

## Chapter 2: Model for fragility fracture care in South Australia

### 2.1 Summary

Fragility fractures are fractures that occur in the setting of decreased bone density. Over 90% occur in the older population and are due to low impact injuries causing minimal trauma. Weight bearing bones, including the femur, pelvis, humerus, radius and vertebrae, are the bones most commonly affected by fragility fractures.

With the ageing population in South Australia fragility fracture rates are set to rise by at least ten percent every five years for at least the next 15 years. Management of these fractures have a significant cost on the health care budget with over \$1.9 billion in direct costs spent per year in Australia on hospital treatment, rehabilitation, therapy and home care (OA, 2007<sup>4</sup>). Hence the need to develop a model of care in this State for the management of fragility fractures across the continuum that ensures sustainability of service provision to this population group now and into the future.

This chapter outlines a model for the provision of care across the continuum for South Australians who experience a fragility fracture.

Primary prevention is an important driver in decreasing the incidence of fragility fractures however it is not covered in this model as the SA Health Primary Prevention Plan will address health promotion, prevention and at risk populations for falls and fragility fractures.

### 2.2 Key recommendations

#### Acute management (including hospitalisation)

- > Fragility fractures not requiring surgical intervention to be managed in the community where possible, with access to community based rehabilitation services and community support
- > Non-surgical management of fragility fractures requiring hospitalisation to occur in Acute Care of the Elderly (ACE) or Geriatric Evaluation and Management (GEM) Units
- > Individuals requiring surgical management of fragility fractures to be managed in hospital with a focus on ortho-geriatric care.
- > Hospital based fragility fracture coordination to occur within the multi-disciplinary teams in development of patient care plans ensuring appropriate supports, rehabilitation and follow up is organised on discharge and secondary prevention commenced

#### Post-acute inpatient rehabilitation

- > Availability of inpatient rehabilitation for individuals not ready to return directly home from the acute hospital but who show potential for improvement
- > Inpatient rehabilitation to be multi-disciplinary and coordinated with goals and discharge plans set collaboratively with the individual and family / carer
- > For individuals not able to achieve a level of function and safety that allows discharge home, then options including permanent residential care and residential transition care need to be considered
- > Appointment of hospital based fragility fracture coordinators to work within the multi-disciplinary teams in development of patient care plans ensuring appropriate supports, rehabilitation and follow up is organised on discharge and secondary prevention commenced

#### Community based rehabilitation and reintegration

- > Availability of ambulatory and community based rehabilitation programs (including rehabilitation in the home, centre based day rehabilitation and community programs) to facilitate function, independence and re-integration into everyday community living post fragility fracture.

## Ongoing maintenance of function

- > Access to community services, which may require partnerships with other government, non-government and private organisations following completion of an inpatient and/or community and ambulatory rehabilitation program to ensure the individual's ongoing recovery and maintenance in the community
- > Availability of therapy to individuals returning to residential care facilities who have the potential to improve, in particular regain mobility.

## Secondary prevention

- > Access to specialist follow-up by geriatrician, rehabilitation specialist and /or orthopaedic surgeon depending on individual's needs
- > Risk assessment and treatment following fragility fracture to minimise further occurrence of such fractures. Intervention to be provided as per national evidence based guidelines addressing falls prevention and osteoporosis management
- > There would be the requirement for the coordination of care of the fragility fracture patient in the community in the initial phase following discharge, including secondary prevention, monitor implementation strategies, assist with linking to other programs / services as appropriate, provide follow up care and respond to queries of individuals / families / carers
- > Availability of specialist follow-up by geriatrician or other specialist depending on individual's needs

## Specific populations

- > Secondary prevention and therapy services need to be provided to individuals living in residential aged care who experience fragility fractures
- > Younger individuals who experience fragility fractures need to have their specific needs addressed including employment, relationships and income support

## 2.3 Background

Fragility fractures including hip, vertebral, humeral and pelvic fractures are set to rise over the next 15-25 years by as much as 15% every 5 years given Australia's ageing population (OA, 2007)<sup>4</sup>. Similar trends are expected in South Australia.

Ten percent of individuals with a hip fracture die within a month and one third are deceased at a year post injury, also for many others their hip fracture may be a contributor to their final illness (BOA, 2007)<sup>5</sup> impacting significantly on their independence and functional ability to participate in everyday activities and life roles.

Strong evidence exists that care for individuals experiencing fragility fractures needs to be provided by a multi-disciplinary team with an orthogeriatric model of care advocated. Surgery within 24 hours is a key to maximising outcomes post fragility fractures as is the provision of rehabilitation and secondary prevention intervention.

These key factors are outlined in a range of national and international best practice guidelines and position papers.

Further detailed information, evidence and South Australian specific data on fragility fractures is contained in Appendix 2

## Current services

Provision of services to individuals experiencing fragility fractures is variable across the city and between metropolitan and rural areas. Most hospitals provide initial management of fragility fractures with referral to rehabilitation services and long-term osteoporosis management on an ad hoc basis dependent on availability of knowledge of local services and referral pathways, which may be quite different.

There is a range of community services providing intervention with variability in focus, coordination, communication and consistency across the sector and the acute / community interface. The process by which individuals and primary care services access community based services can be unclear, leading to under-utilisation of these services and perceived deficiencies in meeting individual needs.

## 2.4 The Model

### 2.4.1 Organisation of services

#### Key requirements

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- > Individuals who have experienced a fragility fracture will require varying levels of intervention, management, identification of risk and ongoing support. Some will require hospitalisation whilst others will not and may be best managed as an outpatient, by their general practitioner or an emergency presentation without admission. The required intervention will be determined by a number of variables including age, co-morbidities, cognitive status, nature and cause of fracture, social situation, availability of informal and formal supports and confidence.
- > For individuals requiring hospitalisation following a fragility fracture, services should be based on an orthogeriatric model of care – that is, collaborative care with orthopaedic and geriatric medicine services working together in the delivery of care to the individual. This model of care advocates: the orthopaedic surgeon having key responsibility for orthopaedic issues; and the geriatrician / physician being responsible for medical problems, coordinating appropriate rehabilitation and planning discharge in collaboration with the orthopaedic surgeon, multi-disciplinary team and individual / family.
- > Multi-disciplinary team structure that fosters communication, teamwork and patient outcomes is essential. The multi-disciplinary team should include geriatric / rehabilitation medicine, orthopaedic surgery, nursing, physiotherapy, occupational therapy and social work with access to other disciplines such as dietetics, on a consultative basis as required.
- > This model recognises that traditional orthopaedic care may not be optimal for older people who often have medical and psychosocial issues that may complicate their presentation, treatment and recovery.
- > In brief, the key features of an orthogeriatric model of care are:
  - care provided collaboratively by orthopaedic and geriatric medicine
  - early comprehensive assessment
  - multi-disciplinary team approach
  - rapid definitive treatment
  - early mobilisation
  - regular communication and consultation with the individual and their family re assessment, goal setting, progress and discharge planning
  - secondary prevention
- > Whilst geriatricians have traditionally provided this orthogeriatric service, other physicians with an interest in peri-operative management of older people, rehabilitation, discharge planning and osteoporosis management will have the skills to provide such a service.
- > It is essential that care is client-centred, seamless and the number of transfers within and between services an individual experiences is minimised to avoid omissions and errors resulting from inadequate handover of information impacting on continuity of care.
- > Hospital-based fragility fracture coordination within the hospital setting will assist in ensuring continuity of care within the hospital environment for individuals experiencing a fragility fracture. Similarly the requirement for the coordination of care of the fragility fracture patient in the community will ensure follow up occurs, in particular for secondary prevention strategies, for all individuals whether admitted to hospital or not.
- > Older people presenting with fragility fractures that do not require surgery but do require hospitalisation should be admitted under the care of an aged care / geriatric team, such as a Geriatric and Evaluation (GEM) Unit with consultation provided by the orthopaedic team as required.
- > Collaborative models of orthogeriatric care must be available in all metropolitan public hospitals and country general hospitals providing management of fragility fractures.
- > Access to inpatient rehabilitation needs to be available to individuals requiring this level of care at the metropolitan general hospitals and country general hospitals with designated rehabilitation units. Rehabilitation may be provided in either an orthopaedic rehabilitation unit or a GEM unit, depending on the needs of the individual to be addressed.
- > Ambulatory rehabilitation programs including home based rehabilitation and centre based day therapy for individuals after experiencing fragility fractures need to be available and easily accessible within a reasonable travelling distance. This may mean in rural areas the establishment of satellite services or outreach teams.

- > Community programs and services are essential to facilitate the fulfilment of an individual's goals, maintenance of functional gains and ongoing monitoring and implementation of secondary prevention strategies such as falls risk minimisation. To achieve this, partnerships between health and other organisations including private, non-government and Commonwealth funded services need to be established and fostered.
- > The role of general practitioners is also very important in the care of individuals experiencing fragility fractures and it is essential liaison occurs between general practitioners and others involved in the individual's care (e.g. hospital staff, community service staff, rehabilitation program staff) from an early stage to ensure continuity of care and the individual achieves the best functional outcome and recovery. The general practitioner must be contacted at least once by the treating hospital team prior to discharge and provided with an accurate written discharge summary in a timely manner summarising the salient medical issues, changes to medication and follow up arrangements including referrals to other services.
- > Coordination of the care of the individual experiencing a fragility fracture is important both in the inpatient area and in the community to ensure there is a mechanism for the flow of care and to provide initial follow up to individuals post discharge with a focus on ensuring secondary prevention recommendations are implemented.
- > The identified personnel undertaking the community based fragility fracture coordination should provide follow up to individuals discharged directly from the emergency department following presentation with a fragility fracture or those managed by their general practitioner without hospital admission.
- > It is important in the organisation of services for fragility fractures, that there are multiple points of access to the various services depending on the individual's need and that access is not based on a linear process of having to access one service before being eligible for another. There needs to be the option to re-access higher acuity care for further input post-discharge if the individual requires such input.

## 2.4.2 The continuum of care

There are a number of phases along the continuum that an individual who has experienced a fragility fracture may experience. This is schematically presented in Figure 2.

This is presented as a linear process across the continuum for clarity, however it is acknowledged that this does not occur in reality and that the phases an individual experiences is determined by a number of factors including severity and type of fragility fracture, need for hospitalisation, pre-morbid function, social supports, functional capacity and recovery potential; hence the need for multiple access points to services and the ability to move back and forward between services depending on the individual's specific needs. Integration of services across the continuum is the key, not how and when services are accessed.

The phases addressed below are as follows:

- > Primary prevention
- > Acute management
  - By general practitioner – not requiring acute hospital input
  - By emergency department / acute hospital
  - For those requiring surgery - peri-operative care and surgical management
  - Ongoing acute inpatient care (including post-operative care for those who have surgery)
- > Post-acute inpatient rehabilitation
- > Community based rehabilitation and re-integration
- > Ongoing maintenance of function
- > Secondary prevention

### Primary prevention

- > As noted above, primary prevention, i.e. identification and treatment of risk factors such as osteoporosis, falls risk and promoting a healthy lifestyle before the initial fragility fracture occurs, is outside the scope of this model and will be addressed in the SA Health Primary Prevention Plan. However the importance of primary prevention to reduce the probability of a fragility fracture is acknowledged especially for older people. The strategies for primary prevention of fragility fractures are similar, if not identical, to secondary prevention, as outlined below.



## Acute management

### Key requirements

#### By general practitioner – not requiring acute hospital input

- > Not all individuals experiencing a fragility fracture will require hospitalisation or present to an emergency department for assessment and management.
- > Some individuals will attend an appointment with their general practitioner due to pain, decreased mobility, function or other symptoms and subsequently be diagnosed with a fragility fracture (e.g. vertebral) following investigations. The diagnosis may even be made coincidentally following diagnosis of an asymptomatic fracture during investigation for other pathologies. The general practitioner will be able to manage the ongoing care of most of these individuals, however if given the severity of the injury this is not possible, then the general practitioner will refer the individual to the local emergency department.
- > For those individuals whose ongoing care in the community is managed by their general practitioner easy access and referral needs to be available to community based rehabilitation services (e.g. rehabilitation in the home, centre based day rehabilitation and community programs) to facilitate an individual's recovery and independence.
- > Referral to identified personnel undertaking the fragility fracture coordination in the community should also be made by the general practitioner at this time to ensure secondary prevention is addressed and any other relevant needs to support the individual's independence in the community.

#### By emergency department / acute hospital

- > Identification and confirmation of fragility fracture in the emergency department, usually with the use of plain x-rays, however in some instances other techniques such as nuclear medicine bone scans, CT scans or MRI may be required if uncertainty exists
- > Decision to manage fracture surgically or conservatively needs to be made promptly. To maximise an individual's rehabilitation potential and functional outcomes, surgery should occur within 24 hours of injury provided medical condition permits.
- > If fracture is to be managed non-operatively then the individual should be transferred to an Acute Care of the Elderly (ACE) or Geriatric Evaluation and Management (GEM) unit or similar if admission is required for functional reasons.
- > Some individuals may be able to be discharged directly to outpatient care, appropriate community services and general practice. If this occurs then referral to a community based fragility fracture coordinator will ensure appropriate follow up. The general practitioner must also be informed so that ongoing care in the community can be provided.
- > Transfer from the emergency department to a definitive ward should occur as soon as possible, preferably within 4 hours, to minimise complications such as pressure areas and dehydration. Key pre-disposing factors to the development of pressure areas are impaired cognitive function, immobility, inactivity and incontinence. Adequate analgesia and hydration needs to be provided whilst awaiting surgery.
- > A medical (including cognitive and nutritional), functional and psychosocial assessment should be performed. This should include risk screening of pre-morbid abilities, potential for functional decline and complexity of discharge needs (e.g. HARP screening tool) as this will assist in guiding services needed across the continuum and discharge destination. Co-morbidities are likely to be present; those of particular relevance include chronic obstructive airways disease, congestive cardiac failure, recent myocardial infarction or unstable angina and recent symptomatic stroke. The presence of dementia also needs to be determined as such individuals have a high risk of delirium in the peri-operative period. A co-morbidity of dementia will also influence potential for recovery and discharge needs.
- > Ortho-geriatric care should commence at this time. Ideally all individuals should be assessed by the orthogeriatric medical team pre-operatively, even in the emergency department when possible.

#### For those requiring surgery - peri-operative care and surgical management

- > In order to maximise future rehabilitation potential, the surgical management of the fragility fracture must be performed by a suitably experienced surgeon utilising current recognised and evidence based operative techniques.
- > In order to minimise the risk of peri-operative complications and consequent delay in, and impact on, functional recovery during the rehabilitation phase, the anaesthetist must be suitably qualified, utilising a current recognised and evidence based anaesthetic technique, taking into account the circumstances of the individual.

- > It is essential that the surgical, orthogeriatric and anaesthetic teams work together in the surgical management of an individual's fragility fracture. In some instances, more thorough medical assessment, including sub-specialist (eg, cardiology) involvement, may be required pre-operatively.
- > Surgery needs to occur at an appropriate time to enable the provision of pre-operative assessment and post-operative management, including adequate medical support, to the individual with a fragility fracture and also maintain normal time routines (day / night). For example surgery should not occur at 2am in the morning because this is the only time operating theatres are available.

#### **Ongoing acute inpatient care (including post-operative care for those who have surgery)**

- > Multi-disciplinary team input during this phase should focus on encouraging the physical independence of the individual including mobility, balance, transfers, feeding and continence. It is imperative that early rehabilitation commences.
- > Mobilisation should commence within 24 hours post surgical treatment of hip fracture, bearing weight as tolerated provided no restrictions are in place. This should aim for sitting out of bed initially on day 1 followed by ambulation within this specified time period. An exception is individuals who require a period of limited weight bearing, such as those with unstable trochanteric fractures. Other fracture types may require different limitations on weight bearing at the discretion of the treating surgeon however mobilisation, including sitting out of bed and within said restrictions should be attempted day 1 post surgery.
- > Adequate pain relief needs to be prescribed, with simple analgesics given regularly and supplemented by other agents if required. Specific attention needs to be given to individuals with delirium or dementia with regards to pain relief as these individuals are often under-treated with analgesics, contributing to a worsening of cognition. Validated pain scales may assist in this situation. Reduced cognition will impact on progress and participation, thus impacting on functional outcomes. Involvement of an acute pain service may be necessary.
- > Common complications need to be monitored for and appropriately managed. These include pressure areas, delirium, urinary retention, constipation, deep vein thrombosis / pulmonary embolism, respiratory tract and urinary tract infections and risk of falls. Appropriate preventative strategies should be employed. Specific evidenced based delirium prevention measures need to be implemented.
- > Poor nutritional state can impact adversely on the outcomes of frail older individuals who experience fragility fractures. Therefore it is essential that nutritional assessment of the individual is undertaken at the earliest opportunity during this phase. Protein and energy supplements may need to be provided to improve the outcomes of undernourished individuals.
- > A medication review by a suitably qualified medical practitioner or clinical pharmacist needs to be undertaken and include early prescription of secondary prevention medications plus a critical review of medications that increase falls risk and cognitive impairment
- > The identified personnel undertaking the hospital based fragility fracture coordination needs to be alerted to the individual's admission and be available as a key contact point for the individual and their family / carers and commence planning the application of appropriate secondary prevention strategies (as outlined below) and screening for falls risk in conjunction with rest of the treating team.
- > The recovery prognosis following the fragility fracture needs to be assessed for and an individualised management plan formulated by the multi-disciplinary team in consultation with the individual and their family / carers. Use of a nominated key worker or the hospital based fragility fracture coordinator may facilitate this. This will be influenced by a number of factors including the individual's pre-morbid level of function and availability of social supports.
- > The development of an individualised management plan will guide early referral and review by a post acute rehabilitation service for the provision of ongoing rehabilitation to maximise an individual's independence, safety and function.
- > Individuals who are safe with their mobility, with or without aid, (i.e. have a low risk of falling), have family / carer supports and an appropriate discharge environment given their limitation should be considered for various discharge options including:
  - selective use of early supported discharge services such as rehabilitation in the home and centre-based day rehabilitation
  - transition care (community-based)
  - community programs / services e.g. Domiciliary Care SA, Commonwealth funded Day Therapy Centres, council services such as cleaning, shopping and transport
  - single discipline interventions (e.g. physiotherapy), either public or private.



The most appropriate discharge option should be a joint decision between the individual / family and multi-disciplinary team and will be influenced by social supports, functional ability and intensity of ongoing rehabilitation required.

- > Preparation for discharge needs to include the prescription and provision of equipment including walking aids, assessment of an individual's home environment with interventions as appropriate to facilitate safe discharge; this may include home modifications, equipment and appropriate community support services such as personal care, domestic assistance, respite, transport and shopping assistance. For some aspects of this to be facilitated the requirement for a home visit to be arranged may be necessary.
- > Individuals who have limited or unsafe mobility (require assistance or have weight bearing restrictions) and/or live alone with limited supports should be considered for a range of discharge options including:
  - inpatient rehabilitation for individuals requiring this level of assistance (based on intensity of therapy required and/or level of nursing and medical care required), this may be in a designated rehabilitation unit or a Geriatric Evaluation and Management (GEM) unit
  - residential transition care
  - return to local country health services (from either metropolitan hospitals or country general hospitals)
  - those with weight-bearing restrictions may require admission to a supportive environment with a restorative focus such as a non-weight bearing program, residential transition care or residential respite for the period of weight-bearing limitation prior to referral to an appropriate inpatient or ambulatory rehabilitation service once the limitations are lifted.

Similarly it should be a joint decision between the individual / family and multi-disciplinary team when deciding on most appropriate discharge option for these individuals and will be influenced by social supports, functional ability, intensity of ongoing rehabilitation required and potential to improve.

- > New admission to permanent residential aged care may need to be considered for some individuals, in particular for those with irreversible physical and/or cognitive disability as a result of their fragility fracture and co-morbidities. Although such decisions are not always easy at this early stage, early identification of these individuals will enable early referral to the relevant assessment services such as the Aged Care Assessment Team (ACAT) and assistance, support and advice to the family re the placement process. This will require social worker and welfare / placement officer input.
- > Individuals experiencing a fragility fracture who reside in residential aged care facilities (particularly high level (nursing home) care) should usually be discharged back to their facility once medically and orthopaedically stable. Those high level care residents who were mobile pre-fracture may have the potential to regain mobility and hence should be provided with appropriate therapy services within the nursing home environment to maximise their potential of recovery.
- > Individuals from low level (hostel) care may require a period of rehabilitation to reach a level of function and safe mobility compatible with this level of support. This may include referral to an intensive rehabilitation service (inpatient or ambulatory) or transition care program (residential or community) if such rehabilitation can not be provided within the facility.
- > Patient education, consultation and emotional support to the individual and their family / carers should be provided. This is of particular importance if the individual has cognitive deficits such as dementia or delirium.
- > Prior to discharge from the acute facility, the individual's general practitioner needs to be contacted re ongoing care needs (unless discharged to another inpatient setting). A referral to the community based fragility fracture coordinator also needs to occur to ensure follow up in the community. The hospital based fragility fracture coordinator could assist with both of these processes.
- > Secondary prevention should be routinely initiated during the admission as uptake rates post-discharge have been shown to be low even with information provision to individuals and primary care practitioners. The community based fragility fracture coordinators will have a key focus in ensuring uptake of secondary prevention strategies post discharge.
- > Appropriate orthopaedic follow-up needs to be arranged prior to discharge.



## Post-acute inpatient rehabilitation

### Key requirements

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- > The purpose of inpatient rehabilitation for an individual who has experienced a fragility fracture should be to maximise their functional potential with the aim of returning them to their usual accommodation as efficiently as possible.
- > The focus of this phase should be on achieving optimal independence in mobility, self care, continence and other activities of daily living. Interventions should focus on functional activities to facilitate regaining independence.
- > Multi-disciplinary intervention is essential and should include identification of previous function, supports and home environment, current functional ability and potential for recovery; case conferencing, goal setting, involvement of individual / family, setting of an individualised management / discharge plan and early referral to community agencies for post discharge supports / equipment
- > Individuals who progress to be safe with their mobility (with or without aid), have family / carer supports and an appropriate discharge environment despite any persisting functional limitations should be considered for various discharge options including:
  - selective use of early supported discharge services such as rehabilitation in the home and centre-based day rehabilitation
  - transition care (residential or community)
  - community programs / services e.g. Domiciliary Care SA, council services such as cleaning, shopping and transport
  - return to local country health services (from either metropolitan hospitals or country general hospitals)
  - single discipline interventions (e.g. physiotherapy), either public or private.

The most appropriate discharge option should be a joint decision between the individual / family and multi-disciplinary team and will be influenced by social supports, functional ability and intensity of ongoing rehabilitation required.

- > Individuals who make progress in their rehabilitation program but have ongoing limited mobility (require assistance or there are safety concerns) and/or live alone with limited supports are likely to need to consider the following discharge options:
  - residential transition care to allow more time for further recovery or to reach a decision about longer-term residence
  - new admission to permanent residential aged care.

Similarly this should be a joint decision between the individual / family and multi-disciplinary team when deciding on the most appropriate discharge option for these individuals.

- > Early identification of individuals who will require a new admission to residential aged care will enable early referral for assessment of residential care (such as the Aged Care Assessment Team) and assistance to the individual / family re the placement process. These individuals may have co-morbidities that impact on their recovery potential. However, need to balance the need to make an early decision against the possibility of further functional recovery.
- > Preparation for discharge needs to include the prescription and provision of equipment including walking aids, assessment of an individual's home environment with interventions as appropriate to facilitate safe discharge; this may include home modifications, equipment and appropriate community support services such as personal care, domestic assistance, respite, transport and shopping assistance. For some aspects of this to be facilitated the requirement for a home visit to be arranged may be necessary.
- > Consultation, education and emotional support to the individual and their family / carers should be provided throughout the inpatient rehabilitation stay.
- > Monitoring for medical complications needs to occur and include monitoring / evaluation for depression.
- > Prior to discharge the individual's general practitioner needs to be consulted re ongoing care needs. Referral also needs to occur to the identified personnel undertaking the community based fragility fracture coordination to ensure secondary prevention strategies and ongoing care needs are followed up on discharge.
- > During an individual's inpatient rehabilitation stay, there needs to be easy access to orthopaedic review as necessary in cases of surgical complications.. Regular orthopaedic review needs to occur with timely feedback to the inpatient rehabilitation team for individuals with weight bearing restrictions.
- > Appropriate orthopaedic follow-up needs to be arranged prior to discharge.

## Community based rehabilitation and reintegration

### Key requirements

- > On discharge from an acute or rehabilitation inpatient facility, individuals experiencing fragility fractures may need to be able to access ongoing rehabilitation in order to continue to improve their functional capacity and regain independence in their home and local community. Rehabilitation may take a number of forms including ambulatory rehabilitation, either home or centre-based day; and community rehabilitation programs such as those provided by Domiciliary Care SA and Commonwealth funded Day Therapy Centres.
- > Ambulatory and community based rehabilitation programs need to be responsive to the individual's needs, provide an individualised program of care to meet client goals, be responsive to changing client needs and facilitate re-integration into everyday community living.
- > Referrals to these programs should be made prior to an individual's discharge from hospital and services need to be available to clients at time of discharge or within a few days of discharge. For individuals requiring daily assistance with activities of daily living then the service should be available on the day of discharge. This will minimise the risk of re-admission, enable rehabilitation to be ongoing to achieve best outcomes and to minimise client and carer stress. Further, the individual should be provided with the contact details of services referred to at time of discharge.
- > It is acknowledged that some public, private and non-government organisations may have waiting lists for service provision. If this is the case, the individual needs to be informed of this prior to discharge and alternative arrangements made if they will not be able to manage safely at home whilst awaiting services.
- > For those individuals not admitted to hospital for management access to these programs without delay is important to ensure appropriate rehabilitation input (as also noted above).
- > Where possible the allied health and therapy staff providing the ambulatory and community based rehabilitation programs should be consistent to avoid confusion and client / carer stress from multiple agency / staff involvement.
- > Further, it is important that ambulatory and community rehabilitation programs liaise regularly with other service providers that may be involved in an individual's ongoing care in the community such as Community Aged Care Package providers and nursing services. Disability and aged care services should be able to modify their care plans as required to meet an individual's changed needs at the end of the rehabilitation process.
- > Cost should not impact on access to ambulatory and community rehabilitation programs.
- > Transport can often be a limiting factor to individuals attending a centre based rehabilitation program, this needs to be addressed to ensure that individuals are not disadvantaged in accessing a rehabilitation program if transport availability is an issue for them. Individuals should also be assisted to access transport services to attend follow up medical appointments as required.
- > Involvement of the individual's general practitioner is critical to ensure continuity of care and consistency of information provided.
- > Regular liaison with the identified personnel undertaking the community based fragility fracture coordination should also occur during and on completion of the community and ambulatory rehabilitation programs, ensuring a coordinated and continuous approach to care.
- > Patient and family / carer education, consultation and support should continue and focus on falls risk minimisation, adapting to any required lifestyle changes and participation in everyday community living activities.
- > At the completion of the ambulatory or community rehabilitation program, referrals need to occur to appropriate community agencies to meet ongoing care needs and maintain functional gains.

## Ongoing maintenance of function

### Key requirements

- > Varying levels of ongoing support in the community will be required by individuals experiencing fragility fractures, depending on their needs, recovery and family/carer support. The availability of community services to provide this support, depending on need, is critical to ongoing recovery and maintenance in the community.
- > A range of community services are likely to be able to meet the varying needs of individuals experiencing a fragility fracture and include Domiciliary Care SA, Community Aged Care Packages, Commonwealth funded Day Therapy Centres, single allied health disciplines such as physiotherapy and occupational therapy (private and public), exercise and balance classes, fitness classes and monitored home exercise programs. Many of these programs are limited to individuals aged over 65, equivalent services need to be accessible for those under 65 experiencing a fragility fracture.

- > Access to community services to review needs and any changes in function and the impact this has on independence, appropriateness of home environment and equipment requirements must be available to individuals. Further, individuals need to be able access episodes of rehabilitation if deterioration in their function is noted. Referral pathways need to be such that ambulatory and community programs can be accessed directly prior to a change in functional capacity to such a degree that hospitalisation is not required.
- > A focus on chronic disease self management, self directed exercise and attendance at balance, strengthening and falls prevention groups should be encouraged.
- > The general practitioner continues as a critical element in this phase providing regular monitoring of the individual who has experienced a fragility fracture to ensure their independence and functional gains achieved are maintained.
- > Specialist follow up by a geriatrician or rehabilitation specialist should be available depending on individual needs.

## Secondary prevention

### Key requirements

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- > The identification of personnel to undertake the coordination of the flow of care of the individual experiencing a fragility fracture is required to coordinate secondary prevention, monitor implementation of strategies, assist with linking to other programs / services as appropriate, to provide follow up care / intervention and respond to queries and concerns of individuals and their families in the initial period after return to the community.
- > Risk assessment and treatment following a fragility fracture needs to occur, based on national evidenced based health professional guides, position papers and recommendations (OA, 2009)<sup>4</sup>. Diagnostic and treatment strategies may include:
  - Bone Mineral Density scanning by dual emission X-ray absorptiometry (DEXA) for appropriate individuals
  - Basic screen for secondary causes of osteoporosis based on individual's risk profile
  - Increasing dietary calcium and Vitamin D intake, safe sun exposure and specific calcium and vitamin D supplementation
  - specific anti-resorptive treatments in eligible individuals
  - referral to community based falls and balance exercise groups for those at low to moderate risk of injurious falls
  - referral to specialist multi-disciplinary falls assessment clinics for those at high risk of injurious falls
  - referral to tertiary outpatient services for assessment of complex osteoporosis (e.g. in young patients or secondary to other medical diagnoses)
  - encouragement to maintain a healthy, active lifestyle (including a healthy diet and moderate intensity exercise) into older age
  - consideration of hip protectors for those residing in residential care.
- > Specialist follow up by a geriatrician or rehabilitation specialist should be available depending on individual needs

## 2.5 Specific populations

### Residential aged care - high care residents

People living in residential care / nursing homes are three times more likely to experience fragility fractures compared to the general population (BOA, 2007)<sup>5</sup>. Therefore it is imperative that secondary prevention measures are implemented for these individuals which may include calcium and Vitamin D supplementation falls risk assessment, hip protectors and consideration for anti-resorptive therapies in appropriate people.

Some high level care residents who were mobile pre-fracture may have the potential to regain mobility. Appropriate therapy services need to be provided within the setting of high level of care to enable such individuals to maximise their function / minimise dependency and maximise quality of life.

### Younger individuals experiencing fragility fracture

Younger individuals are more likely to have an underlying medical condition as the cause of the osteoporosis leading to fragility fracture. These individuals are therefore more likely to require further investigation into cause of osteoporosis and ongoing specialist management e.g. via a metabolic bone clinic.

Issues in regards to employment, relationships, income support and access to appropriate support services need to be taken into account when managing these individuals in order to maximise their quality of life.

### Individuals experiencing pathological fractures

Pathological fractures are fractures secondary to intrinsic bone pathology such as primary or metastatic malignancy, or less commonly metabolic bone diseases such as Paget's disease of the bone or infection of the bone such as osteomyelitis. The care for these individuals will be determined by the type of fracture, co-morbidities and other planned treatments with some managed as described for fragility fractures.

## 2.6 Workforce

The identification of personnel to undertake the coordination of care of individuals experiencing fragility fractures will ensure integration and follow up across the continuum and provide a clear pathway for these individuals to be pulled into the appropriate service stream.

**NB** Refer to Chapter 6 Workforce for the specific competencies related to the fragility fracture coordination role.