Australian and New Zealand Guideline for Hip Fracture Care

Improving Outcomes in Hip Fracture Management of Adults

Dissemination Plan

September 2014

ANZHFR
Australian & New Zealand Hip Fracture Registry


Disclaimer: This document is a general guide to appropriate practice, to be followed subject to the clinician’s judgment and patient’s preference in each individual case. The guideline is designed to provide information to assist decision-making and is based on the best evidence available at the time of development of this publication.

Publisher
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1 Dissemination plan

The primary goal of this Guideline is to provide an up-to-date evidence base for improving the quality of care of hip fracture patients across Australia and New Zealand. The Guideline is intended for use by the large number of clinical staff involved in the care of hip fracture patients. This includes specialists (emergency medicine physicians, anaesthetists, surgeons, geriatricians, general physicians and rehabilitation physicians) as well as nurses and allied health professionals. It is also of relevance to those with managerial and administrative roles which impact on the organisation and delivery of care. Patients, their families and carers may also find this Guideline of use and there are plans to produce a summary document which articulates the recommendations in a manner that is appropriate for patients and their family/carers. A shortened version of the Guideline will also be produced for clinicians.

The Guideline alone is not anticipated to be the sole driver for change and will be supported by national standards for hip fracture care and the evolution of a national (Australian and New Zealand) hip fracture registry which will be used to monitor performance and serve as a key driver to support change. Unlike most guidelines, the group developing this Guideline will have ongoing ownership and responsibility for its widespread dissemination and implementation. A finite resource is available to develop supporting national standards of care and set up the Australian and New Zealand Hip Fracture Registry (ANZHFR) whilst longer term sustainability is being considered.

Key Components to effective implementation

The Guideline will be disseminated widely through the organisations represented on the ANZHFR Steering Group:

- Australian and New Zealand Society for Geriatric Medicine (ANZSGM)
• Australian Orthopaedic Association (AOA)
• Australasian College of Emergency Medicine (ACEM)
• Australasian Faculty of Rehabilitation Medicine (AFRM)
• Australian and New Zealand Bone and Mineral Society (ANZBMS)
• Australian and New Zealand College of Anaesthetists (ANZCA)
• Australian and New Zealand Orthopaedic Nursing Association (ANZONA)
• New Zealand Orthopaedic Association (NZOA)
• Osteoporosis Australia (OA)
• Osteoporosis New Zealand (ONZ)
• Royal Australasian College of Surgeons (RACS)

A copy of the Guideline will also be sent to the health department of each State and Territory (Australia) and District Health Board (New Zealand) and to relevant clinical networks across Australia and New Zealand. The ANZHFR Steering Group will also disseminate the Guideline through email lists subscribed to by practitioners with an interest in hip fracture care in Australia and New Zealand. The release of the Guideline will feature in an ANZHFR newsletter in 2014.

In addition to provision of the Guideline and links to the available supporting documents, the content of the Guideline will be presented by a number of members of the ANZHFR Steering Group at relevant scientific meetings. A review article will also be submitted for publication in an appropriate ANZ peer reviewed journal.

Ongoing engagement with consumer and carer organisations will provide the opportunity to ensure that the Guideline is aligned with patient priorities and that information developed for patients and their family/carers is appropriate. Ongoing work is gathering qualitative data on the patient and carer experience through a series of semi-structured interviews with people who have recently had a hip fracture. Using the recommendations in the Guideline and feedback from the ongoing qualitative analysis, a series of leaflets will be produced that cover key aspects of hip fracture care from a consumer perspective. Funding will be sought to ensure that educational resources are available in a number of languages.
A commitment to undertaking further research in areas where evidence is lacking is required to support future practice. Chapter 9 of the Guideline contains a list of research questions addressing gaps in the existing literature where it is felt the results from additional research are likely to inform and shape practice.

2 Implementation plan

2.1 Standards of care

The Guideline has highlighted a number of areas where a standard of care could be developed. Standards of care are more likely to be adopted and utilised if they are produced through organisations acknowledged as having responsibility for the development and delivery of clinical standards at a national level. In Australia, the Australian Commission on Safety and Quality in Heath Care (ACSQHC) takes a lead in development of national standards, and in New Zealand this sits with the Health Quality & Safety Commission (HQSC). The preferred route for the development of standards is through these respective bodies as this has the greatest chance of producing sustainable improvements in care. Both organisations are aware of the development of the Guideline and the desire to produce standards of care in due course.

Financial incentivisation or reward for quality care is not a feature of the Australian health system at present although this may be something that evolves over time. Western Australia has recently introduced a financial incentive for meeting a number of agreed measures for hip fracture care. The longer term objective of the ANZHFR Steering Group is to see quality measures aligned to financial reward. The ANZHFR plan to build a case for financial incentivisation of the system and will take this case to the Independent Hospital Pricing Authority which is charged in Australia with developing a national efficient price for care.

2.2 Australian and New Zealand Hip Fracture Registry

In order to support implementation of the Guideline and put in place a mechanism to measure against standards of care, it will be necessary to have an Australian and New Zealand (ANZ) Hip Fracture Registry. Work has started on the development of an ANZ Hip Fracture Registry in both Australia and New Zealand. A draft minimum dataset and data dictionary (www.anzhfr.org) exist and pilot work is being undertaken in three hospitals in New South Wales on the use of the minimum dataset. In Western Australia, three hospitals are now using an electronic version of the minimum
dataset. An annual facility level audit is now in place and between the facility level and patient level audit it is possible to track performance against a number of recommendations contained in the Guideline. The technical and ethical aspects of hosting a Registry are also being worked through using information provided by ACSQHC. A number of sites across Australia are already collecting data at a local level and once the ethical and governance issues of hosting a Registry are addressed the data will be used to generate reports on an annual basis.

2.3 Key recommendations for implementation

Recommendations considered to be priority areas for implementation are considered below. These take into consideration the strength of the evidence (all evidence-based recommendations) and the likely benefits to the patient, their family and/or carer and the health system.

1) Time to surgery

Where surgery is the chosen approach to management the recommendation is to perform surgery on the day of, or the day after presentation to hospital. There are a number of benefits to implementing this recommendation which include:

a. Reduction in the period of immobility for the patient and the associated medical complications
b. Alleviation of pain
c. Reduction in length of stay and the cost saving associated with this.

2) Pain management

Effective pain management is one of the most important aspects of care from a patient perspective. Having protocols in place to effectively manage pain including timely access to theatre and use of nerve blocks is likely to improve the overall patient experience. Equally better pain management will allow for early mobilisation and functional recovery.

3) Orthogeriatric services

Evidence supports the use of orthogeriatric services in the care of a hip fracture patient from the point of admission to hospital. The benefits are largely around optimisation for surgery and reduction in post-operative complications. Implementation of this recommendation has the potential to reduce complications and the associated costs in the short term. Longer term benefits will be accrued over time if the prevention of future falls and fractures is addressed. Work will be required at State level to consider alternative strategies to deal with the limited access to geriatric services particularly outside major metropolitan hospitals.
4) **Early and regular mobilisation**

Patients should be given the opportunity to start the rehabilitation process as soon as possible, this includes, for patients who have had an operation, mobilising within 24 hours of surgery unless medically or surgically contraindicated. Again implementation of this recommendation has the potential to enhance outcomes for the patient as well as deliver cost saving for the health system.

### 2.4 Implementation considerations for each recommendation

Table 1 lists each recommendation in the Australian and New Zealand Guideline for Hip Fracture Care and gives consideration to the implications, cost, impact and potential for measurement for each of the recommendations.

#### Table 1: Recommendations with implications, cost, impact and measurement options

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Implications / Cost / Impact / Measurement</th>
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<tbody>
<tr>
<td><strong>DIAGNOSIS AND PRE-OPERATIVE CARE</strong></td>
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</table>
| Offer magnetic resonance imaging (MRI) if hip fracture is suspected despite negative anteroposterior pelvis and lateral hip X-rays. If MRI is not available within 24 hours or is contraindicated, consider computed tomography (CT). | **Implications** – MRI is currently more expensive than CT and not available everywhere.  
**Cost** – would incur cost at a local level.  
**Impact** - implementation of this recommendation is unlikely to have a short or medium term benefit for patients or the health care system.  
**Measurement** - Unlikely to be converted into a measurable standard of care. |
| Assess the patient’s pain:  
  - immediately upon presentation at hospital and  
  - within 30 minutes of administering initial analgesia and  
  - hourly until settled on the ward and  
  - regularly as part of routine nursing observations throughout admission.  
Offer immediate analgesia to patients presenting at hospital with suspected hip fracture | **Implications** – likely to require development of local pain protocols if not already available. A generic protocol could be shared via the ANZHFR website and then adapted locally.  
**Cost** – minimal if any.  
**Impact** - implementation of this recommendation is likely to improve pain management for hip fracture patients. Pain is a major factor in the experience of hip fracture patients. |
| **fracture, including people with cognitive impairment.**  
The choice and dose of analgesia should be age appropriate with close monitoring for associated side effects.  
Ensure analgesia is sufficient to allow movements necessary for investigations (as indicated by the ability to tolerate passive external rotation of the leg), and for nursing care and rehabilitation.  
Offer paracetamol every 6 hours unless contraindicated.  
Offer additional opioids if paracetamol alone does not provide sufficient pain relief.  
Caution is advised when considering the use of non-steroidal anti-inflammatory drugs in what is predominantly an older population. |  
| Measurement – will be challenging to measure at an individual level. Availability of pain protocols can be ascertained at annual facility level audit.  
Already an item in the ANZHFR facility level audit. |

| Consider adding nerve blocks if systemic analgesia does not provide sufficient pain relief, or to limit opioid dosage.  
Nerve blocks should be administered by trained personnel.  
Do not use nerve blocks as a substitute for early surgery. |  
| Implications – can be built into local pain protocols but there may be additional training and education requirements.  
Development of training and education resources at State or National level is recommended.  
Cost – cost effectiveness is unclear and is one of the recommendations for further research.  
Impact – likely to improve pain management.  
Measurement – can be extracted from clinical data and recorded in patient level minimum data set.  
Already an item in the ANZHFR patient level minimum dataset. |

| Perform surgery on the day of, or the day after presentation to hospital with a hip fracture. |  
| Implications – for many hospitals this will require a review of their processes of care including inter-hospital transfers and organisation of theatre lists.  
Cost – data from the UK suggests that timely access to theatres is cost saving.  
Impact – providing patient is medically optimised, this recommendation will lead to more efficient use of services and fewer post-operative complications.  
Measurement – likely to be developed into a |
Identify and optimise correctable co-morbidities immediately so that surgery is not delayed by:
- anaemia
- anticoagulation
- volume depletion
- electrolyte imbalance
- uncontrolled diabetes
- uncontrolled heart failure
- metabolic derangement
- correctable cardiac arrhythmia or ischaemia
- acute chest condition or exacerbation of chronic chest conditions

**Implications** – integrally linked with the timing of surgery and model of care recommendations.

**Cost** - data from the UK suggests that timely access to theatres is cost saving.

**Impact** – directly impacts on timing of surgery. Timely access to surgery is cost saving.

**Measurement** – patient level audit can identify if delay in time to theatre is related to medical issues rather than system and process issues.

Already an item in the ANZHFR patient level minimum dataset.

<table>
<thead>
<tr>
<th>PERI-OPERATIVE CARE</th>
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<tbody>
<tr>
<td>Offer patients a choice of regional or general anaesthesia after discussing the risks and benefits.</td>
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<tr>
<td><strong>Implications</strong> – ability to offer choice will be dependent on the skills and expertise of the anaesthetists</td>
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<tr>
<td><strong>Cost</strong> - uncertain</td>
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<tr>
<td><strong>Impact</strong> – evidence to suggest patient outcomes differ is limited and hence the recommendation to offer choice.</td>
</tr>
<tr>
<td><strong>Measurement</strong> – type of anaesthesia can be measured at individual patient level through extraction of data from clinical records.</td>
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<tr>
<td>Already an item in the ANZHFR patient level minimum dataset.</td>
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</table>

<p>| Consider intraoperative nerve blocks for all patients undergoing surgery. |
| <strong>Implications</strong> – Minimal additional time in theatres and assumes availability of suitably trained individual and equipment. |
| <strong>Cost</strong> – minimal and is already common practice in a number of centres across Australia and New Zealand. |
| <strong>Impact</strong> – likely to lead to better pain control in the immediate post-operative period. |</p>
<table>
<thead>
<tr>
<th>OPERATIVE INTERVENTION</th>
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<tr>
<td><strong>Perform replacement arthroplasty (hemiarthroplasty or total hip replacement)</strong> in</td>
<td><em>Implications</em> – already commonplace in most centres.</td>
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<tr>
<td>patients with a displaced intracapsular fracture.</td>
<td><em>Cost</em> – using UK health economic data, this strategy is likely to be cost saving.</td>
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<td></td>
<td><em>Impact</em> – better functional outcomes for patients and fewer re-operations.</td>
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<td></td>
<td><em>Measurement</em> - can be measured at individual patient level through extraction of data from clinical records.</td>
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<td></td>
<td>Already an item in the ANZHFR patient level minimum dataset.</td>
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<tr>
<td><strong>Use a femoral stem design other than Austin Moore or Thompson stems for arthroplasies</strong></td>
<td><em>Implications</em> – use of these designs is now relatively uncommon.</td>
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<tr>
<td></td>
<td><em>Cost</em> – uncertain.</td>
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<tr>
<td></td>
<td><em>Impact</em> – better functional outcomes.</td>
</tr>
<tr>
<td></td>
<td><em>Measurement</em> - can be measured at individual patient level through extraction of data from clinical records.</td>
</tr>
<tr>
<td>Recommendation</td>
<td>Implications</td>
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| Offer total hip replacement to patients with a displaced intracapsular fracture who:  
  - were able to walk independently out of doors with no more than the use of a stick and  
  - are not cognitively impaired and  
  - are medically fit for anaesthesia and the procedure. | already accepted as standard practice in a number of centres. | when targeting population, likely to be cost saving. | better functional outcomes and lower rate of revision. | can be measured at individual patient level through extraction of data from clinical records. |
| Use cemented stem implants in patients undergoing surgery with arthroplasty. | already accepted as standard practice in most centres. | cost of implants is often locally negotiated. UK data showed that cemented stems are cheaper than the newer uncemented stems. | less pain, better function and lower rates of revision surgery. | can be measured at individual patient level through extraction of data from clinical records. |
| Both extramedullary sliding hip screw devices and intramedullary nails are suitable for use in patients with trochanteric fractures above and including the lesser trochanter (AO classification types A1 and A2). | practice at present is variable and not always driven by cost. | likely to produce cost savings. | no difference in outcomes according to existing literature. | can be measured at individual patient level through extraction of data from clinical records. |
| Use an intramedullary nail to treat patients with a reverse oblique fracture. | likely to reflect existing practice although this has never been audited across Australia and New Zealand. | uncertain |  |  |
## Impact

- uncertain as no evidence was identified in the systematic review.

## Measurement

- can be measured at individual patient level through extraction of data from clinical records.

Already an item in the ANZHFR patient level minimum dataset.

### Use an intramedullary nail to treat patients with a subtrochanteric fracture.

**Implications** - already accepted as standard practice in most centres.

**Cost** – likely to be cost saving given lower rates of non-union but no economic evaluations available.

**Impact** – lower rates of non-union.

**Measurement** - can be measured at individual patient level through extraction of data from clinical records.

Already an item in the ANZHFR patient level minimum dataset.

### Operate on patients with the aim to allow them to fully weight bear (without restriction) in the immediate post-operative period.

**Implications** – unclear if any justification for restricted weight bearing and there is marked variation in practice.

**Cost** – uncertain. Likely to be cost saving as restrictions in weight bearing slow rehabilitation process. Uncertain however re longer term revision rates.

**Impact** – likely to produce more consistent approach to post-operative weight bearing status but also important to monitor short and longer term outcomes through individual patient data collection.

**Measurement** - can be measured at individual patient level through extraction of data from clinical records.

Already an item in the ANZHFR patient level minimum dataset.

### POST-OPERATIVE MOBILISATION STRATEGIES

**Implications** – would be considered standard practice in most centres but variable at weekends

**Cost** – hospitals will need to have agreed protocols for ensuring that, where therapy services are limited, other processes are in place to ensure early mobilisation is
<table>
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<th>MODELS OF CARE</th>
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From admission, offer patients a formal, acute orthogeriatric service that includes all of the following:

- regular orthogeriatrician assessment
- rapid optimisation of fitness for surgery
- early identification of individual goals for multidisciplinary rehabilitation to recover mobility and independence, and to facilitate return to prefracture residence and long-term wellbeing
- early identification of most appropriate service to deliver rehabilitation
- continued, coordinated, orthogeriatric and multidisciplinary review and discharge planning liaison or integration with related services, including falls prevention, secondary fracture prevention, mental health, cultural services, primary care, community support services and carer

<table>
<thead>
<tr>
<th>Implications</th>
<th>whilst standard practice in a number of hospitals, this recommendation has significant implications for others who currently do not have access to this model of care. Will be more challenging in rural settings where geriatric medicine services are very limited. Cost – evidence would suggest that the model is less costly and more efficient. This evidence is derived from UK figures and would need to be considered in the Australian and New Zealand context. Impact – likely to lead better outcomes for patients and more efficient use of resources. Measurement – already an item in the ANZHFR facility level audit.</th>
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Offer patients mobilisation at least once a day and ensure regular physiotherapy review.

<table>
<thead>
<tr>
<th>Implications</th>
<th>would be considered standard practice in most centres but variable at weekends Cost – likely to reduce length of hospital stay but evidence to support this is limited. Should not assume that only physiotherapists can mobilise patients. Impact – uncertain Measurement - not currently an item in the patient level facility audit. Facility level audit reports on availability of therapy services at weekends.</th>
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</table>
| If a hip fracture complicates or precipitates a terminal illness, the multidisciplinary team should still consider the role of surgery as part of a palliative care approach that:  
  - minimises pain and other symptoms  
  - establishes patients' own priorities for rehabilitation  
  - considers patients' wishes about their end-of-life care. | **Implications** – would be considered patient centred and humane care.  
**Cost** – no economic evidence.  
**Impact** – enhanced patient and carer experience.  
**Measurement** – unclear how this could be measured. |
| Healthcare professionals should deliver care that minimises the patient’s risk of delirium and maximises their independence, by:  
  - actively looking for cognitive impairment when patients first present with hip fracture  
  - reassessing patients to identify delirium that may arise during their admission  
  - offering individualised care in line with ‘Delirium’ (NICE clinical guideline 103). | **Implications** – would be considered good clinical practice.  
**Cost** – no evidence derived from hip fracture populations but reducing the incidence and/or duration of delirium is likely to be cost effective.  
**Impact** – improved quality care.  
**Measurement** – incident delirium could be recorded in the patient level dataset. It is not currently part of the ANZHFR patient level minimum dataset. |
| Nutritional status should be assessed early in the hospital stay and reassessed during the course of the admission. Tailored interventions should be implemented. | **Implications** – would be considered good clinical practice although routine systematic assessment would not be commonplace across Australia and New Zealand.  
**Cost** – comprehensive assessment and tailored interventions would require dietitian input.  
**Impact** – some evidence emerging of benefits of nutritional assessment and intervention in terms of functional outcomes.  
**Measurement** – could be added to facility level audit or patient level audit. |
| Consider early supported discharge provided the patient:  
  - is medically stable and  
  - has the mental ability to participate in continued rehabilitation and  
  - is able to transfer and mobilise short distances and | **Implications** – Offers patients the opportunity to rehabilitate in their own home and with family and carers nearby. Availability of services is currently variable.  
**Cost** – likely to produce cost savings overall.  
**Impact** – reduction in use of acute and rehabilitation hospital beds.  
**Measurement** - already an item in the |
- has not yet achieved their full rehabilitation potential, as discussed with the patient, carer and family.
- If unable to meet the criteria for early supported discharge, consider in-patient rehabilitation for those in whom further improvement with a structured multidisciplinary program is anticipated.

ANZFR facility level audit.

Patients admitted from residential aged care facilities should not be excluded from rehabilitation programmes in the community or hospital, or as part of an early supported discharge programme.

**Implications** – the recommendation is designed to ensure that those with potential to benefit from rehabilitation are not excluded based on their usual place of residence. Where this rehabilitation should be undertaken and the potential benefits are less clear and further research findings are awaited.  

**Cost** – uncertain.  

**Impact** – uncertain.  

**Measurement** – could be measured through patient level audit.

### PATIENT AND CARER PERSPECTIVE

Offer patients (or, as appropriate, the carer and/or family) information about treatment and care including:

- diagnosis
- aims of care
- choice of anaesthesia
- choice of analgesia and other medications
- surgical procedures
- possible complications
- post-operative care
- rehabilitation programme
- future fracture prevention
- healthcare professionals involved in their care
- how to care for the patient, especially after discharge
- support and services to assist the carer/family.

**Implications** – better informed patients and carers.  

**Cost** – minimal. Information can be developed at ANZFR level and then adapted for local use. However, important to ensure that material is translated into a range of languages.  

**Impact** – improved communication, improved patient experience.  

**Measurement** – could be measured through facility level audit.
Information should be available in a range of media and in appropriate languages.

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<tr>
<th>Patients (or, as appropriate, the carer and/or family) should be involved in all key decisions in the hip fracture journey. This should include the use of professional interpreters where required and be done in a culturally sensitive manner. Issues to address include:</th>
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<tbody>
<tr>
<td>• the pros and cons of operative versus non-operative intervention</td>
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<td>• goals and limitations of treatment including resuscitation</td>
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<td>• palliation and end of life care.</td>
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| Implications – an essential component of patient centred care and recognises the importance of communication with patients and their family/carers in decision making. |
| Cost – no economic evaluation. |
| Impact – improved patient centred care. |
| Measurement – difficult to measure either at patient or facility level. |