

FFN NEWSLETTER

SPECIAL EDITION ON HIP FRACTURE AUDIT

FFN
Fragility Fracture Network
of the Bone and Joint Decade

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WORLDWIDE HIP FRACTURE AUDIT – AN IDEA WHOSE TIME HAS COME?

by Colin Currie, Chair Hip Fracture Audit
Database Special Interest Group FFN

Hip fracture care is a great and growing challenge worldwide – and the Fragility Fracture Network is now uniquely placed to launch a major initiative to promote better and cheaper care of hip fracture on a global scale.

Progress and opportunity

The last 25 years have seen growing professional and political awareness of fragility fractures, a stronger than ever evidence-base for good care, and developments in hip fracture audit that have exploited the synergy of audit, clinical standards and feedback to improve care. And in recent years major developments in IT and communications have made national and even international audit feasible.

Collaborative care, in the 1970s seen as a possibly eccentric English enthusiasm practised by a Sussex surgeon, Michael Devas, and his geriatrician friend and colleague, Bobby Irvine, is now far more widely available. The frail elderly, with co-morbidities and perioperative medical complications, have benefited enormously.

Prompt surgery, good medical care and early multidisciplinary rehabilitation in the acute ward have together helped many thousands of hip fracture patients to return home far earlier than they would have done a few decades ago. And rising quality of care and increasing cost-effectiveness have gone hand-in-hand: 'Looking after hip fracture patients well is cheaper than looking after them badly'.

The Fragility Fracture Network – with its global reach and its mission to 'promote globally the optimal multidisciplinary management of patients with a fragility fracture' – has already made promising progress, and may be in a position now to build on these developments by making effective hip fracture audit much more widely available around the world.

The challenge

Hip fracture is the most common serious fragility fracture. In nations where age-specific incidence has already levelled off case numbers will rise substantially as populations age. World-wide case numbers will be a challenge even for well-developed healthcare systems and costs will rise proportionately. And in the world's two most populous nations – India and China – access to adequate care is, and is likely to remain, out of reach for the vast majority as case numbers rise by millions.

The rise of large-scale hip fracture audit

The foundations for much subsequent progress were laid in 1989 by a Swedish orthopaedic surgeon, Prof. K-G Thorngren. Rikshoft, the Swedish national hip fracture registry, soon showed that reliable national comparative data raised awareness and generated data on costs and structures of care, and data on surgery and surgical complications that in turn prompted rising standards of care.

Prof. Thorngren worked generously to promote bilateral hospital-to-hospital audits with colleagues across Eastern and Western Europe in the early 1990s. This led to a major EU-funded initiative, the Standardisation of Audit of Hip Fracture in Europe (SAHFE) – an innovative multi-centre international audit which was an early demonstration of the potential for international collaboration.

Prof. Thorngren also strongly supported the development of a second national audit, the Scottish Hip Fracture Audit. That audit, working in conjunction with the 2002 Scottish Intercollegiate Guideline Network Guideline No. 56: The Prevention and Management of Hip Fracture in Older People, pioneered the use of guidelines and audit together.

Other national audits followed, in Norway and – on a rather larger scale – in the UK. The latter, the UK National Hip Fracture Database, web-based and clinically-led, was the brainchild of Prof David Marsh, who initiated early development work in 2004 and chaired the NHFD until 2011,

when his energies and leadership skills were again being deployed to great effect – in leading the setting up of the Fragility Fracture Network.

Launched in 2007, the NHFD incorporated technical advances providing more frequent, and eventually continuous, feedback on case-mix, care and outcomes. Participating units discovered the value of this in prompting and monitoring clinical and service initiatives: a great improvement on reliance on annual reports, the impact of which has proved to be brief because highly intermittent.

With central support from a small clinical Implementation Group, an informative website, newsletters and regional meetings, the NHFD expanded towards complete coverage, with all 182 trauma Units in England, Wales and Northern Ireland now participating. Case ascertainment is around 95% and over one third of a million cases of hip fracture have been documented since the launch in 2007.

The NHFD model – web-based, supportive and clinically led – has been adapted in subsequent national audit initiatives. The Irish Hip Fracture Database, developed from 2008 onwards, began collecting data in 2012 and is now well established. The Australia and New Zealand Hip Fracture Registry, having overcome substantial geographic, information governance and inter-state challenges, is now live, and auditing care against standards derived from the 2014 ANZ Guideline for Hip Fracture Care. Short accounts of both these developments are included in this newsletter.

From the above, it appears that the existence of developed healthcare systems offering equitable access and allowing the aggregation of data for national-level analysis – as in Scandinavia, the UK, Ireland, Australia and New Zealand – can facilitate the fairly straightforward development of national hip fracture audits.

In less developed healthcare systems, and in those mainly reliant on for-profit delivery of healthcare, such progress may be more difficult or perhaps simply impossible.

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ISSUE 9, APRIL, 2015

EDITORIAL

By David Marsh, Past President FFN

In March of this year, the FFN Executive Committee conducted a review of the network's strategy for tackling the global challenge of fragility fractures. Two of the most important conclusions were as follows:

- *Regional, or national, fragility fracture networks have to be set up, since the greatest challenge is in the emerging economies (Asia, Latin America) and activists from those regions cannot afford to come to Europe for meetings. FFN-Japan and FFN-India have already been created; FFN-Middle East is to follow.*
- *To maintain cohesion, the work of the regional and the global networks has to be led by this unifying strategic focus:*

In the next five years, the FFN will:

Facilitate national (or regional) multidisciplinary alliances which lead to:

- **Consensus guidelines**
- **Quality standards**
- **Systematic performance measurement for the care of older people with fragility fracture**

In countries where significant progress has been made, these have been found to be the concrete steps that lead to improvements for patients who present with fragility fracture. In particular, the measurement of performance has been powerful in allowing activists in a given country to change professional behaviour and to argue for health service policy change, which benefits large numbers of people.

The method of performance measurement with the strongest track record is the continuous audit of hip fracture care, which has been effective in Sweden and the United Kingdom. In the UK, the multidisciplinary work to set up the hip fracture database led to the forging of an alliance between orthopaedics and geriatrics which had considerable political influence. The question is – can this methodology work in other countries, including the emerging economies?

Two years ago, the FFN set up a Special Interest Group to try to address this question, led by Colin Currie, a UK geriatrician with huge experience of hip fracture audit. This special edition of the FFN Newsletter reports the progress made by the SIG so far and the progress made in three countries introducing such audits – Ireland and Australia/New Zealand.

If, on reading this newsletter, you think there may be opportunity in your country to adopt a similar approach, please do not hesitate to get in touch with us.

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But, since all nations face the challenge of improving the quality of hip fracture care while reducing its costs as numbers rise and rise, the FFN must do its best to facilitate and support the necessary efforts.

The impact of audit on hip fracture care

There is no doubt that, in the case of the NHFD at least, audit has prompted and monitored some substantial and indeed impressive hospital-level initiatives using and adding to the NHFD dataset. These have included very high rates of early surgery (within 36 hours); improved pain management; increasing geriatrician involvement in care; and active early rehabilitation directed at mobilisation and self care. Such local actions, alone or in combination, have resulted in lower mortality, shorter length of stay – with a substantial savings estimated as costed bed-days – and higher rates of discharge directly home for patients admitted from home.

In some instances casemix-adjusted NHFD feedback on 30 day mortality has highlighted single-hospital problems that can be addressed with the support of the NHFD; and at national level has such data has shown a gradual overall decline in mortality.

However, since audits are essentially self-reporting, the need for external evaluation using non-audit data has become apparent; and now, in the UK context, has become possible. Non-audit data (from UK Hospital Episode Statistics and the Office of National Statistics, a highly reliable source of mortality data) was used to document a vast series of 471,590 cases treated in NHS hospitals in England from 2003 to 2011.

This showed that, since 2007 when the NHFD was launched, more patients were having early surgery, and fewer not having surgery. There was also a significant improvement in survival. A small fall in 30-day mortality – from 11.5% to 10.9% – over the years 2003 to 2007 was followed by a more substantial reduction – from 10.9% to 8.5% over the years 2007 to 2011. Early mortality was not simply deferred. Sustained longer-term survival was demonstrated by the even greater reductions in 90-day and also in 365-day mortality observed after 2007.

It should be noted that these limited but reliable externally-sourced metrics do not tell the whole story. The NHFD, nominally an audit, appears to have served as a broadly-based quality improvement initiative, informing and involving clinicians and managers and creating in effect ‘a critical mass of enthusiasm and expertise for hip fracture care’ with a widespread and sustained positive impact.

Such a large and detailed database as the NHFD’s obviously generates research opportunities. Perhaps the most significant is a prospective observational study of anaesthetic practice documented more than 11,000 cases. Outputs from this are likely to improve greatly on a hitherto disappointing literature consisting of studies based on series that are small and selective (e.g. excluding confused patients, who comprise around a third of cases).

Preliminary results are of note. There is vast observed variation in anaesthetic practice. Intra-operative hypotension, even briefly, can have major adverse consequences. Sedation is associated with a higher risk of delirium; and risk factors for bone cement implantation syndrome (BCIS) have been further clarified. Importantly, casemix-adjusted mortality from this study – to be reported soon – should add very substantially to the evidence base for optimal hip fracture anaesthesia.

The future – towards international web-based hip fracture audit?

As noted, since the launch of Rikshoft just over 25 years ago, great and continuing developments in information technology and international electronic communications have speeded up – and reduced the cost of – data analysis. They have also facilitated data transfer on an unprecedented scale and, at a more basic level, made international Skype-based conference calls routine.

In that context, discussions at the 1st FFN Global Congress in Berlin in 2012 resulted in an FFN-based initiative to explore the possibility of small-scale piloting of international web-based hip fracture audit. An international expert Interim Steering Committee, noting that most existing large-scale audits used variations on extensive Rikshoft-based datasets, worked through 2013 to agree an FFN Minimum Common Dataset. This MCD, simple, robust and confined to one A4 page, captured the key elements of case-mix, care process and outcome in acute hip fracture care.

With start-up funding from Biomet and IT support from Crown Informatics, a UK-based company with its main servers in

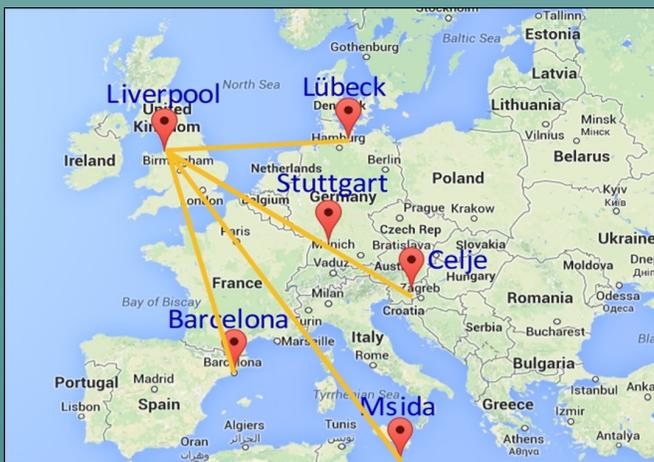
Liverpool and highly developed expertise in hip fracture audit as the main provider for the NHFD, the pilot phase of the proposed FFN Hip Fracture Audit Database began in 2014. Five participating sites – in Msida, Malta; in Barcelona, Spain; in Stuttgart and Lubeck, Germany; and in Celje, Slovenia (see map) – contributed and a preliminary report was presented at the 3rd FFN Global Congress in Madrid last September.

The work of the pilot phase has continued. The main challenges encountered were ensuring compliance with information governance standards across multiple jurisdictions, and the practical difficulties in the remote support of new start-up audits. Lessons have been learned, and the essential feasibility of web-based international hip fracture audit has been established.

A further report, covering data to December 2014, has been prepared and can now be viewed on the FFN website. Most encouragingly, aggregate data from all contributing units has shown a modest but sustained fall in average time to surgery – a key quality measure in hip fracture care. Funding is currently being sought to expand and extend the work of the FFN Hip Fracture Database beyond the pilot phase.

With hip fracture audit now established as a mature technology – clinically-led and user-friendly – that can improve the quality and cost effectiveness of hip fracture care, it can now be deployed to address the central challenge of the current global fragility fracture epidemic.

Progress to date within the FFN gives grounds for optimism. No other organisation is as well placed as the FFN to take things forward, and early and rapid progress in promoting hip fracture audit throughout the world is now central to its mission.



“We gratefully acknowledge the support of our partner Biomet, which made possible the pilot study reported in this article”



Prof. K-G. Thorngren



Prof. D. Marsh

AUSTRALIAN AND NEW ZEALAND HIP FRACTURE REGISTRY: PROGRESS SO FAR

by Jacqui Close, FFN Member

Co-Chairs – Professor Jacqueline Close (ANZSGM) and Professor Ian Harris (AOA)

Born out of recognition of the benefits of audit coming from the northern hemisphere and a shared desire to improve care and outcomes for hip fracture patients, the Australian and New Zealand Hip Fracture Registry Steering Group met for the first time in 2012. With seed funding from the Australian and New Zealand Society for Geriatric Medicine and the Australian Orthopaedic Association, followed soon after by a grant from the BUPA Health Foundation, the group set about its business, putting in place the necessary building blocks to what will hopefully be a sustainable system supporting improvement in hip fracture care in the years to come. The group is primarily clinicians, representing many of the specialities and disciplines involved in hip fracture care both sides of the Tasman Sea.

First up has been the ANZ Guideline for Hip Fracture Care (www.anzhfr.org/guidelines) which is a formally adapted version of the UK NICE Guideline endorsed by the Australian National Health and Medical Research Council. Whilst not sufficient in itself to substantially change practice, the guideline has been an important step in raising the profile of hip fracture care in both countries and has been the trigger for the development of National Clinical Standards for hip fracture care.

These Standards are due for public consultation mid-2015 and will be accompanied by a number of measurable indicators of performance.

While the process is being led by the Australian Commission for Safety and Quality in Health Care, New Zealand has been actively engaged, and it is hoped that the Standards will be adopted for use in New Zealand too. Whether a price in dollars is ultimately linked to quality is yet to be determined.

In place and ready to support the Clinical Standards is the ANZ Hip Fracture Registry. Two facility level audits across Australia and New Zealand have now been completed with the third due to start in the next couple of months. Given the regulations around the ethics of data collection, storage and patient confidentiality, it has been necessary to develop a patient level registry for each country; but common sense currently prevails and the minimum data sets are identical.

Following an arduous process of obtaining ethics approval for the registry across 7 States and Territories in Australia as well as in New Zealand, sites are now entering data in to the live registries. 2015 will be a busy year with an increasing number of hospitals starting to enter data.

The progress and success to date has largely been achieved by the willingness of clinicians to work together and with the respective regulatory bodies in Australia and New Zealand. Longer term funding of the ANZ Hip Fracture Registry is not assured at this point in time, so there is plenty more to be done to take it into the future.

HOW TO DELIVER A NATIONAL HIP FRACTURE AUDIT: THE STORY OF THE IRISH HIP FRACTURE DATABASE (IHFD)

by Emer Ahern, FFN Member

Joint Clinical Leads - Emer Ahern (Geriatrics), Conor Hurson (Orthopaedics) and Louise Brent (Nursing)

Every year in Ireland over 3000 people with a hip fracture are hospitalised in our 16 Trauma and Orthopaedic Units.

In February 2008 a group of clinicians representing the Irish Gerontological Society and the Irish Institute for Trauma and Orthopaedic Surgery gathered with the shared goal of improving care and outcomes for hip fracture patients. At the time 10 hospitals were collecting data on a registry funded by the pharmaceutical industry. It was recognised this model was not sustainable or valid in the long-term.

In November 2008 we held the first Irish Hip Fracture Database meeting in Dublin and invited speakers included David Marsh, Colin Currie and Richard Griffiths. We aimed high from the outset.

The following years were challenging. The IHFD needed government support. Despite knocking on every door we were unable to secure that. I recall attending a meeting in Stamnore and discussing our apparent lack of progress with James Elliott, Orthopaedic Surgeon from Northern Ireland. He enquired had I ever read Malcolm Gladwell's book 'How Little Things Can Make a Big Difference' and encouraged me that our 'tipping point' would occur. And it did.

In 2012 three pivotal events happened. First, a report was published by the Department of Health describing 'Time to hip fracture surgery' and 'Mortality after hip fracture surgery' as potential key performances indicators signalling fledgling government interest. Secondly, the Hospital Inpatient Enquiry System (HIPE), designed to collect data on hospital discharges and deaths, became web-based. This facilitated the addition of a portal to capture IHFD hip fracture data, and this was

accessible from all Trauma and Orthopaedic Units. Thirdly and most importantly, we received government backing through the Quality and Patient Safety Directorate.

The IHFD has been recording data since 2012 and receives operational support from the National Office of Clinical Audit. The preliminary IHFD report, published in 2014, summarised the data recorded on casemix, care and outcomes for 843 hip fracture cases discharged by 8 hospitals between 1st April 2012 and 31st March 2013. The second report summarises 1,950 cases discharged by 12 hospitals between 1st January 2013 and 31st December 2013.

As of January 2015 we are delighted to report that all sixteen eligible hospitals in the Republic of Ireland are now entering data and we hope to publish our third report later this year. Each hospital is issued with a supplementary report of their individual performance which will enable benchmarking and comparison of casemix, care and outcomes against the national data and stimulate each unit to improve hip fracture care and the secondary

prevention of further falls and fractures and ultimately deliver better, safer care for our patients.

None of the above would have been achieved without the efforts, enthusiasm and vision of all those involved. We would like to especially acknowledge and thank all the data collectors, clinical leads and hospitals who have committed and given so much to the IHFD without whom it would never have got off the ground.

And finally we would like to thank our colleagues from the NHFD who from the start of this journey have been a huge resource and always available with advice, encouragement and support. New and significant challenges lie ahead and we are looking forward to continuing the journey.