Hip Fracture Registry in Tasmania

The LGH Journey and Outcomes

Jonathan Mulford – Orthopaedic Surgeon LGH
Why get involved?

• Collect data to understand our patients and clinical practice

• Benchmarked against other hospitals to ensure we are providing top quality care to our patients

• Utilise the data to drive positive change to
  • provide best practice care for people with a hip fracture
  • deliver consistent, effective and efficient care.
Barriers

• Ethics

• Who will enter data?

• Who will pay for it?
Needs Engagement - Many People involved

• Colleagues engagement. John Batten strong advocate.

• Support from Ian Waterhouse – Orthopaedic Ward.
  • Andy – keeps the data base up to speed and lets me know when the unaccredited registrars are slacking off.

• Support from Dr Pratibha Tyrambake (Geriatrician)

• Unaccredited registrars – Namit, Ben, Ronnie.

• On going Barriers - 30 and 120 day data
### Hospital Snapshot

<table>
<thead>
<tr>
<th>Active Patients</th>
<th>Last Modified</th>
<th>All Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>27 Mar 2019</td>
<td>380</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2019 Records</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>27</td>
<td></td>
</tr>
</tbody>
</table>

### Patient Type

- Admitted Via ED
- Transferred In
- Inpatient Fall
- Other/Unknown

### Period

- Period: All Records
- From: 
- To: 

<table>
<thead>
<tr>
<th>Time in ED (hrs) [364]</th>
<th>Time to Surgery (hrs) [355]</th>
<th>Acute Length of Stay (days) [347]</th>
<th>Hospital Length of Stay (days) [337]</th>
</tr>
</thead>
<tbody>
<tr>
<td>380 records</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>182.03</td>
<td>59.29</td>
<td>10.80</td>
</tr>
<tr>
<td>Median</td>
<td>7.00</td>
<td>26.20</td>
<td>6.54</td>
</tr>
<tr>
<td>Shortest</td>
<td>-16.75</td>
<td>-1459.67</td>
<td>-352.27</td>
</tr>
<tr>
<td>Longest</td>
<td>8782.12</td>
<td>8766.75</td>
<td>368.31</td>
</tr>
<tr>
<td>QS1</td>
<td>Care at Presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Assessment prior to surgery (352)</td>
<td>23%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nerve Block before or at surgery (357)</td>
<td>78%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QS2</th>
<th>Pain Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain Assessment within 30 minutes (354)</td>
<td>74%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QS3</th>
<th>Orthogeriatric Model of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed by geriatric medicine (365)</td>
<td>76%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QS4</th>
<th>Timing of Surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery Within 48 hours (355)</td>
<td>81%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QS5</th>
<th>Mobilisation &amp; Weight Bearing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1 Mobilisation Opportunity (354)</td>
<td>84%</td>
</tr>
<tr>
<td>Unrestricted Weight Bearing (355)</td>
<td>93%</td>
</tr>
<tr>
<td>New Pressure Injuries (361)</td>
<td>2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QS6</th>
<th>Minimising Risk of Another Fracture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone Medication on Discharge (357)</td>
<td>48%</td>
</tr>
<tr>
<td>Specialist Falls Assessment (362)</td>
<td>84%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QS7</th>
<th>Transition from Hospital Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients returning to Private Residence @ 120 Days (0)</td>
<td>-</td>
</tr>
</tbody>
</table>
Understanding our patients
The average age of hip fracture patients is 84 years in both New Zealand and Australia. The median age of males is 84 years in New Zealand and 83 years in Australia and in women, the median age is 85 years in both New Zealand and Australia. The figure shows the distribution of hip fracture patients by 10-year age bands. Whilst there is variation in the distribution between individual hospitals, the distribution of patients across the age bands in New Zealand and Australia is similar. People aged 60 years and older make up 25% of hip fracture patients in both Australia and New Zealand.

- Median Age 84
- 85% Over 70
The majority of people admitted to hospital with a hip fracture live at home: 72% of New Zealand patients and 71% of Australian patients. However, this implies that people from residential aged care facilities are over-represented in the hip fracture population – a finding that is expected and consistent with national and international literature. There is variation seen between hospitals and this reflect the make-up of the local population including the number of residential aged care facilities.

- 75% of LGH presentations come from home
Only 40% usually walk without aid.
<table>
<thead>
<tr>
<th>Discharge Destination from the Acute Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Avg 2015</td>
</tr>
<tr>
<td>NZ Avg 2016</td>
</tr>
<tr>
<td>NZ Avg 2017</td>
</tr>
<tr>
<td>Acu Avg 2015</td>
</tr>
<tr>
<td>Acu Avg 2016</td>
</tr>
<tr>
<td>Acu Avg 2017</td>
</tr>
</tbody>
</table>

- 10% go home
- 20% go to residential age care facility
- 60% go to rehab
- 8% another hospital
- 2% deceased
We do not have a hip fracture pathway/guideline

We do not have a protocol if Imaging is inconclusive

We were not good at documenting cognition pre op

ED Length stay
• Hip Fracture Care Clinical Care Standard recommends documentation cognition with a valid tool prior to surgical intervention.
• About 7 hours at LGH
QUALITY STATEMENT 2: PAIN MANAGEMENT

A patient with a hip fracture is assessed for pain at the time of presentation and regularly throughout their hospital stay, and receives pain management including the use of multimodal analgesia, if clinically appropriate.

- 56% of hospitals responded that they had a pathway for pain management in hip fracture patients: 32% across the whole acute patient journey and 24% in the emergency department only.
- 50% and 54% of patients in New Zealand and Australia, respectively, have a documented assessment of pain within 30 minutes of presentation to the emergency department.
- 38% and 46% of patients in New Zealand and Australia, respectively, are receiving analgesia in transit or within 30 minutes of presentation to the emergency department.
- 36% and 66% of patients in New Zealand and Australia, respectively, receive a nerve block before surgery.

- Timely assessment for pain
- Timely provision of analgesia
- Nerve block
- Pathway for pain management
It can be seen that 38% and 46% of the New Zealand and Australian hip fracture patients, respectively, received analgesia either in transit (by paramedics) or within 30 minutes of arrival at the ED.

There is considerable variation seen between hospitals in the proportion of patients who have a documented assessment of pain within 30 minutes of arrival in the ED, varying from 0% to nearly 100%. On average, 50% and 54% of the New Zealand and Australian hip fracture patients, respectively, have a documented assessment of pain within 30 minutes of presentation.
Nerve blocks are used to manage pain in the acute fracture setting and particularly in ED when a new hip fracture patient may be moved a number of times in order to investigate, assess and manage the fracture. The Registry does not record where the nerve block was administered prior to surgery, but for most hospitals this is likely to be in the ED.

In 2017, there was an increased uptake in nerve blocks in both New Zealand and Australia compared to 2016. In New Zealand, 36% of patients had a nerve block administered before surgical intervention. In Australia, 66% of patients received a nerve block before surgical intervention. There is marked variation in practice across hospitals.

- ED and OT 25%
- ED 10%
- OT 40%
- 25% None
QUALITY STATEMENT 3: ORTHOGERIATRIC MODEL OF CARE

A patient with a hip fracture is offered treatment based on an orthogeriatric model of care as defined in the Australian and New Zealand Guideline for Hip Fracture Care.

- 55% of hospitals reported an orthogeriatric service for older hip fracture patients: 32% utilising a daily geriatric medicine liaison service; 23% utilising a shared-care arrangement with orthopaedics
- 24% and 63% of patients in New Zealand and Australia, respectively, are assessed by a geriatrician prior to surgery

- Liaison service 3 days week
- Preoperative medical assessment
80% LGH patients have geriatric involvement
• LGH
• pre op geriatrician 20%
• Pre op Physician 30%
• NO ASSESSMENT 50%
QUALITY STATEMENT 4:
TIMING OF SURGERY

A patient presenting to hospital with a hip fracture, or sustaining a hip fracture while in hospital, receives surgery within 48 hours, if no clinical contraindication exists and the patient prefers surgery.

- 80% and 77% of patients in New Zealand and Australia, respectively, are reported as being operated on within 48 hours of presentation to hospital.
- 54 hours is the average time to surgery in both countries for patients transferred to the operating hospital from another hospital.
This year, Figure 20 excludes patients transferred into the treating hospital, reflecting the journey of a patient initially presenting to the treating hospital. Time to theatre is calculated by measuring the difference between the date and time of presentation to the operating hospital and commencement of anaesthesia. The median time between initial presentation and surgery has increased each year since 2015 and is currently 30 hours.

The Hip Fracture Care Clinical Care Standard states that surgery should be performed within 48 hours of presentation because early surgery is thought to reduce morbidity, hasten recovery and reduce length of stay. The average or mean (the end of the orange bar) is the average time to theatre and is longer than the median due to some patients waiting many days before undergoing surgery. It is important to note that small numbers of patients and a few outliers can significantly affect the average time to surgery.
LGH 12% and 10%
A patient with a hip fracture is offered mobilisation without restrictions on weight bearing the day after surgery and at least once a day thereafter, depending on the patient’s clinical condition and agreed goals of care.

- 87% and 89% of patients in New Zealand and Australia, respectively, are offered the opportunity to mobilise on the first day after surgery.
- 93% and 96% of patients in New Zealand and Australia, respectively, have unrestricted weight-bearing immediately after hip fracture surgery.
- Fewer than 3% of hip fracture patients are reported as experiencing a new stage II or higher pressure injury of the skin during their hospital stay.
- 52% of patients were followed up at 120 days after presentation: of those followed up, 23% and 26% of patients in New Zealand and Australia, respectively, are reported as having returned to their pre-fracture mobility at 120 days after presentation to hospital.
Previously, post-operatively, many patients were not permitted to weight bear fully for fear of disturbing the surgical fixation. However, there is little evidence to support this, and allowing immediate unrestricted weight bearing after surgery permits easier rehabilitation and earlier restoration of function. The ANZ Guideline for Hip Fracture Care and the Hip Fracture Care Clinical Care Standard both recommend that patients be allowed full weight bearing without restriction immediately after surgery. Figure 34 shows that all but a small proportion of patients are allowed full weight bearing after surgery.

<table>
<thead>
<tr>
<th></th>
<th>Unrestricted weight bearing</th>
<th>Restricted / non weight bearing</th>
<th>Not known</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ Avg 2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NZ Avg 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NZ Avg 2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aus Avg 2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aus Avg 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aus Avg 217</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Let more unrestricted WB*
Quality statement 5 of the Hip Fracture Care Clinical Care Standard promotes early mobilisation of patients after hip fracture surgery. All hip fracture patients should be given the opportunity to sit out of bed and start to mobilise the day after surgery unless there is a specific documented contraindication. In New Zealand and Australia, 87% and 89%, respectively, of patients are given the opportunity to mobilise the day after surgery.
WEEKEND THERAPY

In 2018, 85% (100/118) of hospitals reported having routine access to weekend therapy services, predominantly physiotherapy services (80%). There has been a steady increase over the six years of the facilities audit. Mobilisation on the day of, or day after, hip fracture surgery helps patients restore movement and function and prevent complications. Provision of access to weekend therapy provides the opportunity to mobilise early and ensures that the day of surgery doesn’t impact the rehabilitation process.
Before a patient with a hip fracture leaves hospital, they are offered a falls and bone health assessment, and a management plan based on this assessment, to reduce the risk of another fracture.

- 74% and 81% of patients in New Zealand and Australia, respectively, had undergone a fall-risk assessment during their inpatient stay.
- 25% and 24% of patients in New Zealand and Australia, respectively, were receiving bone protection medication at discharge from hospital.
- At 120 days after presentation, 38% and 30% of patients in New Zealand and Australia, respectively, were receiving bone protection medication.

- If bone protective agents not started in hospital only extra 6% started after discharge.
• LGH approx 70% no bone protection at admission

• ? Are we doing enough to prevent
55% LGH
95% POW
65% Liv
80% StG
Surgical Aspects of care
• Tend to give more spinal anaesthetic at LGH
### Figure 31: Procedure Type for Subtrochanteric Fracture

<table>
<thead>
<tr>
<th></th>
<th>NZ Avg 2015</th>
<th>NZ Avg 2016</th>
<th>NZ Avg 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WHG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TGA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NWSH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WBE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HKB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HLT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WRLG</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aus Avg 2015</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aus Avg 2016</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aus Avg 2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Legend:**
  - Intramedullary nail
  - Sliding hip screw
  - Hemiarthroplasty
  - Cannulated screws
  - Total hip replacement
  - Other
  - Not known

**Note:** The chart shows the distribution of procedure types for subtrochanteric fractures in different years and regions. Each bar represents a percentage of cases for a specific procedure type.
Post surgery Care
- 60% to rehab
- 7 days acute stay
- 21 days whole length of stay
We can improve at
• providing written individualised information on discharge that describes
  • ongoing care,
  • goals of care and
  • recommendations for prevention of future falls and fractures

5% and 28% of hospitals in New Zealand and Australia, respectively, reported providing written, individualised information on discharge that describes ongoing care, goals of care and recommendations for prevention of future falls and fractures.

Of those who lived at home prior to injury and followed up at 120 days after presentation, 76% and 71% of patients in New Zealand and Australia, respectively, have returned to their own home at 120 days.
• 10% go home
• 20% go to residential age care facility
• 60% go to rehab
• 8% another hospital
• 2% deceased
FIGURE 46 FOLLOW UP AT 30-DAYS

NZ Avg 2016
NZ Avg 2017
HKB
WRE
BTE
INV
CHB
HUT
MMH
NBD
TGA
WKO
WLG
WHR
ACI
WAG
DUN

Aus Avg 2016
Aus Avg 2017
H23
H13
TAM
TNH
H2s
LIV
POH
FDC
FRA
WMD
TWB
JHH
DOH
PAX
TGW
CNR
IRD
LMH
RJK
IFS
QI8
COS
DO4
H05
H06
LOG
SGS
NBP
THH
FHI
SCI
STP
TWI
E0X
LOR
POW
CRI
H02
H7
QII
RNS

30-day follow-up
No 30-day follow-up
HIP FRACTURE PATHWAY

In 2018, 78% (92/118) reported having a pathway for hip fracture patients: 22% in the emergency department only and 56% for the whole acute journey. Whilst similar to 2017, there has been a steady increase in the proportion of hospitals that report a pathway for the management of a patient with a hip fracture through the whole acute journey.
COMPUTED TOMOGRAPHY (CT) / MAGNETIC RESONANCE IMAGING (MRI)

In 2018, the presence of a protocol or pathway to access either CT or MRI for inconclusive plain imaging of hip fracture was available in 55% (65/118) of hospitals, similar to 2017. This question was first asked in 2014 with 46% (54/117) of sites reporting presence of a protocol: in 2013, the audit question listed MRI as the only imaging modality hence comparison must be done with caution. The absence of substantial change in this area over the six years of the facilities audit provides services an opportunity for improving the quality of assessment at a person’s presentation to hospital.
In 2018, a protocol or pathway for pain was available at 56% (66/118) of hospitals: 24% in the emergency department only and 32% for the whole acute journey. This is similar to the previous year and continues to show little change over the six years of the facilities audit. The facilities audit also asks respondents if patients are offered local nerve blocks as part of preoperative and postoperative pain management. In 2018, 89% (105/118) responded that patients were offered nerve blocks preoperatively “always” or “frequently” and 81% (95/118) responded that patients were offered nerve blocks for postoperative pain relief “always” or “frequently”.
PLANNED THEATRE LIST

In 2018, 40% of respondents reported having access to a planned operating theatre list or planned trauma list for hip fracture patients. This is similar to previous years: 39% (47/120) in 2017; 39% (47/121) in 2016; 40% (48/120) in 2015 and 42% (49/117) in 2014.
RESULTS 4: BEYOND THE ACUTE HOSPITAL STAY

FRACTURE LIAISON SERVICE (FLS)

Dedicated resources allocated to the identification, management, and follow-up of minimal trauma fractures has been shown to reduce re-fracture rates in people with osteopenia and osteoporosis. The availability of fracture liaison services remains limited, however, the small but steady increase seen in previous years has continued and access to a FLS was reported by 36% (43/118) of hospitals. Of these services, 30% (35/118) were for patients with any minimal trauma fracture (including hip fracture) and 7% (8/118) were specifically for hip fracture patients only.

PATIENT AND CARER INFORMATION

Hip fracture patients and their carers must be active partners in any decisions made about their care and recovery from injury. Information and advice on treatment and recovery, and the prevention of future falls and fractures, should be provided verbally and in writing.

In 2018, 47% (55/118) of hospitals responded “yes” to the provision of written information to patients about their hip fracture treatment, an increase from 39% in 2017. Only 24% (28/118) of respondents said they provided written information to patients on discharge that included recommendations for future falls and fracture prevention (not the same as a discharge summary): 5% (1/21) hospitals in New Zealand and 28% (27/97) in Australia.
Where to from Here

• NOF pathway – All Tasmanian hospitals are keen to have one
• A pathway will assist flow through ED
• Cognitive assessment pre-op – getting better
• More early medical involvement (Discussed a orthopaedic medical registrar)
• Shared care
• Theatre – Continue advocate for dedicated trauma lists
• Rehab pathways
• Better Communication with G.Ps, families and patients
• Improved bone protection