is demonstrated in this fifth National Report – but the NHFD is far more than just an annual report, and this document should be read as just part of the NHFD's work.

Quarter by quarter BPT criteria compliance and BPT achievement: 2010–2013



The 2013 National Report

Earlier this year the total number of patients recorded in the NHFD exceeded a quarter of a million. This report considers a total of 61,508 patients admitted between 1 April 2012 and 31 March 2013 – bringing together data from all 180 hospitals in England, Wales and Northern Ireland which reported data on over 100 cases or (in the five units which admit fewer than this) reported data on over two thirds of their cases.

The main body of the report presents comparative data in a series of tables and charts which rank individual hospitals. These allow a local team to understand how their casemix – patients' age, sex-ratio, place of residence, anaesthetic grade, cognitive state, walking ability, and fracture type – compare with that reported in other units.

In this year's report we rank hospitals on the basis of the proportion of hip fractures which have been sustained following an in-patient fall. The fact that inpatient fallers make up as much of 15% of admissions to some units will be of interest to local health providers, as will the observation that the catchment area of some of these units includes hospitals with no alternative to single room accommodation.

The same approach is used to describe the patients' progress – from admission through to discharge, with details of time to an orthopaedic ward and time to surgery, and of operations performed, medical assessment, development of any pressure ulcers, secondary prevention measures, length of acute hospital stay and destination on discharge.

Outcome is summarised with a number of key measures which have been adjusted to take into account the casemix of the patients admitted to individual hospitals.

The priority of most patients and their families is that they are helped to regain independence and mobility, and are able to return to their previous residence as soon as possible. Casemix adjusted data on the percentage of patients returning to their own home by 30 days after hip fracture are therefore our key outcome measure. The report also includes casemix adjusted mortality figures at 30 days.

For the first time, this report includes overall NHS length of stay or 'super-spell' figures, not only for England, but also for Wales and Northern Ireland. These have been derived from reference to national databases – Health Episode Statistics (HES) in England, Patient Episode Database Wales (PEDW) in Wales, and Fracture Outcome Research Database (FORD) in Northern Ireland. This super-spell data at last addresses the difficulty of describing the overall patient experience when different stages of care are provided in different organisations. Figures from different hospitals, Trusts, and other NHS organisations are being linked to define how long it actually takes a patient to return home, or to be settled in their placement.

Progress so far

Performance

This report includes much of which we should be proud when we measure it against the six Blue Book standards which stimulated the NHFD's original development. We can see a progressive pattern of improvement across the four standards for which the NHFD has been the principal driver – orthogeriatric assessment, the prevention of pressure sores, and prevention of future falls and fractures.

Standard	2009	2010	2011	2012	2013
1. Admission to orthopaedic ward within 4 hours	N/A	55%	56%	52%	50%
2. Surgery within 48 hours and during working hours	75%	80%	87%	83%	86%
3. Patients developing pressure ulcers	N/A	6%	3.7%	3.7%	3.5%
4. Pre-operative assessment by an orthogeriatrician	24%	31%	37%	43%	49%
5. Discharged on bone protection medication	N/A	57%	66%	69%	69%
6. Received a falls assessment prior to discharge	44%	63%	81%	92%	94%

In order to ensure comparability with previous reports, the percentages quoted above are based on the exclusion of 'unknown' data.

Of concern, only half of patients are now admitted to an orthopaedic ward within four hours of presentation – this figure having again fallen compared to the 56% we reported in 2011. This coincides with a reduced emphasis on this as a target, but may reflect the tendency for hip fracture patients to be placed in the generic admission wards which have evolved as a means of responding to the increasing numbers presenting to Emergency Units.

On a more positive note, the proportion of patients being offered surgery within 48 hours has stabilised, with a slight improvement after the deterioration we reported last year. The significant variation in performance around the country that we report suggests that there is still considerable room for further improvement.

The more ambitious target set by National Institute for Health and Care Excellence (NICE) in 2011 remains a challenge – with only 70% of patients currently being offered surgery 'on the day of, or the day after admission'.

Mortality

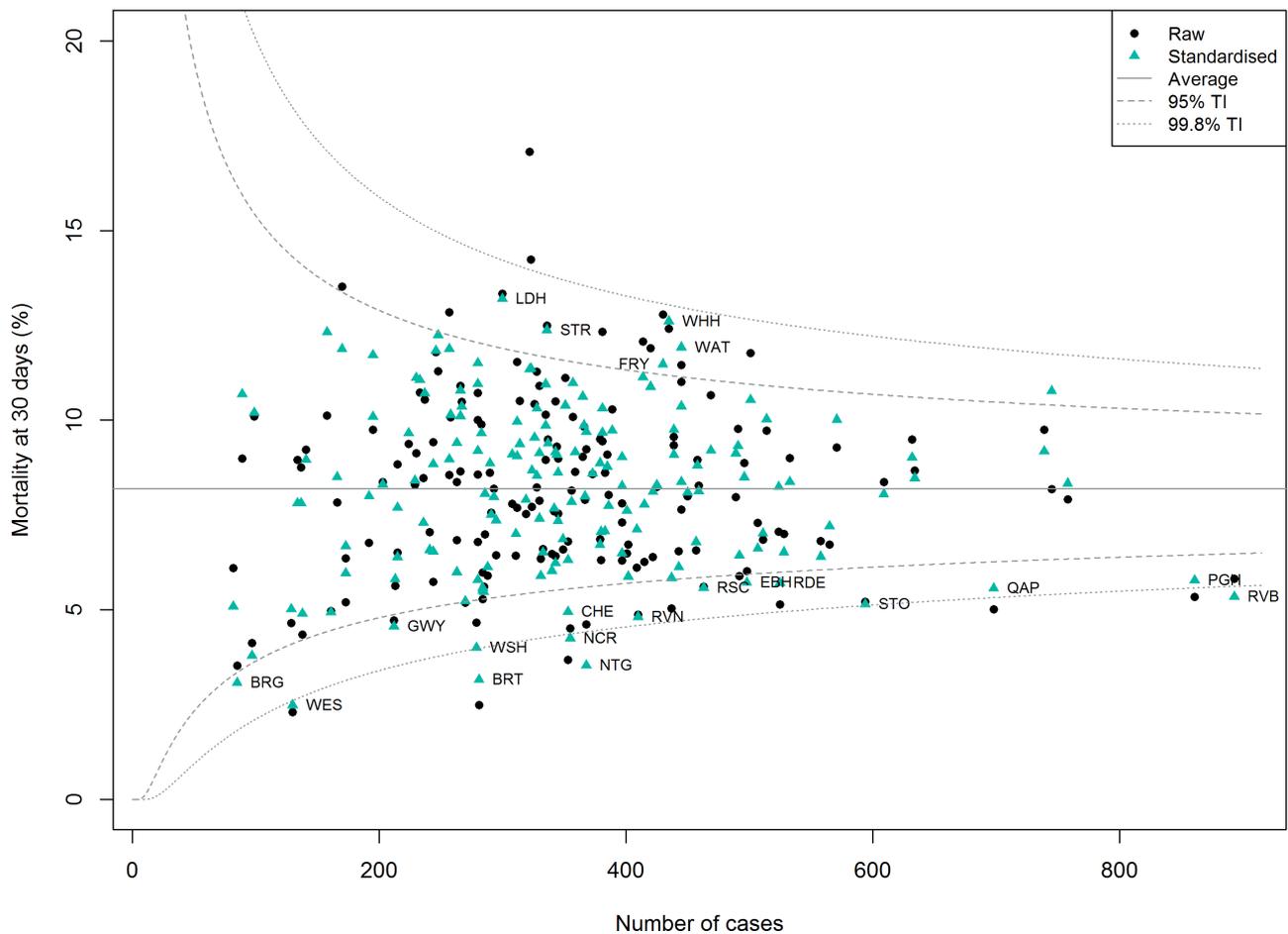
Hip fracture is the commonest cause of injury related death, and is commonly seen by patients, their relatives and friends as the final insult that led to their death. Many of these deaths are a reflection of frailty and pre-existing illness, and not all mortality is preventable. Variation in the age and complexity of patients admitted to different hospitals makes it challenging to demonstrate whether an individual unit is doing everything necessary to avoid preventable deaths, but casemix adjustment helps us to correct for this.

The overall rate of mortality at 30 days in the casemix adjusted analysis is 8.2% – compared with the 8.1% figure we reported for 2011–12 in our supplement earlier this year. Some of the apparent variation in mortality between units will be a chance statistical finding, but our approach does allow us to identify units where performance is particularly poor, and to highlight those where outstanding performance should be recognised.

We identified a number of Trusts (FRY, LDH, STR, WAT, WHH) which are outliers in that they fall outside the 2SD threshold in this year’s funnel plot [Chart 29].

However, it is not clear that this indicates a consistent pattern of failing or justifiable cause for concern. FRY and WHH were not outliers when data collected over the three year period 2010–13 was considered, and although STR did remain an outlier in this three year analysis, the absolute excess mortality for each of these units was less than one case per year.

In contrast, two units (LDH and WAT) triggered concerns on 2012–13 data, and were still outliers when the three years’ data were analysed. Both units remained at or above the 3SD ‘alarm’ threshold for the 2010–13 period. Each showed an excess mortality which in absolute terms equated with over 12 deaths during the three year period, and which was significant at a 95% confidence limit.

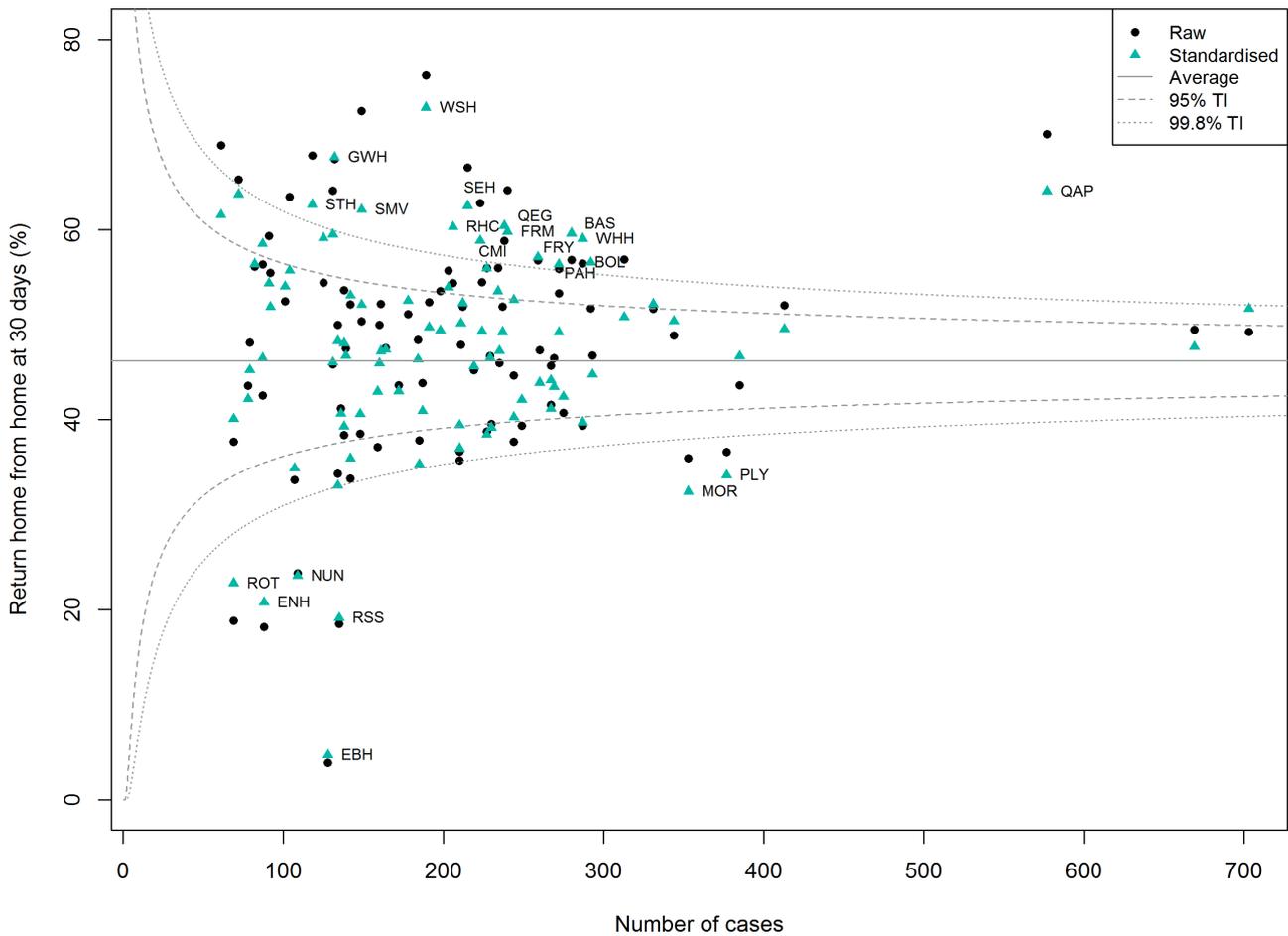


Return home

Older people often report being more concerned about potential loss of independence, than about the risk of dying after a hip fracture. As a result success in rehabilitation remains the NHFD's key marker of the quality of multidisciplinary care.

The overall rate of return home from home at 30 days for all cases included in the case-mix adjusted analysis was 43.3% in 2011, 44.6% in 2012, and this year has improved further – to 46.2%.

The quality of follow-up data has again improved this year, but these figures continue to be based on relatively poor data returns, with only 44.8% complete for the 30 day time point.



This chart is composed of data from HES (England), PEDW (Wales) and FORD (Northern Ireland). Data are for the period 1 April 2011 to 31 March 2012.

Length of Stay

Length of stay (LOS) is the main component of the overall cost of hip fracture care. Potential reductions in LOS were key to the improved cost-effectiveness achieved by Hip Fracture Programmes that were identified by the economic model of the NICE Guideline³ (CG124) on hip fracture.

This report describes a further small reduction in the mean length of acute and post-acute stay within the admitting hospital – from 21.2 days in 2011, to 20.2 days in 2012 – and 20 days this year.

The NHFD has commissioned the Royal College of Surgeons' Clinical Effectiveness Unit (RCS CEU) to link data on individual patients in the NHFD with details of their inpatient care held in national databases. This seeks to capture length of stay not only in the hospital to which a patient is originally admitted, but also the whole of subsequent NHS stay in other Trusts or organisations.

The first description of this approach to 'super-spell' was included in our supplementary report published earlier this year. That report considered patients in England using Health Episode Statistics (HES) data for the 2010–11 year.

In this 2013 National Report we include the same analyses for the 2011–12 year – extended with new data from PEDW data from Wales, and with additional data from FORD for Northern Ireland.

The development of Local Health Boards means that in Wales patients do not move between acute and community Trusts in the same geographical area. There is less need to identify the elements of care provided by different organisations, and PEDW categorises length of stay differently from HES. PEDW data simply split between a spell of trauma/rehabilitation in the admitting hospital, and any spell of rehabilitation or long-stay inpatient care that might follow in a second hospital.

Technical and practical difficulties inherent in attempting to identify 60,000 patients with hip fracture in HES mean that while this report features NHFD figures for 2012–13, we report super-spell figures for 2011–12.

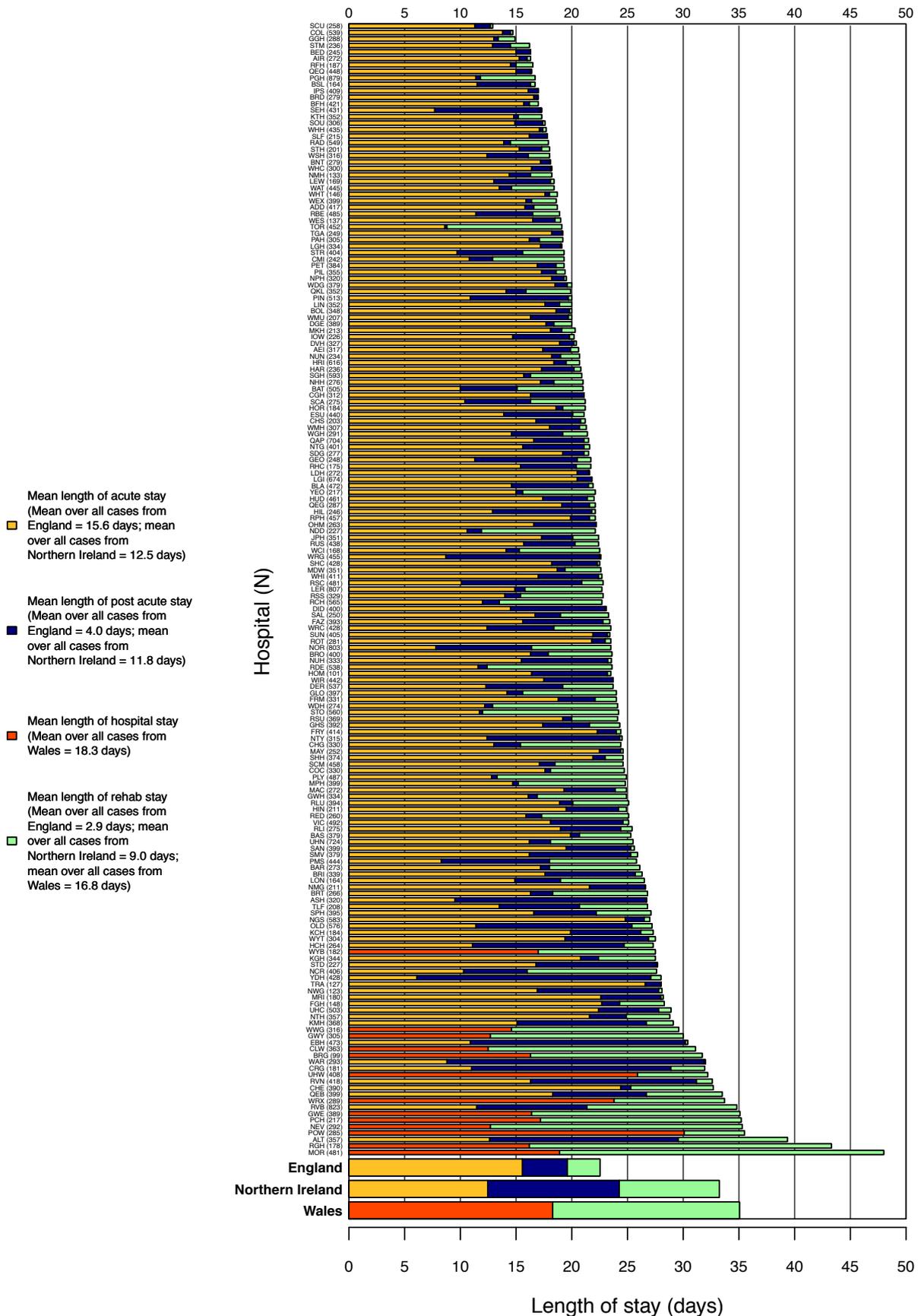
In spite of this the super-spell data gives a crucial insight into the real cost of hip fracture – capturing the whole time a patient has to spend in hospital, and the whole cost to the health service in terms of overall hospital bed occupancy.

The HES figure for mean super-spell in England is 22 days. This may still understate NHS stay as it remains unclear whether HES reliably captures the full extent of NHS funded rehabilitation in intermediate care and care homes – which is an increasingly important component of Community Trust provision in England.

In contrast PEDW records a super-spell of 35 days in Wales, reflecting a LOS in rehabilitation beds that is over twice as long as the figure for England. This pattern is consistent with data submitted to the NHFD; nine of the ten longest LOS figures being for hospitals in Wales. Long-stay and continuing care hospital beds are an element of provision in Wales, but the impact of long-stay patients will have been limited in this report since LOS figures beyond 365 days are excluded from this analysis.

The FORD data indicate a super-spell of 33 days for Northern Ireland that is also substantially longer than the HES figure for England. This will in part reflect a greater use of rehabilitation beds as part of a hub and spoke model, with centralisation of hip fracture surgery in a small number of trauma units which serve a wide geographic catchment area.

Superspell (Third party data sources)



For England and Northern Ireland acute stay and post acute stay are measured separately.
For Wales only hospital stay (acute stay and post acute stay combined) is measured.

Future development of the NHFD

Improving ascertainment

This national report contains the most complete data set so far – the largest number of hospitals, the largest number of patients, and the most complete datasets.

A national clinical audit should seek to acquire complete data on all cases, and the NHFD constantly questions what might be happening in situations where patients are not being reported:

- hospitals which in the past were not submitting any data
- hospitals which still submit too few patients to support reliable analysis
- hospitals where a proportion of patients are missed, but where there is a risk that these may be missed for a reason that might lead to biased performance and outcome figures (for instance if fitter patients were lost when moved for total hip replacement in a different unit)
- hospitals where follow-up is incomplete and where there is a risk of bias (for instance, if inpatient deaths are all recorded, but some discharge data missed – estimates of inpatient mortality might be artificially elevated)

Encouragingly, since May 2013 all hospitals are now contributing data. Only 6 units were excluded from this year's report on the basis of the poor number of cases submitted. Individual charts in the report highlight where data is incomplete. However, it is not straightforward to establish how complete our data are, since there is no external 'gold-standard' against which our figures could be checked.

Until this year the most reliable available estimate of total hip fracture numbers for these countries has been our own – from participating sites' Facilities Audit reports of how many patients they are seeing. Increasingly these units' estimates have been based on previous years' experience of data submission to the NHFD, refined by local understanding of whether a proportion of patients might have been missed.

However, we have attempted to validate the completeness of case ascertainment through the RCS CEU data comparison exercise described above.

The HES and PEDW databases have their own uncertainties, and in particular their dependence on coding means that they may not identify all patients with hip fracture. HES showed 59,344 admissions in England in 2011–12, PEDW showed 3,804 admissions in Wales.

These figures correspond well with our own estimates. Our facilities audit had estimated 58,638 hip fracture admissions in England, and 3,810 in Wales, and for 2012–13 we report data submitted on 55,998 in England, and on 3,665 in Wales.



FORD identified 1,695 patients in Northern Ireland in 2011–12. The NHFD already links directly with FORD so numbers will correspond very closely. All four hospitals in Northern Ireland are now contributing data, so for 2012–13 our facilities audit estimate increased to 1,936, and this report includes 1,845 patients.

There is no reason to believe that HES and PEDW provide a more reliable estimate of total hip fracture numbers than our own figures, but we can feel confident in our case ascertainment since we have collected and report data on 94.9% of all the hip fractures recorded in these national databases, and on 95.5% of the number expected from our own facilities audit.

Improving follow-up

Follow-up data remains disappointing in some areas, and 30 day follow-up data is only complete in 37.4% of cases. However, this report still demonstrates an immediate impact on patient independence, with new care home placements for a significant number of those who suffer a hip fracture.

We show that 23% of those surviving the injury go to care homes directly from the acute hospital (only 19.2% were admitted from such care), and a further 21.6% transfer to rehabilitation wards. At present the incompleteness of follow-up data for the patients who are offered additional rehabilitation means that the overall rate of new care home placement following hip fracture cannot be estimated.

Given that each such placement after hip fracture carries a mean life-time cost of £64,000 an understanding of longer term outcome would be a key economic measure that the NHFD should seek to deliver. Such a move may reflect greater difficulty with mobility or self-care, but may also reflect a loss of confidence on the part of the patient or their relatives – so that a fear of future falls precipitates a move to institutional care.

Provision of coordinated multidisciplinary rehabilitation and secondary prevention of falls are clearly key to avoiding unnecessary loss of independence.

Improving description of care

This and previous National Reports have been focused on audit of current practice against the standards set out in the BOA/BGS 'Blue Book' and the criteria set out for BPT in England.

The demonstration that 78.4% of patients are having a post-operative abbreviated mental test is an indication of how rapidly participating hospitals can respond to innovation or change in these criteria.

Ongoing work seeks to extend this remit so that we can explore other aspects of care, and other measures of performance and outcome. Short term 'Sprint' audits will be the first step in this development.

The NHFD and Anaesthetic Management

Anaesthesia was not included in the initial core dataset for the NHFD as these details did not form part of the Blue Book standards. However, since April 2011 limited information has been collected on the type of anaesthesia, and the use of nerve blocks for hip fracture surgery as part of the core dataset.

In 2011 representatives from NHFD and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) decided to collaborate and develop a comprehensive Anaesthesia Sprint Audit of Practice (ASAP).

This seeks to assess adherence to the AAGBI guidelines⁴ on the management of proximal femoral fracture which in 2011 recommended:

- *that surgery and anaesthesia are undertaken by appropriately experienced surgeons and anaesthetists*
- *that the Nottingham Hip Fracture Score⁵ is used to predict Postoperative mortality*
- *consideration of spinal/epidural anaesthesia for all patients undergoing hip fracture repair unless otherwise contraindicated*
- *not using opioid analgesics as the sole adjunct to anaesthesia*
- *that either spinal or general anaesthesia is administered (simultaneous administration is associated with precipitous falls in blood pressure)*
- *use of supplemental oxygen during spinal anaesthesia*
- *co-administration of intrathecal opioids during spinal anaesthesia*
- *pre or Postoperative peripheral nerve blockade to supplement either general or spinal anaesthesia*
- *monitoring of intraoperative blood pressure*
- *identification of bone cement implantation syndrome, by monitoring for hypoxia or hypotension shortly after cementing or reaming*

The objectives of the ASAP sprint audit are to:

- describe the use of different anaesthesia, peripheral nerve blockade, opioids and sedative medication
- define the prevalence and implications of hypotension developing during anaesthesia
- establish the seniority of the operating surgeon/anaesthetist
- identify operative markers of bone cement implantation syndrome
- establish whether the Nottingham Hip Fracture Score is a robust method of conducting casemix analysis

Data is being collected prospectively in the summer of 2013. The ASAP sprint will involve the addition of 8 fields to the NHFD data set. ASAP data will be linked to outcome measures of the NHFD; primarily 30-day mortality, Postoperative worsening of abbreviated mental test score, and return to normal residence. Currently, out of the 186 hospitals contributing to the NHFD 167 hospitals have signed up for the ASAP sprint audit.

The NHFD and NICE Quality Standard 16

In 2011 NICE published 'The Management of Hip Fracture in Adults'³ along with a series of implementation tools and resources. In 2012 they published a set of Quality Standards for hip fracture (NICE QS16)⁶.

These included a number of areas about which the existing NHFD dataset provides information, and this report already includes charts which test specific standards within QS16 – in particular those which state that people with hip fracture should:

- *have their cognitive status assessed, measured and recorded from admission*
- *have surgery on the day of, or the day after, admission*
- *receive cemented arthroplasty for displaced intracapsular fracture, with the offer of total hip replacement if clinically eligible*
- *be offered a multifactorial risk assessment to identify and address future falls risk, and are offered individualised intervention if appropriate*
- *be offered a bone health assessment to identify future fracture risk and pharmacological intervention as needed before discharge from hospital.*

The NHFD team is currently proposing a new Sprint Audit to extend the NHFD's coverage to the remaining elements of QS16 – quality standards which state that people with hip fracture should:

- *receive prompt and effective pain management, in a manner that takes into account the hierarchy of pain management drugs, throughout their hospital stay*
- *have their surgery scheduled on a planned trauma list, with consultant or senior staff supervision*
- *receive extramedullary implants such as a sliding hip screw in preference to an intramedullary nail for trochanteric fractures above and including the lesser trochanter (AO classification types A1 and A2)*
- *be offered a physiotherapist assessment the day after surgery and mobilisation at least once a day unless contraindicated*
- *be offered a formal Hip Fracture Programme from admission*
- *be offered early supported discharge (if they are eligible), led by the Hip Fracture Programme team*
- *and that the Hip Fracture Programme team retains a comprehensive and continuing clinical and service governance lead for all stages of the pathway of care, including the policies and criteria for both intermediate care and early supported discharge*

It is planned that these areas should form the focus of a specific Sprint Audit – an audit that would also approach the question of the patient experience. Since cognitive impairment is so prevalent in this patient group this will be challenging, but an extension of our work to assess the quality of the patient's experience with respect to pain management is clearly a minimum requirement if we are to understand the impact of hip fracture from their perspective.

The NHFD and Clinical Commissioning Groups

The Clinical Commissioning Group Outcomes Indicator Set is currently being developed as part of NHS England's approach to quality improvement. Its aim is to support Clinical Commissioning Groups (CCGs) and health and wellbeing partners, to plan for health improvement and to provide clear, comparative information for patients and the public about the quality of health services commissioned by CCGs.

The following hip fracture indicators are included in the set of recommended indicators that are under consideration by NHS England for 2014–15¹⁵.

If accepted, hip fracture incidence will be calculated from the Hospital Episode Statistics. The remaining three indicators will be derived from data submitted to the NHFD:

1. Of people with hip fracture, the proportion who receive a formal Hip Fracture Programme from admission evidenced as having a joint acute care protocol at admission, and evidence of MDT rehabilitation agreed with a [named responsible orthogeriatrician and orthopaedic surgeon, with GMC numbers recorded.
2. Of people with hip fracture, the proportion who receive surgery on the day of, or the day after, admission.
3. Of people with hip fracture, the proportion who receive a multifactorial risk assessment of future falls risk, led by the Hip Fracture programme team evidenced by GMC number of responsible clinician.

This reinforces the importance of submitting complete, accurate data to the NHFD.



Using audit to improve care

Improving care and achieving Best Practice Tariff: Airedale NHS Foundation Trust

In May of 2011 Airedale NHS Foundation Trust started an orthogeriatrics service. The specific aims of the service were to achieve Best Practice for patients with fracture neck of femurs based on the Blue Book indicators. The service started from a zero starting point, where no patients were submitted by Airedale NHS Foundation Trust to the National Hip Fracture Database.

The overall aim is to provide optimal medical, surgical and anaesthetic care to patients who have been part of the service.

The service is based on a small team, all located within the same site. This service has been implemented and grown considerably within the last 24 months, based on a strong multidisciplinary team ethic and close working between Geriatrics, Orthopaedics, Anaesthetics and Emergency Department. The Nurse specialist has been key to coordinating the links between the specialities.

The key to the success has been a neck of fracture trauma board and a neck of fracture spreadsheet being kept to highlight all the key indicators to be achieved.

Other initiatives have included close collaboration with the Emergency Department to ensure femoral nerve blocks are done to reduce opiate anaesthesia, nursing care pathways assist in the management of the patient and a neck of femur patient and relative information booklet.

This service has grown to achieve 70%, Best Practice in the first year. The subsequent year 2012–13 has shown a further improvement in the service to 79%. The length of stay in hospital for these patients has fallen significantly. In recognition of these achievements, the service was shortlisted for a Healthcare Innovations award in 2012.

Improving care and reducing time to theatre: North Manchester General Hospital

North Manchester General Hospital now accepts orthopaedic trauma for both North Manchester and Bury following a reconfiguration of services in March 2012. At this time there was Orthogeriatric cover for hip fracture patients for only 3 half days per week.

In order to improve the service, a Multidisciplinary Service Development Group (MSDG) was set up and we have now gained a full time Orthogeriatrics Consultant in February of this year and a (currently locum) Orthogeriatrics Speciality Doctor. The MSDG meets once a month to identify problems and provide solutions.

Our figures have improved dramatically. In June 2013 average time to theatre was 31 hours and average length of stay was 7 days compared to March 2012 when average time to theatre was 57 hours and length of stay 20 days.

After attending the Northwest Hip Fracture Meeting in March 2013 the MSDG uses information from this day and continues to work on improving the service for our patients. Achievement of the Best Practice Tariff has improved from 10% in quarter 4 of 2012–13 (when there was no consistent OG cover) to 33% in quarter 1 of 2013–14.

Using audit data to improve practice: Calderdale and Huddersfield NHS Foundation Trust

In February 2010, Calderdale and Huddersfield NHS Foundation Trust (CHFT) appointed a dedicated Trauma Co-ordinator as a result of the Rapid Improvement Programme for Orthopaedics in 2008. This was increased to 1.6 whole time equivalent (WTE) in September 2011. Prior to February 2010, NHFD data entry was sporadic, as was data completeness. This was due to data collection not being the responsibility of a specific member of staff.

As is nationally expected, the number of fractured neck of femur patients has increased from 415 in 2009–10 to 477 in 2012–13. We currently have an average time to theatre of 33 hours and length of stay averages 22.7 days.

In March 2013, CHFT was highlighted as being an outlier of 30 day mortality at 13.1% in 2011–12. Once aware of this situation, we sought an external opinion for advice on where we could improve the care we provide. As a result, a multidisciplinary review lead by the British Orthopaedic Association was instigated. They visited in May 2013, and after a review of data and documentation, key staff were interviewed. The following day, feedback was provided.

As a Trust, we felt both inspired and invigorated by their positive, supportive outlook. Current good practice in the ward environment was complimented upon. They also acknowledged that changes had already been made and suggested other areas worth considering for improvement.

Whilst we await formal feedback, our practices continue to evolve, and we look forward to reporting significant improvements in the near future.

Improving care: University Hospital Lewisham

Following significant delays in times to theatre in 2010 and early 2011, the pre-operative assessment of the patients was changed to include the outreach consultant anaesthetist as well as consultant orthogeriatrician, to ensure optimisation to theatre and to plan post-operative care. In addition integration with community providers has allowed in-reach of teams to allow earlier supported discharge.

In 2011/12 an average of 62% of patients were in theatre within 36 hours. Delays were due to lack of theatre space and medically unfit. In 2012–13 75% of patients to theatre within 36 hours.

63% of patients are discharged straight back to their own home compared to 42% in 2010–11, with an average length of stay reduced 5 days to 18.4 days in 2011–12 compared to 24.1 days in 2010–11 and readmissions have almost halved (16% to 8.8%).



Improving care and reducing length of stay: James Cook Hospital

In September 2012 a generic multi-speciality trauma admissions unit underwent a transition to a dedicated hip fracture ward. Communication in discharge planning has been improved through single site physiotherapy and occupational therapy teams, a ward-based social worker, daily MDT meetings with input from an Orthogeriatrician.

The morning trauma meeting has moved, and the hip fracture unit is visited first on the daily trauma round – to enable senior decision makers to integrate with ward staff and the anaesthetic team in coordination of care.

A change of approach across many domains has led to:

- average acute LOS decreasing by 6 days in the first six months from 20 days to 14 days
- 40% of patients return directly home from the acute ward, but this is achieved earlier 11.5 days compared to 16 day previously
- a further 35% of patients return to their original residence after rehabilitation in one of the community hospitals
- risk of pressure sores and inpatient falls both appear to have been reduced by single site care.

Improving care and reducing pressure ulcer incidence: Royal Liverpool University Hospital

The Royal Liverpool University Hospital first joined the NHFD back in 2008. In 2010 NHFD report we found 7% patients developing pressure ulcers (national 3.9%). A multidisciplinary team initiative was set up resulting in 0.9% patients developing pressure ulcers by 2012.

Our project 'Sustaining the reduction of pressure ulcers in patients with hip fracture' was recently awarded the 'Eva Higgins Prize' at the British Geriatrics Society Scientific meeting.

The NHFD has provided us with a great platform for improvements; we present our data monthly to our orthopaedic trauma directorate and aim to constantly improve the care we deliver with monthly action plans.

Not only have we seen year by year improvements in best practice in the form of Blue Book Standards/ Best Practice Tariff but also multiple other areas for example dementia care, continence care and improvements in nutrition for patients with hip fractures.

This has all been achieved through extensive collaborative work.

Improving care and reducing time to theatre: Royal Devon and Exeter Hospital

In the last quarter of 2012, 75% of patients from the Exeter Hip Fracture Service at the Royal Devon and Exeter Hospital had surgery within 36 hours of admission. 25% of patients did not reach theatre within this time, either due to lack of theatre time (12% of the total) or due to fitness for surgery (12%), which included patients previously on warfarin awaiting surgery.

Since January 2013, an early start initiative for the operative list was implemented in our trauma theatre, optimizing its utilization from 8:00 every morning and prioritizing hip fracture patients as first cases. These procedures are performed or supervised by an experienced surgeon whilst the post-take ward round and meeting normally take place.

In February 2013 a formal audit of compliance to our Trust guidelines for reversal of warfarinisation was also carried out for this group of patients, aiming towards prompt action as soon as a hip fracture is diagnosed, identifying correctable delays in the process and leading to shorter reversal periods of anticoagulation.

These implementations, amongst others, have contributed towards an improvement in the percentage of patients reaching theatres within 36 hours. The figure for the month of April improved to 93%.

Improving care: Pilgrim Hospital, Boston

The last 12 months have seen major improvements in outcomes and patient experience. An Orthopaedics Associate Specialist with a real commitment has taken on a Lead Clinician role as a champion for patients with hip fracture. Three new morning trauma lists to supplement the previous five afternoon week-day lists, and extended week-end trauma lists have played an important role in minimising delays.

Patients are admitted by on-call teams prompt, receive prompt pre-op. optimisation by Trauma Coordinators, Anaesthetists and the Orthopaedic Specialist, are listed first on dedicated trauma lists with Consultant Anaesthetists and Senior Surgeons operating or supervising trainees, and transfer to the care of the multidisciplinary Hip Fracture Service team post-op.

With the support of the Orthogeriatrician the Orthopaedic Specialist carries out robust ward rounds every day, and monitors the progress of post-op. patients.

As a consequence Pilgrim hospital is achieving BPT for most hip fracture patients, and has seen:

- a one day reduction in time-to-theatre from 42.5 hours last year 18.4 hours recently
- a four day reduction in the length of stay
- a halving of 30 day mortality from 15% to 7.4%



Improving care: East Lancashire Hospitals NHS Trust

East Lancashire Hospitals NHS Trust has contributed to the NHFD with a high case ascertainment for past 3 years. Over this time period, there has been the introduction of an integrated care pathway, fracture neck femur care bundle, a fast tracking system, and a dedicated hip fracture unit in a 46 bed trauma ward

2 consultant orthogeriatricians provide perioperative care through daily ward rounds (Mon-Fri), coordinate rehabilitation and discharge through weekly multidisciplinary case conferences, undertake fall and bone health clinics; and lead the fracture liaison service.

The recent introduction of a clinical group comprising orthopaedic surgeons and orthogeriatricians (with anaesthetic involvement as required) undertaking joint primary and secondary mortality reviews allows us to monitor our mortality and morbidity. In addition this group helps share good practice and lessons to be learnt.

Over the last three years we have consistently improved our Best Practice Tariff standards from 15.62% in 2010–11 to 65.33% in 2011–12 and 73% in 2012–13. There has been consistent improvement in five out of six standards year on year for last three years. The platform has identified the main areas for improvement including length of stay and unexpected variation in mortality which may require further detailed investigation.

In line with current Department of Health directives, we have improved the ward environment and care of patients suffering from delirium and dementia; with a designated bay and increased nursing support for these particularly vulnerable patients.

Improving Care: The Royal Hampshire County Hospital

The Royal Hampshire County Hospital (Hampshire Hospitals Foundation Trust) started implementation of an Enhanced Recovery (ER) Pathway for patients with a hip fracture in February 2012.

The #NOF Enhanced Recovery pathway utilises the principles of ER, but key details of the pathway that support the care and management of patients presenting with a hip fracture are:

- GP's summary notes obtained on admission
- minimum fasting pre-operatively with administration of pre-op drinks (fast from food for 6 hours, and clear fluids for 2 hours) Oral intake encouraged as soon as possible post operatively so avoiding iv fluids where possible
- Hb results are obtained within an hour on day 1 to facilitate mobility.
- joint therapy working enhancing rehabilitation.

Using these principles for care delivery there has been a reduction in acute length of stay by a day.

Time from admission to surgery has reduced by 6.39 hours to 19.95 hours, and 72% of patients return to their preadmission residence as against 55% at the start of this work.

Improving Care: Worthing Hospital

Worthing Hospital treats between 400 and 500 hip fractures annually from an elderly population with high levels of comorbidity. Data collated by The National Hip Fracture Database (NHFD) and Dr. Foster in early 2011 identified a higher than expected hospital standardised mortality ratio (HSMR) after hip fracture.

As a result, the hip fracture pathway was redesigned according to practice recommendations from the National Institute for Health and Clinical Excellence (NICE) and the British Orthopaedic Association / British Geriatrics Society 'Blue book'.

The effect of practice change on outcomes and quality indicators such as mortality and length of stay (LOS) after hip fracture was analysed.

Changes to the patient pathway included

- admitted under geriatrician to ward specialising in perioperative hip fracture care
- pre operative Orthogeriatrician review
- prioritised for all day trauma list
- on-site rehabilitation

There was a significant drop in mean LOS (from 28 to 21 days) and mean time to surgery (42 to 28 hours) as well as time to orthogeriatric assessment. There was no significant difference in crude mortality between groups but the HSMR dropped to the expected level. The post intervention group had significantly higher numbers of patients over the age of 90 and with ASA ≥ 3 .

Implementing an effective orthogeriatric pathway at our hospital has resulted in significant improvements in clinical outcomes and quality indicators despite an increase in the complexity of an already challenging case mix.

Benchmarking data from national databases such as the NHFD and Dr. Foster may be used to facilitate improvement in service delivery. However, careful examination of local data is still important to correct discrepancies, adjust for local case mix and account for the differences in methodology used by these organisations.

Appendix A

Participating hospitals

Indicates inclusion in this report n=180; indicates hospitals participating in NHFD but not submitting sufficient data to be included in this report n=6

In the NHFD Annual Report 2013, hospitals are identified using their unique three letter code

Addenbrooke's Hospital, Cambridge	ADD	Furness General Hospital, Barrow-in-Furness	FGH
Airedale General Hospital	AIR	George Eliot Hospital, Nuneaton	NUN
Alexandra Hospital	RED	Glan Clwyd Hospital, Rhyl	CLW
Altnagelvin Area Hospital	ALT	Gloucester Royal Hospital	GLO
Arrowe Park Hospital, Wirral	WIR	Good Hope Hospital	GHS
Barnet Hospital	BNT	Grantham and District Hospital	
Barnsley Hospital	BAR	Guys and St. Thomas Hospital	STH
Basildon and Thurrock University Hospital	BAS	Gwynedd Ysbyty, Bangor	GWY
Basingstoke and North Hampshire Hospital	NHH	Harrogate District Hospital	HAR
Bassetlaw District General Hospital	BSL	Hillingdon Hospital	HIL
Bedford Hospital	BED	Hinchingbrooke Hospital	HIN
Birmingham Heartlands	EBH	Homerton University Hospital	HOM
Bradford Royal Infirmary	BRD	Horton Hospital, Banbury	HOR
Bristol Royal Infirmary	BRI	Huddersfield Royal Infirmary	HUD
Bronglais General Hospital, Aberystwyth	BRG	Hull Royal Infirmary	HRI
Broomfield Hospital	BFH	James Cook University Hospital	SCM
Charing Cross Hospital		James Paget University Hospital	JPH
Chase Farm Hospital	CHS	Jersey General Hospital	
Chelsea and Westminster Hospital	WES	John Radcliffe, Hospital, Oxford	RAD
Cheltenham General Hospital	CHG	Kettering General Hospital	KGH
Chesterfield Royal Hospital	CHE	King's College Hospital, London	KCH
Colchester General Hospital	COL	King's Mill Hospital, Sutton in Ashfield	KMH
Conquest Hospital, Hastings	CGH	Kingston Hospital	KTH
Countess of Chester Hospital	COC	Leeds General Infirmary	LGI
County Hospital, Hereford	HCH	Leicester Royal Infirmary	LER
Craigavon Area Hospital	CRG	Leighton Hospital, Crewe	LGH
Croydon University Hospital	MAY	Lincoln County Hospital	LIN
Cumberland Infirmary, Carlisle	CMI	Luton and Dunstable Hospital	LDH
Darent Valley Hospital, Dartford	DVH	Macclesfield General Hospital	MAC
Darlington Memorial Hospital	DAR	Manchester Royal Infirmary	MRI
Derbyshire Royal Infirmary	DER	Manor Hospital, Walsall	WMH
Derriford Hospital, Plymouth	PLY	Medway Maritime Hospital	MDW
Diana Princess of Wales Hospital, Grimsby	GGH	Milton Keynes General Hospital	MKH
Doncaster Royal Infirmary	DID	Morrison Hospital, Swansea	MOR
Dorset County Hospital	WDH	Musgrove Park Hospital, Taunton	MPH
Ealing Hospital		Nevill Hall Hospital	NEV
East and North Herts Hospital	ENH	New Cross Hospital, Wolverhampton	NCR
East Surrey Hospital, Redhill	ESU	Newham General Hospital	NWG
Eastbourne Hospital	DGE	Nobles Hospital, Isle of Man	NOB
Frenchay Hospital, Bristol	FRY	Norfolk and Norwich University Hospital	NOR
Frimley Park Hospital, Camberley	FRM	North Devon District Hospital	NDD

North Manchester General Hospital	NMG	St George's Hospital	GEO
North Middlesex University Hospital	NMH	St Helier Hospital, Carshalton	SHC
North Tyneside General Hospital	NTY	St. Mary's Hospital, Isle of Wight	IOW
Northampton General Hospital	NTH	St. Mary's Hospital, Paddington	STM
Northern General Hospital, Sheffield	NGS	St Peter's Hospital, Chertsey	SPH
Northwick Park Hospital	NPH	St Richard's Hospital, Chichester	STR
Peterborough District Hospital	PET	Stafford Hospital	SDG
Pilgrim Hospital, Boston	PIL	Stepping Hill Hospital, Stockport	SHH
Pinderfields General Hospital, Wakefield	PIN	Stoke Mandeville, Aylesbury	SMV
Poole General Hospital	PGH	Sunderland Royal Hospital	SUN
Prince Charles Hospital, Merthyr	PCH	Tameside General Hospital, Manchester	TGA
Princess Elizabeth Hospital, Guernsey		The Great Western Hospital, Swindon	PMS
Princess Of Wales Hospital	POW	The Ipswich Hospital	IPS
Princess Royal Hospital, Bromley	BRO	The Princess Alexandra Hospital, Harlow	PAH
Princess Royal Hospital, Telford	TLF	The Royal Cornwall Hospital,	RCH
QEQM, Margate	QEQ	The Royal London Hospital	LON
Queen Alexandra Hospital, Portsmouth	QAP	Torbay District General Hospital	TOR
Queen Elizabeth Hospital, Birmingham	QEB	Trafford General Hospital	TRA
Queen Elizabeth Hospital, King's Lynn	QKL	Tunbridge Wells Hospital	TUN
Queen Elizabeth Hospital, Gateshead	QEG	Ulster Hospital, Dundonald	NUH
Queen Elizabeth Hospital, Woolwich	GWH	Queens Medical Centre, Nottingham	UHN
Queen's Hospital, Burton upon Trent	BRT	University College Hospital , London	
Queen's Hospital, Romford	OLD	University Hospital of North Staffs,	
Rotherham District General Hospital	ROT	Stoke-on Trent	STO
Royal Albert Edward Infirmary, Wigan	AEI	University Hospital Aintree	FAZ
Royal Berkshire Hospital, Reading	RBE	University Hospital Coventry (Walsgrave site)	UHC
Royal Blackburn Hospital	BLA	University Hospital Of North Durham	DRY
Royal Bolton Hospital	BOL	University Hospital of North Tees	NTG
Royal Devon and Exeter Hospital	RDE	University Hospital of Wales, Cardiff	UHW
Royal Free Hospital	RFH	University Hospital, Lewisham	LEW
Royal Glamorgan Hospital, Llantrisant	RGH	Victoria Hospital, Blackpool	VIC
Royal Gwent Hospital	GWE	Wansbeck Hospital	ASH
Royal Hampshire County Hospital	RHC	Warrington Hospital	WDG
Royal Lancaster Infirmary	RLI	Warwick Hospital	WAR
Royal Liverpool University Hospital	RLU	Watford General Hospital	WAT
Royal Oldham Hospital	OHM	West Cumberland Hospital, Whitehaven	WCI
Royal Preston Hospital	RPH	West Middlesex University Hospital	WMU
Royal Shrewsbury Hospital	RSS	West Suffolk Hospital, Bury St Edmonds	WSH
Royal Surrey County Hospital, Guildford	RSU	West Wales General Hospital , Carmarthen	WWG
Royal Sussex County Hospital, Brighton	RSC	Weston General Hospital,	
Royal United Hospital, Bath	BAT	Weston-Super-Mare	WGH
Royal Victoria Hospital, Belfast	RVB	Wexham Park Hospital, Slough	WEX
Royal Victoria Infirmary, Newcastle	RVN	Whipps Cross University Hospital	WHC
Russells Hall Hospital, Dudley	RUS	Whiston Hospital, Prescot	WHI
Salford Royal Hospital	SLF	Whittington Hospital	WHT
Salisbury District Hospital	SAL	William Harvey Hospital, Ashford	WHH
Sandwell General Hospital	SAN	Withybush Hospital, Haverford West	WYB
Scarborough General Hospital	SCA	Worcestershire Royal Hospital	WRC
Scunthorpe General Hospital	SCU	Worthing and Southlands Hospital	WRG
South Tyneside District Hospital	STD	Maelor Hospital, Wrexham	WRX
Southampton General Hospital	SGH	Wythenshawe Hospital, Manchester	WYT
Southend University Hospital	SEH	Yeovil District Hospital	YEO
Southport District General Hospital	SOU	York Hospital	YDH



Acknowledgements

NHFD participants: clinical and audit staff in all contributing hospitals

British Geriatrics Society
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National Clinical Audit Advisory Group
Healthcare Quality Improvement Partnership
Quantics Consulting Ltd



British Orthopaedic Association



Royal College
of Physicians



HQIP

Healthcare Quality
Improvement Partnership

National Hip Fracture Database National report 2013

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