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**Generic business plan document**

**Participation in the Australian and New Zealand Hip Fracture Registry by implementation/development of an/the Orthogeriatrics Service for [Insert name of hospital]**

| **How to use this document** |
| --- |
| * This document has been formulated to assist sites with participation in the ANZHFR by implementation of an Orthogeriatric service at your hospital. * The document provides comprehensive insight into hip fracture care in Australia, the international experience and a background to the development of the Hip Fracture Care Clinical Care Standards. * Sites can choose to use the generic business case document and insert the hospital name and approprate figures in the space provided. * Alternatively, hospital sites can choose to use certain aspects of this document and delete information that is not required. * Please check with your executive unit whether your hospital has a preferred business case template. |

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# Executive Summary

**The combination of national clinical care standards, participation in a national hip fracture registry, feedback and sharing of best practice has resulted in significant improvements in the care of hip fracture patients and a significant reduction in 30-day mortality in other countries.**

* **XXX** people served by [**Insert Local Health District**] present with a hip fracture to [**Insert name of hospital**] resulting in **Y,YYY** bed days and a total annual cost of AUD$**ZZZ,ZZZ**.
* Hip fractures impose a tremendous burden on people who suffer them, resulting in many not being able to walk unaided or requiring assistance with routine activities of daily living.
* Hip fractures are a leading cause of institutionalisation and are associated with considerable excess mortality: up to one quarter of people who break their hip will die within 12 months.
* People who suffer hip fractures are at considerably elevated risk of suffering further falls and fractures in the future.
* Clinical Guidelines and Clinical Care Standards have been published in many countries as a response to the increasing burden of hip fracture among our globally ageing population.
* The Australian and New Zealand Hip Fracture Registry initiative has developed widely endorsed Clinical Guidelines for Australia and New Zealand.
* The Clinical Guidelines have enabled development of an Australian and New Zealand Hip Fracture Care Clinical Care Standard.
* The Clinical Guidelines and Clinical Care Standard state that a patient with hip fracture should be offered treatment based on the orthogeriatric model of care.
* The Australian and New Zealand Hip Fracture Registry provides an opportunity to benchmark the care that hospitals provide for hip fracture patients – in real time – against the average performance in Australia and against the Clinical Care Standard.
* The combination of national clinical care standards, data collection through a national hip fracture registry, feedback and sharing of best practice has resulted in significant improvements in the care of hip fracture patients and a significant reduction in 30-day mortality in several countries.
* The Australian and New Zealand Hip Fracture Registry is a key component of a whole of system approach to falls and fracture management in Australia.

**This business plan makes the case for participation in the Australian and New Zealand Hip Fracture Registry to enable delivery of, and benchmark performance against the trans-Tasman Hip Fracture Care Clinical Care Standard at [Insert name of hospital] by implementation/development of an/the Orthogeriatrics Service.**

The following three sections could provide the introductory section of the business plan and provide the background and rationale for participation in the Australian and New Zealand Hip Fracture Registry and implementation/development of an Orthogeriatrics Service:

* The impact of hip fracture in Australia
* Best practice in hip fracture care: International experience
* A systematic approach to hip fracture care and prevention for Australia

Authors of the business plan may decide to precis this information, or add/replace with local data on the impact of hip fracture on quality of life, rates of institutionalisation, mortality, length of stay and health system costs. This information could be obtained from Australasian Rehabilitation Outcomes Centre (AROC) data or the Enhanced Recovery After Surgery (ERAS) initiative.

# The impact of hip fracture in Australia

In 2015-2016, approximately 18 700 Australians were admitted to hospital with a hip fracture[[1]](#endnote-1). The number of new hip fractures rose over time, in line with the aging population, despite declining incidence rates after the implementation of preventative strategies.

The burden imposed by these hip fractures on the individual includes decreased mobility and quality of life, increased likelihood of re-fracture, admission into residential aged care and death.

* Fewer than half of people who survive a hip fracture will walk unaided again[[2]](#endnote-2) and in many cases they will never regain their former degree of mobility[[3]](#endnote-3).
* A year after hip fracture, 60% of sufferers require assistance with activities such as feeding, dressing or toileting, and 80% need help with activities such as shopping or driving[[4]](#endnote-4).
* 60% of hip fracture sufferers report pain in the fractured hip and more than 30% report that the pain disrupts their sleep2.
* A 2017 study found that people aged 65 years and over who had suffered a hip fracture were more than 3.5 times more likely to die within 12 months compared to those who had not suffered a fracture[[5]](#endnote-5).

Hip fracture has also been shown to be a leading cause of institutionalisation of older people in many countries.

* Among women suffering a hip fracture in Belgium, 19% were newly admitted to nursing homes during the year following hospitalisation compared to just 4% of age and residence matched controls[[6]](#endnote-6).
* Investigators from Norway reported that the proportion of individuals living in nursing homes increased from 15% to 30% after sustaining a hip fracture2.
* A study from the United States reported the proportion of men and women living in an institution before their hip fracture to be 6.8% and 13%, respectively[[7]](#endnote-7). After hip fracture, 26.8% of men and 25.6% of women were newly admitted to institutions.

In the UK, hip fractures have been reported to be the most common cause of accident-related death in older people[[8]](#endnote-8). Thirty percent die within a year. The 2011 Australian Burden of Disease Study reported that hip fractures contributed to 3.4% of the fatal burden in Australia[[9]](#endnote-9).

Hip fractures also place considerable financial burden on the Australian health care system. A 2014 study predicted that the number of hip fractures will rise by 35% by 2036[[10]](#endnote-10), while another study reported that the total annual cost of hip fractures attributable to osteoporosis and osteopenia would rise by 36% between 2013 and 2022—from $829 million to $1.27 billion[[11]](#endnote-11). In addition to direct health system costs, hip fractures also have indirect costs associated with lost productivity and participation, and with formal and informal care1. a

As Australia’s 5.5 million baby boomers age, hip fractures will continue to place significant demands upon our healthcare system. Accordingly, now is the time to consider how this serious injury can be managed in the most clinically effective and cost-effective manner.

# Best practice in hip fracture care: International experience

## Development of the combined orthogeriatric model of care

The approach taken to improve care for hip fracture patients in the UK provides a useful illustration of how current models of best practice have evolved. The first collaborations between orthopaedic surgeons and geriatricians were described in the 1960s, and since then the majority of trauma services have incorporated some form of formal geriatrician input to the care of older inpatients recovering from hip fractures. In 2007, the British Orthopaedic Association (BOA) and British Geriatrics Society (BGS) published the Blue Book on the care of patients with fragility fracture[[12]](#endnote-12). The BOA-BGS Blue Book described the following common models of orthogeriatric care.

**Traditional orthopaedic care:**

* The fracture patient is admitted to a trauma ward and their care and rehabilitation is mainly managed by the orthopaedic surgeon and team;
* Geriatrician input to such wards can take a variety of forms.

**Geriatric orthopaedic rehabilitation unit:**

* Peri-operative orthopaedic management is followed by early post-operative transfer to a geriatric rehabilitation unit;
* Identification of appropriate patients by orthopaedic staff, specialist orthogeriatric liaison nurses/hip fracture nurses or routine geriatrician rounds;
* Orthopaedic input to the rehabilitation ward varies;
* A weekly surgeon visit at a fixed time allows multidisciplinary team members to present concerns, problems and x-rays.

**Orthogeriatric liaison and a hip fracture nurse:**

* Collaborative working requires effective communication between senior medical, surgical and anaesthetic staff;
* A hip fracture nurse takes responsibility for patients throughout the course of their clinical care; coordinating initial assessment, expediting pre-operative work-up, supervising post-operative care, rehabilitation, discharge planning, secondary prevention and follow-up;
* Key benefits of this approach include:
  + A consistent health professional point of contact;
  + The nurse can coordinate input from medical, orthopaedic, or other specialist teams if necessary;
  + Hip fracture nurses are ideally placed to coordinate audit data collection, such as for a national hip fracture registry.

**Combined orthogeriatric care:**

* The fracture patient is admitted to a specialised orthogeriatric ward under the care of both geriatricians and orthopaedic surgeons;
* This level of collaboration underpins the concept of a hip fracture service, with pre-operative assessment by the orthogeriatric medical team, who will take the lead in post-operative multidisciplinary care;
* Rehabilitation may occur in this setting or in a separate rehabilitation unit.

During the last 20 years, development and implementation of the combined orthogeriatric model of care has occurred in many countries[[13]](#endnote-13) [[14]](#endnote-14) [[15]](#endnote-15) [[16]](#endnote-16) [[17]](#endnote-17) [[18]](#endnote-18) [[19]](#endnote-19) [[20]](#endnote-20). The core principles underpinning this model of care have been described as[[21]](#endnote-21):

* Most patients benefit from surgical fracture stabilisation;
* The sooner patients have surgery, the less time they have to develop complications and functional decline;
* Co-management, with frequent communication between disciplines, avoids iatrogenesis;
* Standardised protocols decrease unwarranted variability;
* Discharge planning begins when the patient is admitted to the hospital.

## International experience of benchmarking hip fracture care against national clinical standards

The BOA – BGS Blue Book identified six standards for hip fracture care12. To enable benchmarking of care against these standards and other relevant metrics, the UK National Hip Fracture Database (NHFD) was launched in tandem with the Blue Book[[22]](#endnote-22). The NHFD is the largest and fastest-growing national hip fracture audit in the world with more than half a million cases recorded since its launch in 2007. All hospitals receiving hip fracture patients in England, Wales, Northern Ireland and Channel Islands participate. The most recent report published in 2018 benchmarked care of more than 66,500 presentations during 2017 against current national professional standards[[23]](#endnote-23).

In 2015, an external evaluation was undertaken to assess the impact of the national clinical standards, data collection, and feedback, together with NHFD-led activities to support regional and national sharing of best clinical practice and encourage local implementation at hospitals[[24]](#endnote-24). Routinely collected data on 471,590 people aged 60 years and older who were admitted with a hip fracture to National Health Service (NHS) hospitals in England between 2003 and 2011 were analysed. The variables of interest were the use of early surgery (on day of admission, or day after) and mortality at 30 days from admission. Time trends were compared for the periods 2003-2007 and 2007-2011 (i.e. before and after the launch of the NHFD). Key findings included:

* The number of hospitals participating in the NHFD increased from 11 in 2007 to 175 in 2011;
* From 2007 to 2011, the rate of early surgery increased from 54.5% to 71.3%, whereas the rate had remained stable over the period 2003–2007;
* Thirty-day mortality fell from 10.9% to 8.5%, compared with a small reduction from 11.5% to 10.9% previously:
  + The annual relative reduction in adjusted 30-day mortality was 1.8% per year in the period 2003–2007, compared with 7.6% per year over 2007–2011 (P< 0.001 for the difference).

In addition to optimal management of the acute event and rehabilitation, because up to 9% of hip fracture patients will go on to break their other hip[[25]](#endnote-25) [[26]](#endnote-26) [[27]](#endnote-27) [[28]](#endnote-28), a determined effort to prevent future falls and fractures is needed. In this regard, the NHFD initiative has been associated with a very significant change in the delivery of secondary falls and fracture prevention. The 2018 NHFD annual report23 indicated that 96.8% of patients had been assessed for the need for bone protection medication. Only 38.4% of patients received 120-day follow-up of their mobility and to confirm that they were still taking bone protection medication. This means that most units do not know if their patients are continuing with effective bone protection. Assessment of falls risk was undertaken for 96% of cases.

# A systematic approach to hip fracture care and prevention for Australia and New Zealand

Following on from the BOA and BGS successful implementation of a National Hip Fracture Database in 2011, representatives from many sectors in Australia and New Zealand agreed in principle to support the development of an Australian and New Zealand Hip Fracture Registry.

Since 2011, informed by the experience from the UK and other countries, a multisector effort to develop and implement a systematic approach to hip fracture care and prevention in Australia has resulted in significant progress:

* **2011:** First meeting of clinicians from Australia and New Zealand to consider how experience from elsewhere could inform development of an Australian and New Zealand Hip Fracture Registry (ANZHFR).
* **2012:** Osteoporosis New Zealand published *BoneCare 2020*, which called for development of a national hip fracture registry and nationwide implementation of models of care to improve both acute hip fracture care (orthogeriatrics services) and prevention of hip and other fragility fractures (fracture liaison services)[[29]](#endnote-29). The Health Quality and Safety Commission New Zealand launched the *Reducing Harm from Falls* programme[[30]](#endnote-30).
* **2013:** Publication of the first ANZHFR Facilities Level Audit, which assessed and documented what services, resources, policies, protocols and practices existed across Australia and New Zealand hospitals in relation to hip fracture care[[31]](#endnote-31).
* **2014:** Publication of the Australian and New Zealand Guideline for Hip Fracture Care[[32]](#endnote-32). Publication of the second ANZHFR Facilities Level Audit[[33]](#endnote-33). Ongoing implementation of FLS.
* **2015:** Development and roll out of the ANZHFR in both countries. Publication of the third ANZHFR Facilities Level Audit[[34]](#endnote-34).
* **2016:** Publication of the Hip Fracture Care Clinical Care Standard by the Australian Commission on Safety and Quality in Health Care in collaboration with the Health Quality and Safety Commission New Zealand [[35]](#endnote-35). Publication of the ANZHFR 2016 Annual Report[[36]](#endnote-36), which included the first ANZHFR Patient Level Audit and the fourth ANZHFR Facilities Level Audit.
* **2017:** Publication of the ANZHFR Annual Report[[37]](#endnote-37), which included the second ANZHFR Patient Level Audit and the fifth ANZHFR Facility Level Audit. In October 2017, ANZHFR was awarded the 2017 Health Services Research prize at the Research Australia Health and Medical Research Awards.
* **2018:** Publication of the ANZHFR Annual Report[[38]](#endnote-38), which included the third ANZHFR Patient Level Audit, the sixth ANZHFR Facility Level Audit and the first Supplementary Report of Australian States and Territories[[39]](#endnote-39).
* **2019**: Publication of the ANZHFR Annual Report[[40]](#endnote-40), including the fourth ANZHFR Patient Level Audit, the seventh ANZHFR Facility Level Audit and second Supplementary Report of Australian States and Territories.[[41]](#endnote-41) Publication of the ANZHFR Hip Fracture Care guide to support hospitals to transition patients from acute care.

As of 2019, 86 hospitals in Australia and New Zealand are approved to contribute patient level data to the ANZHFR.

# Australian and New Zealand Hip Fracture Care Clinical Care Standard

The Clinical Care Standard is comprised of 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 48 hours, if no clinical contraindication exists and the patient prefers surgery.*
5. ***Mobilisation and weight-bearing:*** *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 (i.e. osteoporosis), 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 they may require. It also describes mobilisation activities, wound care and function post-injury. This plan is provided to the patient before discharge and their general practitioner and other ongoing clinical providers within 48 hours of discharge.”*

The orthogeriatric model of care is defined in the ANZ Guideline for Hip Fracture Care as follows32. “*From admission, offer patients a formal, acute orthogeriatric service that includes all of the following:*

* *Regular orthogeriatrician assessment;*
* *Rapid optimisation of fitness for surgery;*
* *Early identification of individual goals for multidisciplinary rehabilitation to recover mobility and independence, and to facilitate return to pre-fracture residence and long-term wellbeing;*
* *Early identification of most appropriate service to deliver rehabilitation;*
* *Continued, coordinated, orthogeriatric and multidisciplinary review and discharge planning liaison or integration with related services, including falls prevention, secondary fracture prevention, mental health, cultural services, primary care, community support services and carer support services.”*

The Clinical Care Standard comments on the meaning of Quality Statement 3 for health services35:

* “*For hospitals that do not have a geriatric medicine service available, care should be undertaken by an orthopaedic surgeon, an anaesthetist, and a physician or if unavailable in rural and remote settings, another medical practitioner, using the orthogeriatric model of care.”*

# Preparedness to participate in the ANZHFR at [Insert name of hospital]

The ANZHFR provides hospitals with an opportunity to benchmark the care they provide for hip fracture patients – in real time – against the average performance in Australia and against the Australian and New Zealand Hip Fracture Care Clinical Care Standard35.

This section of the business plan should describe the current level of preparedness to participate in the ANZHFR. This could be informed by the hospital’s contribution to the recent seventh ANZHFR Facilities Level Audit40. Participation in the ANZHFR is described in Appendix 2. Additional information regarding how to get started with ANZHFR in your hospital is provided in Appendix 3 which should be read with the ANZHFR User Guide. A sample business change template is included in Appendix 4, please check if your hospital has a preferred template.

The seventh ANZHFR Facilities Level Audit included information from 118 hospitals: 23 in New Zealand and 95 in Australia. The aim of the Facilities Level Audit is to document and monitor over time the services, resources, policies, protocols and practices that exist in both countries in relation to hip fracture care. In 2012, a standardised audit form was devised by the ANZHFR Steering Group for use in all public hospitals in both countries.

Several figures have been reproduced from the 2019 ANZHFR Report below, with permission of the ANZHFR. As illustrated in Figure 1 overleaf, the number of hip fractures treated in hospitals in both countries varies considerably. As illustrated in Figure 2, there is considerable variability in terms of the model of care provided for hip fracture patients. Figure 3 and Figure 4 illustrates the proportion of hospitals in Australia and New Zealand with the following protocols for the period 2013-2019:

* Shared Care MOC
* ED protocol/pathway
* CT/MRI protocol
* VTE protocol
* Pain pathway
* Anaesthetic choice
* Scheduled theatre list
* Weekend therapy

Figure 1. Estimated number of hip fractures treated by Australian and New Zealand Hospitals 2014-2019

Figure 2. Model of care for older hip fracture patients, 2014-2019



1. A shared care arrangement where there is joint responsibility for the patient from admission between orthopaedics and geriatric medicine for all older hip fracture patients.
2. An orthogeriatric liaison service where geriatric medicine provides regular review of all older hip fracture patients (daily during working week).
3. A medical liaison service where a general physician or GP provides regular review of all older hip fracture patients (daily during working week).
4. An orthogeriatric liaison service where geriatric medicine provides intermittent review of all older hip fracture patients (2-3 times weekly).
5. A medical liaison service where a general physician or GP provides intermittent review of hip fracture patients (2-3 times weekly).
6. An orthogeriatric liaison service (2014) / geriatric service (2015/6) where a consult system determines which patients are reviewed.
7. A medical liaison service (2014) / medical service (2015/6) where a consult system determines which patients are reviewed.
8. No formal service exists.
9. Other.

Figure 3. Presence of protocols for elements of hip fracture care in Australian Hospitals 2013-2019



Figure 4. Presence of protocols for elements of hip fracture care in New Zealand Hospitals 2013-2019



# Orthogeriatric service provision at [Insert name of hospital]

This section of the business plan requires input from local lead clinicians which describes:

* **Current provision:** A description of the current model of care in place for hip fracture patients. The current configuration may be similar to one of the four common examples described in the international experience section above. This could be informed by the hospital’s contribution to the recent seventh ANZHFR Facilities Level Audit40 and/or from the local Hip Fracture Pathway.
* **Current performance:** An indication of performance of the current model of care. This could be informed by:
  + The hospital’s contribution to the recent seventh ANZHFR Patient Level Audit40.
  + The Australian Atlas of Healthcare Variation 2015 Chapter 3.8- Hip fracture hospital admissions 65 years and over and Chapter 3.9- Hip fracture average length of stay in hospital by peer group- 65 years and over. See <https://www.safetyandquality.gov.au/our-work/healthcare-variation/atlas-2015/atlas-2015-3-surgical-interventions>
  + Analysis of adherence to the local hip fracture pathway and ERAS initiative.
* **Service development:** A description of proposed changes to the current model of care intended to enable delivery of the Hip Fracture Care Clinical Care Standard35. This could be informed by the ANZHFR documents32,40 and documentation from several Orthogeriatrics Services from Australia and New Zealand which feature in Appendix 1.

The section of the business plan could be structured as follows:

**Service development proposal:**

* **Current provision:** As described above;
* **Current performance:** As described above;
* **Service development:** This section will identify gaps that exist between current performance and best practice according to the Hip Fracture Care Clinical Care Standard35. This should include the rationale for appointment of any new staff (e.g. an orthogeriatrician, a hip fracture nurse specialist) or re-tasking of existing staff’s roles, and a comprehensive analysis of resources required to support such developments. This section will also include:
* **Service objectives:** A clear statement of what the new or refined service will deliver for a specific patient population within a given time frame;
* **Service process and outcome measures:** Based on international experience and publications and documentation from several Orthogeriatrics Services from Australia and New Zealand which feature in Appendix 1, provide an estimate of the impact that the new service will have upon delivery of the 7 Quality Statements of the Hip Fracture Care Clinical Care Standard35. Based on international experience, the impact on 30-day mortality could also be estimated over an appropriate time period.

**Strategic context:**

Description of how the proposed service development is aligned to **national health priorities**, including:

* **Australian Commission on Safety and Quality in Healthcare** works in four strategic priority areas[[42]](#endnote-42):
* Patient safety;
* Partnering with patients, consumers and communities;
* Quality, cost and value;
* Supporting health professionals to provide care that is informed, supported and organised to deliver safe and high-quality care.
* **Australian Commission on Safety and Quality in Healthcare** have beenmoving towards value-based healthcare[[43]](#endnote-43) by fostering system change in five key areas to:
  + Focus on people: understanding and responding to what matters to consumers and staff;
  + Measure and report on safety and quality: using data to identify, monitor and report on patient experience and outcomes, staff experience, costs and variation in practice;
  + Use evidence-based guidance and policy: using evidence to inform clinical practice and improvement;
  + Strengthen clinical governance: embedding accountability and strategies for safety and quality within organisational structures;
  + Embed safety and quality into national systems: using information and knowledge about safety and quality to inform national systems.
* **National Healthcare Agreement 2019**[[44]](#endnote-44)affirms the agreement of all governments that Australia’s health system should:
  + Be shaped around the health needs of the individual patients, their families and communities;
  + Focus on the prevention of disease and injury and the maintenance of health, not simply the treatment of the illness;
  + Support an integrated approach to the promotion of healthy lifestyles, prevention of illness and injury, and diagnosis and treatment of illness across the continuum of care;
  + Provide all Australians with timely access to quality health services based on their needs, not ability to pay, regardless of where they live in Australia;
  + Furthermore, negotiations for a new five year national heath agreement to commence 1 July 2020 and conclude on 30 June 2025 include four strategic priorities to reform our health system[[45]](#endnote-45):
    - Improving efficiency and ensuring financial sustainability
    - Delivering safe, high quality healthcare in the right place and the right time
    - Prioritising prevention and helping people manage their health across their lifetime; and
    - Driving best practice and performance using data and research.
* **Australian Government Department of Health** 10 year health plan[[46]](#endnote-46) based on key pillars and supported by major initiatives including:
  + Guaranteeing Medicare and improving access to medicines;
  + Supporting our hospitals;
  + Prioritising mental health and preventative health;
  + Life-saving and job creating medical research;
  + Ageing and aged care;
  + A stronger rural health strategy.
* Description of how the proposed service development is aligned to Local Health District (LHD) or health network priorities

**Implementation:**

* **Clinical governance:** In order to develop a multidisciplinary approach to hip fracture care in the particular institution, all relevant disciplines must take an active role in the development, implementation and ongoing oversight of the new service model. Accordingly, based on experience from other countries, a multidisciplinary stakeholder group should be established from the outset. This group must meet regularly for example monthly in the implementation period.
* **Continuous quality improvement:** A range of quality improvement methodologies have been applied to hip fracture care, including Plan-Do-Study-Act Cycles[[47]](#endnote-47) in accordance with the Institute for Healthcare Improvement (IHI) methodology and the value stream model known as ‘Lean thinking’[[48]](#endnote-48). Utilisation of such an approach should be considered by the multidisciplinary stakeholder group.
* **Participation in the ANZHFR:** The ANZHFR is now able to be fully implemented across New Zealand public hospitals. To date, 22 hospitals in New Zealand and 64 hospitals in Australia are participating in the ANZHFR. The ANZHFR collects patient data from participating hospitals which is then used for the annual bi-national report and provides real-time reporting on hospital data with comparisons against the country average, using measures from the Clinical Care Standard. The data can be used to inform ongoing quality improvement in the delivery of hip fracture care.

# Other useful resources

In addition to the various resources described above, the authors of the business plan may find the comprehensive suite of web-based resources from the following organisations useful.

* **Australian and New Zealand Hip Fracture Registry (ANZHFR):** To learn more about the ANZHFR, visit [www.anzhfr.org](http://www.anzhfr.org)
* to learn more about the **Hip Fracture Care Clinical Care Standard**, go to:

<https://www.safetyandquality.gov.au/our-work/clinical-care-standards/hip-fracture-care-clinical-care-standard>

* **Australian Commission on Safety and Quality in Health Care (ACSQHC):** The First Australian Atlas of Healthcare Variation 2015 developed by ACSQHC has a surgical interventions domain. The Atlas provides information on hip fracture care regarding hospital admissions and average length of stay by peer group- 65 years and over. Read more at:

<https://www.safetyandquality.gov.au/our-work/healthcare-variation/atlas-2015/atlas-2015-3-surgical-interventions>

* **Health Quality & Safety Commission New Zealand (HQSC):** The Atlas of Healthcare Variation developed by HQSC has a falls domain. The Atlas provides information on hip fracture care for all DHBs. Read more at:

<http://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/falls/>

* **HQSC Reducing Harm from Falls**: to read more about a new website for older New Zealanders with a focus on reducing the incidence and severity of falls and fractures, please visit:

<https://www.hqsc.govt.nz/our-programmes/reducing-harm-from-falls/news-and-events/news/3008>

* **My Aged Care**: [www.myagedcare.gov.au](http://www.myagedcare.gov.au)
* **Live Stronger for Longer**: [https://www.livestronger.org.nz](https://www.livestronger.org.nz/)
* **Fragility Fracture Network (FFN):** FFN is a global group of activists committed to improving care of individuals with fragility fractures. The FFN’s strategic goals are completely aligned to the case made in this business plan. Read more at: <http://fragilityfracturenetwork.org/>.
* **International Osteoporosis Foundation (IOF):** IOF functions as a global alliance of patient societies, research organisations, healthcare professionals and international companies working to promote bone, muscle and joint health. Read more at: <https://www.iofbonehealth.org/>.

# Summary and recommendation

During the last eight years, significant progress has been made in Australia and New Zealand in relation to hip fracture care and prevention. The Australian and New Zealand Guideline for Hip Fracture Care published in 201432 presented the most current synthesis of clinical evidence on hip fracture care in the world at the time, and was endorsed by the National Health and Medical Research Council in Australia and the following learned societies and NGOs:

* Australasian College for Emergency Medicine
* Australasian Faculty of Rehabilitation Medicine
* Australian and New Zealand Orthopaedic Nurses Association
* Australian and New Zealand Society for Geriatric Medicine
* Australian Orthopaedic Association
* Carers NSW
* New Zealand Orthopaedic Association
* Osteoporosis Australia
* Osteoporosis New Zealand
* Royal Australasian College of Surgeons

This guideline informed development of the Hip Fracture Care Clinical Care Standard35 which supports:

* People to know what care should be offered by their healthcare system, and to make informed treatment decisions in partnership with their clinician;
* Clinicians to make decisions about appropriate care;
* Health services to examine the performance of their organisation and make improvements in the care they provide.

The third Quality Statement of the Clinical Care Standard states that a patient with a hip fracture should be offered treatment based on an orthogeriatric model of care as defined in the Clinical Guideline.

The ANZHFR provides hospitals with an opportunity to benchmark the care that they provide for hip fracture patients – in real time – against the average performance in Australia and against the Clinical Care Standard.

**This business plan recommends that [Insert name of hospital] participates in the Australian and New Zealand Hip Fracture Registry and develops/refines the/an Orthogeriatrics Service to enable us to deliver the best standards of clinical care for older people in our locality who suffer hip fractures.**

# Appendix 1: Examples in Australia and New Zealand

A description of the approaches taken to participation in the ANZHFR and Orthogeriatric Services is provided for Toowoomba Hospital, St Vincent’s Hospital, Waitemata DHB and Waikato Hospital.

## Toowoomba Hospital, Toowoomba, Queensland

Toowoomba Hospital, QLD, has been entering data to the ANZHFR since September 2015. The early establishment of a Fractured Neck of Femur Working group with key stakeholders including Geriatrics, Orthopaedics, Anaesthetics and Nursing enabled identification of issues and to drive change. The ANZHFR data is a valuable source of information to track the effect of service improvements and provides great feedback to all the members of the team providing hip fracture care.

Preoperative medical reviews by our orthogeriatric service has improved from 56% of patients in March 2016 to 81% by March 2019. The Geriatrician reviews patients daily on weekday rounds, but the orthopaedic registrar now notifies the geriatric nurse of new patients presenting to ED during work hours, providing an enhanced opportunity for more patients to be reviewed by the Geriatrician preoperatively, particularly before the weekend.

One of the primary challenges for Toowoomba was to improve time to theatre, noting that many patients are transferred from one of 23 rural hospitals, or from outside the health service, as far away as Augathella Hospital (621km away). Initially, median time to surgery from first hospital presentation was 44 hours.

One strategy to improve time to surgery was to implement a Neck of Femur checklist for rural facilities within the health service, and shared for consideration of use with hospitals outside the area. It aims to ensure timely transfer and prompts consideration of key care components, such as nerve blocks. By November 2018, median time to surgery had improved and the rate of surgery within 48 hours for transferred patients had improved from a low of 57% in September 2015 to 73% in June 2017, and up to 93% in June 2018. The long-awaited addition of an extra operating theatre also enhanced access to surgery and our nerve block rate had increased to 89% from 75% in September 2015.

Sustaining these gains is never taken for granted. The next project is to improve documentation of the falls prevention aspect of the Hip Fracture Care Clinical Care Standard. Most importantly these improvements mean better care for our patients.

Monica McCarron, Clinical Nurse, Toowoomba Hospital, QLD

## St Vincent’s Hospital, Darlinghurst, New South Wales

The participation of St Vincent’s Hospital Darlinghurst in the Australian and New Zealand Hip Fracture Registry (ANZHFR) has been a significant undertaking, but one that is proving to be a worthwhile investment of time and resources. Hip fracture represents a ‘watershed event’ in the course of a person’s health, so having the Registry inform and encourage reflection on clinical practice is of major importance. St Vincent’s journey thus far with the Registry has been one of growth, learning and increased interdisciplinary collaboration.

As the size of the database has grown, it has become a job for more than one person. As such, our senior orthopaedic nurses have become involved. They speak to our patients about the Registry, and collect and add data. This process is evolving as a fantastic learning opportunity for our team, where our nurses are learning in-depth information about a patient’s journey through the experience of the person who has fractured their hip. I have greatly enjoyed engaging and educating our nurses about the national Hip Fracture Care Clinical Care Standard, not only from the nursing perspective but also from the surgical, allied health, and rehabilitation perspectives, and the experience of a patient transitioning back to home.

St Vincent’s Hospital delivers a ‘shared care’ model of care for our patients with a hip fracture. This model of care involves provision of an orthogeriatric service headed by Professor Sandy Beveridge. This provides a team approach to care between the surgical orthopaedic team and the medical geriatric team. The addition of the ANZHFR has complimented this shared model of care, and it provides a wonderful reference point for reflection on the current delivery of hip fracture care, as well as inspiration for future planning and quality improvement projects. So far, the Registry has informed the design of an orthogeriatric case conference form, which is currently being trialled. The form prompts review of key goals of care for the patient including the use of nerve blocks, cognitive screening, bone health screening and post discharge planning and interventions.

Looking forward, we hope to improve dissemination of Registry data to “bring to life” information for the purpose of feedback and quality improvement. We aim to initiate a 3-monthly reporting meeting by inviting the various medical and surgical teams and departments to allow all to see their hard work in ‘black and white’ and review areas for improvement.

Further, the follow-up phone call has been extremely well received by patients and their families. The longer-term 120-day follow-ups provide a unique opportunity to gauge a person’s recovery and their progress through rehabilitation, and to screen for appropriate and effective use of analgesia. It is a wonderful opportunity to stay connected with those who may be vulnerable and benefit from further engagement with health services. Our anaesthetics team see the potential of the Registry follow-up to improve identification and education of patients who may be using opioids inappropriately, as this is a significant problem in our community.

The potential of the Registry to stimulate and encourage research projects, improve practice and provide recognition for local achievement, is a wonderfully positive addition to St Vincent’s mission to provide excellence in health care for our community. The Registry is one-step towards closing the care gap for patients who suffer this often life changing injury.

Katherine Paulette, RN Orthopaedic Care Coordinator, St Vincent's Hospital Darlinghurst

## Waitemata District Health Board (DHB), New Zealand

Waitemata DHB contains the largest population group in the country. North Shore Hospital (NSH) have been part of the ANZHFR since 2015 and recorded over 400 hip fractures last year, from a pool of 62,000 residents aged 70 years and older.

This high demand resulted in the creation of a novel perioperative model in early 2018. This orthogeriatric-chaired service incorporates a multidisciplinary approach to patient care from admission to discharge. All five services: ED, orthogeriatrician, anaesthetic, orthopaedic and older people service departments collaborate and meet on a regular basis to ensure a seamless perioperative care model. One example is a daily morning triage meeting between the surgeon, orthogeriatrician and anaesthetist to prioritise and stabilise patients with hip fractures for their surgery.

There has been substantial improvement arising from this model of care. 93% of patients were operated within 48 hours of admission, and 65 % within the first 24 hours. This figure improved further to 72% in 2019. Comprehensive pre-operative management facilitated this expediency to surgery, with 100% of patients reviewed by an orthogeriatrician during working hours, and 94% of patients receiving a femoral block performed in ED or during surgery. The comprehensive perioperative management and rapid access to surgery has reduced the median length of stay in the acute orthopaedic ward by 44% (now 5 days).

Both orthopaedic and anaesthetic departments at NSH have a strong research interest aimed at improving the outcomes of patients with hip fractures. Current research activities include TRANFUSE-NOF (liberal versus restrictive blood transfusion for NOF patients), MAPI-NOF (Maori/Pacific Islander NOF patients study) and HYPO-NOF (intraoperative hypotension in NOF patients).

## Waikato Hospital, New Zealand

Waikato Hospital is a large tertiary facility providing care for approximately 312 patients with primary hip fracture each year. Our DHB joined the ANZHFR a couple of years ago, and has been entering data since July of 2017.

Early outcome data from the Registry highlighted an opportunity for improvement, with only 27% of patients who presented in 2018 with a hip fracture, receiving a pre-operative medical assessment. In response, the orthogeriatric team ran a two-month scoping trial to establish their ability to provide a responsive, preoperative assessment service during normal working hours. Current resources were re-directed toward the early phase of the patient journey, as no extra medical or nursing hours were available for the trial.

Our aim was to pre-operatively assess 75% of all patients who presented to hospital between Sunday evening and midday Thursday, as there was no Friday availability.

The project was successful in a number of unexpected ways. Similar rates of early assessment were achieved for both patients who presented during regular work hours (n= 11/21; 52%) and those who arrived out of hours (n= 9/21; 43%). Of the 20 patients formally reviewed before the operating theatre, four were felt to have particularly benefitted: one patient’s operation was abandoned, with an end of life pathway deemed more appropriate; and for the other three patients, the identification of renal, cardiac and respiratory conditions enabled medical optimisation of co-morbidity prior to surgery.

As part of the trial, a systematic, multidimensional tool was developed for pre-operative patient assessment and it was found to be particularly helpful. As a result, the tool has been adopted for use across the entire hip fracture cohort.

Sandra Cate, CNS Ortho-Geriatrics, Waikato Hospital

# Appendix 2: ANZHFR Participation

**What does your hospital need to do?**

To contribute patient-level data to the ANZHFR, hospitals need to have both ethics and governance/locality approval. Data collection is ongoing from the date of governance/locality approval. To commence the approval process, contact the Registry Manager in Australia.

In Australia, the Registry Manager will undertake the majority of the administration required to get ethics approval for sites to contribute patient-level data. The Registry Manager will work with the designated person at each new site to ensure the local research office has all the information they need to undertake the governance review. The ANZHFR needs the following information to start the approval process:

* A local clinical lead (Principal Investigator) and site co-ordinator (Associate Investigator);
* A short CV for each investigator.

**Recommendations for local governance of participation?**

In order to develop an effective and efficient multidisciplinary approach to hip fracture care in a hospital (the site), all relevant disciplines must take an active role in the development, implementation and ongoing oversight of participation in the Registry. This also encourages local initiatives to improve the quality of hip fracture care provided to patients at each site.

Based on experience from other countries, establishing a multidisciplinary, hospital stakeholder group at the outset helps achieve successful implementation of the ANZHFR at a hospital. The stakeholder group may include representatives from medicine (geriatrician or general physician), surgery (orthopaedics), nursing and allied health, and representatives from other areas of the hip fracture care journey may also be included: anaesthetists, emergency physicians, rehabilitation specialists and fracture liaison coordinators. It is possible a group will already exist as part of local efforts to create a whole of system approach to falls and fracture management.

At a site, a local clinical lead (Principal Investigator) and site co-ordinator (Associate Investigator) need to be identified. These two people will be responsible for data quality and governance, and implementation of the ANZHFR at the hospital. Additional Associate Investigators may be included, and these people may represent supporting departments within the hospital.

**Who is the local Clinical Lead / Principal Investigator?**

The local clinical lead / Principal Investigator takes overall responsibility for the ANZHFR at each site. They will be from a clinical area involved in the care of people who have fractured their hip: geriatric medicine, orthopaedics or anaesthetics are the most common.

The responsibilities of the Principal Investigator include:

* Being a first point of contact for the ANZHFR, the hospital executive and other clinical departments;
* Data governance, ensuring the data is securely stored and only accessed by appropriate people, and de-identified before analysis and use;
* Checking the data is being collected and submitted on a regular basis;
* Checking the quality of the data submitted to the ANZHFR from their site;
* Using the data to improve the standard of care for patients with hip fractures.

**What is the role of the Site Coordinator/ Associate Investigator?**

The Site Coordinator / Associate Investigator is involved in the day-to-day activities of patient identification, provision of information sheets to patients and/or their families, data collection and data submission to the ANZHFR. They may be nurses, allied health clinicians, fracture liaison coordinators, or junior doctors.

The responsibilities of the Associate Investigator include:

* Being a point of contact for the ANZHFR;
* Being a point of contact for patients with a hip fracture and their families;
* Ensuring the data is securely stored and only appropriate people have access to the data;
* Overseeing data collection and submission of data to the ANZHFR.

If a Clinical Lead / Principal Investigator or Site Coordinator / Associate Investigator steps down from the role or moves to another hospital, he/she should advise the ANZHFR and provide details of the new investigator. Notification to the research office of change in personnel will be done by the ANZHFR, with the support of the local investigators.

# Appendix 3: ANZHFR - How to get started

**Familiarisation with Demo Website**

As a way to get an idea of the mechanics of data entry and what data fields are collected, log on to the demo website via the ANZHFR website [www.anzhfr.org](http://www.anzhfr.org).

**Familiarisation with Data Dictionary and Data Collection Form**

Please note that Hip Fracture Clinical Care Standards35 have just been formally adopted by both Australia and New Zealand. This will entail some additional fields in the data set to reflect these standards. This will start on 1st January 2017.

1. Data dictionary:
   1. This is a large document that details the definition and purpose of each of the approximately 56 data items;
   2. On first read this should only be scanned so that you know what it contains and to then use it as a resource as needed.
2. Data Collection Form:
   1. The main data collection fits on both sides of a single A4 sheet of paper. Most of the data items are straight forward to understand, but we think it would be worth going through each item one by one with us to ensure interpretation of each item is correct at the start;
   2. The 120-day post-surgery follow ups are straight forward;
   3. There are a couple of process issues to be aware of and so we would like to discuss aspects of this process before you start.

**Website**

1. Once your hospital has site approval we will organise:
   1. For your hospital to be added to the live website;
   2. Logons for staff that will be involved.
2. Please note there are no charges to your hospital for participation in the registry.

**Setting up to collect data**- **time involvement**

1. Completing data sheet:
   1. If doing this by sitting at the clinical workstation and with the notes it will take 10-15 minutes;
   2. If doing this on a ward round – it shouldn’t add any time to the ward round as the majority of items you will want to know as part of clinical care.
2. Entering the data on to the web-site:
   1. This will take about 10 minutes per patient;
   2. The website is optimised for mobile devices and so you don’t have to use a desktop computer;
   3. Administration staff can enter the data and save on clinical time.
3. Follow up phone calls:
   1. These take 5-10 minutes;
   2. The information required is simple and can often more easily obtained by a source other than the patient;
   3. It is an advantage if you know the patient and family, have identified the correct person to phone and have already warned them that they will be contacted;
   4. As many patients will be in residential care, we suggest using your local networks to raise awareness about ANZHFR within the Residential Aged Care sector. It may help if they realise that they may be contacted as part of the follow up.
   5. The information provided to the Ethics Committee on this topic is listed separately at the end of this document.

**System of Data Collection**

1. There is no one correct method for sustainable data collection.
2. We recommend a team approach to developing this reflecting both Orthopaedic and Geriatric Medicine interests. (Also consider Emergency Department, Anaesthetics, Theatre staff, although a small group is likely to be more effective):
   1. This “team” can also review the results on a quarterly basis (see below).
3. Feedback from the NHFD in the UK has the following suggestions:
   1. The key is having interested and committed person(s);
   2. It works better if these persons are involved in the care delivery;
   3. Nursing roles tend to be the most reliable;
   4. Sustainability needs to be considered: holiday and sickness cover etc;
   5. Clerical staff can enter data, saving on clinical time;
   6. It is suggested that there is one person with overall responsibility (usually an SMO). Data accuracy and completeness can be checked by this person by randomly checking say 10% of entries. This person can chair the quarterly “team” review meetings.
4. Consider the benefits of the Registry providing information on how hip fractures are being managed in your hospital:
   1. Quarterly reports on a number of measures (e.g. time to surgery) will be shown in the web site comparing your hospital with the average for all contributing Australian hospitals;
   2. You will be able to download all your data into a spread sheet for your own analysis.

# Appendix 4: Business change template

| **Business Change Summary** | | | | |
| --- | --- | --- | --- | --- |
| **Directorate** |  | | | |
| **Health Unit** |  | | | |
| **Division / Dept / Unit** |  | | | |
| **Title/Name** |  | | | |
| **Case for Change** |  | | | |
| **Description of Business Need** |  | | | |
| **Cost/benefit proposition** |  | | | |
| **Current pathway** |  | | | |
| **Proposed pathway** |  | | | |
| **Implementation plan** |  | | | |
| **Implementation costs** |  | | | |
| **Net annualised recurring costs** |  | | | |
| **Impact on funded FTE plan** |  | | | |
| **Source of funds** |  | | | |
| **Expected Start Date** |  | | **Expected End Date** |  |
| **Risk** | | | | |
| **Are there any significant risks?** | | **Yes**  **No**  **<If yes, please provide details below of the identified risks.>** | | |
| Risk of not implementing:   * …   Risk of implementing:   * … | | | | |

| **Financial analysis (include all incremental costs for FTE (e.g. laptop etc)** | | |
| --- | --- | --- |
| **Item** | **Annualised Value** | **Specify nature of revenue and costs** |
| **Revenue** | $ | ***(include additional funding if confirmed)*** |
| **Salary and wages** | $ |  |
| **Proposed savings** | $ |  |
| **Goods and Services** | $ |  |
| **NET ANNUALISED COST** | $ |  |
| **Capital expenditure required** | $ |  |
| **Where a net cost arises, please provide an explanation on funding source below** | | |
|  | | |

| **Detailed commentary and alternatives** |
| --- |
| **Include commentary on the initiative and other options considered.** |
|  |

| **Key performance indicators and evaluation measures** |
| --- |
|  |

| **Existing Approved Budgeted Staff Plan (show detail as they exist in the current staff plan)** |
| --- |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **Total FTE:** | **0** | **$** | **$** | **$** | **$** | **$** | **$** | **$ -** | **$ -** | | **Position Grade** | **Position Grade Year** | **Total Position FTE** | **Base** | **Total Annual Leave Provision** | **Allowances [Ex Super]** | **Allowances [Inc Super]** | **Base Sick Leave** | **Base Long Service Leave Provision** | **Super- annuation** | **Total** | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |

| **Proposed New Funded Staff Plan (positions to be added)** |
| --- |
| |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **Total FTE:** | **0** | **$** | **$** | **$** | **$** | **$** | **$** | **$ -** | **$ -** | | **Position Grade** | **Position Grade Year** | **Total Position FTE** | **Base** | **Total Annual Leave Provision** | **Allowances [Ex Super]** | **Allowances [Inc Super]** | **Base Sick Leave** | **Base Long Service Leave Provision** | **Super- annuation** | **Total** | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  | |

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