

# Orthogeriatric hip fracture care

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The information in this document should not replace a clinician's professional judgement.

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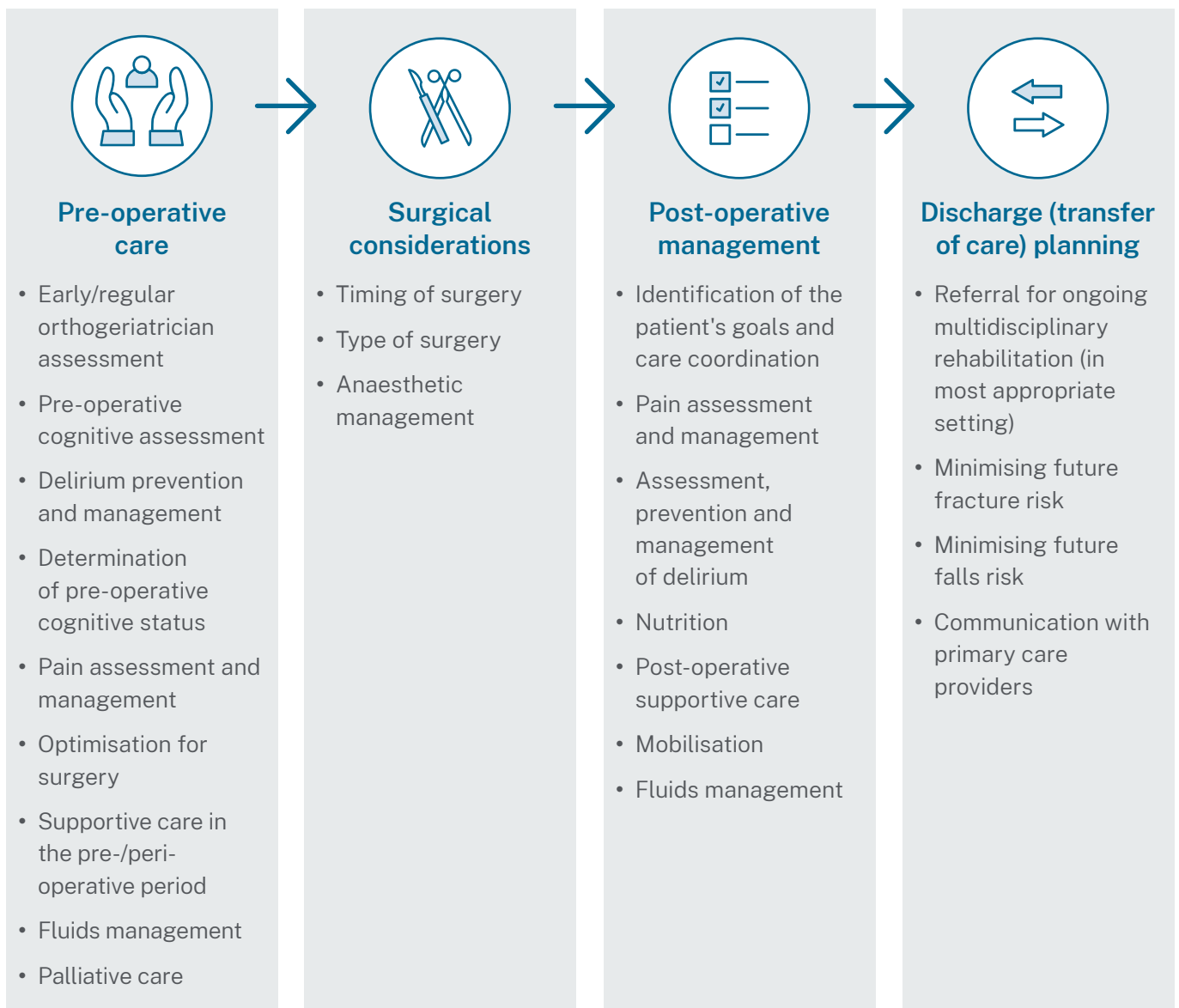
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# At a glance

Orthogeriatric hip fracture care should follow a shared care approach to improve patient, health service and quality of care outcomes. These may include hospital length of stay, time to surgery and reduced rates of complications and readmission. This guide provides best practice recommendations across the inpatient journey: from the time a patient with a hip fracture arrives at the hospital to the time they are discharged.

As the current evidence base does not identify the single best type of shared care model for patients with a hip fracture, healthcare settings should use this guide and the [guiding principles](#) to develop an organisational model of care that meets the needs of patients and suits their capacity, staffing and local requirements.

## Inpatient journey



# Introduction

The Agency for Clinical Innovation (ACI) published the orthogeriatric model of care in 2010, outlining the key aspects of and practical considerations for pre-operative care, post-operative management and rehabilitation/discharge planning.<sup>1</sup> The scientific evidence on orthogeriatric models of care has evolved considerably since then. This guide aims to inform contemporary clinical practice for orthogeriatric hip fracture care.

## Guiding principles throughout the patient's journey

The image shows four stacked rectangular boxes, each containing a guiding principle. From top to bottom: 1. A dark blue box with white text 'Person-centred care'. 2. A medium blue box with white text 'Shared decision-making'. 3. A light blue-grey box with dark blue text 'Goals of care'. 4. A light grey box with dark blue text 'Alignment with local resources'.

Orthogeriatric hip fracture care should be guided by best practice principles described in the [Guiding principles to develop organisational model of care for patients with hip fracture](#):

- Local governance and leadership
- Access
- Protocols and procedures
- Local data collection
- Workforce education and training
- Person-centred care
- Advanced care planning
- Coordinated care
- Multidisciplinary care teams

This guide outlines best practice recommendations for the care of patients with a hip fracture throughout their inpatient journey, and aims to support implementation and operationalisation of these recommendations across a variety of healthcare settings. It is designed to inform local policies and procedures, and support hospitals to improve adherence to the Australian Commission on Safety and Quality in Health Care (ACSQHC) Hip Fracture Care Clinical Care Standard (Hip Fracture Care Standard)<sup>2</sup> and the Australian and New Zealand Guideline for Hip Fracture Care (ANZ Guideline for Hip Fracture Care).<sup>3</sup>

The Hip Fracture Care Standard comprises seven quality statements that describe the clinical care that should be offered to a patient with a hip fracture ([Box 1](#)).<sup>2</sup>

### Box 1: The Hip Fracture Care Standard – 7 quality statements

- 1. Care at presentation** – A patient presenting to hospital with a suspected hip fracture receives care guided by timely assessment and management of medical conditions, including diagnostic imaging, pain assessment and cognitive assessment.
- 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.
- 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.
- 4. Timing of surgery** – A patient presenting to hospital with a hip fracture, or sustaining a hip fracture while in hospital, receives surgery within 36 hours, if no clinical contraindication exists and the patient prefers surgery.
- 5. Weight bearing and mobilisation** – 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.
- 6. Minimising risk of another fracture** – 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.
- 7. Transition from hospital care** – Before a patient leaves hospital, the patient and their carer are involved in the development of an individualised care plan that describes the patient's ongoing care and goals of care after they leave hospital. The plan is developed collaboratively with the patient's general practitioner. The plan identifies any changes in medicines, any new medicines, and equipment and contact details for rehabilitation services.

Source: ACSQHC Hip Fracture Care Clinical Care Standard<sup>2</sup>

The ANZ Guideline for Hip Fracture Care provides recommendations to help professionals deliver consistent, effective and efficient care.<sup>3</sup> On the models of care, the guideline recommends that patients should be offered 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 (either inpatient or outpatient) to recover mobility and independence, and to facilitate return to pre-fracture residence and long-term wellbeing
- early identification of most appropriate service to deliver rehabilitation
- continued, coordinated, orthogeriatric and multidisciplinary review
- 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 support services.<sup>3</sup>

A shared care approach should be followed when caring for a patient with a hip fracture for improved patient, health service and quality of care outcomes, such as hospital length of stay, time to surgery and reduced rates of complications and readmission rates.<sup>4</sup> The current evidence base does not identify the single best type of shared care model; therefore, it is recommended that hospitals should incorporate a shared care model that meets the needs of patients and suits their capacity, staffing and requirements.<sup>2, 4-8</sup>

## Background

In 2021, 12,153 hip fractures were reported in Australia.<sup>9,14</sup> A hip fracture is defined as a fracture of the proximal femur. It is the most serious and costly fall-related injury in older people.<sup>3</sup>

Most hip fractures occur in people aged  $\geq 65$  years, most often associated with a fall.<sup>3</sup> Two thirds of patients presenting with hip fracture are female; the median age in Australia is 83 years for men and 84 years for women, and 25% are aged  $>90$  years.<sup>3</sup>

Patients from residential aged care facilities are over-represented, comprising more than a quarter of admissions.<sup>10</sup> Over one in three (37%) have documented cognitive impairment/dementia; however, it is likely that dementia is under-diagnosed.<sup>10</sup> Comorbidity and frailty are common.<sup>3, 4, 8, 11, 12</sup> Hip fracture is associated with increased risk of poor outcomes, including poorer functional outcomes, residential placement and death.<sup>3, 8, 11, 13, 14</sup>

Every person with a hip fracture should be given the best possible chance of making a meaningful recovery following their injury, and strategies should be put in place to reduce the occurrence of future falls and fractures. The Australian New Zealand Hip Fracture Registry (ANZHFR) Annual Report 2021 showed that fewer than half of people with a hip fracture return to their previous function.<sup>11</sup> Furthermore, data from this annual report continue to highlight disparities in care received across Australia, despite existence of national guidelines and evidence-based recommendations.<sup>11</sup>

While the benefit of an orthogeriatric approach to care has been recognised at several levels, hospitals employ a number of different models of orthogeriatric care, informed by local resources and priorities.<sup>2,3,12</sup> Data from the ANZHFR indicated that:

- 69% of NSW hospitals had a formal orthogeriatric service
- 37% of hospitals used an orthogeriatric liaison service model, where the geriatric medicine team provides daily review (at least) Monday to Friday
- 33% of hospitals utilised an orthopaedic-geriatric shared care model
- 18% used a medical team in lieu of a specialist geriatric medicine service (medical liaison service and medical consultation service)
- only 1 of 33 NSW hospitals included had no formal orthogeriatric service.<sup>11</sup>

Key markers of quality of care, such as time to surgery, complication rates, hospital readmission rates and length of stay, can vary considerably. The quality of care is influenced by factors including, but not limited to:

- the configuration of orthopaedic and geriatric medicine services
- hospital protocols and processes
- the degree to which a multidisciplinary approach to care is taken between hospitals.<sup>3,11</sup>

## Methods

The ACI Orthogeriatric Model of Care Working Group (the working group) developed this guide in consultation with clinicians, managers, researchers and ACI team members. The guide was informed by a rapid evidence check of the current literature, a survey undertaken by hospitals across NSW (NSW survey) and data from the ANZHFR on orthogeriatric models of care within NSW hospitals (2021).<sup>11</sup> It is complemented by the Hip Fracture Care Standard and the ANZ Guideline for Hip Fracture Care.<sup>2,3</sup>

### Rapid evidence check

The scientific evidence on orthogeriatric models of care has evolved considerably since the release of the ACI Orthogeriatric Model of Care in 2010.<sup>1</sup> Best practice has since been illustrated in the Hip Fracture Care Standard published in 2014 and the ANZ Guideline for Hip Fracture Care published in 2016.

A rapid evidence check was undertaken to answer the following question: What are the key features, effectiveness, opportunities and challenges in the orthogeriatric model of care? Rapid evidence checks are based on a simplified review method and may not be entirely exhaustive; however, they aim to provide a balanced assessment of what is already known about a specific problem or issue.

Peer-reviewed articles were identified through PubMed, Google and Google Scholar. Grey literature search was conducted using Google and Google Scholar. Because of a large volume of eligible studies published in the last 10 years and availability of high-quality systematic reviews, the current evidence check only included review studies published since 2012, interventional/evaluative



studies presenting quantitative/comparative data published since August 2020 and eligible empirical studies published since the last systematic review. This evidence check was subject to review by the Orthogeriatric Model of Care Committee, but not to external peer review.

### Survey of orthogeriatric models of care in NSW

A survey was developed by the working group, informed by the Hip Fracture Care Standard and the ANZHFR audit questions,<sup>2,3</sup> to explore the existing provision of care to patients with a hip fracture, and barriers to and facilitators of best care, across NSW. Through assessment of ANZHFR data and previous stakeholder consultation, potential areas for improvement in hip fracture care were identified and reflected in the survey.<sup>11,12</sup> The survey was piloted with the working group before being distributed to all hospitals that care for patients with acute hip fractures, in electronic and/or paper form as per respondent preference ([Appendix 1: NSW survey](#); [Appendix 2: List of sites](#)).

Findings from this survey can be found in [Appendix 3](#).

### Intended audience and application

This guide is intended for use by clinicians and management in local health districts (LHDs) across NSW who care for patients with a hip fracture. It allows for local adaptation based on site resourcing and service structure.

The contents of this guide are not intended to be a substitute for healthcare providers' professional judgement and individualised patient care.

### Scope

The scope of this guide includes the patient's hip fracture journey, from hospital admission to post-acute care, and current standard of practice in NSW. While the guide refers to existing high-quality guidelines and recommendations from other bodies promoting best practice care of patients with a hip fracture, it is intended to complement, and not replace, such guidelines.

The pre-hospital part of the patient's journey as well as the operative and anaesthetic management of patients are not within the scope of this guide.

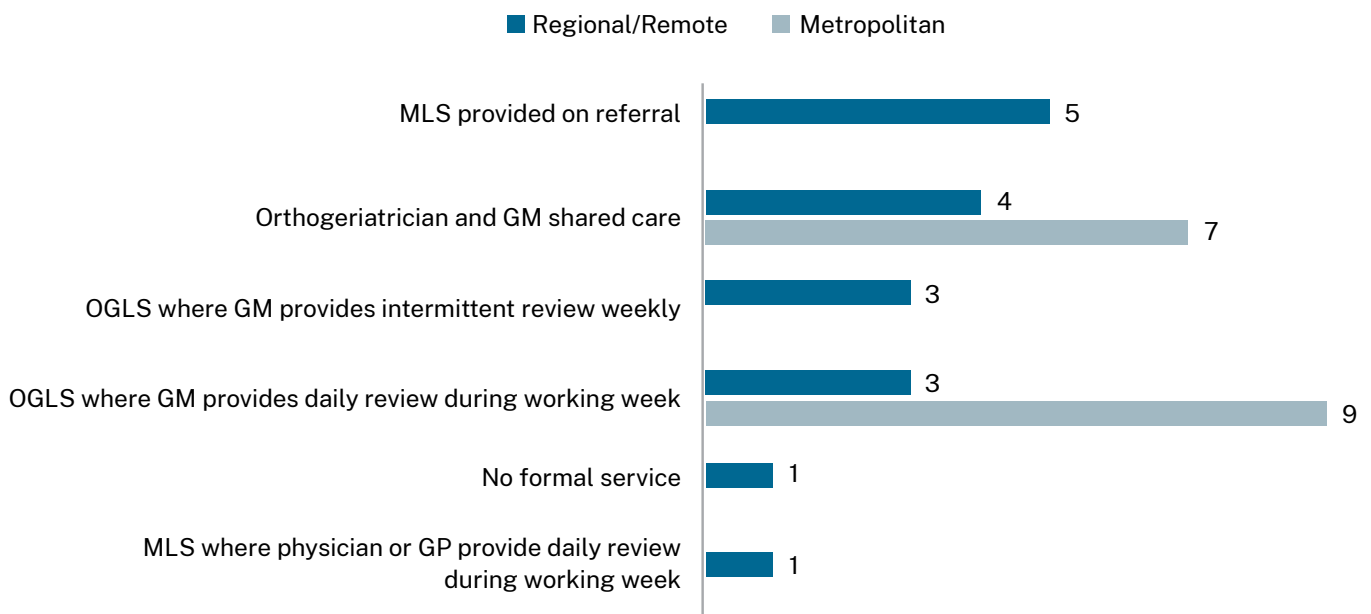
# Practice point

## Availability of local resources: What if a site does not have a geriatric medicine service?

While there is strong evidence supporting the benefit of an orthogeriatric approach to hip fracture care, not all clinical sites will have ready or frequent access to a dedicated aged care specialist/team. Data from the ANZHFR (Figure 1) indicate that some hospitals use a model based on input from a general medical team, either regularly or on an ‘as requested’ basis, rather than from a geriatrician.<sup>11</sup> ‘As needed’ medical consultation often forms the

basis of ‘routine’ care in studies investigating the utility of dedicated orthogeriatric services and does not offer the same benefit (see [Evidence check](#)). This document is primarily focused on orthogeriatric care, which will complement the surgical management of patients with a hip fracture. Refer to best practice surgical and anaesthetic management guidelines used within your hospital.

**Figure 1: Shared care models of orthogeriatric care used in NSW hospitals, N=33**



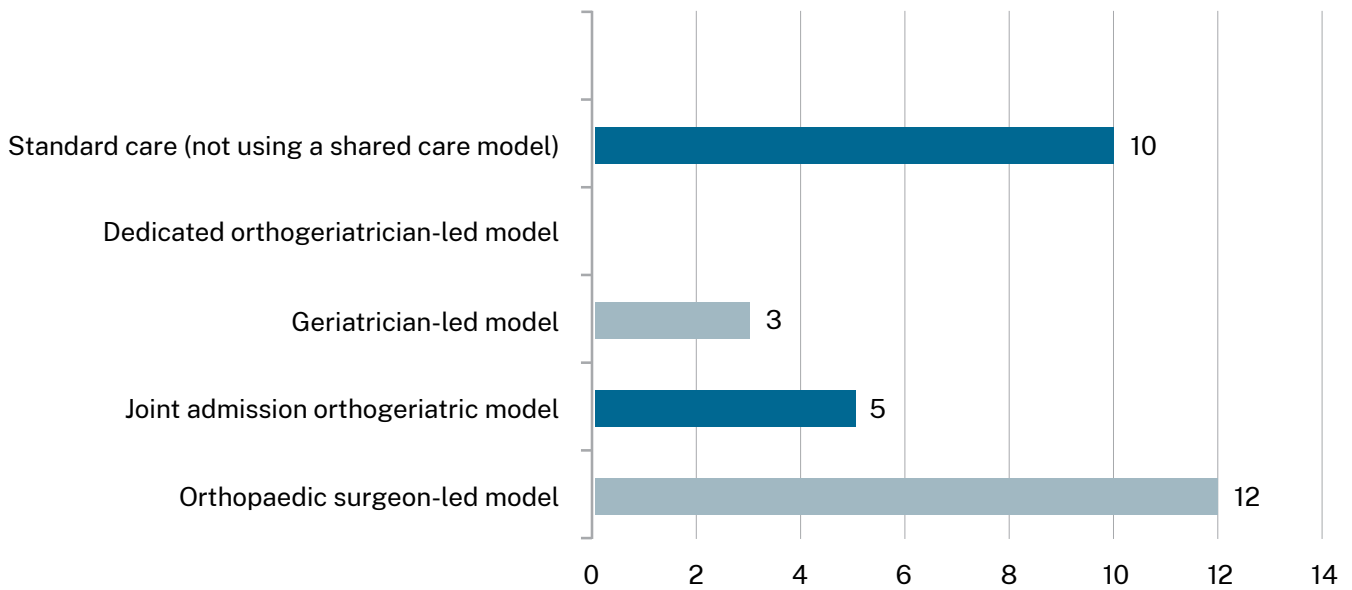
GM – geriatric medicine  
 GP – general practitioner  
 OGLS – orthogeriatric liaison service  
 MLS – medical liaison service

\* Three hospitals reporting a geriatric service provided on referral were not included in the graph as they did not provide details about their service.

Source: Australian and New Zealand Hip Fracture Registry facility-level audit of hip fracture care 2021

Findings from the NSW survey show that the most common shared care model was an orthopaedic surgeon-led model (40%, 12/30), followed by a joint admission orthogeriatric model (17%, 5/30).

**Figure 2: Types of shared care models being used in NSW hospitals, NSW Orthogeriatric Model of Care Survey 2022, N=30**



**Recommendation**

The consensus recommendation for this guide is that while geriatric medicine input is preferred (based on the available evidence supporting its utility), if no such service is available, the best positioned team to provide holistic medical input should be determined at local level. Local data

collection and audit are encouraged to identify whether enhancements to existing services are needed and if innovative options (e.g. aged care upskilling, geriatrician-led telehealth) can improve outcomes in the absence of an onsite geriatric medicine team. The term ‘orthogeriatric care’ is used throughout this guide, noting these caveats and recommendation.

## Patient and carer perspectives

Any person who has suffered a hip fracture should be an active partner in decisions about their care. Family/carers should also be active partners unless the patient does not consent to their involvement.<sup>15</sup> Family/carers will be particularly important if the patient is unable to make decisions or has dementia/cognitive impairment.

The patient with a hip fracture and their family/carers should be kept informed about the care they receive. Information and advice should be provided verbally and in printed form. Use of professional interpreters is encouraged, and printed information should be available in relevant community languages.

The patient's voice is relatively under-represented in the literature on hip fracture, and more specifically, in orthogeriatric models of care. However, a recent review of 14 high-quality studies noted four themes pertaining to the patient's experience of recovery after hip fracture:<sup>16</sup>

- Recovery as participation
- Feelings of vulnerability
- Driving recovery
- Reliance on support<sup>16</sup>

The authors noted that 'patient perspectives highlighted hip fracture as a major life event requiring health professional and social support to overcome feelings of vulnerability and enable active engagement in recovery'.<sup>16</sup>

The ANZHFR My Hip Fracture: Information and Individual Care Plan is a useful, multilingual resource to be given to patients and family/carers to support their engagement in their care.<sup>16</sup> Hospitals can order copies of this resource from <https://anzhfr.org/resources>.<sup>16</sup>

Decision-support tools can also be used at various points in patient care to facilitate shared decision-making (SDM; examples can be found at <https://www.safetyandquality.gov.au/our-work/partnering-consumers/shared-decision-making/decision-support-tools-specific-conditions><sup>17</sup>) and inform discussions about treatment options and explore the patient's preferences.<sup>17</sup> For example, while surgery will be the preferred option for most patients and has been shown to improve pain control and function in the majority of patients, a recent study evaluating the use of SDM with institutionalised older frail patients presenting with proximal femoral fracture highlighted that many would choose non-operative management, without compromising quality of life (or quality of death).<sup>18</sup>

Hospitals should use patient-reported measures (PRMs) to support their monitoring and evaluation. PRMs give patients the opportunity to provide direct, timely feedback about their health-related experiences and outcomes. This feedback helps drive improvements in care and supports clinicians to identify whether a patient is getting value from their treatment.

# Providing hip fracture care to Aboriginal and Torres Strait Islander patients

Aboriginal people have a higher rate of hip fractures than non-Indigenous people and are more likely to fracture their hip at a younger age.<sup>3</sup> Treating Aboriginal people who have suffered a hip fracture requires considerations to access and coordination of care. Coordinated and connected care is achieved when support available in inpatient and community settings flows seamlessly. This requires improved communication and information sharing, and strong referral pathways. Ensuring that Aboriginal patients are partners in their own care will require services to provide more coordinated, culturally safe and competent care that is targeted to the needs of Aboriginal communities.<sup>19</sup>

Clinicians should use culturally appropriate communication, which includes building rapport, being conscious of appropriate language and gathering information. Clinicians should be mindful of the hospital experience for Aboriginal people.

Aboriginal hospital liaison officers play a pivotal role in providing support and assistance to Aboriginal patients, including:

- practical and emotional support
- advocacy
- referrals
- discharge planning.

They provide cultural safety and connection, and therefore, can be valuable in ensuring Aboriginal patients are able to be partners in their care. Aboriginal people will often bring a support person, which could include a carer, family member or community member. Support people can assist with communication and should be informed about the care the patient is receiving.<sup>20</sup>

# Pre-operative care – care at presentation

The ANZ Guideline for Hip Fracture Care provides recommendations regarding magnetic resonance imaging (MRI) in patients whose initial scans do not confirm a fracture, but where clinical suspicion of a fracture remains.<sup>3</sup> Timely diagnosis informed by appropriate imaging is recommended for all patients with a suspected fracture.<sup>2,3</sup> This guide focuses on the orthogeriatric management of patients with an isolated hip fracture. The management of patients with multi-trauma is beyond the scope of this document. The principles of hip fracture care remain regardless of additional injuries that a patient may present with.

Upon arrival of the patient at the hospital, the multidisciplinary team should start identifying and communicating about perceived barriers to discharge/transfer of care and develop mitigation strategies, where appropriate. Initiation of bone protection medication should begin early in the patient's journey by the treating physician,<sup>21</sup> as should assessment of pressure areas to prevent pressure injury.<sup>22</sup>

## Early and regular orthogeriatrician (or general medical team in absence of orthogeriatric team) assessment

Patients diagnosed with a hip fracture should be offered early and continued pre-operative orthogeriatric review. If an orthogeriatrician is not available, other local shared care arrangement can be used. The ANZHFR Annual Report 2021 indicates that among hospitals included, 87% of patients had undergone a geriatrician review during their admission.<sup>11</sup>

Pre-operative orthogeriatric review is likely to afford benefits in terms of optimisation for surgery and early adoption of an orthogeriatric approach to

care, including cognitive assessment of the patient, their medication review and medication reconciliation (refer to the Hip Fracture Care Standard<sup>2</sup>).

The review may facilitate early initiation of a comprehensive geriatric assessment of the patient, which incorporates assessment of:

- medical morbidity
- medications
- cognition
- mobility
- physical function
- social circumstances
- goals of care.

The review may also allow aspects of care such as Advanced Care Planning (ACP) and consideration of palliation (e.g. if death imminent) to be addressed early in the patient's journey.<sup>23</sup>

## NSW survey results

The survey found that 57% (17/30) of NSW hospitals reported barriers to pre-operative medical review.

### Barriers

- Heavy workload and staffing deficits
- Communication gaps
- Out-of-hours presentations and lack of after-hours resources
- Rapid transfer to the operating suite

### Enablers

- Communication tools (e.g. notification system for hip fractures)

- Alternative review options (e.g. after-hours orthogeriatric phone advice, medical registrar supported by a senior physician/general physician, a visiting medical officer)
- Education (e.g. recurrent education of emergency department [ED] staff)
- Transfer of patients with complex conditions to an alternative site

### Recommendations

It is recommended that the following options be considered to operationalise early and regular assessment:

- A formalised orthogeriatric model of care. Sites that do not have this service can consider implementation and use of 'next best' options, with local audit to assess outcomes, e.g. liaison between specialities or consultative models.
- Use tools that facilitate communication and flag arrival of patients with a hip fracture.
- Develop local pathways/protocols that support staff to provide timely care, e.g. use of electronic pathways/tools.

### Pre-operative cognitive assessment

The importance of early cognitive assessment, delirium risk screening and prevention of 'preventable' delirium is highlighted in existing guidelines and recommendations.<sup>2,11,24</sup> The ANZHFR Annual Report 2021 indicates that only 72% of patients presenting to Australian hospitals undergo pre-operative cognitive screening.<sup>11</sup> Collateral history can be a valuable tool in determining baseline cognition of the patient.

Patients with underlying cognitive impairment are at a particularly high risk of delirium. Appropriate and timely identification of a responsible carer

should be undertaken for patients who are deemed cognitively impaired, at risk of palliation or high-risk. This information should be accurately updated in the patient's medical record.

### NSW survey results

The survey identified that two thirds of hospitals (68%, 19/28) reported barriers to pre-operative cognitive assessment.

### Barriers

- Lack of knowledge among staff/identified literature
- Lack of staffing
- Service structure issues

### Recommendations

It is recommended that the following options be considered to determine pre-operative cognitive status in all adult patients with a hip fracture admitted to hospital:

- Use tools such as the Delirium Risk Assessment Tool (DRAT)<sup>25</sup> to assess delirium risk.
- Use screening instruments such as the Confusion Assessment Method and 4AT to identify delirium at presentation (or within 24 hours if assessment is not possible at admission).<sup>26-30</sup>
- Use validated cognitive screening tools such as the Abbreviated Mental Test Score, 4AT or Rowland Universal Dementia Assessment Scale (RUDAS)<sup>26,30</sup> to determine cognitive status. The 4AT tool has been validated for both cognitive impairment screening and delirium assessment.<sup>31</sup>
- Implement change management projects to support behaviour change among staff to undertake cognitive assessments.

## Delirium prevention and management

Delirium is common in patients with a hip fracture, with rates in excess of 60% having been reported and recent data from a Sydney hospital indicating a baseline day three post-operative rate of 33%.<sup>29</sup> However, it is estimated that 40% of this is preventable.<sup>27, 29, 31, 32</sup> Key elements of best practice guidelines for the prevention and management of delirium include:<sup>2, 23, 33-36</sup>

- timely assessment of cognitive status
- recognition of delirium
- pain assessment and management
- proactive prevention by avoidance of triggers.

The principles underpinning delirium recognition, prevention and management are outlined in recommendations such as the ACI's Care of Confused Hospitalised Older Persons (CHOPS) ([Box 2](#))<sup>26</sup> and the ACSQHC Delirium Clinical Care Standard.<sup>37, 38</sup> Delirium is associated with increased costs (estimated A\$60,000 per patient: length of stay, mortality, risk of dementia, and in-patient falls)<sup>29, 32-34, 39, 40</sup> and causes significant distress among patients and family/carers.<sup>41, 42</sup>

Use of multifaceted interventions has shown benefit in wider hospital populations, such as the Hospital Elder Life Program. This program targets six delirium risk factors:<sup>34, 35</sup>

- cognitive impairment
- sleep deprivation
- immobilisation
- visual impairment
- hearing impairment
- dehydration.

Analgesic-centric multicomponent bundles of care have also been associated with improvements in early post-operative delirium among patients with a hip fracture.<sup>29</sup>

### Recommendations

It is recommended that the following options be considered to operationalise cognitive assessment and delirium management:

- Embed early cognitive assessment and delirium screening in local pathways and include change management to implement.
- Audit staff education compliance and compliance with mandated risk assessment/screening tools.
- Consider quality improvement initiatives that align with local delirium management priorities and address current gaps.
- Make delirium assessment 'everyone's business'.
- Consider introduction of evidence-based, multifaceted interventions; such initiatives should be complemented by data collection to assess patient outcomes.



## Box 2: Care of Confused Hospitalised Older Persons (CHOPS) principles<sup>26</sup>

1. Undertake cognitive screening
2. Delirium risk identification and preventive measures
3. Assessment of older people with confusion
4. Management of older people with confusion
5. Effective communication to enhance care
6. Staff education
7. Supportive care environment

## Pain assessment and management

The Hip Fracture Care Standard advises pain assessment at the time of presentation and frequently thereafter, and the use of multimodal pain management, where appropriate.<sup>2</sup> In addition to simple analgesics and individualised/appropriate use of opiates, nerve blocks such as fascia-iliaca block (FIB) are beneficial in the acute care setting. In Australia, 79% of patients receive a nerve block before surgical intervention.<sup>12</sup> To maintain/optimize pain control, FIB can be repeated before surgery.<sup>11</sup>

### NSW survey results

The survey found that 52% (14/27) of hospitals reported barriers to timely (within 30 minutes of patient arrival) pain assessment and 37% (10/27) reported barriers to the administration of FIBs.

### Barriers

- Lack of staffing
- Service structure
- Staff training and knowledge

## Recommendations

It is recommended that the following options be considered to operationalise pre-operative pain assessment and management:

- Consider pain as the 'Fifth Vital Sign' and ask about this at triage.
- Embed handover regarding pain into clinician handover protocols.
- Audit current practices to identify gaps and inform targeted quality improvement initiatives.
- Embed early pain assessment in local hip fracture care pathways.
- Review local staffing barriers that may impede early pain assessment.
- Implement change management projects to support behaviour change among staff in undertaking pain assessments and including into business as usual.
- Increase access to FIB training for ED staff.

## Optimisation for surgery

There is clear evidence supporting early surgery (within 36 hours) and showing that inappropriate delays are associated with poorer patient outcomes.<sup>2, 43, 44</sup> Severe morbidity and a combination of acute and chronic conditions may require optimisation to facilitate surgery. It is recommended that the time before surgery may be efficiently used to optimise patients for surgery.

Pending the development of national guidelines in relation to the below issues, clinicians may consider the following to support optimisation for surgery in certain patient groups:

### Consideration of pre-operative echocardiography (ECHO)

Pre-operative ECHO should be considered only if it will change anaesthetic management or inform decisions regarding progression to surgery. A significant number of patients admitted for hip fractures will have comorbid cardiovascular disease, which is a risk factor for falls and in-hospital morbidity.<sup>45</sup> Specific types of cardiovascular disease, such as valvular heart disease and heart failure, contribute disproportionately to peri-operative morbidity and mortality.<sup>46</sup>

The use of pre-operative ECHO may be helpful in quantifying the severity of valvular heart disease, ventricular dysfunction, haemodynamic status and presence of pericardial effusion. However, it is widely acknowledged that delays to surgery may increase mortality and morbidity. Thus, although ECHO is useful, it is recommended that this investigation should not delay definitive surgery for the patient.

### Patients with a hip fracture receiving therapeutic anticoagulation

With the advent of a broader range of anticoagulants, clinical practice in relation to the management of patients receiving anticoagulant therapy has become more challenging. National guidelines for the management of anticoagulation in patients undergoing a hip fracture surgery do not yet exist in Australia. Available literature outlines pragmatic approaches to manage such patients.<sup>47</sup> Individual institutions may wish to consider the development of local practice guidelines in collaboration with relevant specialties (orthopaedic surgery, geriatric medicine, anaesthetics, haematology).

### Patients with diabetes receiving sodium-glucose transport protein 2 inhibitors (SGLT2-i)

Patients with diabetes will require close attention to glycaemic management during the peri-operative period, and their medications and food intake will need to be reviewed. This is particularly important in relation to SGLT2-i, which are being used increasingly and peri-operative concerns relating to these medications are acknowledged here.

While diabetic ketoacidosis is uncommon with SGLT2-i therapy, certain stressors, including surgery and/or acute illness, can be associated with increased risk.<sup>48</sup> Severe euglycaemic ketoacidosis has been associated with SGLT2-i use in the peri-operative period.<sup>49</sup>

The Australian Diabetes Society (ADS) recommends:

- SGLT2-i should be ceased at least three days pre-operatively (two days before surgery and the day of surgery), noting that this may require an increase in other glucose-lowering drugs during this time. For patients presenting with a hip fracture, use of SGLT2-i should be ceased on admission.

- Specialist input (e.g. endocrinologist) should be sought for patients receiving such treatment who present with a hip fracture.<sup>49</sup> (Note that postponement of non-urgent surgery may be considered if ‘SGLT2 inhibitors have not been ceased prior to surgery and either blood ketones are >0.6 mmol/L, or HbA1c is >9.0%’. Hip fracture surgery may require a more expedited approach due to the Hip Fracture Care Standard recommending surgery within 36 hours.)
- SGLT2-i should not be reinitiated routinely post-operatively. Recommencement can be considered if needed when the patient is eating/drinking normally or close to hospital discharge.

## Recommendations

It is recommended that the following options be considered for optimisation for surgery:

- Consider facilitating early physician review/ input if the orthogeriatric team is not available 24/7 (e.g. medical registrar review, geriatrician phone consult).
- Encourage team communication between the ED, orthopaedic surgical team, orthogeriatric/medical team and anaesthetist.
- Identify potential barriers to surgery and implement early treatment plans to minimise surgical delays associated with medical instability.
- Seek early advice from appropriate specialists for patients with complex issues (e.g. direct oral anticoagulant therapy, glycaemic control and monitoring, all diabetes medications, including insulin, SGLT2-i and metformin).

## Supportive care in the pre-operative and peri-operative period

Managing patients with a hip fracture requires a holistic approach to care, with the aim to maximise recovery and reduce complications. Supportive therapies that require consideration in patients undergoing surgery for a hip fracture include:

- antibiotic prophylaxis
- fluid repletion (using a combination of oral and intravenous fluids, as needed)
- fasting before surgery
- venous thromboembolism (VTE) prophylaxis.<sup>49</sup>

### VTE prophylaxis

VTE prophylaxis should be used in patients with a hip fracture where the risk of VTE outweighs the risk of bleeding.<sup>3, 50, 51</sup> Clinicians should refer to the Australian Commission on Safety and Quality in Health Care (ACSQHC) Venous Thromboembolism Prevention Clinical Care Standard and the ACSQHC Implementation Guide for Venous Thromboembolism Prevention<sup>52-54</sup> for recommendations and assessment tools.

The Clinical Excellence Commission (CEC) has provided a framework to guide implementation of VTE prevention, which is available at: [https://www.cec.health.nsw.gov.au/\\_data/assets/pdf\\_file/0009/259506/VTE-prevention-framework.PDF](https://www.cec.health.nsw.gov.au/_data/assets/pdf_file/0009/259506/VTE-prevention-framework.PDF).<sup>55</sup>

Options for VTE prophylaxis that may be commenced pre-operatively include low molecular weight heparin (LMWH), such as enoxaparin or fondaparinux (noting there is a higher risk of bleeding with fondaparinux, which may not be appropriate if spinal anaesthetic is preferred).<sup>2, 51, 52</sup> Patients with creatinine clearance <30ml/minute cannot receive these therapies but may receive unfractionated heparin (UFH) instead.<sup>53, 54</sup>

Clinicians are advised to consult the Australian Medicines Handbook (AMH)/Electronic Therapeutic Guidelines for information on dosing, contraindications, cautions, drug interactions and specific indications.<sup>53, 54</sup> The AMH notes that VTE prophylaxis should be continued for seven days after surgery or until the patient is fully mobilised; longer prophylaxis may be used after a major joint surgery depending on the indication.<sup>50, 51</sup>

Aspirin should not be used in high-risk-VTE hip fracture population.<sup>51</sup> Evidence for aspirin being non-inferior to prophylactic anticoagulation is uncertain and so the use of aspirin has not been embedded in the current Australian guidelines.<sup>21</sup>

Mechanical prophylaxis for VTE is effective alone. It has an additive effect when combined with pharmacological prophylaxis and may be preferable in some scenarios where there is a high risk of bleeding.<sup>53</sup>

### Recommendations for VTE prophylaxis

It is recommended that the following options be considered to operationalise VTE prophylaxis:

- Use of assessment and prescribing tools. Specific recommendations to aid implementation are provided in the ACSQHC Implementation Guide for Venous Thromboembolism Prevention.<sup>52-54</sup>
- Include VTE prophylaxis decisions in admission and post-operative care documentation.
- Consider use of electronic decision aids.
- Embed VTE prophylaxis in local hip fracture care pathways and consider implementing standardised evidence-based management options to reduce confusion/uncertainty.
- Address timing of pre-operative VTE prophylaxis in local pathways and procedures to avoid delays to surgery.

## Fasting before surgery

The ANZ Guideline for Hip Fracture Care notes that periods of prolonged fasting are unlikely to be beneficial, given the relative vulnerability of patients with a hip fracture.<sup>3</sup> Patients with specific comorbidities, such as diabetes, may require an individualised approach to fluid management, including oral fluid management, in the pre-operative period. Although there are multiple national and international guidelines recommending shortened fasting times,<sup>3, 56</sup> continuing evidence suggests prolonged fasting in patients diagnosed with a hip fracture occurs frequently. This is despite that this cohort can be frail and nutritionally vulnerable, and the risk of post-operative complications is increased by malnutrition and underfeeding.<sup>56, 57</sup>

### NSW survey results

The survey identified that 30% (8/27) of hospitals did not include nutrition in their hip fracture management path/model of care.

### Recommendations

It is recommended that the following options be considered regarding fasting before surgery:

- Ensure clear guidance for team members regarding the need for and duration of fasting.
- Embed fasting recommendations in local hip fracture care pathways.
- Consider practical options such as ‘saved sandwich’ on the ward if patients are off the ward for procedures or investigations.
- Ensure clear communication between theatre and ward staff to minimise prolonged fasting if, for example, patient’s surgery is going to be delayed.
- Have dedicated surgical slots.

Refer also to Key Principles: Preoperative Fasting in NSW Public Hospitals 2016<sup>49</sup> and local protocols.

# Key surgical considerations for patients with a hip fracture

## Timing of surgery

*'Prompt hip fracture surgery has been demonstrated to reduce morbidity, hasten functional recovery and reduce length of stay.'*<sup>11</sup>

The timing of surgery should be informed by best available evidence and current guidelines, specifically the Hip Fracture Care Standard and the ANZ Guideline for Hip Fracture Care.<sup>2</sup>

The Hip Fracture Care Standard states that a patient presenting to hospital with a hip fracture, or sustaining a hip fracture while in hospital, receives surgery within 36 hours, if no clinical contraindication exists and the patient prefers surgery.<sup>2</sup>

The ANZ Guideline for Hip Fracture Care advises that patients should undergo surgery on the day of, or the day after, presentation to hospital with a hip fracture, with the wording modified to reflect the potential influence of inter-facility transfers on the timing of surgery.<sup>3</sup>

The NSW Emergency Surgery Guidelines and Principles for Improvement note that patients with a hip fracture should receive surgery within 24 hours (being assigned a priority level of semi-urgent [level E] or higher), unless undergoing an inter-hospital transfer when a 36-hour window is acceptable.<sup>58</sup>

Eighty percent of patients with a hip fracture in Australia receive surgery within 48 hours.<sup>10</sup> The most common barriers to surgery within 36 hours are theatre access and patients being 'deemed unfit for surgery'.<sup>11</sup> Pre-operative optimisation and multidisciplinary team input should commence from the time the patient arrives at the initial (transferring) hospital.

## NSW survey results

Most of the hospitals reported having difficulties in accessing an operating theatre for a hip fracture surgery, with only one in five hospitals having a dedicated operating theatre for these surgeries. Sixty-two percent (16/26) of the hospitals also reported barriers to inter-facility transfer that lead to delays in surgery for these patients.

### Barriers

- Problems accessing operating theatres for a hip fracture surgery both in normal business hours and after hours
- Lack of specialist post-surgical beds (e.g. ICU or other orthopaedic bed)
- Lack of specific surgeon availability for total hip replacement

### Enablers

Hospitals with a dedicated operating theatre for hip surgeries had various access arrangements, such as:

- priority access for surgery time on weekdays for acute orthopaedic lists and patients with a hip fracture (once medically stable) prioritised for theatre within 24 hours of presentation
- prompt review of these patients and a commitment to initiate prompt care management and timely communication with all teams.

For hospitals that cannot provide hip fracture surgery:

- agreed coordinated transfer protocols to assist in streamlining patient transfer to sites with operating theatres for hip fracture surgery.

### Out of hours (after hours) surgery

Hospitals may wish to consider additional dedicated emergency surgical models to accommodate hip fracture caseload and to meet timing targets (currently <36 hours).<sup>58</sup> Theatre time should not be limited to Monday–Friday ‘business hours’ if surgery can be conducted safely outside of this period (e.g. dedicated lists, consultant-led and adequately supervised, appropriate anaesthetic support and adequate post-operative care).<sup>58, 59</sup>

Recent evidence from a large systematic review and meta-analysis including over 177,000 patients suggests that performing a hip fracture surgery out of hours or on the weekends does not increase the risk of 30-day or inpatient mortality or post-operative complications.<sup>59</sup>

It is recommended that the following options be considered to facilitate timely surgery (within 36 hours or less):

- Identify local barriers to surgery and consider targeted solutions to minimise delays, such as:
  - dedicated weekend lists if weekend presentations are associated with delays to surgery
  - priority access if other surgery superseding hip fracture surgery
  - ‘saved bed’ so that hip fracture surgery is not delayed pending post-operative bed availability.
- Agree on clear protocols to maximise pre-operative optimisation while patients are awaiting transfer, e.g. specialist phone consultation/telehealth as an option if specialist input is needed during this period.

- Early communication with the hospital to which the patient with a suspected hip fracture is being transferred.
- Lack of bed availability may require investigation of local resources and options tailored to specific settings, such as exploring whether direct-to-ED or direct-to-ward might work better for the involved facilities or whether the transferring hospital can accept a different patient from the receiving hospital to make a bed available for the patient with a hip fracture.

### Surgical procedures and anaesthetic management

Surgery should facilitate early mobilisation and full weight-bearing post-operatively where possible.<sup>3</sup>

Recommendations regarding surgical procedures and anaesthetic management are beyond the scope of this guide. Refer to anaesthesia guidelines such as that by the Association of Anaesthetists.<sup>59, 60</sup> Clinicians may wish to consult the ANZ Clinical Guideline for Hip Fracture Care and other best-practice documents, such as the NICE Guidelines for making operative decisions.<sup>3, 34</sup>

### Palliative care

The ANZ Guideline for Hip Fracture Care notes that 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 to optimise symptoms and quality of life.<sup>3</sup> For patients who are assessed as imminently dying (e.g. likely to die within 24–48 hours), non-operative comfort care may be appropriate; assessment for this should be made on a case-by-case basis.

The CEC has produced several resources to guide clinicians and patients/families, both in the uncertain period when recovery may be unclear (e.g. [AMBER Care Bundle](#)<sup>61</sup>) and in the last days and hours of life (e.g. [Last Days of Life](#) toolkit).<sup>61</sup>

## Recommendations

It is recommended that the following options be considered to operationalise palliative care:

- Ensure goal-directed care that has been informed by the patient and family and carer wishes.
- Consider surgery as part of the palliative care approach, ensuring that patients and family and carers are informed of the aim of surgery.
- Ensure clear documentation of discussion and rationale if surgery is not being pursued.
- Audit local data to review care of patients with a hip fracture who are being managed palliatively and/or non-operatively.
- Employ standardised pathways and protocols to assist in the management of patients with uncertain prognosis or at end of life.
- Ensure clear multidisciplinary communication regarding goals of care.



# Post-operative management

Early, continued, coordinated orthogeriatric/medical and multidisciplinary review aims to prevent post-operative complications and identify the patient's goals and care coordination. Compared with the challenges encountered in obtaining pre-operative orthogeriatric review, the NSW survey indicated that 81% of hospitals did not report barriers to post-operative medical review. Post-operative orthogeriatric/medical and multidisciplinary review should include:

- assessment and management of pain
- assessment, prevention and management of post-operative delirium
- assessment of nutritional status, and prevention and management of malnutrition
- post-operative supportive care
- mobilisation and weight-bearing.

## Assessment and management of pain

Prompt assessment and effective management of pain are critical to the experience of the patient with a hip fracture. Therefore, regular pain assessment and documentation should be a part of routine post-operative care.<sup>2</sup> Pain scales, such as the Abbey Pain Scale and Pain Assessment in Advanced Dementia (PAINAD) Scale, exist to support staff in identifying symptoms and signs associated with pain in all people, including those with altered cognition.<sup>62</sup>

Most patients with a hip fracture will require regular analgesia. Adequate pain control enhances comfort and reduces delirium risk. Analgesia should be sufficient to allow movements necessary for investigations, nursing care and rehabilitation.

## Recommendations

It is recommended that the following options be considered to operationalise pain assessment and management:

- The choice and dose of analgesia should be age- and weight-appropriate, with close monitoring and management for associated side effects (e.g. nausea, constipation).
- Consider strategies to minimise overall opioid analgesic use. Simple analgesia (e.g. paracetamol) should be used to reduce need for opioids, as there is no evidence to support the use of modified-release opioid analgesics for acute pain.<sup>63</sup>

Refer also to the [ACSQHC Opioid Analgesic Stewardship in Acute Pain Clinical Care Standard](#).<sup>63</sup>

## Assessment, prevention and management of post-operative delirium

As per the ACSQHC Delirium Clinical Care Standard, a patient with cognitive impairment on presentation to hospital, or who has an acute change in behaviour or cognitive function during a hospital stay, should be promptly assessed for delirium using a validated tool.<sup>37, 63</sup>

The Delirium Clinical Care Standard suggests that patients be monitored at least daily for cognitive, behavioural and clinical deterioration, as symptoms can vary throughout the day.<sup>37, 63</sup> Refer to sections [Assessing and diagnosing delirium and Identifying and treating underlying causes in the Delirium Clinical Care Standard](#).<sup>63, 68</sup>



## NSW survey results

The survey revealed that 30% of hospitals reported barriers to post-operative delirium assessment.

### Barriers

- No clear protocol on conducting post-operative delirium assessment and lack of awareness among nursing staff to complete the assessment
- Lack of education for junior staff on the importance of delirium assessment

### Enablers

- Leadership-endorsed change management, including protected time to teach junior staff
- Development of a clear protocol to undertake post-operative delirium assessment
- Local audit and quality improvement initiatives to monitor delivery of best-practice care and opportunities for improvement
- Ensuring management strategies are implemented following risk assessment/diagnosis

Refer also to tools and resources in the ACI CHOPS program and the Delirium Clinical Care Standard.<sup>26, 37, 63</sup>

## Recommendations

It is recommended that the following options be considered for risk assessment and management of delirium:

- Implement interventions to prevent delirium in at-risk patients and regularly monitor for changes in behaviour, cognition and physical condition. Appropriate interventions are determined on admission, reviewed post-operatively and in discussion with the patient and their family/carers.

- Implement interventions to manage and treat the causes of delirium, based on a comprehensive assessment that includes relevant multidisciplinary team consultation.
- Provide care to patients diagnosed with delirium to prevent associated complications, including functional decline, dehydration, malnutrition, falls and pressure injuries, based on the patient's risk.<sup>26</sup>
- Partner with patients and family/carers to support person-centred care and consider options such as [Top 5](#) or [Sunflower Tool](#).<sup>64, 65</sup>

## Assessment of nutritional status, and prevention and management of malnutrition

There is strong evidence on the role of nutrition in managing the outcomes of patients with a hip fracture. The ANZHFR Sprint Audit 2021 identified that malnutrition is the costliest comorbidity in hip fracture and the most likely to prolong length of stay.<sup>66</sup> It is a stronger predictor of 12-month mortality than the ASA grade, Charlson Comorbidity Index, time to surgery or type of surgery.

Malnutrition is observed across all BMI ranges, and in overweight or obese patients, it is a very strong predictor of 12-month mortality. It has been widely established that multidisciplinary, multimodal nutrition care can improve outcomes.

Given the high prevalence of malnutrition and inadequate post-operative protein and energy intakes, all patients diagnosed with a hip fracture should be considered at nutritional risk and should undergo nutrition assessment early in their hospital stay and throughout their admission (using a validated assessment tool) and intervention. Some will be malnourished at the time of admission while others will be at risk of becoming malnourished if enough attention is not paid to their nutritional needs.

## Recommendations

It is recommended that the following options be considered for assessment of nutritional status, and prevention and management of malnutrition:

- Provide multidisciplinary, multimodal nutritional assessment and interventions to all patients with a hip fracture to support adequate dietary intake; maintain or increase body weight; and improve patient and health outcomes.
- Screen all patients for malnutrition. Simple validated tools like the Mini Nutritional Assessment or Malnutrition Screening Tool may be useful in the first instance.<sup>67</sup>
- Refer patients identified as at risk of malnutrition or as malnourished to a dietitian service, where available, for full assessment and intervention.
- Use a 'food first' approach to nutritional protocols, to increase the energy density of meals, including offering high-quality snacks and drinks, providing education about food choices and encouraging patients to eat little and often.<sup>68</sup>
- Use dietitian assistants, where available. These assistants would encourage patients to eat and take dietitian-prescribed supplements, seek feedback on how patients are managing their food/supplements (to inform the dietician) and make changes to diet order (e.g. modify order for kitchen staff to cut up food).
- Where resources are limited, offer all patients nutrition care interventions, including oral nutrition supplements, to improve dietary intake and reduce the risk of complications.
- Implement a 'Nutrition as Medication', or NAM, strategy, routinely prescribing high-energy/high-protein drinks to most patients to reduce the risk of malnourishment throughout the inpatient journey.

## Post-operative supportive care

Post-operative care for patients with a hip fracture shares commonalities with routine post-operative care.

Implementation of local evidence-based protocols is recommended, including those relating to:

- routine post-operative pathology review and management, including blood and iron transfusion protocols
- antibiotic prophylaxis – secondary to insertion of prosthesis/internal fixation
- post-operative nausea and hydration management
- VTE risk screening and prophylaxis – using pharmaceutical and mechanical prophylaxis
- pressure injury prevention, including pressure area risk assessment and prevention strategies, such as access to pressure-relieving devices<sup>22</sup>
- falls – identifying fall risk factors (e.g. previous history of falls, poor mobility, cognitive impairment and vision issues)<sup>69</sup>
- bowel management, including monitoring and constipation prevention and management strategies
- catheterisation/continence, including trial of void, retention monitoring and continence strategies
- wound management – local protocol aimed to prevent surgical site infections
- comorbidity management, e.g. diabetes mellitus, heart failure.

## Mobilisation and weight-bearing

If appropriate and clinically indicated, provide multidisciplinary rehabilitation, aimed at:

- increasing mobility and independence
- facilitating return to pre-fracture residence
- supporting long-term wellbeing while ensuring the patient is included in decision-making, and that the care delivered aligns with individual values and goals.<sup>2, 3, 11</sup>

Early mobilisation is an essential component of post-operative management after a hip fracture surgery. It has been shown to reduce post-operative complications, such as VTE, pneumonia, wound breakdown, pressure ulcers and delirium.<sup>70</sup>

All patients who have undergone a hip fracture surgery, depending on their clinical condition and agreed goals of care, should be given the opportunity to sit out of bed, and offered mobilisation without restrictions on weight-bearing the day after surgery and at least daily thereafter.<sup>2, 3</sup>

Early mobilisation has been associated with lower mortality rates at six months and one year compared with patients who mobilised later independent of early time to surgery.<sup>71</sup> The Hips4Hips randomised controlled trial illustrated that intensive hospital physiotherapy is safe and reduces hospital length of stay after an isolated hip fracture.<sup>72</sup> This has the potential to improve bed flow, given the large numbers of inpatient beds occupied by this patient population.<sup>72</sup> The presence or absence of a physiotherapist should not be the main determinant of when this happens, as availability of physiotherapy is not universal, particularly on weekends. Establishing a physiotherapy service seven days a week with a priority on hip fracture can assist with the effective delivery of mobilisation.<sup>73, 74</sup>

## NSW survey results

The survey identified that:

- non-weight-bearing status (as recommended by the treating surgeon) was one of the top three barriers to achieving day one mobilisation in 42% of hospitals (15/36)
- 40% of hospitals reported not having access to rehabilitation within a week of surgery because of availability and selection processes of rehabilitation teams
- rehabilitation models available differed across hospitals. Public and private inpatient rehabilitation units were the most common models, with community and outpatient models less common.

## Recommendations

It is recommended that the following options be considered to operationalise mobilisation and weight-bearing:

- Put multidisciplinary mobilisation plans in place – adopt a team approach to mobilisation, e.g. involving allied health assistants, physiotherapists and nursing staff
- Consider implementation of physiotherapy seven days a week.<sup>75</sup>
- Transfer patients to rehabilitation, where medically appropriate.
- Care for patients with a hip fracture on a dedicated orthogeriatric ward or similar e.g. geriatric or aged care ward,<sup>76</sup> where possible.

Refer also to the ACI Physical Activity and Movement: A Guideline for Critically Ill Adults, 2017 for additional details on mobilisation.<sup>76</sup>

# Discharge (transfer of care) planning

## Referral for multidisciplinary rehabilitation assessment based on local eligibility criteria

Goal-setting is an integral component of the provision of quality, patient-centred rehabilitation service delivery and occurs in partnership with patients and family/carers.<sup>76</sup> Person-centred goal-setting is a vital component of rehabilitation services,<sup>70</sup> and incorporating an interdisciplinary approach facilitates coordinated delivery of treatments and interventions that are focused on the values of individuals and their families.<sup>70</sup>

Best practice rehabilitation care delivery is further outlined in the ACI Principles to Support Rehabilitation Care 2019,<sup>77</sup> and supporting documentation regarding rehabilitation can be found in the Australasian Faculty of Rehabilitation Medicine's Standards for the Provision of Inpatient Adult Rehabilitation Medicine Services in Public and Private Hospitals, which should be incorporated into service planning.<sup>78</sup>

Refer also to the following documents:

- Clinical Excellence Queensland - Goal-setting in Rehabilitation<sup>79</sup>
- ACI Person-centred Rehabilitation Planning: Facilitator Manual<sup>80</sup>

### Assessment

Every patient with a hip fracture should receive an assessment for multidisciplinary rehabilitation, and the most appropriate setting for rehabilitation should be identified (e.g. physiotherapy at home, private rehabilitation, day rehabilitation), typically after a period of in-patient rehabilitation.<sup>81</sup>

Cognitive impairment may or may not hinder a patient's ability to participate in rehabilitation, and

patients with cognitive impairment or dementia should still be assessed for suitability for rehabilitation.<sup>77,82</sup>

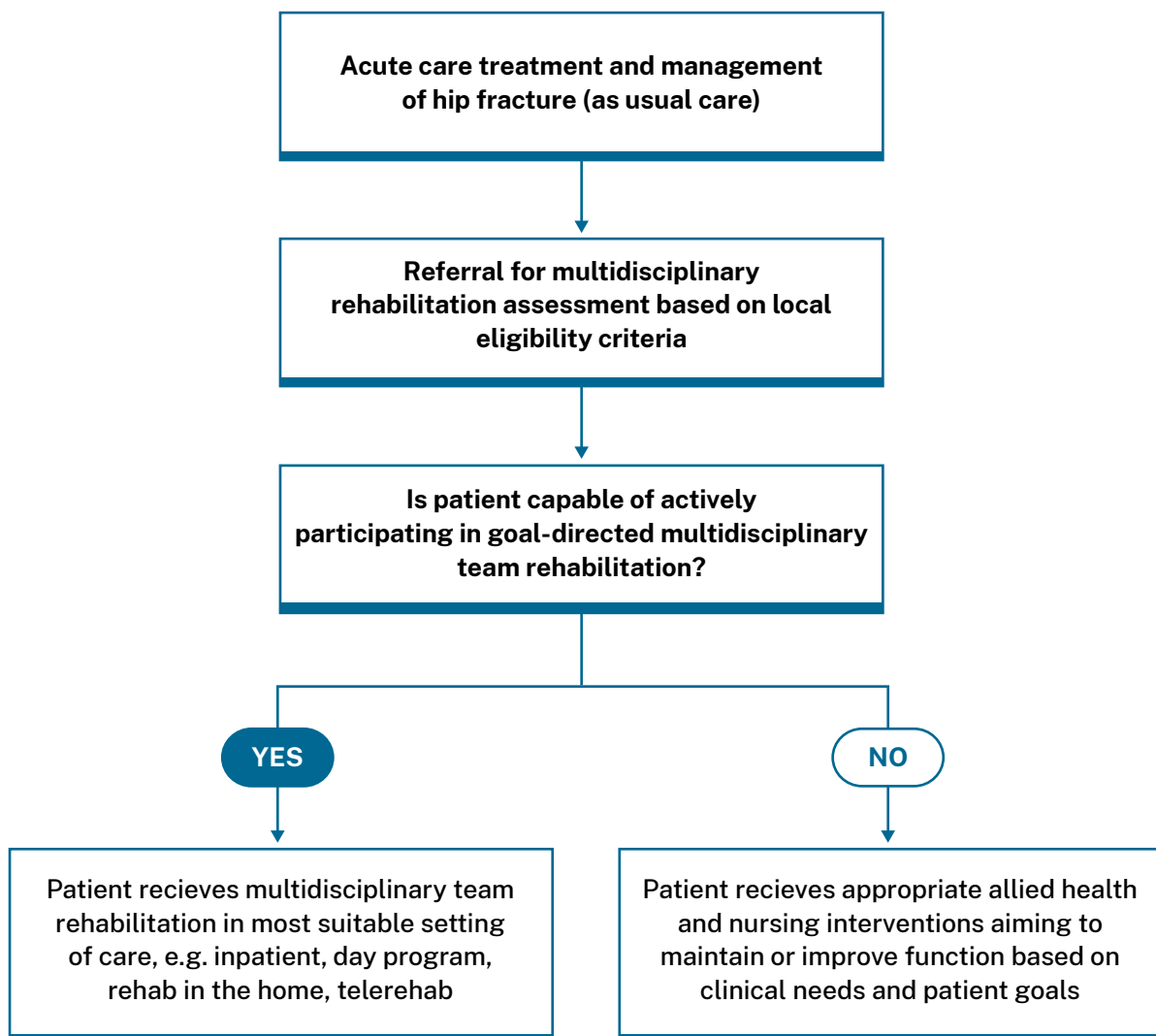
The NICE Hip Fracture: Management guideline also highlights that patients from residential facilities should not be precluded from rehabilitation on the basis of their residential status.<sup>83</sup>

### Recommendations

It is recommended that the following options be considered to operationalise rehabilitation assessment:

- Use referral pathways with consideration of rehabilitation to improve patient and family/carer experience.
- Have formal eligibility criteria for rehabilitation agreed upon by the multidisciplinary team members at acute and rehabilitation sites with a clear process ensuring clinicians know when to engage with rehabilitation services in the patient's journey.
- Develop a discharge plan (transfer of care) in consultation with allied health team members.
- Provide individualised care plans to the patient and their family/carers.
- Provide timely access to treatment tailored to and chosen with the patient.
- Offer a multidisciplinary team rehabilitation readiness assessment to every patient
- Support patients to help them adhere to agreed treatments and interventions, and to maintain long-term lifestyle and behavioural changes.<sup>77</sup>

Figure 3: Referrals to multidisciplinary rehabilitation and follow-up



## Minimising the risk of another fracture

Fractures increase the risk of subsequent fractures.<sup>84</sup> Minimising the risk of another fracture depends on improving uptake of medication, mobilisation and calcium to support a better quality of life. The Hip Fracture Clinical Care Standard advises that before a patient with a hip fracture leaves the 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.<sup>2</sup> Bone protection medicine should be offered before discharge, as per the Hip Fracture Clinical Care Standard.

Optimal treatment should support early initiation of a tailored care plan, including osteoporosis assessment and treatment, to restore movement and function, and minimise the risk of another fracture. Early screening to guide bone health management should be considered, including screening for secondary osteoporosis, where relevant. This will enable early initiation of high-dose vitamin D in patients deemed eligible for antiresorptive therapy (with the need for bone protection medication) while they are in the hospital to ensure patients have normal vitamin D levels.

Resources to assist clinicians in refracture prevention:

- [NSW Agency for Clinical Innovation, Osteoporotic refracture prevention, Clinical priorities, 202085](#)
- [NSW Agency for Clinical Innovation, Osteoporotic refracture prevention, Organisational models, 202086](#)
- [NSW Agency of Clinical Innovation, Musculoskeletal service directory, 202087](#)
- [ANZHFR Sprint Audits, Acute Rehabilitation, 202266](#)
- [ANZHFR Sprint Audits, Bone medication Protection, 202166](#)

## Recommendations

It is recommended that the following options be considered to minimise the risk of another fracture:

- Identification of the multidisciplinary team members' roles in assessment and management processes for patient's risk of another fracture (based on the resources of a facility), e.g. using physiotherapists for certain tasks or nursing staff if physiotherapists are not available
- Assessment and management of post-operative delirium<sup>40</sup>
- Assessment of calcium, protein and vitamin D intake/exposure and appropriate dietary/lifestyle and supplementation advice
- Assessment of re-fracture risk completed by an identified coordinator (designated staff member) to improve early detection and access to appropriate services (e.g. falls prevention program, balance/strength training) for whole-of-person care
- Assessment of future fracture risk using FRAX or Garvan tools<sup>21</sup>
- Assessment of bone health, which may include bone mineral density testing (dual-energy X-ray absorptiometry [DEXA] or if deemed appropriate, quantitative computed tomography [QCT])<sup>21</sup>
- Identifying who will be responsible for providing bone protection medication prescriptions or provide in discharge plan for patient to receive prescription from their general practitioner (GP)
- Initiating bone protection medications, as appropriate
- Clear and accessible pathway for patients to be referred to Osteoporotic Refracture Prevention (ORP) services (<https://aci.health.nsw.gov.au/networks/musculoskeletal/resources/service-directory>).<sup>87</sup> These services should ideally offer multidisciplinary input.

- Osteoporosis diagnosis by a qualified clinician, which is communicated to the patient and family.
- Provision of written information to patients on how to reduce the risk of a future fracture.<sup>5</sup>
- Development of a hospital health pathway for inpatient teams to know who is responsible for re-fracture care during the inpatient stay.

## Minimising the risk of falls

Patients and their family/carers should be educated about the patient's risk factors for falls during their stay in the hospital and at the time of discharge as well as provided with written information.

The CEC [Older Persons Patient Safety Program, Comprehensive Care – Minimising Harm](#)<sup>88</sup> has a range of resources. Resources for clinicians in community health settings include:

- Clinical Excellence Commission, Falls Prevention Program, Community Care Setting, Procedure following a fall, 2015<sup>94</sup>
- Clinical Excellence Commission, FROP-Com Fall Risk Screen, Falls Prevention for Community Care Settings, 2015<sup>94</sup>

## Recommendations

It is recommended that the following options be considered to minimise the risk of falls:

- Screen people aged  $\geq 50$  years who had a hip fracture for heightened risk, including mobility requirements and vision.<sup>89</sup>
- Assess medical status, including physical function, comorbidities and signs of cognitive impairment.<sup>89</sup>
- Use tools such as the Drug Burden Index to measure anti-cholinergic effects of medications and for deprescribing.<sup>90, 91</sup>
- Coordinate falls prevention interventions by an identified staff member.

- Assess the patient's safety to be discharged, which may include assessment by an occupational therapist to ensure they are being discharged to a safe environment (in home setting or residential aged care facility).
- Clear pathway to refer patients to falls prevention service (if available), e.g. Stepping On.<sup>92</sup>
- Assess environment and the need for assistive technologies/aid.

## Communication with primary care in discharge planning

Discharge summaries (transfer of care letters) should be sent to the patient's GP within 24 hours of discharge and, where clinically appropriate, include:

- ongoing management of wounds
- medical status of the patient, including physical function, comorbidities and mental health<sup>89</sup>
- psychosocial factors affecting the patient
- bone protection medication that has been commenced or should be commenced (if appropriate) and who is to continue monitoring this post discharge
- vitamin D and calcium advice (lifestyle or supplemental), and how often the levels should be checked
- falls prevention guide, including where referral has been sent (fall prevention program referral or physiotherapist referral)
- long-term exercise plan and recommendations, and who is responsible to arrange (e.g. GP)
- plans for follow up in OrRP clinic, if available
- rehabilitation requirements to be managed out of acute care
- circumstances of fall (if reason for fracture) and investigations done with falls management

- change in patient's function since admission (if appropriate)
- patients to be provided with a copy of their discharge summary (transfer of care letter).

Recommendations for discharge planning:

- Role identification for management of patient's needs in community care described in discharge summaries, e.g. GP to manage bone protection medication prescriptions and physiotherapist to manage strength training.
- Multidisciplinary team involvement in discharge planning (which may involve a discharge case conference) and writing discharge summaries to ensure all aspects of care are addressed.
- Utilisation of the 5M Framework: Reframing Change Management Education to ensure holistic care and inclusion of details on what matters to the patients, i.e. goals of care, mobility, medications and malnutrition.<sup>93</sup>

Discharge plan should be made in consultation with the patient and family/carers to maximise their involvement.



## Technology

Use of virtual care (video conferencing and teleconferencing) may facilitate communication among healthcare professionals, particularly in outreach models or where additional clinical expertise is required.<sup>94</sup> This could be of benefit

in interfacility transfer; in promoting medical optimisation when patients are waiting for interfacility transfer; and during follow-up (when patients cannot attend in-person, e.g. due to mobility issues).<sup>94</sup>

## Monitoring and evaluation

Patient-reported measures (PRMs) are critical to supporting Leading Better Value Care (LBVC) across NSW, shifting the focus from measuring volume to measuring value in terms of the outcomes and experiences that matter to patients. In NSW, the Patient Reported Measures Program gives patients the opportunity to provide direct, timely feedback about their health-related experiences and outcomes. This feedback helps drive improvement and enables NSW Health to deliver better value care that is sustainable over time.

Patient demographic details are collected in the Health Outcomes and Patient Experience (HOPE) platform when a patient is registered. In LHDs and specialty health networks across NSW, these demographic details come from the Patient Administration System.

HOPE supports the routine collection of PRMs and supports clinicians to capture, review and act on the data in a timely, holistic way.

The Registry of Outcomes, Values and Experience (ROVE) is a linked data asset containing multiple data collections sourced from various health information systems, including the Leading Better Value Care Program: Hip fracture care.

Patient Reported Outcome Measures and Patient Reported Experience Measures for hip fracture care patients can be collected through HOPE and used by clinicians to inform shared decision-making about care, treatment and health interventions, in addition to the ANZ Hip Fracture Registry's yearly reports and monthly data collections.

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# Appendix 1 – Orthogeriatric Model of Care survey (paper form)



## Orthogeriatric Model of Care Survey

Thank you for completing this survey regarding the current state of hip fracture care in NSW public hospitals. Through assessment of ANZHFR data and previous stakeholder consultation, areas for potential improvement in hip fracture care have been identified and are reflected in this survey. The results of the survey will inform the review of the current Orthogeriatric Model of Care, allowing us to optimise care for our older hip fracture patients.

*\*Required*

### Background information

1. We would like to use deidentified data provided here for presentation and/or publication as part of a quality improvement initiative. If you do NOT wish for the data you provide to be utilised, please indicate here

If you have any questions in relation to this survey or the use of data, please contact [ACI-LBVC-HipFractureCare@health.nsw.gov.au](mailto:ACI-LBVC-HipFractureCare@health.nsw.gov.au)

2. Hospital Name \*

\_\_\_\_\_

3. Please provide your name, role and email address (optional)

\_\_\_\_\_

4. Would you be happy to be contacted about your responses?

- Yes
- No

### Part One: Acute Care

**The Australia New Zealand Hip Fracture Registry (ANZHFR) data reveals that the rate of completion of pain assessment under 30 minutes is low. This is despite the increase in implementation of ED pathways and the development of a pain pathway across NSW. What are your barriers in the following areas? What do you think the reasons for these barriers are?**

5. At your hospital/unit, are there barriers to pain assessment within 30 minutes of arrival?
  - Yes
  - No (go to Q8)
6. If yes, which if the following are barriers to pain assessment within 30 minutes of arrival? (Tick all that apply)
  - Staffing
  - Service Structure
  - Lack of protocols
  - Knowledge/literature
  - Other: \_\_\_\_\_

## Appendix 1 (cont.)

7. Please expand on reasons for these barriers if possible

---

8. At your hospital/unit are there barriers to administering a Fascia Iliaca Block (FIB) for hip fracture patients?

- Yes
- No (go to Q11)

9. If yes, which if the following are barriers to administering a FIB for hip fracture patients? (Tick all that apply)

- Staffing
- Service structure
- Lack of protocols
- Knowledge/literature
- Other: \_\_\_\_\_

10. Please expand on reasons for these barriers if possible

---

11. At your hospital/unit are there barriers to accessing operating theatres for hip fracture patients either in hours or out of hours?

- No - no barriers to accessing operating theatres either in and out of hours
- Yes - barriers to accessing operating theatres both in and out of hours
- Yes - barriers to accessing operating theatres out of hours only
- Yes - barriers to accessing operating theatres in hours only
- Other: \_\_\_\_\_

12. Is there a dedicated theatre that can be used for hip fracture patients at certain times?

- Yes
- No (go to Q14)

13. If yes, please describe access arrangements

---

**The ANZHFR data reveals low rates of medical and surgical shared care models, pre-operative and post-operative medical review.**

14. Do you have a shared care model at your hospital? (Shared care model means a joint responsibility between Orthopaedics and Geriatric medicine for all older hip fracture patients from admission.)

- Yes (go to Q15)
- No (go to Q16)
- I am unsure what "shared care model" looks like in operation. (go to Q17)

15. If yes, what does "share care model" looks like in your hospital? (go to Q17)

---

## Appendix 1 (cont.)

16. If no, what are the barriers in implementing “shared care model” in your hospital?

---

17. Are there barriers to pre-operative medical review at your hospital?

- Yes
- No (go to Q19)

18. If yes, how is this being addressed?

---

19. Are there barriers to post-operative medical review at your hospital?

- Yes
- No (go to Q21)

20. If yes, how is this being addressed?

---

21. Are limitations in Geriatric/Medical/Physician/GP cover during business hours and after hours an issue at your hospital?

- Yes
- No (go to Q25)

22. If yes, how is this being addressed?

---

23. Have these issues been addressed effectively?

- Yes (go to Q25)
- No

24. If no, why not?

---

**The ANZHFR data reveals that pre-operative cognitive assessment completion rates are low.**

25. Are there barriers to pre-operative cognitive assessment?

- Yes
- No (go to Q28)

26. If yes, which of the following are barriers to pre-operative cognitive assessment?

- Staffing
- Service Structure
- Lack of protocols
- Knowledge/literature
- Other: \_\_\_\_\_

27. Please expand on reasons for these barriers if possible.

---

## Appendix 1 (cont.)

28. Are there barriers to bone protection medication prescription prior to discharge?

- Yes
- No (go to Q31)

29. If yes, what are the barriers? (tick all that apply)

- Lack of knowledge/awareness of bone protection medication
- Workload of JMOs
- Belief that GPs are responsible for prescribing bone protection medication
- Concerns re: bone healing (e.g. surgeon preference to delay)
- Concerns re low vitamin D
- Other: \_\_\_\_\_

30. Which of the above do you think can be addressed by the Orthogeriatric Model of Care?

\_\_\_\_\_

31. Are there barriers to providing 7 day mobilisation to hip fracture patients?

- Yes
- No (go to Q34)

32. If yes, which of the following are barriers to providing 7 day mobilisation to hip fracture patients? (tick all that apply)

- Staffing
- Service Structure
- Lack of protocols
- Knowledge/literature
- Other: \_\_\_\_\_

33. Please expand on reasons for these barriers if possible. (go to Q35)

\_\_\_\_\_

34. If no, how does your hospital achieve 7 day mobilisation for hip fracture patients? (tick all that apply)

- Nursing staff mobilising patients
- Allied Health assistants providing mobilisation
- Group sessions
- Physiotherapy students assisting
- Physiotherapist 7 day a week cover
- Other: \_\_\_\_\_

35. Are there barriers to post-operative delirium assessment?

- Yes
- No (go to Q38)

## Appendix 1 (cont.)

36. If yes, which of the following are barriers to post-op delirium assessment? (tick all that apply)

- Staffing
- Service structure
- Lack of protocols
- Knowledge/literature
- Other: \_\_\_\_\_

37. Please expand on reasons for these barriers if possible.

\_\_\_\_\_

38. For inter-facility transfer, where does pre-op optimisation occur?

- Transferring hospital (first presenting hospital)
- Receiving hospital
- Other: \_\_\_\_\_

39. What are the barriers in pre-op optimisation for inter-facility transfer?

\_\_\_\_\_

40. Are there other barriers or challenges to inter-facility transfer?

- Yes
- No (go to Q43)

41. If yes, which of the following are barriers or challenges to inter-facility transfer? (Tick all that apply)

- Staffing
- Service structure
- Lack of protocols
- Knowledge/literature
- Other: \_\_\_\_\_

42. Please expand on reasons for these barriers or challenges if possible.

\_\_\_\_\_

43. Are there barriers to providing specialist falls assessment and management?

- Yes
- No (go to Q46)

44. which of the following are barriers to providing specialist falls assessment and management? (Tick all that apply)

- Staffing
- Service structure
- Lack of protocols
- Knowledge/literature
- Other: \_\_\_\_\_

45. Please expand on reasons for these barriers or challenges if possible.

\_\_\_\_\_

## Appendix 1 (cont.)

46. Is there pathway to refer patients to Osteoporosis Refracture Prevention services (if clinically indicated)? E.g. Osteoporosis Refracture Prevention Service, Geriatrics, Osteoporosis Specialist (Endocrinologists/Rheumatologist).

- Yes (go to Q48)
- No (go to Q47)

47. If not, why not?

\_\_\_\_\_

48. Is there pathway to refer patients to falls clinics (if clinically indicated)?

- Yes (go to Q50)
- No (go to Q49)

49. If not, why not?

\_\_\_\_\_

50. Is an individualised care plans (e.g. "My Hip Fracture - information and Individual Care Plan by ANZHFR) provided to patients and carers?

- Yes (go to Q52)
- No (go to Q51)

51. If not, which of the following are barriers or challenges to individualised care plan provision?

- Lack of awareness
- Lack of ownership
- Other: \_\_\_\_\_

### Part Two: Rehabilitation

**The ANZHFR data reveals that NSW has long acute LOS (acute LOS = from ED to discharge from acute ward).**

52. Have you encountered challenges or barriers in discharging hip fracture patients at your hospital?

- Yes
- No (go to Q55)

53. If yes, in which of the following discharge areas have you encountered challenges? (Tick all that apply)

- Private Residence (including unit in retirement village) +/- Home Based Rehab
- Residential Aged Care Facility
- Public Rehabilitation Unit (Inpatient)
- Private Rehabilitation Unit (Inpatient)
- Other: \_\_\_\_\_



## Appendix 1 (cont.)

54. Which of the following barriers to discharge have you encountered? (Tick all that apply)

- Medically unwell patients
- Delirium
- Insufficient resources in RACFs
- Insufficient community rehab
- Insufficient public rehab beds
- Insufficient private rehab beds
- Strict PUBLIC rehab admission criteria
- Strict PRIVATE rehab admission criteria
- Strict inreach rehab criteria (in reach rehab = mobile rehab team providing rehab to patients in acute wards)
- Patients with cognitive impairment/dementia
- Patients from RACF
- Other: \_\_\_\_\_

55. Who would determine that patient can be transferred to inpatient rehab?

- Acute hospital Geriatrician
- Acute hospital Rehab team
- Other acute hospital team
- Accepting Rehab/Geriatrician team
- Other: \_\_\_\_\_

56. Has your hospital made a focused effort to reduce LOS for hip fracture patients? (e.g. targeted access to OT, earlier rehab)

- Yes
- No (go to Q60)

57. How is your hospital addressing long acute LOS for hip fracture patients?

58. Have your efforts been effective?

- Very effective (go to Q60)
- Somewhat effective (go to Q60)
- Not sure / too soon to tell
- Not very effective
- Not effective at all

59. If not, why not?

# Appendix 1 (cont.)

## Part Three: Multidisciplinary (MDT) Collaboration, Communication and Pathway

60. Is there a clear escalation and handover process between clinical areas at your hospital?

- Yes, always
- Yes, most of the time
- Sometimes
- Occasionally
- No, not at all (go to Q62)

61. What does this process look like and who is responsible for ensuring this process happens smoothly? (go to Q64)

---

62. If you don't have a process, what are challenges/reasons why? (Tick all that apply)

- Lack of managerial buy-in
- Lack of time
- Inadequate staffing resources
- Lack of agreement/awareness that process is important
- No protocol.
- Other: \_\_\_\_\_

63. Please expand if possible.

---

64. Does your facility have a regular MDT communication mechanism (e.g. weekly case conference, daily white board meeting, 2-3 ward rounds/week)?

- Yes
- No (go to Q69)

65. If yes, what is the structure of your MDT communication? (tick all that apply)

- (Bi-)weekly case conference
- Daily whiteboard meeting
- Ward rounds (ISH, SIBR or similar)
- Other: \_\_\_\_\_

## Appendix 1 (cont.)

66. Who facilitates this and reinforces the importance of attendance? (Tick all that apply)

- Hospital Exec/senior management
- Orthopaedic surgical senior doctor (e.g. consultant, AT)
- Orthopaedic surgical junior doctor (e.g. JMO, reg)
- Orthogeriatric doctor
- General medical doctor
- Ortho CNC
- NUM
- Other nursing staff
- Physio
- Occupational Therapist
- Speech Pathologist
- Social Worker
- Dietitian
- Pharmacist
- Other: \_\_\_\_\_

67. Who attends your meeting? (Tick all that apply)

- Hospital Exec/senior management
- Orthopaedic surgical senior doctor (e.g. consultant, AT)
- Orthopaedic surgical junior doctor (e.g. JMO, reg)
- Orthogeriatric doctor
- General medical doctor
- Ortho CNC
- NUM
- Other nursing staff
- Physio
- Occupational Therapist
- Speech Pathologist
- Social Worker
- Dietitian
- Pharmacist
- Other: \_\_\_\_\_

68. What are some challenges that you face with regards to your MDT meetings? (go to Q70)

\_\_\_\_\_

69. If your facility does not have an MDT meeting, what is the reason for this? (go to Q74)

\_\_\_\_\_

70. Are MDT meetings documented?

- Yes
- No (go to Q72)

## Appendix 1 (cont.)

71. If yes, how?

\_\_\_\_\_

72. Has your MDT communication mechanism changed due to COVID?

- Yes (go to Q73)
- No (go to Q74)

73. If yes, how?

\_\_\_\_\_

74. Is nutrition addressed in your MOC/pathway?

- Yes
- No

75. What clinical areas does your local hip fracture pathway cover?

- ED to post op acute ward
- ED only
- acute ward only
- no formal pathway
- Other: \_\_\_\_\_

76. How is pathway enforced/coordinated? Tick all that apply

- paper form/checklist for completion (mandatory)
- paper form/checklist for completion (non-mandatory)
- eMR/electronic pathway (mandatory)
- eMR/electronic pathway (non-mandatory)
- Dedicated care coordinator
- Other: \_\_\_\_\_

77. Who is/are the dedicated care coordinator(s)? (tick all that apply)

- CNC/CNS
- NUM
- Other Nursing staff
- Medical staff
- Allied Health staff
- Other: \_\_\_\_\_

## Appendix 2 – List of sites

List of sites that responded to the survey and those that were invited to participate in the NSW Orthogeriatric Model of Care Survey (2022).

Hospital emailed to complete survey	Local Health District (LHD)	Responded
<b>Gosford Hospital</b>	Central Coast LHD	Yes
<b>Broken Hill Base Hospital</b>	Far West LHD	Yes
<b>Maitland Hospital</b>	Hunter New England LHD	Yes
<b>Manning Hospital</b>	Hunter New England LHD	Yes
<b>John Hunter Hospital</b>	Hunter New England LHD	Yes
<b>Tamworth Rural Referral Hospital</b>	Hunter New England LHD	Yes
<b>Armidale Rural Referral Hospital</b>	Hunter New England LHD	Yes
<b>Wollongong Hospital</b>	Illawarra Shoalhaven LHD	Yes
<b>Shoalhaven District Memorial</b>	Illawarra Shoalhaven LHD	Yes
<b>Coffs Harbour Health Campus</b>	Mid North Coast LHD	Yes
<b>Port Macquarie Base Hospital</b>	Mid North Coast LHD	Yes
<b>Wagga Wagga Base Hospital</b>	Murrumbidgee LHD	Yes
<b>Nepean Hospital</b>	Nepean Blue Mountains LHD	Yes
<b>Lismore Base Hospital</b>	Northern NSW LHD	Yes
<b>The Tweed Hospital</b>	Northern NSW LHD	Yes
<b>Grafton Base Hospital</b>	Northern NSW LHD	Yes
<b>Royal North Shore Hospital</b>	Northern Sydney LHD	Yes
<b>Ryde Hospital</b>	Northern Sydney LHD	Yes
<b>Hornsby Ku-ring-gai Hospital</b>	Northern Sydney LHD	No
<b>Prince of Wales Hospital</b>	South Eastern Sydney LHD	Yes
<b>St George Hospital</b>	South Eastern Sydney LHD	Yes
<b>The Sutherland Hospital</b>	South Eastern Sydney LHD	Yes

## Appendix 2 (cont.)

Hospital emailed to complete survey	Local Health District (LHD)	Responded
Liverpool Hospital	South Western Sydney LHD	Yes
Campbelltown Hospital	South Western Sydney LHD	Yes
Bowral Hospital	South Western Sydney LHD	Yes
Bankstown Hospital	South Western Sydney LHD	Yes
Bega - South East Regional Hospital	Southern NSW LHD	Yes
Goulburn Base Hospital	Southern NSW LHD	No
St Vincent's Hospital	St Vincent's	Yes
Concord Repatriation Hospital	Sydney LHD	Yes
Canterbury Hospital	Sydney LHD	Yes
Royal Prince Alfred Hospital	Sydney LHD	Yes
Orange Health Service	Western NSW LHD	Yes
Dubbo Health Service	Western NSW LHD	No
Westmead Hospital	Western Sydney LHD	No
Blacktown Mt Druitt Hospital	Western Sydney LHD	No

## Appendix 3 – Findings from NSW Orthogeriatric Model of Care Survey 2022



The NSW Orthogeriatric Model of Care Survey was sent out to NSW hospitals that care for patients with acute hip fractures to determine the current state of hip fracture care in NSW public hospitals. The results of this survey have informed this clinical practice guide and highlight areas where care for older patients diagnosed with a hip fracture can be optimised.

There may be slight differences in responding hospitals between the presented ANZHFR data and the NSW survey (see included sites in [Appendix 2](#)). The ANZHFR Orthogeriatric Model of Care data provided on 36/37 hospitals. One hospital did not consent to being identified and so was removed. There are slightly different definitions of the models of shared care from data collected by NSW Survey (2022) and the ANZHFR data. ACI's descriptions have been defined to ensure inclusion of various shared care models that do not clearly fit the strict definitions of ANZHFR. This is to support involvement of sites with key components of shared care.

In total, survey responses were received from 31/36 hospitals across NSW, comprising 13 metropolitan (42%), 18 non-metropolitan (58%) and 12 tertiary level hospitals. In total, 67% of hospitals reported using a shared model of care for patients diagnosed with a hip fracture, defined as 'a joint responsibility between Orthopaedics and Geriatric medicine for all older patients diagnosed with a hip fracture from admission' (Figure 2). Only two metropolitan hospitals were not using a shared care model (6%) while 26% (8/31) of regional and remote hospitals were not using a shared care model. Thirty-three percent (10/30) of hospitals in NSW are currently not using a shared care model. Of note, all tertiary hospitals (12/12) reported using a shared care model regardless of geographical location.

# Appendix 4a – Showcase of local hip fracture pathways

## Prince of Wales Hospital – Hip Fracture Clinical Pathway (Inpatient Ward)

 SAMPLE123  Holes Punched as per AS2828.1: 2019 BINDING MARGIN - NO WRITING  SXXXX 161219	 Health South Eastern Sydney Local Health District	FAMILY NAME		MRN	
	Facility:		GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
			D.O.B. ____/____/____		M.O.
			ADDRESS		
	<b>CLINICAL PATHWAY HIP FRACTURE</b>		LOCATION / WARD		
			COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		
	ADRG				
	Peer ALOS				
	Intended users		Patients, nurses, medical officers, allied health		
	Executive sponsor		Dr Gregory Keogh		
Date for review		September 2017			
<p><b>Use of Clinical Pathways</b></p> <ul style="list-style-type: none"> <li>The Clinical Pathway is a guide only.</li> <li>The Clinical Pathway is part of the medical record and therefore a legal document.</li> <li>Always view each patient as an individual and consider if the intervention is appropriate.</li> <li>Do not hesitate to depart from this Clinical Pathway if you consider it is appropriate to do so based on your own clinical judgment and consultation with the doctor.</li> <li>The Clinical Pathway is to remain with the patient's observation and medication charts and must accompany the patient to other departments.</li> <li>The Clinical Pathway is to be utilised in conjunction with the Doctors rounds. It does not take the place of a Doctor's order.</li> <li>The Clinical Pathway is to be used as the bedside handover tool.</li> </ul> <p><b>Guide to Care</b></p> <ul style="list-style-type: none"> <li>Affix patient label, insert date (each day/page of the Clinical Pathway).</li> <li>As the pathway is multidisciplinary, each discipline initials in the appropriate column after events have actually occurred or each intervention has been achieved.</li> <li>So that initials can be recognised staff must also sign, print name and designation in the signature log for each day of the Clinical Pathway.</li> <li>Enter N/A if the intervention is not applicable during your shift.</li> <li>If there is a deviation from the Clinical Pathway, then this is to be documented as a variance in the patient notes. The recording of variances is the responsibility of all health professionals.</li> </ul> <p><b>Variance Documentation</b></p> <p>A variance can be in relation to the patient, physician, system or community/family and can be positive or negative. It can therefore be:</p> <ul style="list-style-type: none"> <li>Any event noted on the Clinical Pathway not occurring as outlined on the Pathway.</li> <li>Any event not pre-printed on the Clinical Pathway eg. CVC removed due to inflammation.</li> <li>Any event that occurs earlier than outlined on the Clinical Pathway.</li> </ul> <p>If a variance occurs, document a 'V' in red and your initials in the appropriate shift column, then record the variance in the continuation progress notes (SMR050.001)</p> <ul style="list-style-type: none"> <li>Document the date, time and Day of stay</li> <li>Describe the variance eg. Infection.</li> <li>Describe the action, eg. IV removed due to inflammation</li> <li>Document the outcome.</li> <li>Sign</li> </ul> <p style="text-align: center;">Patient care <b>MUST</b> be documented in the <b>Progress Notes</b> at least once each shift</p>					
NO WRITING					

CLINICAL PATHWAY HIP FRACTURE  
SESXXX.XXX



# Appendix 4a (cont.)



 <b>Health</b> South Eastern Sydney Local Health District	FAMILY NAME		MRN					
	GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE					
<b>Facility:</b>	D.O.B. ____/____/____		M.O.					
	ADDRESS							
<b>CLINICAL PATHWAY HIP FRACTURE</b>			LOCATION / WARD					
			COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE					
<b>Pre-operative Care</b>	Admission date: ____/____/____   Time of admission: ____ Day of surgery: ____/____/____ (goal within 24 hours of admission) NBM: _____ Clear fluids until (2 hours prior to OT)		AM	PM	ND	V		
<b>Consent/checklist</b>	<ul style="list-style-type: none"> <li>Consent complete   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Ortho geriatric review   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Anaesthetic review   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Pre-operative checklist completed   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> </ul>							
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Standard observations as per CBR</li> <li>Neurovascular observations as per CBR</li> <li>Complete AAA as per CBR   BGL (if required)</li> <li>Pressure relieving mattress in-situ   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Cognition assessment attended   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> </ul>							
<b>Medications</b>	<ul style="list-style-type: none"> <li>Review of regular medications</li> <li>Anticoagulant/antiplatelet reviewed   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Date ceased: ____/____/____</li> </ul>							
<b>Pain management</b>	<ul style="list-style-type: none"> <li>Nerve block performed in ED:   <input type="checkbox"/> Y   <input type="checkbox"/> N   Time: ____</li> <li>Regular and PRN oral analgesia prescribed</li> <li>Regular pain assessment attended using appropriate tool</li> <li>If poorly controlled pain please contact Orthogeriatric team or APS.</li> </ul>							
<b>Mobility</b>	<ul style="list-style-type: none"> <li>Rest in bed/2 hourly pressure area care</li> <li>Deep breathing and coughing exercises</li> </ul>							
<b>Nutrition</b>	<ul style="list-style-type: none"> <li>Assess feeding ability:   <input type="checkbox"/> Independent   <input type="checkbox"/> open packs   <input type="checkbox"/> full supervision</li> <li>Commence on high energy, high protein diet</li> <li>Commence carbohydrate loading drinks (e.g. DEX) until 2 hours prior to surgery (SITE SPECIFIC)</li> <li>Nutrition as medication: Ensure Twocal HN 70mls TDS</li> <li>Request Dietitian consult if clinically indicated</li> </ul>							
<b>Elimination</b>	<ul style="list-style-type: none"> <li>IDC in-situ   <input type="checkbox"/> Y   <input type="checkbox"/> N   4/24 urine output</li> <li>Bowels last opened   Date: ____/____/____</li> <li>Oral aperients charted</li> </ul>							
<b>IV therapy</b>	<ul style="list-style-type: none"> <li>IVC Date: ____/____/____   VIP score: _____</li> <li>Accurate fluid balance chart maintained</li> </ul>							
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>Pre op chlorhexidine surgical wash</li> <li>Mouth care TDS</li> </ul>							
<b>Patient/carer education</b>	<ul style="list-style-type: none"> <li>Treatment plan discussed with patient and carer</li> <li>Hip fracture booklet &amp; hip fracture registry information given to patient and carer</li> </ul>							
Nurse giving handover (name, sign & designation)	ND/AM	AM/PM	PM/ND					
Nurse receiving handover (name, sign & designation.)								

Stream solutions  
 draft 1

Holes Punched as per AS2828.1: 2019  
 BINDING MARGIN - NO WRITING  
  
 SAMPLE123




# Appendix 4a (cont.)

 SAMPLE 123  Holes Punched as per AS2828.1: 2019 BINDING MARGIN - NO WRITING	 <b>Health</b> South Eastern Sydney Local Health District		FAMILY NAME		MRN			
			GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE			
	<b>Facility:</b>		D.O.B. ____/____/____		M.O.			
			ADDRESS					
	<b>CLINICAL PATHWAY HIP FRACTURE</b>		LOCATION / WARD					
	COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE							
	<b>Pre-operative Day 0</b>	Date: ____/____/____			AM	PM	ND	V
		Time transferred to ward: _____						
	<b>Surgery performed</b>							
	<b>Ortho/ Orthogeriatric Assessment</b>	<ul style="list-style-type: none"> <li>Hip X-Ray ordered (THR &amp; Hemiarthroplasty only)   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Routine pathology ordered   <input type="checkbox"/> Y   <input type="checkbox"/> N   checked HB: _____</li> </ul>						
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Standard observations as per CBR and within PACE criteria</li> <li>Neurovascular observations as per CBR</li> <li>BGL (as required)</li> <li>Monitor for signs of post op delirium</li> </ul>							
<b>Medication/ Pain Management</b>	<ul style="list-style-type: none"> <li>Regular and PRN analgesia given</li> <li>Regular pain assessment attended using appropriate tool and recorded in EMR</li> <li>Nutritional as Medication prescribed</li> <li>Oral Aperients charted</li> </ul>							
<b>Mobility/activity</b>	<ul style="list-style-type: none"> <li>Weight bear status:   <input type="checkbox"/> FWB   <input type="checkbox"/> TWB   <input type="checkbox"/> NWB</li> <li>Continue to encourage deep breathing and coughing exercises</li> <li>2/24 hourly PAC/skin assessment</li> <li>Ensure pressure relieving mattress in-situ</li> </ul>							
<b>Nutrition</b>	<ul style="list-style-type: none"> <li>Encourage oral intake of food and fluids</li> <li>Continue Ensure Twocal HN 70mL TDS (cease on D/C)</li> <li>Continue to provide feeding assistance as indicated</li> </ul>							
<b>Elimination</b>	<ul style="list-style-type: none"> <li>IDC in-situ - 4/24 urine output</li> <li>Bowel chart maintained</li> </ul>							
<b>IV therapy/ access</b>	<ul style="list-style-type: none"> <li>Visual Infusion Phlebitis score : _____</li> <li>IV therapy IV/ABs</li> <li>Accurate fluid balance chart maintained</li> </ul>							
<b>Wound</b>	<ul style="list-style-type: none"> <li>Dressing reviewed and remains intact</li> <li>Drain in-situ   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> </ul>							
<b>VTE prophylaxis</b>	<ul style="list-style-type: none"> <li>Continue mechanical VTE prophylaxis</li> <li>Enoxaparin charted nocte</li> </ul>							
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>Post op wash</li> <li>Mouth care TDS</li> </ul>							
<b>Patient / Carer Education Discharge Planning</b>	<ul style="list-style-type: none"> <li>Progression of care discussed with patient and carer</li> <li>Referral to support services SW/Occ Thpy/HITH/Dietitian/speech pathology as required</li> </ul>							
Nurse giving handover (name, sign & designation)	ND/AM	AM/PM		PM/ND				
Nurse receiving handover (name, sign & designation.)								

NO WRITING

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# Appendix 4a (cont.)


 <b>Health</b> South Eastern Sydney Local Health District	FAMILY NAME		MRN					
	GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE					
<b>Facility:</b>	D.O.B. ____/____/____		M.O.					
	ADDRESS							
<b>CLINICAL PATHWAY HIP FRACTURE</b>			LOCATION / WARD					
			COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE					
<b>Pre-operative Day 1</b>	Date: ____/____/____   EDD: _____		AM	PM	ND	V		
<b>Ortho/ Orthogeriatric Assessment</b>	<ul style="list-style-type: none"> <li>• Check Hip Xray (THR &amp; Hemiarthroplasty only)</li> <li>• Review routine pathology   checked HB: _____</li> <li>• Urinary Catheter Removal   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>• IVC removal   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>• Drain removal   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> <li>• Signature: _____</li> </ul>							
<b>Assessment</b>	<ul style="list-style-type: none"> <li>• Standard observations as per CBR</li> <li>• Neurovascular observations as per CBR</li> <li>• BGL (as required)</li> <li>• Monitor for signs of post op delirium</li> <li>• Attend to 2/24 hourly PAC/skin assessment</li> </ul>							
<b>Medication/ Pain Management</b>	<ul style="list-style-type: none"> <li>• Continue regular and prn analgesia</li> <li>• Pain assessment attended using appropriate tool and recorded in EMR</li> <li>• IV/AB</li> <li>• Oral Aperiens</li> </ul>							
<b>Mobility/activity</b>	<ul style="list-style-type: none"> <li>• Encourage patient to SOOB in AM &amp; PM</li> <li>• Pressure relieving cushion insitu   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>• Unable to SOOB due to : _____</li> <li>• In and out of bed transfers with _____ person</li> <li>• Mobilising aid: _____</li> <li>• Encourage deep breathing and coughing exercises</li> </ul>							
<b>Nutrition</b>	<ul style="list-style-type: none"> <li>• Encourage oral intake of food and fluids as tolerate</li> <li>• Continue Ensure Twocal HN 70mL TDS (cease on D/C)</li> <li>• Continue to provide feeding assistance as indicated</li> <li>• Patient weight recorded while mobilising with PT</li> </ul>							
<b>Elimination</b>	<ul style="list-style-type: none"> <li>• IDC removed   <input type="checkbox"/> Y   <input type="checkbox"/> N   Time removed: _____</li> <li>• Passed trial of void   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>• Bowel chart maintained</li> </ul>							
<b>IV therapy/ access</b>	<ul style="list-style-type: none"> <li>• Cease IV therapy   Visual Infusion phlebitis score: _____</li> <li>• Fluid balance chart maintained</li> </ul>							
<b>Wound</b>	<ul style="list-style-type: none"> <li>• Dressing reviewed and remains intact   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>• Drain removed   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> </ul>							
<b>VTE prophylaxis</b>	<ul style="list-style-type: none"> <li>• Continue mechanical VTE prophylaxis</li> <li>• Enoxaparin given</li> </ul>							
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>• Shower:   <input type="checkbox"/> with assistance   <input type="checkbox"/> Independent</li> <li>• Mouth care</li> </ul>							
<b>Patient Education Discharge Planning</b>	<ul style="list-style-type: none"> <li>• Progression of care discussed with patient and carer</li> <li>• Referral to support services SW/Occ Thpy/HITH/Dietitian/speech pathology/ pharmacist as required</li> </ul>							
Nurse giving handover (name, sign & designation)	ND/AM	AM/PM	PM/ND					
Nurse receiving handover (name, sign & designation.)								

○ Holes Punched as per AS2828.1: 2019

BINDING MARGIN - NO WRITING



○

SAMPLE123



Page 4 of 12      NO WRITING

# Appendix 4a (cont.)

 SAMPLE 123	 <b>Health</b> South Eastern Sydney Local Health District		FAMILY NAME		MRN				
			GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE				
	<b>Facility:</b>		D.O.B. ____/____/____		M.O.				
			ADDRESS						
<b>CLINICAL PATHWAY</b> <b>HIP FRACTURE</b>		LOCATION / WARD COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE							
<b>Pre-operative Day 2</b>		Date: ____/____/____   EDD: _____		AM	PM	ND	V		
<b>Assessment</b>		<ul style="list-style-type: none"> <li>Standard observations as per CBR and within PACE criteria</li> <li>Neurovascular observations as per protocol</li> <li>BGL (as required)</li> <li>Monitor for signs of post op delirium</li> <li>Attend to 2/24 hourly PAC/skin assessment</li> </ul>							
<b>Medication/ Pain Management</b>		<ul style="list-style-type: none"> <li>Continue regular and prn analgesia</li> <li>Pain assessment attended using appropriate tool and recorded in EMR</li> <li>Oral Aperiets as charted</li> </ul>							
<b>Physiotherapy/ Mobility</b>		<ul style="list-style-type: none"> <li>Encourage patient to SOOB in AM &amp; PM</li> <li>Pressure relieving cushion insitu   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Unable to SOOB due to : _____</li> <li>In and out of bed transfers with _____ person</li> <li>Mobilising aid: _____</li> <li>Encourage deep breathing and coughing exercises</li> </ul>							
<b>Nutrition</b>		<ul style="list-style-type: none"> <li>Encourage oral intake of food and fluids</li> <li>Continue Ensure Twocal HN 70mL TDS (cease on D/C)</li> <li>Continue to provide feeding assistance as indicated</li> </ul>							
<b>Elimination</b>		<ul style="list-style-type: none"> <li>Passed trial of void   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> <li>Bowel chart maintained</li> </ul>							
<b>Wound</b>		<ul style="list-style-type: none"> <li>Dressing dry and intact</li> </ul>							
<b>Hygiene</b>		<ul style="list-style-type: none"> <li>Shower:   <input type="checkbox"/> With assistance   <input type="checkbox"/> Independent</li> <li>Mouth care attended</li> </ul>							
<b>VTE prophylaxis</b>		<ul style="list-style-type: none"> <li>Continue mechanical VTE prophylaxis</li> <li>Enoxaparin given</li> </ul>							
<b>Patient Education Discharge Planning</b>		<ul style="list-style-type: none"> <li>Progression of care discussed with patient and care</li> <li>Discharge plan discussed and confirmed with patient and family</li> <li>SW/Occ Thpy/HITH/Dietitian/speech pathology/ pharmacist review completed   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> </ul>							
Nurse giving handover (name, sign & designation)		ND/AM		AM/PM		PM/ND			
Nurse receiving handover (name, sign & designation.)									


Holes Punched as per AS2828.1: 2019  
 BINDING MARGIN - NO WRITING

SXXXX 161219

NO WRITING

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# Appendix 4a (cont.)

 <b>Health</b> South Eastern Sydney Local Health District		FAMILY NAME		MRN	
<b>Facility:</b>		GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	
		D.O.B. ____/____/____		M.O.	
		ADDRESS			
<b>CLINICAL PATHWAY HIP FRACTURE</b>		LOCATION / WARD			
		COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE			
<b>Pre-operative Day 3</b>	Date: ____/____/____    EDD: _____	AM	PM	ND	V
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Vital signs as per policy and within PACE criteria</li> <li>Monitor for signs of post op delirium</li> <li>2/24 hourly PAC attended/skin assessment</li> </ul>				
<b>Medication/ Pain Management</b>	<ul style="list-style-type: none"> <li>Continue regular and prn analgesia</li> <li>Pain assessment attended using appropriate tool and recorded in EMR</li> <li>Oral Aperiets as charted</li> </ul>				
<b>Mobility and activity</b>	<ul style="list-style-type: none"> <li>Encourage patient to SOOB in AM &amp; PM</li> <li>Pressure relieving cushion insitu   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>In and out of bed transfers with _____ person</li> <li>Sit to stand transfers with _____ person</li> <li>Mobilising with aid of _____ and _____ person</li> <li>Stairs practised   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Chest physio attended   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Assessed by Physio _____</li> </ul>				
<b>Nutrition</b>	<ul style="list-style-type: none"> <li>Encourage oral intake of food and fluids</li> <li>Continue Ensure Twocal HN 70mL TDS (<b>cease on D/C</b>)</li> <li>Continue to provide feeding assistance as indicated</li> </ul>				
<b>Elimination</b>	<ul style="list-style-type: none"> <li>No sign of urinary retention</li> <li>Bowel chart maintained (Medical R/V if BNO 3/7)</li> </ul>				
<b>Wound</b>	<ul style="list-style-type: none"> <li>Dressing dry and intact</li> </ul>				
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>Shower:   <input type="checkbox"/> With assistance   <input type="checkbox"/> Independent</li> <li>Mouth care TDS</li> </ul>				
<b>VTE prophylaxis</b>	<ul style="list-style-type: none"> <li>Continue mechanical VTE prophylaxis</li> <li>Enoxaparin given</li> </ul>				
<b>Patient Education Discharge Planning</b>	<ul style="list-style-type: none"> <li>Discharge plan discussed and confirmed with patient and family</li> <li>SW/Occ Thpy/HITH/Dietitian/speech pathology/ pharmacist review completed   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> <li>Discharge destination:   <input type="checkbox"/> Home   <input type="checkbox"/> HITH   <input type="checkbox"/> COMPACS  <input type="checkbox"/> Residential aged care   <input type="checkbox"/> Rehab</li> <li><b>Estimated Date of Discharge:</b></li> </ul>				
Nurse giving handover (name, sign & designation)	ND/AM	AM/PM	PM/ND		
Nurse receiving handover (name, sign & designation.)					



Holes Punched as per AS2828.1: 2019

BINDING MARGIN - NO WRITING

SAMPLE123



# Appendix 4a (cont.)

 SAMPLE 123	 <b>Health</b> South Eastern Sydney Local Health District		FAMILY NAME		MRN				
			GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE				
	<b>Facility:</b>		D.O.B. ____/____/____		M.O.				
			ADDRESS						
<b>CLINICAL PATHWAY</b> <b>HIP FRACTURE</b>		LOCATION / WARD				COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE			
<b>Pre-operative Day 4</b>		Date: ____/____/____   EDD: _____		AM	PM	ND	V		
<b>Assessment</b>		<ul style="list-style-type: none"> <li>Vital signs as per policy and within PACE criteria</li> <li>Monitor for signs of post op delirium</li> <li>2/24 hourly PAC attended/skin assessment</li> </ul>							
<b>Medication/ Pain Management</b>		<ul style="list-style-type: none"> <li>Continue regular and prn analgesia</li> <li>Pain assessment attended using appropriate tool and recorded in EMR</li> <li>Oral Aperients as charted</li> </ul>							
<b>Mobility and activity</b>		<ul style="list-style-type: none"> <li>Encourage patient to SOOB in AM &amp; PM</li> <li>Pressure relieving cushion insitu <input type="checkbox"/> Y <input type="checkbox"/> N</li> <li>In and out of bed transfers with _____ person</li> <li>Sit to stand transfers with _____ person</li> <li>Mobilising with aid of _____ and _____ person</li> <li>Stairs practised <input type="checkbox"/> Y <input type="checkbox"/> N</li> <li>Chest physio attended <input type="checkbox"/> Y <input type="checkbox"/> N</li> <li>Assessed by Physio _____</li> </ul>							
<b>Nutrition</b>		<ul style="list-style-type: none"> <li>Encourage oral intake of food and fluids</li> <li>Continue Ensure Twocal HN 70mL TDS (<b>cease on D/C</b>)</li> <li>Continue to provide feeding assistance as indicated</li> </ul>							
<b>Elimination</b>		<ul style="list-style-type: none"> <li>No sign of urinary retention</li> <li>Bowel chart maintained (Medical R/V if BNO 3/7)</li> </ul>							
<b>Wound</b>		<ul style="list-style-type: none"> <li>Dressing dry and intact</li> </ul>							
<b>Hygiene</b>		<ul style="list-style-type: none"> <li>Shower: <input type="checkbox"/> With assistance   <input type="checkbox"/> Independent</li> <li>Mouth care TDS</li> </ul>							
<b>VTE prophylaxis</b>		<ul style="list-style-type: none"> <li>Continue mechanical VTE prophylaxis</li> <li>Enoxaparin given</li> </ul>							
<b>Patient Education Discharge Planning</b>		<ul style="list-style-type: none"> <li>Discharge plan discussed and confirmed with patient and family</li> <li>SW/Occ Thpy/HITH/Dietitian/speech pathology/ pharmacist review completed <input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> N/A</li> <li>Discharge destination: <input type="checkbox"/> Home   <input type="checkbox"/> HITH   <input type="checkbox"/> COMPACS  <input type="checkbox"/> Residential aged care   <input type="checkbox"/> Rehab</li> <li><b>Estimated Date of Discharge:</b></li> </ul>							
Nurse giving handover (name, sign & designation)		ND/AM		AM/PM		PM/ND			
Nurse receiving handover (name, sign & designation.)									


Holes Punched as per AS2828.1: 2019  
 BINDING MARGIN - NO WRITING

SXXXX 161219

NO WRITING

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# Appendix 4a (cont.)



 <b>Health</b> South Eastern Sydney Local Health District		FAMILY NAME		MRN			
		GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE			
<b>Facility:</b>		D.O.B. ____/____/____		M.O.			
		ADDRESS					
<b>CLINICAL PATHWAY HIP FRACTURE</b>		LOCATION / WARD					
		COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE					
<b>Pre-operative Day 5</b>	Date: ____/____/____   EDD: _____			AM	PM	ND	V
<b>Assessment</b>	<ul style="list-style-type: none"> <li>Vital signs as per policy and within PACE criteria</li> <li>Monitor for signs of post op delirium</li> <li>2/24 hourly PAC attended/skin assessment</li> </ul>						
<b>Medication/ Pain Management</b>	<ul style="list-style-type: none"> <li>Continue regular and prn analgesia</li> <li>Pain assessment attended using appropriate tool and recorded in EMR</li> <li>Oral Aperients as charted</li> </ul>						
<b>Mobility and activity</b>	<ul style="list-style-type: none"> <li>Encourage patient to SOOB and mobilise</li> <li>Pressure relieving cushion insitu   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>In and out of bed transfers with _____ person</li> <li>Sit to stand transfers with _____ person</li> <li>Mobilising with aid of _____ and _____ person</li> <li>Stairs practised   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Chest physio attended   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Assessed by Physio _____</li> </ul>						
<b>Nutrition</b>	<ul style="list-style-type: none"> <li>Encourage oral intake of food and fluids</li> <li>Continue Ensure Twocal HN 70mL TDS (<b>cease on D/C</b>)</li> <li>Continue to provide feeding assistance as indicated</li> </ul>						
<b>Elimination</b>	<ul style="list-style-type: none"> <li>No sign of urinary retention</li> <li>Bowel chart maintained (Medical R/V if BNO 3/7)</li> </ul>						
<b>Wound</b>	<ul style="list-style-type: none"> <li>Dressing dry and intact</li> </ul>						
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>Shower:   <input type="checkbox"/> With assistance   <input type="checkbox"/> Independent</li> <li>Mouth care TDS</li> </ul>						
<b>VTE prophylaxis</b>	<ul style="list-style-type: none"> <li>Continue mechanical VTE prophylaxis</li> <li>Enoxaparin given</li> </ul>						
<b>Patient Education Discharge Planning</b>	<ul style="list-style-type: none"> <li>Discharge plan discussed and confirmed with patient and family</li> <li>SW/Occ Thpy/HITH/Dietitian/speech pathology/ pharmacist review completed   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> <li>Discharge destination:   <input type="checkbox"/> Home   <input type="checkbox"/> HITH   <input type="checkbox"/> COMPACS  <input type="checkbox"/> Residential aged care   <input type="checkbox"/> Rehab</li> <li><b>Estimated Date of Discharge:</b></li> </ul>						
Nurse giving handover (name, sign & designation)	ND/AM	AM/PM	PM/ND				
Nurse receiving handover (name, sign & designation.)							

Holes Punched as per AS2828.1: 2019  
 BINDING MARGIN - NO WRITING





# Appendix 4a (cont.)

 SAMPLE 123	 <b>Health</b> South Eastern Sydney Local Health District		FAMILY NAME		MRN		
			GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE		
	<b>Facility:</b>		D.O.B. ____/____/____		M.O.		
			ADDRESS				
<b>CLINICAL PATHWAY HIP FRACTURE</b>		LOCATION / WARD		COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE			
<b>Pre-operative Day 6</b>		Date: ____/____/____   EDD: _____		AM	PM	ND	V
<b>Assessment</b>		<ul style="list-style-type: none"> <li>Vital signs as per policy and within PACE criteria</li> <li>Monitor for signs of post op delirium</li> <li>2/24 hourly PAC attended/skin assessment</li> </ul>					
<b>Medication/ Pain Management</b>		<ul style="list-style-type: none"> <li>Continue regular and prn analgesia</li> <li>Pain assessment attended using appropriate tool and recorded in EMR</li> <li>Oral Aperients as charted</li> </ul>					
<b>Mobility and activity</b>		<ul style="list-style-type: none"> <li>Encourage patient to SOOB and mobilise</li> <li>Pressure relieving cushion insitu   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>In and out of bed transfers with _____ person</li> <li>Sit to stand transfers with _____ person</li> <li>Mobilising with aid of _____ and _____ person</li> <li>Stairs practised   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Chest physio attended   <input type="checkbox"/> Y   <input type="checkbox"/> N</li> <li>Assessed by Physio _____</li> </ul>					
<b>Nutrition</b>		<ul style="list-style-type: none"> <li>Encourage oral intake of food and fluids</li> <li>Continue Ensure Twocal HN 70mL TDS (<b>cease on D/C</b>)</li> <li>Continue to provide feeding assistance as indicated</li> </ul>					
<b>Elimination</b>		<ul style="list-style-type: none"> <li>No sign of urinary retention</li> <li>Bowel chart maintained (Medical R/V if BNO 3/7)</li> </ul>					
<b>Wound</b>		<ul style="list-style-type: none"> <li>Dressing dry and intact</li> </ul>					
<b>Hygiene</b>		<ul style="list-style-type: none"> <li>Shower:   <input type="checkbox"/> With assistance   <input type="checkbox"/> Independent</li> <li>Mouth care TDS</li> </ul>					
<b>VTE prophylaxis</b>		<ul style="list-style-type: none"> <li>Continue mechanical VTE prophylaxis</li> <li>Enoxaparin given</li> </ul>					
<b>Patient Education Discharge Planning</b>		<ul style="list-style-type: none"> <li>Discharge plan discussed and confirmed with patient and family</li> <li>SW/Occ Thpy/HITH/Dietitian/speech pathology/ pharmacist review completed   <input type="checkbox"/> Y   <input type="checkbox"/> N   <input type="checkbox"/> N/A</li> <li>Discharge destination:   <input type="checkbox"/> Home   <input type="checkbox"/> HITH   <input type="checkbox"/> COMPACS  <input type="checkbox"/> Residential aged care   <input type="checkbox"/> Rehab</li> <li><b>Estimated Date of Discharge:</b></li> </ul>					
Nurse giving handover (name, sign & designation)		ND/AM		AM/PM		PM/ND	
Nurse receiving handover (name, sign & designation.)							


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# Appendix 4a (cont.)

 <b>Health</b> South Eastern Sydney Local Health District	FAMILY NAME	MRN			
	GIVEN NAME	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE			
<b>Facility:</b>	D.O.B. ____/____/____	M.O.			
	ADDRESS				
<b>CLINICAL PATHWAY HIP FRACTURE</b>					
	LOCATION / WARD				
	COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE				
<b>Variance Tracking record for Name</b>					
<b>Variance codes</b>					
<b>1. System related</b>	<b>2. Patient related</b>	<b>3. Practitioner related</b>			
1.1 Delay in test/procedure availability. 1.2 Delay in test/procedure results. 1.3 Delay in ambulance/hospital transport. 1.4 Delay in availability of bed at another facility. Delay in availability of community support/equipment/supplies. 1.5 Other.	2.1 Pre-op complication. 2.2 Intra-op complication. 2.3 Post-op complication. 2.3a Development of DVT/PE. 2.3b Pain management issues. 2.3c Nausea + vomiting. 2.3d Does not tolerate diet. 2.3e Unstable observations. 2.3f Ileus/bowel obstruction. 2.3g Anastomotic leak. 2.3h Infection (chest/urine). 2.3i Wound complication. 2.3j PIVC infection. 2.4 Unplanned return to theatre. 2.5 Unplanned transfer to ICU. 2.6 Existing co-morbidities. 2.7 Non-compliance. 2.8 Other.	3.1 Delay in medical consultation. 3.2 Delay in allied health consultation. 3.3 Delay in nursing intervention. 3.4 Delay in consultation due to <input type="checkbox"/> Public holiday <input type="checkbox"/> Weekend <input type="checkbox"/> Other _____ 3.5 Inadequate discharge planning. 3.7 Other: _____			
<b>Date</b>	<b>Variance code</b>	<b>Code explanation</b>	<b>Action taken</b>	<b>Outcome</b>	<b>Sign &amp; print</b>

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# Appendix 4a (cont.)

 <p style="writing-mode: vertical-rl; transform: rotate(180deg);">SAMPLE123</p>	 <p><b>Health</b> South Eastern Sydney Local Health District</p>	FAMILY NAME		MRN	
		GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	
	<b>Facility:</b>		D.O.B. ____/____/____	M.O.	
	<b>CLINICAL PATHWAY HIP FRACTURE</b>		ADDRESS		
			LOCATION / WARD		
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE					
 <p style="font-size: 2em; opacity: 0.5;">stream solutions draft 1</p> <p style="font-size: 3em; opacity: 0.5; transform: rotate(-15deg);">THIS PAGE HAS BEEN LEFT BLANK</p>					





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# Appendix 4a (cont.)

 <b>Health</b> South Eastern Sydney Local Health District	FAMILY NAME		MRN
	GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
<b>Facility:</b>	D.O.B. ____/____/____		M.O.
	ADDRESS		
<b>CLINICAL PATHWAY HIP FRACTURE</b>			
	LOCATION / WARD		
	COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		
 			
			<input type="radio"/>
			Holes Punched as per AS2828.1: 2019 <b>BINDING MARGIN - NO WRITING</b>
			<input type="radio"/>
			SAMPLE123 
Page 12 of 12		NO WRITING	

# Appendix 4b – Showcase of local hip fracture pathways

## Prince of Wales Hospital – Hip Fracture Clinical Pathway (Emergency)

 SAMPLE123	 Health South Eastern Sydney Local Health District	FAMILY NAME	MRN	
	Facility: Prince of Wales Hospital		GIVEN NAME	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
	<b>HIP FRACTURE CLINICAL PATHWAY                  EMERGENCY DEPARTMENT (ED)                  TO INPATIENT WARD</b>		D.O.B. ____/____/____	M.O.
			ADDRESS	
		LOCATION / WARD COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE		
<b>ED</b>				
<b>Diagnosis</b>		AP and lateral hip X-ray. If imaging negative but high clinical index of suspicion after senior ED+/- radiology or orthopaedic review then request CT		
<b>Contacting orthopaedics and orthogeriatrics</b>		Telstra instant messaging alert from 0700-1600 – Call goes to bone phone, old bone phone, orthogeriatric consultant and bed manager 1600-0700: Call - 0457 875 284 Patient is admitted under on-call orthopaedic surgeon as AMO1 and Professor Close as AMO2		
<b>Pain management</b>		Pain to be assessed using appropriate tool and documented within 30 minutes of presentation to ED Chart regular paracetamol and prn endone Offer a nerve block unless contraindicated Reassess pain within 45 minutes of administration of analgesia and regularly thereafter		
<b>Observations</b>		Blood pressure, HR, RR, Sats, Temp, Pain, GCS. Pressure injury risk assessment attended using the Waterlow scale Documentation of comprehensive skin inspection		
<b>Investigations</b>		FBC / EUC / CMP / BSL Group and hold ECG CXR if cardio-respiratory signs / symptoms If on anticoagulants – see clinical support tool		
<b>Anticoagulants and thromboprophylaxis</b>		DVT prophylaxis – subcutaneous enoxaparin 40mg at 20:00 hrs daily unless contraindication (can be given up to midnight on day of presentation) Withhold antiplatelets, except aspirin, and anticoagulants until orthopaedic / orthogeriatric review See appendix 1 for management of anticoagulants in hip fracture patients		
<b>Medications</b>		Document regular medications in eMeds including those that are to be withheld		
<b>Fasting and fluids</b>		Insert IVC IV fluids – N/Saline 80mls/hr unless a contraindication Commence fluid balance chart Fast only if patient arrives between midnight and midday (ie same day OT likely) Medications can be given with sips of water		
<b>Catheter</b>		Consider a catheter for comfort (not essential) Ensure hip pain is controlled before insertion.		
<b>Pressure care</b>		Order air mattress when fracture confirmed		
Pathway assumes a diagnosis of a hip fracture. If hip pain but no fracture and not suitable for discharge – patient should be referred to geriatric medicine				

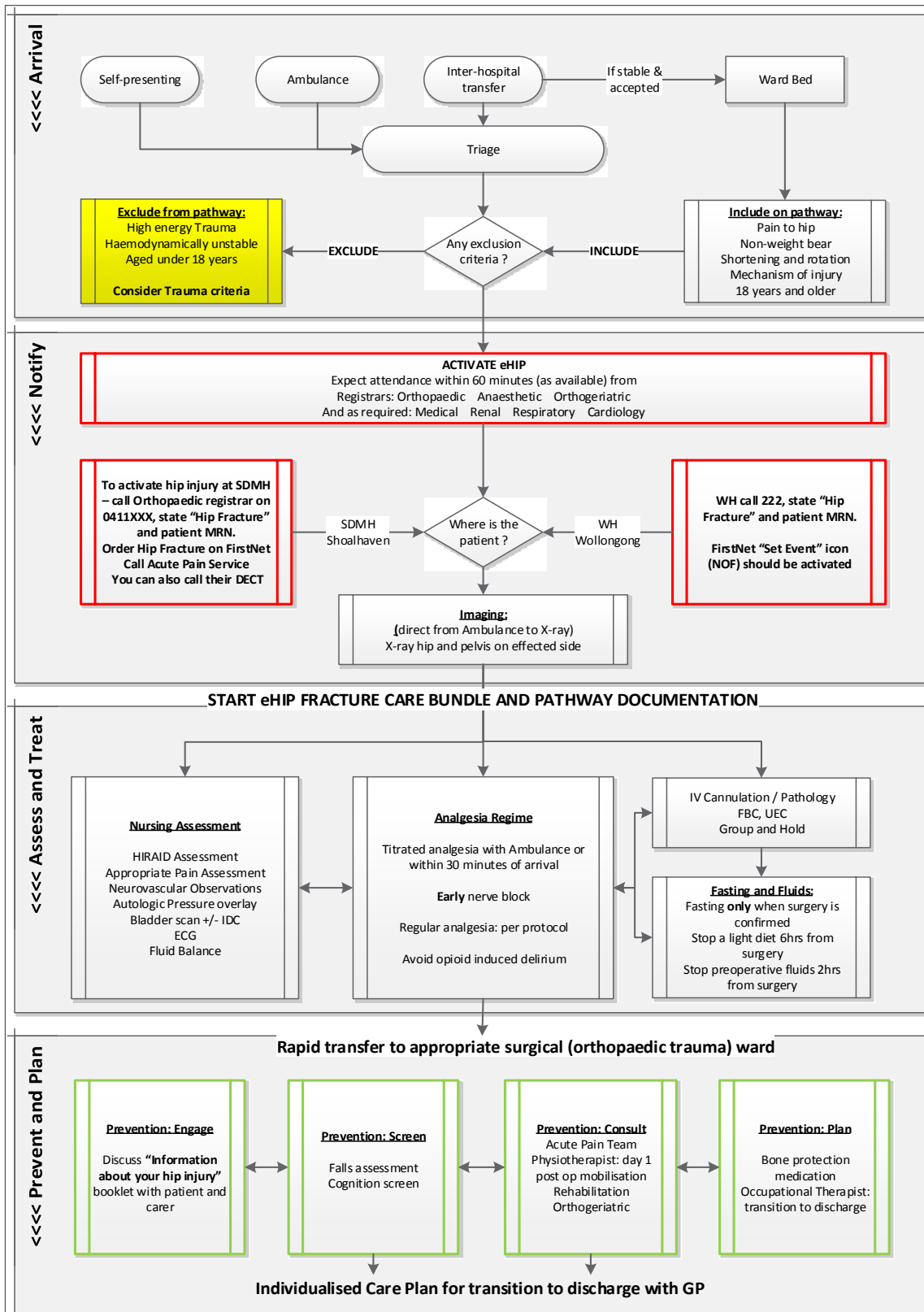
TBA  
  
COUROT  
  
HIP FRACTURE CLINICAL PATHWAY EMERGENCY DEPARTMENT (ED) TO INPATIENT WARD  
  
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# Appendix 4c – Showcase of local hip fracture pathways – ISLHD



# Definitions

## Orthogeriatric shared care

Orthogeriatric shared care is a multidisciplinary approach to care, involving the systemic/ongoing involvement or leading role of a geriatrician or a specialised orthogeriatrician in the management of older people requiring orthopaedic surgery, and particularly patients with hip fracture. This may take different forms as detailed below.

## Models of orthogeriatric shared care

### Orthopaedic surgeon-led model

The patient is admitted to the orthopaedic ward under the orthopaedic surgeon; the geriatrician provides consult on a routine and ongoing basis.

### Joint admission orthogeriatric model

The patient is admitted to a ward under the co-management of both the surgeon and the geriatrician. A variation of this model includes admitting patients to the orthopaedic ward immediately after surgery with a daily consult from a geriatrician; after removal of sutures/staples, transfer to internal medicine or geriatric wards with a routine consult with an orthopaedic surgeon.

### Geriatrician-led model

The patient is admitted to the geriatric medical ward under the geriatrician; the orthopaedic surgeon provides consult on a routine and ongoing basis.

### Dedicated orthogeriatrician-led model

Embedding of a dedicated orthogeriatrician in an Orthopaedic Department with the patient admitted under (ortho)geriatrics.

## Mobilisation

The process of re-establishing the ability to move between postures (e.g. moving from seated to standing), maintain an upright posture and ambulate with increasing levels of complexity (speed, changes of direction, dual and multi-tasking).

## Rehabilitation

Rehabilitation care is where the primary clinical purpose or treatment goal is improvement in the functioning of a patient with an impairment, activity limitation or participation restriction due to a health condition. The patient will be capable of actively participating. Rehabilitation can be undertaken in the most suitable setting based on the patient's needs, e.g. inpatient, day program, outpatient rehabilitation or in the home. Rehabilitation care is always:

- delivered under the management of or informed by a clinician with specialised expertise in rehabilitation
- evidenced by an individualised multidisciplinary management plan, which is documented in the patient's medical record, that includes negotiated goals within specified time frames and formal assessment of functional ability.

## Tertiary referral hospitals

Tertiary referral hospitals are public acute hospitals that provide a very broad range of services, have a range of highly specialised service units and have very large patient volumes. The term 'referral' recognises that these hospitals have specialist facilities not typically found in smaller hospitals. Tertiary referral hospitals are referred to as principal referral hospitals in the Australian Institute of Health and Welfare (AIHW)'s Australian hospital peer groups.



## Definitions (cont.)

### Major hospitals

Major hospitals are public acute hospitals that provide a wide range of services typically including a 24-hour emergency department, intensive care unit, coronary care unit and oncology unit, but do not provide the breadth of services provided by principal referral hospitals. Referred to as public acute group A hospitals in AIHW's Australian hospital peer groups.

### Other hospitals

Other hospitals - any hospitals that do not adhere to the definitions of major or tertiary referral hospitals (as above). These are referred to as public acute group A, B, C and D hospitals in AIHW's Australian hospital peer groups.

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Bigi Kongola	Registered nurse	Gosford Hospital
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The Agency for Clinical Innovation (ACI) is the lead agency for innovation in clinical care.

We bring consumers, clinicians and health-care managers together to support the design, assessment and implementation of clinical innovations across the NSW public health system to change the way that care is delivered.

The ACI's clinical networks, institutes and taskforces are chaired by senior clinicians and consumers who have a keen interest and track record in innovative clinical care.

We also work closely with the Ministry of Health and the four other pillars of NSW Health to pilot, scale and spread solutions to healthcare system-wide challenges. We seek to improve the care and outcomes for patients by re-designing and transforming the NSW public health system.

Our innovations are:

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- clinically led
- evidence-based
- value-driven.

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