Using clinical audit to improve outcomes: Irish Hip Fracture Database

Louise Brent
Irish Hip Fracture Database Audit Coordinator
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What is clinical audit?

The Commission on Patient Safety and Quality Assurance (2008) defined clinical audit as:

“a clinically led, quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and to act to improve care when standards are not met”
Why Audit (IHFD)?

✓ Hip fracture management takes a frail patient through a complex clinical pathway involving a wide range of specialties & is an ideal marker condition for the care of frail older patients.

✓ Clearly defined diagnosis

✓ Good evidence base for care and prevention

✓ Care is complex and costly

✓ Care, outcomes and costs vary

✓ Numbers rising

✓ 3,610 hip fractures in 2015 at an estimated cost of > € 45 million
IHFD Reports

1st National Report 2013: **1950 cases**
12 hospitals

2nd National Report 2014: **2664 cases**
14 hospitals

3rd National Report 2015: **2962 cases**
16 hospitals

4th National 2016 Report due to be published in November: **3123 cases**
<table>
<thead>
<tr>
<th>Blue Book Standards</th>
<th>IHFD 2014 N=2,664 %</th>
<th>IHFD 2015 N=2,962 %</th>
<th>NHFD 2015 N= 64,864 %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard 1</strong> All patients with hip fracture should be admitted to an acute orthopaedic ward within 4 hours of presentation</td>
<td>9</td>
<td>10</td>
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<tr>
<td><strong>Standard 2</strong> All patients with hip fracture who are medically fit should have surgery within 48 hours of presentation, and during working hours (Mon - Sun 08:00 - 17:59)</td>
<td>69</td>
<td>72</td>
<td>72</td>
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<tr>
<td><strong>Standard 3</strong> All patients with hip fracture should be assessed and cared for with a view to minimising their risk of developing a pressure ulcer – number of patients who developed a pressure ulcer</td>
<td>5</td>
<td>4</td>
<td>3</td>
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<tr>
<td><strong>Standard 4</strong> All patients presenting with a fragility fracture should be managed on an orthopaedic ward with routine access to orthogeriatric medical support from the time of admission</td>
<td>8</td>
<td>15</td>
<td>88</td>
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<tr>
<td><strong>Standard 5</strong> All patients presenting with a fragility fracture should be assessed to determine their need for bone protection therapy to prevent further osteoporotic fractures</td>
<td>42</td>
<td>47</td>
<td>80</td>
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<tr>
<td><strong>Standard 6</strong> All patients presenting with a fragility fracture following a fall should be offered multi-disciplinary assessment and intervention to prevent future falls</td>
<td>54</td>
<td>49</td>
<td>97</td>
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<tr>
<td>Inpatient mortality</td>
<td>4</td>
<td>5</td>
<td>7</td>
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<tr>
<td>Length of stay</td>
<td>19 (12.5)</td>
<td>20 (13)</td>
<td>16</td>
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</table>
National 2016 Report due to be published in November sows increase in coverage to 86.5%
Completeness

The overall data completeness level for IHFD fields used in generating the graphs in this report is 96%, which is an increase on the 2014 level of 95%. Individual hospital proportions range from 88% to 99%, Figure 3. The recording of dates/times for patients not admitted via ED in the operating hospitals remains a challenge and there are also significant completeness deficits for the Abbreviated Mental Test (AMT) Performed, American Society of Anaesthesiologists (ASA) Grade, Reason for Delayed Surgery, and Type of Fracture data items.

**FIGURE 3: COMPLETENESS PERCENTAGES PER HOSPITAL**
HIPE Add-on screen

- HIPE portal

- Demographic data, admission source from HIPE

- Clinical data entered through IHFD on care, standards and outcomes
Gender (N=2,962)

FIGURE 4: GENDER PERCENTAGES BY AGE GROUP (N=2,962)

- Male, n=881, 30%
- Female, n=2,081, 70%
Age group percentages (N=2,962)

**FIGURE 5: AGE GROUP PERCENTAGES FOR MALES (n=881) AND FEMALES (n=2,081)**

- **60-69:** Male 16, Female 12
- **70-79:** Male 32, Female 27
- **80-89:** Male 38, Female 45
- **90+:** Male 13, Female 17

*Please note: Percentages may not sum to 100% due to rounding.*
Source of admission (N=2,962)

FIGURE 6: SOURCE OF ADMISSION PERCENTAGES (N=2,962)*

- Home: 83%
- Transfer from HIPE/Acute Hospital: 9%
- Nursing Home or other Long Stay Facility: 8%
- All Other Sources: 1%

* Please note: Percentages may not sum to 100% due to rounding
Pre-fracture mobility (n=2,170)

In 2016 new functional measures have been added to the dataset.

FIGURE 9: KNOWN PRE-FRACTURE MOBILITY PERCENTAGES (n=2,170)*

* Please note: Percentages may not sum to 100% due to rounding.
To ensure uniformity in the classification of hip fractures, education was provided and supports within the database are now built in to improve data quality in this field. There was a 4 percentage point improvement in 2015 compared to 2014.
Mode of admission (N=2,962)

76 patients had a hospital acquired diagnosis of a hip fracture

All suspected hip fracture patients should be brought directly to the trauma operating hospital.
In 2015, 72% of medically fit patients received surgery within 48 hours and during normal working hours (See Table 3) - this is an increase of 3 percentage points compared with 2014.

**FIGURE 15: TIME TO AND TIME OF SURGERY PERCENTAGES (n=2,827)**

- **Working Hours 08:00-17:59**: 72%
- **Outside Working Hours 18:00-07:59**: 2%

*Please note: Percentages may not sum to 100% due to rounding*
Assessment by a geriatrician (N=2,962)

61% of reviews were carried out by a consultant geriatrician.
Types of fixation by fracture type

Intracapsular Un-displaced
- 68% Hemiarthroplasty
- 24% DHS
- 6% Screws
- 2% Other

Intracapsular Displaced
- 89% hemiarthroplasty
- 5% THR
- 6% Internal fixation

Intertrochanteric
- 53% DHS
- 24% Short nail
- 14% Long nail
- 6% Hemiarthroplasty
- 2% Other

Subtrochanteric
- 69% Long nail
- 13% Short nail
- 7% DHS
- 10% Other

70% of arthroplasties were cemented
Early mobilisation

- 7 day physiotherapy for hip fracture patients is only available in 7 hospitals, the majority of hospitals offer a Monday-Friday service.

- 13 hospitals have off-site rehabilitation and 3 have on-site facilities.

**Figure 26: Mobilisation Percentages (n=2,827)**

- **No**: 25%
- **Not Known**: 2%
- **Yes**: 73%
- **By Physiotherapist**: 68%
- **By Other**: 5%
- **Not Known**: <1%
Pressure ulcers (n=2,820)

Professor Zena Moore, RCSI and IHFD: study on pressure ulcers and hip fracture 2013-2015.
Blue Book Standard 5

Bone health assessment (n=2,820)

Seventy-five percent (75%) of patients received a bone health assessment in 2015. This is an increase of 8 percentage points compared with 2014.
Specialist falls assessment (n=2,820)

FIGURE 29: SPECIALISTS FALLS ASSESSMENT PERCENTAGES (n=2,820)

- Not Known: 2%
- Yes: 48%
- Performed This Admission: 47%
- Awaits Further Out-Patient Assessment: 1%

*Please note: Percentages may not sum to 100% due to rounding*
Length of stay (N=2,962)

The mean and median length of stay in 2015 are 20 days and 13 days respectively.
Key recommendations

2015 IHFD NATIONAL REPORT
KEY RECOMMENDATIONS

- All suspected hip fracture patients should be brought directly to the trauma operating hospital.

- Hospitals should submit 100% of their data and provide protected time for data collection.

- All 16 hospitals should establish a hip fracture working group, to review and utilise the IHFD data locally to improve patient care.
Current coverage (End of Mar 2017)

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3202 | 3123 | 3610 | 86.5% | 20   | 282  | 1178 | 2147 | 2893 | 3168
Updated quarterly reports
National IHFD Contacts

• Louise Brent National IHFD Audit Coordinator
  • Louisebrent@noca.ie  0871159892

• Aisling Connolly Audit Coordinator NOCA
  • aislingconnolly@noca.ie  01 402 5162
Thank you

“Looking after hip fracture patients well, is a lot cheaper then looking after them badly”