NSW Health

Leading Better Value Care

Osteoporotic Refracture Prevention

Site manual

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NSW GOVERNMENT

AGENCY FOR CLINICAL INNOVATION

Musculoskeletal Network

The Agency for Clinical Innovation (ACI) is the lead agency for innovation in clinical care.

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

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

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

Our innovations are:

- person-centred
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Contents

1. Introduction

The *NSW Model of Care for Osteoporotic Refracture Prevention* was revised in 2017.[1] The model of care is designed to support the implementation of a consistent approach to the manner in which osteoporotic fractures (commonly known as a minimal trauma or fragility fractures) are identified and managed. The model of care supports best practice coordinated, multidisciplinary care to improve outcomes for people with minimal trauma fracture, resulting in reduced refracture rates and the resultant health usage, morbidity and mortality that refracture causes.

Purpose

This site manual has been developed to support and guide local sites with the implementation of the *NSW Model of Care for Osteoporosis Refracture Prevention*. It outlines the key features and requirements of the model of care and provides supplementary tools and resources intended to guide services and local health districts in constructing their own localised model of care. The aim is to support the translation of evidenced based best practice into an effective and sustainable way of working.

It is envisioned that each local health district (inclusive of their primary health network) across NSW work proactively to review, select and implement a locally appropriate service, that is consistent with current guidelines, to ensure that refracture prevention strategies are addressed in order to improve patient outcomes, experience and satisfaction with care.

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2. Getting started: district implementation

Identify sponsors, clinical leadership and governance and service leads

Successful implementation of the model is dependent on an engaged and active team. A designated service lead, supported by a sponsor (senior hospital executive) and clinical governance (via a visible clinical leader) is essential. Importantly, successful implementation requires active involvement, commitment and ownership of the musculoskeletal services.

Executive sponsor
It is essential that executive and senior management support is identified at the outset. Their role is critical to the success in terms of expressing the value and importance of the musculoskeletal services. They will be a committed advocate and enabler of resources and will drive changes required to shift practice toward the model.

Clinical leadership and governance
Clinical leadership and governance must be identified to support the service. The clinical leader or champion should be a clinical expert with credibility in the musculoskeletal health specialty, with a special interest in the service. They are considered key influencers to support successful local service implementation. For example, the clinical leader may be a senior clinician from rheumatology, orthopaedics, endocrinology, and/or rehabilitation.

Service lead
It is recommended that a member of the team is allocated the role of service lead to provide leadership and coordination of the local musculoskeletal service implementation including the development, review and evaluation of service delivery. This role requires specific project management skills and dedicated project time. Potential service leads may be clinical leaders within musculoskeletal health, for example clinical nurse consultants, nurse managers, or senior allied health clinicians.

Roundtable discussion

A start-up meeting should be held at each district, at the beginning of service planning, for all key stakeholders and inclusive of service leads, clinical leads and executive sponsorship. Involvement in initial discussions may include: rheumatologists, orthopaedic surgeons, endocrinologists, general practitioners, rehabilitation physicians, pain specialists, geriatricians, nurses, allied health managers, fracture liaison coordinators, support staff, primary health clinicians and consumers.

Discussion should include:

- service and clinical governance
- the current context of service delivery
- the model of care
- how to implement local services in alignment with the model of care
- resource needs
- formalisation of the musculoskeletal steering group.

You may wish to consider the need for representation from the ACI Musculoskeletal Network to support planning for localised service delivery.

Musculoskeletal steering group

A musculoskeletal steering group is recommended to support service planning, implementation and to provide advice for service delivery in alignment with the model of care.

Members of the musculoskeletal steering group should be representative of senior hospital staff who are in a position to drive service establishment and delivery, provide advice, and advocate or escalate issues. Membership should consist of both clinical and managerial leaders who are involved or impacted by the service. The steering group could also include an Aboriginal liaison officer and consumer representative(s).

In some circumstances it may be appropriate to report to an already established governance committee (e.g. Leading Better Value Care) rather than establishing a specific musculoskeletal steering group, however adequate consideration of the needs of the musculoskeletal services must be assured.

Where district use specific musculoskeletal steering group, the group will report up to executive and/or the overarching governance committee on service progress.

Activities of the steering group will follow on from the initial roundtable discussions including the following.

- Define and document the steering group's terms of reference.
- Formalise the service and clinical governance framework.
- Identify and analyse the current approach to the service delivery (if any), e.g. data to inform service need, existing service provision and use.
- Review the model of care (and relevant supporting guidelines and standards) and consider how this will translate into local practice. For example conduct a self assessment, identify issues and gaps and prioritise solutions, consider service and resource needs.
- Plan the localised delivery of model of care and prepare for service delivery by the agreed launch date. For example service site or setting, infrastructure, technology, workforce, service pathways, participant journey, communication and referral pathways *(more detail is provided in Section 5 – Planning: Local Service Set Up).*
- Define the evaluation approach. For example key questions and data that will need to be collected and measured *(more detail is provided in Section 7 – Evaluation and Reporting).*
- Develop the communication plan. For example key messages, the method (meetings, newsletters, the local health district intranet, websites, emails, reports, presentations) and frequency.
- Consider the long term sustainability of the service.

Conduct a site assessment

The purpose of conducting the site assessment is to help services to identify current alignment with the model of care and to assist the preparation and planning to implement or improve the delivery of the model of care. A summary of the *Site Assessment Tool* is provided in Appendix 1.

Benefits of the assessment

- Generate awareness and understanding of the model of care, including underlying principles and elements of care delivery.
- Assist in developing a comprehensive and shared understanding of what currently exists for osteoporotic refracture prevention at a local level.
- Help plan for service delivery in new sites.
- Help identify current strengths and weaknesses in relation to implementation of the model of care.
- Identify the current gaps between what exists now and best-practice care as described in the model of care.
- Inform the development of local solutions to address gaps and issues.
- Highlight areas to target for improvement.
- Support the prioritising and planning for action and improvement.
- Track implementation progress over time.
- Identify health system changes to support implementation.

For services where there is no current provision of an osteoporotic refracture prevention service, the assessment tool can be used to aid the planning process for new services.

For sites that are already implementing an osteoporotic refracture prevention service (or elements of that service) this should be completed quarterly to identify progress made and priority areas for action.

It is recommended that a broad and diverse range of views are considered when completing the assessment, as it is not expected that any one person will have a complete and accurate understanding of what is currently in place.

This may be achieved by multiple stakeholders (e.g. fracture liaison clinic coordinators and team members, clinical leads and executive) completing the assessment from their perspectives, or completing the assessment as a group during a steering group meeting.

Additional implementation support tools

To further support implementation through the planning, assessing and operationalising stages, the ACI Clinical Program Design and Implementation Team has developed some additional resources.

The ACI **Implementation Support webpage** provides a number of resources and tools to assist the implementation process.

The **Implementation Guide** provides detailed guidance through the phases and steps involved in successful implementation.

The Centre for Healthcare Redesign provides capability development for the NSW Health workforce, **Accelerating Implementation Methodology (AIM)** is a two-day course that provides a framework for implementation and change management. AIM training may be useful development opportunity for service leads and managers to support successful implementation.

3. Planning: local service setup

Review key documents

All service sites should be familiar with, and understand the following key documents in order to guide evidenced based and best practice care for osteoporotic refracture prevention.

- ACI. NSW Model of Care for Osteoporotic Refracture Prevention, 2nd ed. 2017.[1]
- The Royal Australian College of General Practitioners. Clinical guideline for the prevention and treatment of osteoporosis in postmenopausal women and older men. 2nd ed. 2017.[2]
- Akesson K, Marsh D, Mitchell PJ, et al. Capture the fracture: a best practice framework and global campaign to break the fragility fracture cycle. 2013.[3]

Resource needs

Successful delivery of the model of care requires the consideration of the workforce, technology and infrastructure and equipment needs.

Workforce

FRACTURE LIAISON COORDINATORS

Central to osteoporotic refracture prevention services is the appointment of fracture liaison coordinators to provide care coordination and case management. They have a dedicated role in patient identification, assessment, education and referral in order to achieve early access to appropriate interventions and community support services that support reduced risk of refracture and effective management of bone health.

The fracture liaison coordinators must be employed at an appropriate full-time equivalent (FTE) with the capacity to successfully meet the cohort need of each service site and achieve full coverage of the local health district's geographical area. Consideration of baseline service data as well as determination of the realistic operational performance capacity for the coordinators will inform this allocation.

Fracture liaison coordinators (typically senior nurses and physiotherapists) will have extensive experience in the public health system, have tertiary qualifications and can demonstrate understanding of the clinical, social and psychological care needs of this population group with a chronic disease. This includes having:

- an in-depth understanding of the appropriate disease management requirements
- ability to express the importance of, and actively support adherence to interventions through behaviour change theory and application
- knowledge of the needs of the population group, as well as how and where to gain access to services to support self-management and maintain independence within the community.

A **Position Description Template** had been created to support the recruitment of suitable Fracture Liaison Coordinators to fulfil this position. See Appendix 2.

Some training and development may be required to prepare the appointed fracture liaison coordinator for the role. A key element to the *Model of Care for Osteoporotic Refracture Prevention*

is the provision of effective self-management support to empower and prepare people to manage their health and health care. Training in health coaching is recommended to ensure the coordinator has the skills and ability to deliver person-centred care addressing health literacy, shared decision making, self-management and behaviour change. The ACI Musculoskeletal Network is able to support access to health coaching training. This is detailed further in *Section 8 – ACI Support*.

Additionally, attendance at the ACI Musculoskeletal Network Peer Mentoring Workshops is desired. These workshops are held quarterly and are designed to provide support to staff and services implementing the model of care. This is also detailed further in *Section 8 – ACI Support*.

LEAD FRACTURE LIAISON COORDINATORS

Each local health district should allocate a senior clinician to lead the service provision across the local health district. This position will not only have clinical responsibilities but will also involve activities that support the development, implementation and delivery of services that are congruent with the model of care and that fosters a culture of quality improvement to maximise the impact of the service.

MEDICAL OFFICER

Medical officers must be identified who can support the osteoporotic refracture prevention service and provide clinical governance. They will also ensure a process is in place to facilitate timely access to care, ideally within the service, hospital or local health district itself. This involves accessing the necessary investigations and initiating the required medical management in people diagnosed with osteoporosis, including the prescription of osteoporosis medication as an addition to conservative care measures such as vitamin D and calcium supplementation. Services may choose to use a staff specialist, visiting medical officer (usually from the rheumatology or endocrinology speciality, but can be others as available locally) primary care clinician, or general practitioner for this role. If the service site decides to use a general practitioner, they must be willing to implement the model of care (i.e. contemporary evidence must be consistently applied in that setting) and formal arrangements for service delivery must be established. Considerations should be given to effective and efficient communication pathways to allow safe and secure sharing of patient information across settings, and ideally systems will be established for shared data recording. Irrespective of which model of medical involvement is used, processes should be in place for the service to document initiated medical treatment and ensure patient adherence.

MULTIDISCIPLINARY TEAM MEMBERS

The local service model must support access for all to a multidisciplinary team to meet the chronic care needs of the person accessing the service. This may include the use of existing internal clinical resources from public health service medical, allied health and nursing teams as well as through existing services in the primary care and community setting. With regards to osteoporotic refracture prevention the specific disciplines may include: endocrinologist, rheumatologist, rehabilitation specialist, geriatrician, pain medicine physician, orthopaedic surgeon, general physician, general practitioner, nurse, physiotherapist, dietician, occupational therapist, exercise physiologist and social worker.

ADMINISTRATIVE OFFICERS

This role is not to be underestimated. Administration officers at each site are needed to support the osteoporotic refracture prevention service and fulfil duties such as patient registration, booking patient appointments and providing patient reminders, ensuring communication between the

service and the primary and secondary care clinicians, billing, facilitation of patient reported measure collection, data entry and collation, and other administrative support as required.

Technology
The technology requirements to implement the model are to be considered early in the planning process. Delivery of the osteoporotic refracture prevention service will require the following.

- Establishment of local data collection and management solutions to assist with reporting requirements.
- Methods and tools to support fracture liaison coordinators in patient identification (ideally services work towards the development of IT functionality such as a patient identification and screening tool).
- Development of new forms required for documentation within clinical systems.
- Means in which to capture and document Patient Reported Measures

Thought may also be given to solutions to enhance the efficiency of work practices which may include:

- electronic medical record (eMR) integrated assessment and outcome forms and data extraction functionality
- discharge letter functionality within eMR
- electronic referral processes
- communication systems between service providers
- data tools to enable timely and efficient reporting and identifying quality improvement needs.

Infrastructure and equipment
The physical location of the service setting must be appropriately situated within the health service to allow convenient access and will be suitable to provide the service and address all components of the model of care. In determining the location of the service, thought should be given to the needs of the target population (e.g. age and mobility status), the requirements for efficient service delivery and the patient's journey and experience of care.

Consideration should also be given to the layout and space required to deliver the current and future operational needs of the service. For example if services plan of delivering group education sessions, a suitable space and access to the required equipment (computer, projector, screen, whiteboard, flip chart, chairs etc.) must be available. In order to undertake functional testing you may require enough space to conduct a timed up and go or a walk test.

If the purchase of any required equipment is needed, this should be enabled and arranged promptly. For example, in order to complete a thorough and comprehensive assessment you the following is required; sphygmomanometer and stethoscope, blood glucose testing machine, body weight scales, height measuring tools and a stop watch for timed mobility tests, anatomical models, posters, and others. Electronic devices for collection of patient reported measures can be sourced via eHealth NSW.

Preparing for service delivery

In preparing for service delivery, time must be allocated to work on the following.

- Mapping the person's journey and building the clinical care pathways. This will help to promote active identification, referral and ease of access.
- Ensuring appropriate reach and access for local community and priority population groups including older adults, socioeconomic disadvantaged, Aboriginal Australians, culturally and linguistically diverse groups.
- Establishing and documenting service delivery processes and procedures. These must be regularly updated, centrally located and easily available.
- Creating the evaluation and reporting methods and protocols, as agreed in the evaluation plan (*see Section 7 – Monitoring and Evaluation).*
- Developing service resources and materials, e.g. correspondence or letter templates, program pamphlets, assessment forms (if not accessing these in eMR), education packages, self-management plans, handouts, etc.
- Building and foster partnerships and collaborations both internally as well as within the community, i.e. create the linkages for multidisciplinary care, identify the self-management support services in the community, and develop service directories and referral pathways.
- Establishing communication protocols between the service and all treating and referring health professionals and services, particularly the primary health care provider.
- Communicating and promoting the service availability and access, as defined in the communication plan.
- Undertaking training and development needs, e.g. Health Coaching training, attending Peer Mentoring Workshops, consulting ACI or colleagues across other health services, etc.

Services implementing both Osteoporotic Refracture Prevention and Osteoarthritis Chronic Care Programs at the same time should consider collaborating in the development of service resources and materials and work on streamlining documentation and processes, where possible, to support moving towards a local musculoskeletal service model.

In a similar fashion, osteoporotic refracture prevention services may be able to leverage, modify and adapt existing Osteoarthritis Chronic Care Program materials and resources to address the specific requirements of the osteoporotic refracture prevention service and the target cohort needs.

4. Key elements of the NSW Model of Care for Osteoporosis Refracture Prevention

The *NSW Model of Care for Osteoporotic Refracture Prevention* provide an *established* and *documented* best practice approach for the prevention of refracture in people sustaining minimal trauma fractures. Services are required to provide care that is consistent with the key elements of the model of care.

Active identification

People aged 50 years or more presenting with minimal trauma fractures at acute, outpatient, community and primary healthcare settings will be actively identified.

Who?
The target population group for the model of care are people aged 50 years or more who present to a NSW public health facility having sustained a minimal trauma fracture.

How?
Services will be required to develop and refine methods and tools to support fracture liaison coordinators in identification of the target population group from which to enable secondary fracture prevention. This may include the use of relevant International Classification of Diseases 10th Revision (ICD10) codes, patient age, fracture type, etc.

What?
The ACI Musculoskeletal Network is working towards the development of IT functionality to automate patient identification and screening. The tool will screen all eMR data as per the determined selection criteria (i.e. Age >50yrs, ICD-10, any of the osteoporosis related codes, Medicare Benefits Scheme codes, keywords, etc.), and generate a report. From here the fracture liaison coordinator can review and triage to confirm suitability for participation. This may include the examination of admission records, progress notes, discharge summaries, x-rays, etc.

Communication and promotion of the service across all relevant areas within the local health district will increase awareness of the importance of refracture prevention, service availability and clinical pathways in order to support active identification and referral. Depending on local context this may include emergency department, orthopaedics, endocrinology, rheumatology, geriatrics, ages care, fracture clinics, falls prevention services, radiology, as well as primary care providers, etc. As previously mentioned it is beneficial to engage some of these key stakeholders in the program steering group to facilitate active collaboration and ensure ongoing communication across departments.

Access
All people identified within the target population group will be contacted by the fracture liaison coordinator to initiate secondary fracture prevention. This initial contact is used to provide health education promoting the importance of optimising bone health and facilitate the person's engagement in refracture prevention services. This initial contact with the person by the fracture liaison coordinator is considered the first clinical occasion of service (i.e. all people identified and contacted should be registered and recorded under the National Assessment Program (NAP) service types for osteoporotic refracture prevention). The contact must be documented in the clinical notes, summarising the discussion and outcomes.

The person will likely enter one of the following categories.

1. **Scheduled in for a comprehensive assessment with the osteoporotic refracture prevention service**
   Typically with the fracture liaison coordinator in the first instance. A confirmation letter including a patient information brochure should be posted out to the person. Where services require a referral from a general practitioner (GP), contact with the GP is made in order to receive the referral for service.
2. **Managed by their GP**
   Some people may already be, or may wish to be managed by their GP. A letter will be posted to the person to encourage a review with their GP regarding the assessment of their bone health and refracture prevention interventions. This should also be communicated to the persons GP highlighting the importance of, and requirements for, refracture prevention. These people should be flagged for follow-up (typically three months) to check on whether or not they have had their bone health assessed and as required strategies are in place for refracture prevention.
3. **Decline service participation**
   It is suggested a letter is posted to the person to reinforce the importance of bone health and refracture prevention, as well as indicating where they can receive care and who they should contact if they choose to engage in services in the future.
4. **Out of area**
   If a person has been identified but resides out of the area of the health service they will chose whether or not they wish to participate in the local service, be referred to the health service of which they reside or be managed by their GP. The ACI have developed an *Osteoporotic Refracture Prevention Program Service Directory* for NSW to assist making referrals to other service sites. If the person resides outside the state it is recommended a letter be sent to the person to prompt follow up with their GP.

Care coordination

Fracture liaison coordinators will work with people, their families and carers to facilitate the appropriate delivery of care that supports reduced risk of refracture and effective management of bone health.

Comprehensive assessment

Assessment will determine future fracture risk including bone health (i.e. osteoporosis) and falls risk, and is holistic and person centred with considerations for the medical health, physical functioning, comorbidity, psychological and social needs of the person.

The fracture liaison coordinator will be tasked with undertaking a comprehensive assessment for all people attending the osteoporotic refracture prevention service. As part of their role as care coordinator they will facilitate the appropriate delivery of care that supports reduced risk of refracture and effective management of bone health based on the outcomes identified through the assessment.

The Royal Australian College of General Practitioners (RACGP) guidelines for osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age provides evidenced based recommendations for assessment.[2]

In keeping with the chronic care approach of the model of care the assessment must be holistic and patient centred with considerations for the medical health, physical functioning and falls risk, psychological and social needs of the person. It should also include patient reported outcome measures that provide valuable information pertaining to the person's health, quality of life, or functional status (discussed in *Patient reported outcome measures* below).

Additionally, the access and facilitation of bone mineral density scanning and further investigations (typically blood testing and urine studies) to assess for underlying causes of low bone mineral density should be arranged (discussed in *Supported access to investigation* below).

It is suggested that the assessment form be developed and integrated within the eMR if available.

Risk factors for osteoporosis

The following lists some of the known causes of osteoporosis. Some are non-modifiable, others can be rectified with lifestyle changes, and others are related to disease states and their treatment.

NON-MODIFIABLE RISK FACTORS

- Female gender
- Older age in both men and women
- Family history of osteoporosis or minimal trauma fracture
- Late menarche
- Cessation of menstruation for periods of six months or more but not pregnant
- Early menopause
- Previous minimal trauma fracture
- Caucasian or Asian race

MODIFIABLE RISK FACTORS

- Low body mass index
- History of smoking
- Excessive alcohol intake
- Insufficient calcium in the diet
- Inadequate sunlight leading to vitamin D deficiency
- Sedentary lifestyle including lack of weight bearing exercise
- Excessive weight (recent studies suggest that hormones associated with obesity may impact bones)

DISEASE AND THEIR TREATMENTS

- Metabolic bone disease
- Inflammatory conditions, e.g. rheumatoid arthritis, inflammatory bowel disease
- Cystic fibrosis
- Malabsorption syndromes, e.g. coeliac disease, bowel resection
- Chronic liver or kidney disease
- Endocrine disorders, e.g. deficiency sex hormones men and women, hyperthyroidism, hyperparathyroidism, Cushing syndrome
- Glucocorticosteroids used for > 3 months
- Excessive thyroid hormone
- Long term heparin
- Anti-anxiety and antidepressants

- Anticonvulsants and neuroleptic drugs
- Aromatase inhibitors for breast cancer
- Glitazones for diabetes

Assessment of risk factors for osteoporosis
The assessment of risk factors should include:

- health and medical history, particularly identifying any risk factors and underlying causes of low bone mineral density
- family history, paternal or maternal history of osteoporosis, minimal trauma fractures and hip fractures
- height and weight
- fracture history, inclusive of mechanism and treatment of current and past fractures
- lifestyle behaviours, dietary calcium intake, vitamin D exposure, smoking, physical activity levels and alcohol consumption.

Risk factors for falls
The following list some of the risk factors considered to have a high association with falls.[2,4]

- Psychological factors, including fear of falling, depression and impaired cognition.
- Impaired physical function, limitations in mobility and undertaking the activities of daily living, including impaired balance, mobility or walking ability, muscle weakness or lower limb disability such as orthopaedic abnormality or poor sensation.
- Sensory or neuromuscular impairments, including deficits in vision, peripheral sensation, proprioception, vestibular function and reaction time.
- Medical conditions, including stroke, incontinence, acute illness, Parkinson's disease, dementia, arthritis, diabetes, orthostatic hypotension, foot problems and osteoporosis.
- Medications, use of multiple medications specifically benzodiazepines, antidepressants, anti-psychotics and psychoactive medications.
- Lifestyle factors, alcohol consumption, smoking, physical inactivity, under nutrition.

Screening for falls risk
The simplest form of falls risk screening that should be included into routine care is the person's history of falls in the past 12 months and their balance and mobility status.[4-5]

The minimum standard of care is to ask 'Have you had a fall in the last 12 months?'

If one or more falls is reported the person should be observed for balance and mobility problems, such as watching their gait, their transfers from sitting to standing or ability to stand on one leg. Preferably this should be assessed through the conduction of a simple and validated screening test.[6] *(see Falls risk screening tools).*

Consideration of the falls risk factors will also be used to determine those who are at greatest risk of future falls the need for a more thorough and comprehensive falls risk assessment. This can be achieved by incorporating falls risk factors screening into the assessment process or through the use of a multiple‑item screening tool which will typically consist of a small number of items (up to five) based on presence or absence of a risk factor (*see Falls risk screening tools).*

Importantly, if a risk factor is identified, interventions should be considered for that risk factor, even if the person is considered to have a low falls risk score overall.

Falls risk screening tools

TEST	DESCRIPTION	TIME	CRITERIA
The Falls Efficacy Scale-International (FES-I)[12-13]	A short, easy to administer self-report questionnaire that measures the level of concern about falling during social and physical activities inside and outside the home and whether or not the person actually does the activity. The questionnaire contains 16 items scored on a four-point scale (1 = not at all concerned to 4 = very concerned).	2-4 minutes	Adding the scores of all the items together, to give a total that will range from 16 (no concern about falling) to 64 (severe concern about falling). Scores >23 indicated high concern about falling.
Timed up and go (TUG)[5-8]	A simple and easy test to administer which provides a good indication of steadiness, impaired functioning and increased falls risk. Measures the time taken for a person to rise from a chair, walk three metres at normal pace with their usual assistive device, turn, return to the chair and sit down.	1-2 minutes	A time of more than 12 seconds indicates increased risk of falling.
Sit-to-Stand Test (STS)[9]	A simple and easy test to administer to measures lower limb strength, speed and coordination. It tests how quickly a person can perform a sequence of 5 sit to stands from a chair of a standard height (43cm)	1-2 minutes	A time of more than 12 seconds indicates increased risk of falling
Alternate Step Test (AST)[9]	Measures lateral stability and tests the time taken to complete eight steps, alternating between left and right foot, up onto a step that	1-2 minutes	A time of more than 10 seconds indicates increased risk of falling.

	is 19 cm high and 40 cm deep.		
FROP-Com Screen[10]	A validated risk screening tool for older adults (>60 years) living in the community. The three items are a history of falls in the past 12 months; observations of steadiness while standing up, walking three metres, turning returning to the chair and sitting down; and self-reporting the need for assistance in performing domestic activities of daily living.	1-2 minutes	A score of more than 3 indicates increased risk of falling.
Falls Risk Assessment Tool (FRAT)[11]	The FRAT has three sections: Part 1 - falls risk status; Part 2 – risk factor checklist; and Part 3 – action plan. The complete tool is a complete falls risk assessment tool. However, Part 1 can be used as a falls risk screen predicting falls risk status based on recent falls, medications, psychological and cognition.	1-2 minutes	Risk classified as low, medium or high by adding the four scores.

If not trained or confident in conducting falls risk screening tools, the **Clinical Excellence Commission's *NSW Falls Prevention Program*** provides further information for clinicians about falls screening and assessment and tools for testing a person's balance and/or strength.

Assessment of falls risk
People who perform poorly on a simple test of balance or gait, or on a falls risk screening should undergo a detailed assessment of their falls risk. Based on the identified risk factors an action plan should be developed to assist with the prevention of future falls.

Services should ensure pathways exist to enable people to access a detailed assessment of falls risk, which may include referral to falls prevention services, physiotherapy or occupational therapy services, either internal to the health services or externally through private providers or community services.

Predicating fracture risk
Absolute fracture risk calculators can be used to calculate a numerical risk of a fracture for that person. The absolute fracture risk is most commonly expressed as a person's percentage chance

of suffering a minimal trauma fracture over a given period of time, generally five or 10 years. In Australia, the most common absolute fracture risk calculators in use are:

- **Garvan Fracture Risk Calculator (GFRC)**[14-15]
- **Fracture Risk Assessment Tool (FRAX)**[16-17]

6.3.8 Clinical Assessment

The clinical assessment will be supported by the medical officer and may include:

- blood pressure (mmHg)
- heart rate (bpm)
- blood glucose levels
- clinical investigations including bone density scanning, imaging and pathology (discussed in *Supported access to investigation* below).

To complete the clinical assessment the coordinator may require some up skilling if they are not confident in carrying out some of these measures.

Co-morbidities

Understanding a person's comorbidities is an important part of providing chronic disease management services. A complete health and medical history including all current medications will help to identify any addition care needs and will allow coordinators to plan, facilitate and support people to access the care they need.

Psychosocial assessment

It is important to recognise that the needs of people with chronic diseases extend beyond the medical problem. Not only is it likely they will have multiple co-morbidities, there may be physical and functional limitations to consider or psychological or social factors impacting on their overall health and wellbeing.

A complete understanding of the person's needs and circumstances will ensure that all factors affecting a person's health and wellbeing are known and will facilitate better informed and appropriate planning of care.

Therefore be sure the assessment covers all these factors:

- physical and functional ability and limitations
- social history including social support and relationships
- mental health.

Standardised assessment tool can help facilitate drawing this information and may include the following Patient Reported Outcome Measures (discussed in detail in *Patient reported outcome measures (PROMs)* below).

Patient reported outcome measures

Valuable information about the person's health and well-being is gathered with the use of patient reported outcome and experience measures as part of the assessment and care process. Patient reported outcome measures (PROMs) are used to improve quality of care by informing care planning and management.

Benefits

Measuring and recording outcomes from the person's perspective (i.e. patient reported outcomes) will provide valuable information about the person's health and wellbeing and help to identify what is important to the person, as well as their specific care needs. Use of (PROMs) must be incorporated into the assessment process.

PROMs are (patient) self-completed tools or surveys that typically measure functional status, health related quality of life, symptom and symptom burden, and health-related behaviours such as anxiety and depression. PROMs are directly reported by the person without interpretation of the person's response by a clinician or anyone else and are considered core elements of a person-centred, quality-oriented healthcare system.

ADDITIONAL BENEFITS OF USING PROMS

- Establishing rapport and engagement with the person by identifying and focussing care on what is most meaningful and relevant to them.
- Gaining greater insight of the persons overall health by helping to uncover and address problems or needs that may have been missed otherwise.
- Providing immediate feedback to the person about their condition and progress. Similarly for the clinician it can monitor progression and fluctuation of a person's health status over time.
- Providing a more comprehensive picture of health service performance.

EXAMPLES OF PROMS IN MUSCULOSKELETAL SERVICES

- Quality of life and health status
    - Patient-Reported Outcomes Measurement Information System ® (PROMIS-29)
    - Assessment of Quality of Life (AQoL)
    - Short Form Health Survey (SF-36)
- Mental health
    - Depression Anxiety and Stress Scales (DASS 21) – to assess the core mental health symptoms of depression, anxiety and stress
- Fear of falling
    - Falls self-efficacy (FES-I)
- Pain
    - Visual analogue scale (VAS)

As a minimum, the ACI Musculoskeletal Network suggests the use of PROMIS-29 for all people attending the osteoporotic refracture prevention service to capture patient centred indicators of health status (see Appendix 3). It is envisaged that PROMIS-29 will be used broadly across the health system to promote a consistent approach to the collection of person-centred measures.

The PROMIS-29 is a set of person-centred measures that evaluates and monitors physical, mental, and social health. It includes seven health related quality of life domains: pain interference, pain intensity, physical function, fatigue, depression, anxiety, sleep disturbance and satisfaction with social participation.

In practice the PROMIS-29 tool can be used to screen a person's health across various domains and flag areas where further assessment may be required.

PROMs in practice

The ACI Patient Reported Measures program will be used to support and enable the use of PROMs into practice.

Services should consider:

- the process for capturing PROMs within the care process or work flow
- the preferred use of digital and/or paper-based surveys
- equipment needs (i.e. iPad or tablet)
- eMR integration (if possible)
- the need for a standalone database and processes for recording and monitoring data.

Each local health district or specialty health network has a patient reported measures officer who can assist with producing the most appropriate solution.

Monitoring mental health

Depression and anxiety are often more common in people with chronic conditions. All people will be screened for psychological distress.

- PROMIS-29 includes two domains for depression and anxiety which may be used initially to elucidate any concerns.
- DASS-21 may then be conducted to further define, understand and measure the severity of emotional states of depression, anxiety and stress, which can then be used to guide onward referral.

Comprehensive assessment in practice

The coordinators are not expected to know everything about all the conditions or problems the person may present with or be able to directly assist the person with all their needs. However they are required to have broad knowledge of a variety of chronic conditions seen in the community and the appropriate disease management. Most importantly their role is to oversee the delivery of comprehensive assessment and care, and to provide the vital link between the person and the health system more broadly including identifying service options.

Supported access to investigation

Access to further investigation will be supported. That may include bone mineral density scanning for either a definitive diagnosis (though not necessarily required to start treatment), to monitor treatment over time, or to assess for future fracture risk. Serum blood assays may also be indicated to look for underlying causal disease processes.

Bone mineral density testing

Supported access to bone density scanning is an important element of the model of care and local arrangements need to be made to support timely access to bone density scanning for people who have a minimal trauma fracture.

Bone density scanning may be used for the diagnosis of osteoporosis and osteopenia and in determining the need for medical therapy to decrease the incidence of further minimal trauma fractures. It may also be necessary for people with an existing osteoporosis or osteopenia diagnosis who have not had a recent bone density scan to monitor disease progression and inform the need for appropriate medical intervention.

To diagnose osteoporosis it is generally accepted that bone densitometry, also called dual-energy x-ray absorptiometry (DXA) is the mode of choice to measure bone density. However, in some regions, quantitative computed tomography (QCT) is used as an alternative to DXA. Based on advice sought from the ACI Musculoskeletal Network, DXA is the recommended technique to diagnose and monitor bone density in the management of osteoporosis. There are few longitudinal studies on QCT in predicting fracture and no evidence it is better than DXA. The dose of radiation in QCT is significantly higher than DXA and providers should justify exposing patients to a higher dose for no demonstrated benefit.

Some service will have access to DXA on site. If this is the case, a close collaboration with the bone density scanning department is important to ensure an allocation of appointments for people involved in the osteoporotic refracture prevention service to access investigations in a timely fashion.

Alternatively, linkages with local providers will be necessary to support efficient referral, timely access and seamless communication of the person's results and report to the osteoporotic refracture prevention service.

Medicare rebates are available for bone density testing in high risk categories, including all patients over 70 and for monitoring treatment and low bone density. A rebate is also available to confirm low bone density in a patient with presumed osteoporosis presenting with one (or more) minimal trauma fractures.

Other forms of testing

Additionally, further investigations may be monitored to assess the clinical risks.

- Plain x-rays to confirm the presence of spinal fractures.
- Blood tests may also be indicated to exclude other causes of bone mineral loss such as primary hyperparathyroidism, malabsorption, thyroid disease or vitamin D deficiency.

Referral for bone density scanning, imaging and pathology can be facilitated by the fracture liaison coordinator with the support of the medical officer within the osteoporotic refracture prevention service team.

Access to a consultation with medical officer at each service site will be arranged in order to review and discuss the outcomes of the investigations and initiate the required medical interventions as required.

Initiation of appropriate medical interventions

Required medical treatment will be initiated by the dedicated osteoporotic refracture prevention medical officer before handover to the person's GP. This treatment will include the prescription of an osteoporosis medication regimen as an addition to conservative care measures, such as vitamin D and calcium supplementation.

Osteoporosis treatment is efficacious and has demonstrated a reduced future fracture risk.[2] Services that include the initiation of appropriate non-pharmacological and pharmacological interventions as necessary have been found to be superior (compared to those that make treatment recommendations without initiating the treatment) and are recommended as best practice.[18]

As necessary, initiation of medical therapy will be supported through access to a consultation with medical officer at each service site. This includes the prescription of osteoporosis medication as an addition to conservative care measures such as vitamin D and calcium supplementation.

Pharmaceutical interventions recommended for the management of osteoporosis, including calcium and vitamin D supplements, a category of medications known as bisphosphonates, hormone therapy, selective oestrogen receptor modulators, strontium ranelate and parathyroid hormone, are supported by high level evidence of efficacy and safety and are approved by, and available under, the Pharmaceutical Benefits Scheme (PBS). Approval by the PBS follows after a full evaluation of efficacy, safety and cost effectiveness by the Pharmaceutical Benefits Advisory Committee.

Health education and self-management support

Health education and self-management support will be provided to enhance knowledge and support active and informed engagement in care. It will promote a healthy lifestyle, physical activity, good nutrition and healthy eating, and osteoporosis treatments that support bone health and reduce fracture risks.

Health education and self-management support is considered an integral part of any chronic disease management program. The fracture liaison coordination will provide education about osteoporosis and will promote the necessary treatment and a healthy lifestyle to support bone health and reduce risks. Use of behaviour change methodology is required to support the required lifestyle and behaviour changes.

The aim of providing health education and self-management support is to improve health and self-care by:

- enhancing knowledge about the disease process
- improving understanding of treatments and management

- influencing attitudes and decisions about care
- promoting informed lifestyle choices and risk factor reduction
- empowering active self-management
- developing skills to improve health
- enhancing confidence
- improving compliance and persistence with treatments and interventions
- supporting psychosocial welfare (e.g. depression, social isolation, fear of falling) and co-morbidity health needs.

Health education will be evidenced based and address the fundamentals of refracture prevention and osteoporosis management and care as relevant to the person including:

- osteoporosis disease process
- diet and lifestyle (i.e. adequate calcium and protein intake, adequate but safe exposure to sunlight as a source of vitamin D, maintenance of a healthy weight and body mass index, cessation of smoking, avoidance of excessive alcohol consumption)
- reducing the risk of falls
- exercise
- calcium and Vitamin D supplementation
- pharmacologic approaches to prevention and treatment.

Effective health education requires information and communication practices that consider the principles of adult learning, behavior change methodologies and health literacy. It must be flexible and tailored to take into account the persons preferences regarding the type or media, along with frequency of contact and the skills or competencies of the person. It may be provided face to face on a 1:1 basis, in a group setting, written, online or digitally, phone based, or a combination of these.

Education and self-management resources

The Royal Australian College of General Practitioners (RACGP)
http://www.racgp.org.au/your-practice/guidelines/musculoskeletal/osteoporosis/

Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age, 2nd edition was developed by Osteoporosis Australia and published by RACGP. It is designed to provide clear, up to date evidence-based recommendations to assist general practitioners and other health professionals in managing older patients with osteoporosis.

Osteoporosis Australia
https://www.osteoporosis.org.au/

- Health professional education, supplement and treatment information, latest research, position papers, and current statistical information
- Consumer guide: What you need to know about osteoporosis

- Factsheets
- Translated information.

Healthy Bones Australia
http://www.healthybonesaustralia.org.au/

Healthy Bones Australia is a national public awareness program with a key focus on the prevention of osteoporosis. An initiative of Osteoporosis Australia, its aim is to improve the bone health of all Australians, and to help everyone lead a fit and active lifestyle throughout their life. Their online tool supports people to improve their bone health, by tracking calcium, exercise and sunshine.

Stay active and on your feet
www.activeandhealthy.nsw.gov.au

- Physical activity and falls prevention information
- Find an exercise program
- Download and print copies of *Staying Active and On Your Feet*, the community falls prevention resource produced by the NSW Health – translated in a number of languages.

Arthritis and Osteoporosis NSW
https://arthritisnsw.org.au/osteoporosis/

- Health information
- Community education
- Seminars and webinars
- Self-management programs.

Get healthy information and coaching services
http://www.gethealthynsw.com.au/program

Provides free and confidential telephone-based information only or six month coaching program.

NSW Falls Prevention Network
http://fallsnetwork.neura.edu.au/resources/

- Resources on falls prevention for older people
- Falls prevention and exercise programs around the state.

Patient medicine information sheets
https://rheumatology.org.au/patients/medication-information.asp
https://www.novartis.com.au/products/consumer-information

Development of a personalised management plan

A personalised management plan will be established to promote planning and application of long-term chronic disease management. It will be designed to help the person address their care needs and to meet their health goals within the context of their care preferences.

Personalised care is essential to addressing the person's full range of needs. The collaborative development of a personalised management plan that addresses both their physical and psychosocial needs is essential to the model of care. It will document the care and management of the person, including the clinical and medical management approach (e.g. initiation and prescription of medications and supplementation regimes), as well as specific goals and action plans to address conservative care options (e.g. exercise, diet and lifestyle), that are aligned and appropriate to their needs, circumstances, preference and context.

Key principles for developing effective management plans include the following.

- Acknowledge the persons central role in their care and fostering a sense of personal responsibility for their own health care.
- Collaborate and engage with the person in decision making and management of their condition, (i.e. working together to define problems, set priorities, creating treatment plans, establishing appropriate goals and solving problems).
- Use evidence based care options.
- A team approach to managing health and provide holistic and complementary care.
- Enhancing self-management support opportunities (e.g. enlisting other health professionals and supports and creating links with community resources).
- Planned follow-up consultations and reviews.

A template of the Personalised Management Plan is provided in Appendix 6. All attempts should be made to ensure the plan is person centred and user friendly (i.e language, literacy and format). It should serve as a motivational tool for the person and a central point of interaction between members of the care team.

It is suggested that the plan be developed and integrated within the eMR if available, to enable sharing, review and update by all relevant stakeholders.

A copy of the plan will be provided to the person.

Multidisciplinary support and access to community services

People will be linked to the appropriate multidisciplinary support to promote bone health and reduce falls and fracture risks. This will be achieved through establishing and fostering relationships and referral pathways to services.

Local community resources are used to provide ongoing self-management support for people to facilitate behaviour change (e.g. falls prevention)

Osteoporotic refracture prevention services will be designed to provide multidisciplinary support in order to effectively meet the bone health and chronic care needs of the person accessing the

service. Fracture liaison coordinators will be responsible for establishing and fostering relationships and streamlining referral pathways to a range of multidisciplinary services and programs. They will also play a key role in referring and linking people to the appropriate multidisciplinary support interventions as deemed necessary based on the information gathered from the comprehensive assessment.

Knowledge of various ancillary services and programs available through the health service, primary care setting and the community is required in order to help people to access the supports and services they need to assist them to better manage their health.

The development of local service directories is encouraged to support teams to easily identify the resources available and referral processes to support timely access to care.

Multidisciplinary support may come from the use of existing internal clinical resources from public health service medical, allied health and nursing teams as well as through services in the primary care and community setting. This may be enabled using Medicare chronic disease management items or involvement in community programs such as Heartmoves and Stepping on Programs.

Timely and efficient communication

Communication between primary and secondary care physicians, allied health and community service providers will facilitate reinforcement and continuity of care across healthcare settings and ensure optimum adherence with treatment and recommendations.

The effective exchange of information between all relevant care providers improves the overall management of the person's chronic conditions.

Fracture liaison coordinators must ensure the personalised management plan is appropriately communicated to the person's GP as well as any specialist medical services, allied health clinicians and community service providers who are engaged in providing care and services for the person.

The purposes are to:

- facilitate reinforcement and reassurance of treatment regimens and interventions as recommended from the osteoporotic refracture prevention service
- promote a continuity of care across health care settings
- support the engagement and adherence to recommendations, goals and action plans through a shared awareness of the plan.

Methods to support the efficiency in the transfer of information, particularly electronic solutions such as discharge letter functionality within eMR, electronic referral processes and communication systems between service providers should be considered if, and when available.

Follow-up

Follow-up will support the maintenance of long-term lifestyle and behaviour changes and adherence with treatment and interventions.

A key responsibility of the osteoporotic refracture prevention service is to have a protocol in place to ensure follow-up will take place. Care should include planned reviews to assess progress, provide ongoing self-management support and to evaluate and make adjustments to the person's management plan based any changing needs and whether further support is required. It provides a means to engage and support people to maintain long term changes and compliance with treatment and interventions.

Ideally the person should be followed up at 12 weeks, however flexible options for reviews based on the persons needs is required.

The review will involve the following.

- A repeat assessment of clinical and patient reported outcomes using the same tools as in the comprehensive assessment.
- Monitoring the health, treatments and interventions as described in the management plan.
- Confirming that the existing management is satisfactory and appropriate, and if not, modifying the plan and making adjustments to previously set goals to assist the person to optimise their health.
- Self-management support to celebrate progress, reinforce behaviour change and problem solve issues.

Documentation of this review is important to demonstrate that follow-up is reliably provided. Ideally this will occur within the eMR if available.

The osteoporotic refracture prevention service may provide an ideal scenario for undertaking the review. This will typically be the role of the fracture liaison coordinator. Alternatively, it could be referred to the primary care provider in some settings, as long as clear guidance on when and with whom lies the responsibility is established and reliable systems for communication and shared data recording are in place.

Data systems

Services will have data systems to collect and record patient interventions; collate patient outcomes; and analyse and report on service outcomes.

Services should use appropriate tools and data systems to support quality and timely evaluation and reporting. The ability for services to efficiently collect, record, analyse and report on interventions and outcomes is important in allowing service review at steering group meetings, quarterly reporting and informing quality improvement activities.

Ideally data extraction functionality within the eMR will promote the most efficient work practices by avoiding the need to duplicate data entry as would be required if using standalone databases.

Example
Northern Sydney LHD have led the way with IT enablers to support services to improve quality of care and clinical outcomes with the development informatics and analytics platform using Qlik Sense® application. It allows near real time clinical data accessibility across multiple data sources to support data collection and reporting.

Patient-reported experience measures

Patient-reported experience measures (PREMs) will be used to support service evaluation and inform improvements.

PREMs capture a person's perception of their experience with health care or service. It allows the person to provide direct feedback on their care and should be used to support service evaluation and drive improvement in services.

Examples of items that may be measured

- Access to and ability to navigate services
- Involvement (consumer and carer) in decision-making
- Knowledge of management plan and pathways
- Quality of communication
- Support to manage long-term condition
- Would they recommend the service to family and friends.

The ACI Patient Reported Measures program will be used to support and enable the use of PREMs in practice. A 10 question Outpatient PREM question set has been endorsed for use in Leading Better Value Care programs. It includes, along with additional items, the items listed above. See *Appendix 5: LBVC Outpatient Patient Reported Experience Measure*.

Engagement in quality improvement

Regular time will be assigned in the service weekly plan to critique service interventions and processes, follow up on patient care, conduct literature reviews seeking solutions to identified issues, and plan and implement quality improvement cycles as required.

Services are encouraged to undertake regular reviews to ensure the quality of service delivery. This may be supported by feedback sought from participants (including PREMs) as well as staff and key stakeholders; audit of service and clinical data; or the analysis of systems and processes. Importantly there should be dedicate time in the service weekly plan for teams to come together to reflect on service outcomes and processes, consider quality improvement needs and identify opportunities to make changes.

5. Monitoring and evaluation

A *Monitoring and Evaluation Plan of the NSW Model of Care for Osteoporotic Refracture Prevention*[19] has been developed through collaboration between the ACI Health Economics and Evaluation team and the Musculoskeletal Network. The evaluation will assess and monitor key outcomes including service access, patients reported outcome and experience measures, health service utilisation and fidelity to the model of care.

The responsibility for the evaluation of the Osteoporotic Refracture Prevention program lies with the ACI Health Economics and Evaluation Team.

Local health districts will support the evaluation through:

- roadmaps
- recording occasions or service and NAPping to the osteoporotic refracture prevention service type to ensure activity is visible
- reporting of quarterly monitoring measures
    - number and per cent of referrals *(i.e. people identified)* to hospital and community services for patients at risk of osteoporotic refracture prevention *(i.e. requiring refracture prevention)* and referral source
    - number and per cent of patients having assessment for refracture prevention and osteoporosis
    - number and per cent of patients that have received a personalised management plan for fracture prevention that includes dietary advice, medical treatments and falls prevention strategies
    - number and per cent of patients followed up six months after initial assessment
    - inpatient use (National Weighted Activity Units (NWAUs), separations, beddays)
    - Non-admitted uses (NWAUs, service events)
- collection of minimum data set and clinical measures (data collection system to be developed).

6. ACI support

Site visits

The ACI Musculoskeletal Network can make a visit to support the planning, set up and implementation of services locally. This may include attendance at local steering group meetings, sharing of lessons learnt in previous implementation efforts, and mentoring of local team members as required.

Quarterly Peer Mentoring Workshops

These workshops are held quarterly and are designed to provide support to managers and teams implementing the models of care.

- Experts in musculoskeletal health present on the evidence for chronic care of people with osteoarthritis and those experiencing minimal trauma fractures.
- Teams experienced in delivery of the two models of care share experiences in setting up and managing the services required for the patient cohorts.
- Service sites present their progress in setting up and delivery of the models of care.
- Teams are encouraged to share and debate their experiences, to support each other in their implementation efforts.

Health Coaching – Health Change Australia

Training in behaviour change methodology delivered by Health Change Australia is offered to staff involved in delivering the models of care.

Accelerated Implementation Methodology training for project leads

With sufficient demand, Accelerated Implementation Methodology (AIM) training can be arranged for service or project leads and managers implementing the musculoskeletal models of care.

Musculoskeletal Toolkit

Services can be supported with a variety of tools and resources.

- Fracture liaison coordinator position description
- Validated tools for assessment and outcome measures
- Clinical summaries to promote services
- Data specifications
- Evaluation data
- Roadmaps
- NAP service types
- Relevant clinical guidelines and standards of care, research articles, evidence reviews and position statements
- Patient information brochures.

7. Resources

Osteoporosis Australia

- Produces a range of publications for GPs and other health professionals.
- Comprehensive, consumer-friendly information for people who have been diagnosed with osteoporosis, are at risk of osteoporosis, or who wish to know more about bone health generally.
- All are available to download free of charge from the Osteoporosis Australia website: www.osteoporosis.org.au

Know your bones

- A consumer-friendly, online bone-health assessment tool, based on the Garvan Fracture Risk Calculator (www.knowyourbones.org.au).

Healthy Bones Australia

- Features an online calculator to help people of all ages track their daily calcium, vitamin D and activity levels towards a 'healthy bones score' (www.healthybonesaustralia.org.au).

The Royal Australian College of General Practitioners

- www.racgp.org.au
- Clinical guidelines for *Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age*[2] (2017)
- Smoking, nutrition, alcohol, physical activity (SNAP): A population health guide to behavioural risk factors in general practice. 2nd edn. East Melbourne, Vic: RACGP, 2015
- Guidelines for preventive activities in general practice. 9th edn. East Melbourne, Vic: RACGP, 2016

Other useful websites

- Australian Rheumatology Association: www.rheumatology.org.au
- International Osteoporosis Foundation: www.iofbonehealth.org
- National Osteoporosis Foundation (USA): www.nof.org
- National Osteoporosis Society (UK): www.nos.org.uk
- NSW Falls Prevention Program: http://www.cec.health.nsw.gov.au/patient-safety-programs/adult-patient-safety/falls-prevention
- Stay active and on your feet: www.activeandhealthy.nsw.gov.au

8. References

1. ACI. NSW Model of Care for Osteoporotic Refracture Prevention. Chatswood: ACI: 2017. Available from: **https://www.aci.health.nsw.gov.au/__data/assets/pdf_file/0008/279350/ACI_0036-Osteo-Refracture-Prevention-Model-of-Care_FINAL_May-2018.pdf**
2. The Royal Australian College of General Practitioners. Clinical guideline for the prevention and treatment of osteoporosis in postmenopausal women and older men. 2nd Edition. The Royal Australian College of General Practitioners, Melbourne. 2017
3. Akesson K, Marsh D, Mitchell PJ, et al. Capture the fracture: a best practice framework and global campaign to break the fragility fracture cycle. Osteoporos Int. 2013;24 (8):2135–2152.
4. Australian Commission on Safety and Quality in Health Care. Preventing falls and harm from falls in older people: Best practice guidelines for Australian hospitals, residential aged care facilities and community care. Darlinghurst, NSW: ACSQHC, 2009. Available at www.safetyandquality.gov.au/our-work/falls-prevention/ [Accessed July 2017]
5. Panel on Prevention of Falls in Older Persons, American Geriatrics Society, British Geriatrics Society. Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. J Am Geriatr Soc 2011;59(1):148–57.
6. Scott V, Votova K, Scanlan A, Close J. Multifactorial and functional mobility assessment tools for fall risk among older adults in community, home-support, long-term and acute care settings. Age Ageing 2007;36(2):130-9.
7. Rose DJ, Jones CJ, Lucchese N. Predicting the probability of falls in community residing older adults using the 8-foot up-and-go: a new measure of functional mobility. J Aging Phys Activ 2002;10(4):466-75.
8. Podsiadlo D, Richardson S. The timed 'Up & Go': A test of basic functional mobility for frail elderly persons. J Am Geriatr Soc 1991;39(2):142–48.
9. Tiedemann A, Shimada H, Sherrington C et al. The comparative ability of eight functional mobility tests for predicting falls in community-dwelling older people. Age Ageing 2008;37(4):430–35.
10. Russell MA, Hill KD, Day LM et al. Development of the Falls Risk for Older People in the Community (FROP-Com) screening tool. Age Ageing 2009;38 (1): 40-46.
11. Stapleton C, Hough P, Bull K, et al. A 4-item falls-risk screening tool for sub-acute and residential care: The first step in falls prevention. Australas J Ageing. 2009;28(3): 139-143
12. Yardley L, Beyer N, Hauer K et al. Development and initial validation of the Falls Efficacy Scale-International (FES-I). Age Ageing 2005;34(6):614-619
13. Delbaere K, Close JC, Mikolaizak AS et al. The Falls Efficacy Scale International (FES-I). A comprehensive longitudinal validation study. Age Ageing 2010;39(2):210-216
14. Nguyen ND, Frost SA, Center JR et al. Development of prognostic nomograms for individualizing 5-year and 10-year fracture risks. Osteoporos Int 2008;19(10):1431–44.
15. Nguyen ND, Frost SA, Center JR wr al. Development of a nomogram for individualizing hip fracture risk in men and women. Osteoporos Int 2007;18(8):1109–17.
16. Kanis JA, Johnell O, Oden A et al. FRAX and the assessment of fracture probability in men and women from the UK. Osteoporos Int 2008;19(4):385–97.

17. Kanis JA, Oden A, Johnell O, et al. The use of clinical risk factors enhances the performance of BMD in the prediction of hip and osteoporotic fractures in men and women. Osteoporos Int 2007;18(8):1033–46.
18. Ganda K, Puech M, Chen JS et al. Models of care for the secondary prevention of osteoporotic fractures: a systematic review and meta-analysis. Osteoporos Int. 2013;4(2):393-406.
19. ACI. Osteoporotic Refracture Prevention Monitoring and Evaluation Plan. Chatswood: ACI: 2017.

Glossary

ACI	Agency for Clinical Innovation
AIHW	Australian Institute of Health and Welfare
AQoL	Assessment of Quality of Life Scale
DASS 21	Depression Anxiety and Stress Scale
DXA	Dual-energy x-ray absorptiometry
eMR	Electronic Medical Record
FES-I	Falls Self Efficacy - International
FRAX	Fracture Risk Assessment Tool
FTE	Full Time Equivalent
GFRC	Garvan Fracture Risk Calculator
GP	General Practitioner
ICD-10	International Classification of Diseases 10th Revision
IT	Information Technology
NAP	Non-Admitted Patient
NWAUs	National Weighted Activity Units
ORP	Osteoporotic Refracture Prevention
PBS	Pharmaceutical Benefits Scheme
PREMs	Patient Reported Experience Measures
PROMIS-29	Patient-Reported Outcomes Measurement Information System ®
PROMs	Patient reported outcome measures
QCT	Quantitative Computed Tomography
RACGP	Royal Australian College of General Practitioners
SF-36	Short Form Health Survey
VAS	Visual Analogue Scale

Appendix 1: Implementation assessment

This is a summary of the components of care. For full details see site self assessment tool available on the ACI website.

Element or resources		Components of care
Governance	1	**Osteoporotic refracture prevention is based on chronic care principles**
		The osteoporotic refrature prevention (ORP) service is governed by a shared understanding, clear vision and strategies supporting the delivery of chronic care services to reduce the risk of refracture and to promote effective management of bone health.
	2	**There is collaborative decision making for planning, implementation and evaluation**
		A musculoskeletal steering committee responsible for the governance of ORP, consists of representation of all key stakeholders and promotes the achievement of the vision and strategies to achieve program outcomes.
Workforce	3	**Dedicated fracture liaison coordinator who is skilled to support the chronic care needs of individuals**
		The fracture liaison coordinator has a dedicated role in leading ORP service delivery and is appropriately skilled in the management of bone health. There is a dedicated FTE with the capacity to successfully meet the cohort need of each ORP service site and achieve full coverage of the local health district's geographical area.
	4	**Multidisciplinary team access is facilitated to support the individual's chronic care needs**
		The local ORP service delivery model provides access to multidisciplinary support to meet the chronic care needs of person and for efficient and effective service delivery including administrative support.
	5	**A medical officer is allocated to provide medical management and support for the ORP service**
		Engagement of a medical officer to address the medical needs of the patients and provide clinical governance and leadership for the ORP service.
IT	6	**IT functionality supports efficient and effective service delivery**
Access		IT infrastructure supports the identification of eligible individuals, captures and monitor outcomes, supports care coordination, sharing of the personalised management plan and the extraction and analysis of data for reporting and quality improvement activities.
	7	**There is equitable access to the service**
		The ORP service model has appropriate reach and access for local community and priority population groups.
	8	**Easy identification of eligible individuals**
		Effective and efficient processes for the identification of people sustaining minimal trauma fractures and requiring refracture prevention.
Assessment	9	**Undertake a comprehensive assessment based on the holistic needs of the individual**

Element or resources		Components of care
		A comprehensive assessment is completed for those identified that is holistic and patient centred, using validated clinical and patient reported measures and in consideration of physical, social, psychosocial and co- morbidity needs of the person.
Medical care	10	**Access to investigations**
		Clinical investigations including bone mineral density scanning are available and used to support the assessment of poor bone health and future fracture risk.
	11	**The initiation of medication is facilitated by the ORP medical officer**
		The medical officer initiates the required medical therapy.
Health education	12	**Health education builds understanding, engagement and empowerment for self-management**
		Health education is provided to all people within the ORP service on their condition and effective treatments and interventions to facilitate active and informed decision making.
Self-management support	13	**All individuals are supported to engage in treatments, interventions and identified health behaviour changes**
		There is access to and behavioural support to promote a healthy lifestyle, physical activity, nutrition and treatments and interventions that enhance bone health, reduce fracture risks and address psychosocial and co-morbidity needs.
Development of a personalised management plan	14	**Collaborative personalised management plans cover the person's holistic needs**
		There is collaborative development of a personalised management plan that addresses both the physical and psychosocial needs with their specific goals and actions plan.
	15	**Personalised management plans are shared with all relevant stakeholders**
		The personalised management plan is provided to the individual as well as being available to all care providers.
Reviews	16	**There is ongoing care through planned reviews**
		Care includes a planned review of long term lifestyle changes and compliance with treatment and interventions.
Reporting and evaluation	17	**Data systems support quality and timely evaluation and reporting**
		Appropriate reporting and evaluation capabilities exist allowing for quarterly reporting, service review by the steering committee and use in quality improvement activities.
Quality improvement	18	**Improved quality of care is driven by patient outcomes and experiences and staff and stakeholder feedback**
		Quality improvement activities are embedded in ongoing practice and related to patient reported measures as well as staff and stakeholder feedback.

Appendix 2: Fracture liaison coordinator position description

NSW GOVERNMENT Health

POSITION DESCRIPTION

POSITION DETAILS			
Position Title	Fracture Liaison Coordinator, Osteoporosis Refracture Prevention Service	**Branch**	*<add>*
Position Number	*<add>*	**Division**	*<add>*
Grade	Clinical Nurse Specialist 2 Clinical Nurse Consultant Grade 2 Allied Health Level 3 Allied Health Level 4	**Location**	*<add>*
Reports To (position)	*<add>*	**Direct Reports** **Indirect Reports**	*<add>*
Other Roles Reporting to Position's Manager: *<add>*			
Job Analyst		**Date Evaluated**	

ORGANISATION ENVIRONMENT

For more information go to www.health.nsw.gov.au

PRIMARY PURPOSE OF THE POSITION

(max 150 words)

The Fracture Liaison Coordinator will work with the <Local Health District> to develop, coordinate, implement and evaluate the <Local Health District> Osteoporotic Refracture Prevention Service that aligns with the ACI model of care for Osteoporotic Refracture Prevention. The service will provide chronic care services to people who have been identified as sustaining a minimal trauma fracture and who are suspected of having osteoporosis. This will include providing comprehensive bone health assessments; health education on refracture risk, osteoporosis and chronic disease management; empowering patient self-management; linking people with their medical teams to enhance access to investigation and appropriate treatment of osteoporosis; facilitating access to multidisciplinary support services as required; and undertaking follow-up of patients in the long-term.

KEY ROLES AND ACCOUNTABILITIES

(max 8 dot points recommended)

The Fracture Liaison Coordinators role involves liaising and communicating effectively and efficiently with <Local Health District> and ACI staff, external stakeholders as well as consumers. The role requires the ability to clearly explain ideas and arguments to individuals and groups while customising communication to the audience and actively listening to others. Key stakeholders for the role include:

- Work effectively with <Local Health District> to develop, coordinate, implement and evaluate the <Local Health District> Osteoporotic Refracture Prevention Service.
- Work collaboratively with the identified medical clinical governance of the <Local Health District> Osteoporotic Refracture Prevention Service.

- Support the development of regular reports on admissions or presentations to the Emergency Department/ <Local Health District> for minimal trauma fractures.
- Actively seek potential participants of the <Local Health District> Osteoporotic Refracture Prevention Service from any source/setting across the <Local Health District> and from the <Local Health District> locality including primary care.
- Actively facilitate access for potential participants to the <Local Health District> Osteoporotic Refracture Prevention Service including referral and flexibility of service provision.
- Work effectively with key stakeholders in the wider <Local Health District> area to facilitate access to required services for the participants of the Service. This includes fostering and maintaining strong links with the community and acute care providers and providing direct referrals to service providers.
- Provide assessment, health education, advocacy and follow-up over time for the participants of the Service.
- Provide and facilitate education on bone health to the wider <Local Health District> community – consumers as well as health professionals.
- Responsible for the overall administration and management of the Service.
- Responsible for the collection of outcome measurements and involvement in data collection to allow for evaluation of the Service.
- Responsible for developing procedures, practices, referral pathways and resources for the Service.
- Comply with administrative requirements and policies of <department the Service is located in>, LHD and NSW Health (included but not limited to maintaining client records, equipment maintenance, workplace statistics).
- Undertake reasonable travel in accordance with the duties of the position.
- Work effectively with the Agency for Clinical Innovation in further development, refinement and improvements of the <Local Health District> Osteoporotic Refracture Prevention Service including input for ongoing evaluation across NSW.

KNOWLEDGE, SKILLS AND EXPERIENCE

(max 8 dot points recommended)

- Relevant Nursing or Allied Health qualification with extensive post-graduate clinical experience. Current professional registration with Australian Health Practitioner Regulation Agency.
- Demonstrated interest in musculoskeletal health care and a well-developed understanding of the concepts of chronic care and its application with people and communities where chronic care is required.
- Ability to work collaboratively and cultivate productive working relationships with a variety of stakeholders to ensure effective and efficient service delivery.
- Demonstrated excellent oral and written communication skills, interpersonal skills and negotiation skills.
- Proficiency in Information Technology such as Microsoft applications, email, clinical software packages and an ability to manage and maintain database information
- Ability to initiate, complete and evaluate quality improvement projects including the development of procedures, practices and resources.
- Demonstrated commitment to the provision of quality healthcare services.
- Current unrestricted NSW drivers licence.

KEY CHALLENGES

(max 4 dot points recommended)

- Effectively and efficiently identifying the population group – there are limited DRGs that may provide clues to who the target group will be and many of the target group won't be identified in clinical records.

- Supporting change and managing potential reluctance by medical/surgical staff to embrace the Service. Medical support and governance will be vital to the <Local Health District> Osteoporotic Refracture Prevention Service success.
- Obtaining engagement and acceptance from General practice for the Service at the outset to ensure support and follow-up of participants of the <Local Health District> Osteoporotic Refracture Prevention Service occurs. General practice will also be a referral source so collegial relationships must be fostered.
- Engagement of colleagues within a variety of chronic care services, falls prevention and other community settings is vital for the success of the <Local Health District> Osteoporotic Refracture Prevention Service.
- Managing competing priorities of the day to day delivery of the Osteoporotic Refracture Prevention Service.
- Working in a continuously changing and challenging environment.

KEY OUTCOMES - Optional

(Max 5 Major Outcomes expected within a 2 year period)

-
-
-

KEY INTERNAL AND EXTERNAL RELATIONSHIPS - *Optional*

- People with musculoskeletal conditions and their carers
- <Local Health Districts> Osteoporotic Refracture Prevention Service Advisory Group or Committee
- <Local Health Districts> staff in all settings and disciplines relevant to <Local Health District> Osteoporotic Refracture Prevention Service.
- ACI Musculoskeletal Network who can provide support to ensure the <Local Health District> Osteoporotic Refracture Prevention Service remains true to the NSW Model of Care for Osteoporotic Refracture Prevention with allowances for local resources.
- Clinical teams and community services working with people with musculoskeletal conditions and their carers – both within and outside the NSW public health system.
- Primary care clinicians in the <Local Health District> area in supporting recruitment of participants and chronic care management for re-fracture prevention and osteoporosis.
- Primary Health Networks will become a key partner in the Osteoporotic Refracture Prevention Service to foster primary care participation, advice, and partnerships to develop and refine the service.

DECISION MAKING AND BUDGET

- Using clinical judgment in supporting individuals in the development and implementation of their care plans as part of the <Local Health District> Osteoporotic Refracture Prevention Service.
- Facilitating appropriate referrals for participants to health professionals and/or services internal and external the <Local Health District>.
- Advice and collaborative decision-making as appropriate with the Osteoporotic Refracture Prevention Service team and the Advisory Group or Committee

BUDGET
Recurrent Expenditure $
Staff management $
Capital $
Total $

Financial Delegation: Expenditure limit $ Administrative Delegation Group:

ATTACHMENTS	
Organisation Chart	❑ Yes ❑ No

CERTIFICATION	
We have read the above position description and are satisfied it accurately describes the position.	
Position Holder's Name	
Signature	
Date	
Manager's Name	
Signature	
Date	

Appendix 3: PROMIS-29

The PROMIS-29 (Patient-Reported Outcomes Measurement Information System) is a publicly available, free to use, generic health related quality of life (HRQoL) measure available in multiple languages that has been validated for many diseases. More information is available at **http://www.healthmeasures.net/explore-measurement-systems/promis**

PROMIS–29 Profile v2.0

Please respond to each question or statement by marking one box per row.

	Physical Function	**Without any difficulty**	**With a little difficulty**	**With some difficulty**	**With much difficulty**	**Unable to do**
1	Are you able to do chores such as vacuuming or yard work?	☐	☐	☐	☐	☐
2	Are you able to go up and down stairs at a normal pace?	☐	☐	☐	☐	☐
3	Are you able to go for a walk of at least 15 minutes?	☐	☐	☐	☐	☐
4	Are you able to run errands and shop?	☐	☐	☐	☐	☐
	Anxiety **In the past 7 days…**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
5	I felt fearful	☐	☐	☐	☐	☐
6	I found it hard to focus on anything other than my anxiety	☐	☐	☐	☐	☐
7	My worries overwhelmed me	☐	☐	☐	☐	☐
8	I felt uneasy	☐	☐	☐	☐	☐
	Depression **In the past 7 days...**	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
9	I felt worthless	☐	☐	☐	☐	☐
10	I felt helpless	☐	☐	☐	☐	☐
11	I felt depressed	☐	☐	☐	☐	☐
12	I felt hopeless	☐	☐	☐	☐	☐
	Fatigue **During the past 7 days…**	**Not at all**	**A little bit**	**Somewhat**	**Quite a bit**	**Very much**
13	I feel fatigued	☐	☐	☐	☐	☐
14	I have trouble starting things because I am tired	☐	☐	☐	☐	☐

PROMIS–29 Profile v2.0

Fatigue

	In the past 7 days…	**Not at all**	**A little bit**	**Somewhat**	**Quite a bit**	**Very much**
15	How run-down did you feel on average? ...	☐	☐	☐	☐	☐
16	How fatigued were you on average?	☐	☐	☐	☐	☐

Sleep Disturbance

	In the past 7 days…	**Very poor**	**Poor**	**Fair**	**Good**	**Very good**
17	My sleep quality was.....	☐	☐	☐	☐	☐

	In the past 7 days…	**Not at all**	**A little bit**	**Somewhat**	**Quite a bit**	**Very much**
18	My sleep was refreshing.....	☐	☐	☐	☐	☐
19	I had a problem with my sleep	☐	☐	☐	☐	☐
20	I had difficulty falling asleep	☐	☐	☐	☐	☐

Ability to Participate in Social Roles and Activities

		Never	**Rarely**	**Sometimes**	**Usually**	**Always**
21	I have trouble doing all of my regular leisure activities with others.....	☐	☐	☐	☐	☐
22	I have trouble doing all of the family activities that I want to do	☐	☐	☐	☐	☐
23	I have trouble doing all of my usual work (include work at home)	☐	☐	☐	☐	☐
24	I have trouble doing all of the activities with friends that I want to do	☐	☐	☐	☐	☐

Pain Interference

	In the past 7 days…	**Not at all**	**A little bit**	**Somewhat**	**Quite a bit**	**Very much**
25	How much did pain interfere with your day to day activities?	☐	☐	☐	☐	☐
26	How much did pain interfere with work around the home?	☐	☐	☐	☐	☐
27	How much did pain interfere with your ability to participate in social activities? .	☐	☐	☐	☐	☐
28	How much did pain interfere with your household chores?	☐	☐	☐	☐	☐

Pain Intensity

	In the past 7 days…											
29	How would you rate your pain on average?.....	☐ 0 **No pain**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9	☐ 10 **Worst imaginable pain**

Appendix 4: Falls Efficacy Scale – International

The Falls Efficacy Scale International (FES-I) is a measure of 'fear of falling' or, more properly, 'concerns about falling', which is suitable for use in research and clinical practice. [12]

FES-I has been translated from the original English into many other languages. FES-I is available free of charge for use by researchers and clinicians providing it is appropriately referenced. More information is available on the Manchester University FES-I page: https://sites.manchester.ac.uk/fes-i/

SUPPLEMENTARY DATA

Translators'/Interviewers' notes for FES-I

The text of the FES-I below is the final version agreed by the authors on completion of the development study, prior to subsequent translation and validation in different languages. It became clear during the process of translation that there was no wording of the questionnaire that would translate easily into every EC language using exactly the same words and phrases. Consequently, these notes are intended to assist translators of the FES-I to express the same *meaning* of items, even if they cannot use quite the same words in their language. They may also assist interviewers who are asked for clarification of the meaning of items when the FES-I is administered by interview.

Instructions
Participants should answer items thinking about how they usually do the activity – for example, if they usually walk with an aid they should answer items about walking to show how concerned they would be about falling when using that aid. Some translators may find it helpful to clarify in the instructions (after the sentence on circling an opinion) 'The opinions you can choose from are: 1 = not at all concerned 2 = somewhat concerned 3 = fairly concerned 4 = very concerned.' In some languages it is better to translate the word 'opinion' as 'statement'.

Response categories
The word 'concerned' expresses a cognitive or rational disquiet about the possibility of falling, but does not express the emotional distress that would be expressed by terms such as 'worried', 'anxious' or 'fearful'. It is important to use a similar unemotional term, as respondents may be less willing to admit to emotions, which might be viewed as signs of weakness.

Item 3. In some EC languages 'simple' meals are best translated as 'everyday' meals, but the intention is to refer to a meal that does not require complex preparation, rather than one that is prepared every day.

Item 5. This item is intended to refer to shopping that is not extensive or recreational. In some languages the best translation is 'shopping for groceries'.

Item 7. This item refers to *any* stairs, not necessarily the flight of stairs in one's own house.

Item 8. In some languages 'neighbourhood' may be difficult to translate, and so 'walking around outside' can be used instead.

Item 12. In some languages it is necessary to add the term 'acquaintances' to friends and relatives, since this is a more common and casual category of relationship than friends. (see also comment on items 12, 13 and 16 below)

Item 13. 'Crowds' can be translated as 'many people' if necessary. (see also comment on items 12,13 and 16 below)

Item 14. It was found to be necessary to give examples of what is meant by uneven ground, but no examples could be found that were appropriate for all countries. Consequently, translators should choose any TWO examples from the following: cobblestones; poorly maintained pavement; rocky ground; unpaved surface.

Items 12, 13, 16. These items contain a greater element of ambiguity than many of the items assessing functional capabilities, because the physical activities involved in these social events may differ greatly for different respondents. However, it was decided that this ambiguity was acceptable because it is important to assess effects of fear of falling on social activities.

Now we would like to ask some questions about how concerned you are about the possibility of falling. For each of the following activities, please circle the opinion closest to your own to show how concerned you are that you might fall if you did this activity. Please reply thinking about how you usually do the activity. If you currently don't do the activity (e.g. if someone does your shopping for you), please answer to show whether you think you would be concerned about falling IF you did the activity.

		Not at all concerned *1*	*Somewhat concerned* *2*	*Fairly concerned* *3*	*Very concerned* *4*
1	Cleaning the house (e.g. sweep, vacuum or dust)	*1*	*2*	*3*	*4*
2	Getting dressed or undressed	*1*	*2*	*3*	*4*
3	Preparing simple meals	*1*	*2*	*3*	*4*
4	Taking a bath or shower	*1*	*2*	*3*	*4*
5	Going to the shop	*1*	*2*	*3*	*4*
6	Getting in or out of a chair	*1*	*2*	*3*	*4*
7	Going up or down stairs	*1*	*2*	*3*	*4*
8	Walking around in the neighbourhood	*1*	*2*	*3*	*4*
9	Reaching for something above your head or on the ground	*1*	*2*	*3*	*4*
10	Going to answer the telephone before it stops ringing	*1*	*2*	*3*	*4*
11	Walking on a slippery surface (e.g. wet or icy)	*1*	*2*	*3*	*4*
12	Visiting a friend or relative	*1*	*2*	*3*	*4*
13	Walking in a place with crowds	*1*	*2*	*3*	*4*
14	Walking on an uneven surface (e.g. rocky ground, poorly maintained pavement)	*1*	*2*	*3*	*4*
15	Walking up or down a slope	*1*	*2*	*3*	*4*
16	Going out to a social event (e.g. religious service, family gathering or club meeting)	*1*	*2*	*3*	*4*

Appendix 5: LBVC outpatient patient reported experience measure

Patient Experience

We are interested in your experience with the healthcare services you have received. We would greatly appreciate your assistance, as your responses will be used to help review how healthcare services are delivered, and to help improve services where necessary.

This survey takes an average of 10 minutes to complete.

All responses will be strictly confidential. You are not asked for any information that could be used to identify you.

For each question, please select the appropriate box.

1.	Were you able to get an appointment time that suited you?	
		Please select one box
	Yes, definitely	☐
	Yes, to some extent	☐
	No	☐
	Don't know/can't remember	☐

2.	Did the health professionals explain things in a way you could understand?	
		Please select one box
	Yes, always	☐
	Yes, sometimes	☐
	No	☐

3.	I was involved as much as I wanted in making decisions about my treatment and care	
		Please select one box
	Always	☐
	Mostly	☐
	Sometimes	☐
	Rarely	☐
	Never	☐

4.	My views and concerns were listened to	
		Please select one box
	Always	☐
	Mostly	☐
	Sometimes	☐
	Rarely	☐
	Never	☐
	Didn't apply	☐

5.	Do you have a treatment plan for your condition(s) that you can carry out in your daily life?	
	Please select one box	
	Yes	☐
	No	☐
	Not sure	☐

6.	Have you been given enough information about how to manage your care at home?	
	Please select one box	
	Yes, completely	☐
	Yes, to some extent	☐
	No, I was not given enough	☐
	I did not need this type of information	☐

7.	Did you feel you were treated with respect and dignity while you were at the clinic?	
	Please select one box	
	Yes, always	☐
	Yes, sometimes	☐
	No	☐

8.	Overall, how would you rate the care you received in the clinic?	
	Please select one box	
	Very good	☐
	Good	☐
	Neither good nor poor	☐
	Poor	☐
	Very poor	☐

9.	What would have made your visit better?
	Please provide a comment

10.	Which language do you mainly speak at home?	
	Please select one box	
	English	☐
	A language other than English	☐

Thank you for taking the time to provide feedback about your care. The information we receive will be used to continue to improve our services

Appendix 6: personalised management plan templates

My bone health management plan

About me

My name		**Date plan developed**	
I developed this plan with			
My GP			
The reason I am attending the osteoporotic refracture prevention service			

My bone strength and fracture risk

Date	**T-score or bone mineral density**	**My bones are…**			**My risk of refracture**
		☐ Normal	☐ Osteopenic	☐ Osteoporotic	
		☐ Normal	☐ Osteopenic	☐ Osteoporotic	

My height and body weight – Being underweight (body mass index <20) can increase my risk of fracture

Date	**Height**	**Weight**	**Body Mass Index (BMI)**	**I am**		
				☐ Underweight	☐ Normal	☐ Overweight
				☐ Underweight	☐ Normal	☐ Overweight

My medication and supplements

Medication for my bones has not been recommended ☐			
Type or name	**My dose**	**When and how I take it**	**What to be careful about**

Vitamin D supplement			
Calcium supplement			

My health and lifestyle - Calcium intake, sunshine exposure and exercise are three key factors that contribute to healthy bones

	Why	**What I currently do**	**What I should do**	**What I will do (My health and lifestyle goals)**
Smoking	*Smoking increases my risk of fractures*		*Stop smoking*	
Alcohol	*Drinking too much alcohol also increases my risk of fracture.*		*Drink less than two alcoholic drinks per day*	
My servings of dairy products per day (milk, cheese, yoghurt)	*Dairy products are the main source of calcium in my diet. Calcium helps me build healthy and strong bones.*		*Eat at least three serves of dairy per day (1000 mg of calcium). Better still, four serves of dairy per day (1300 mg calcium)*	
My time in the sunshine per day	*Safe exposure to sunlight is a great source of vitamin D. I need vitamin D to absorb calcium to help my bones stay healthy and strong.*		*In summer walk with arms exposed for 5-10 minutes mid-morning or mid-afternoon. In winter I may need up to 30 minutes of sunlight exposure*	
My weight bearing exercise each week	*Exercise builds stronger bones, especially weight-bearing exercises (e.g. brisk walking, hiking, stair climbing, tennis, jogging and dancing) and resistance orstrength training. Unfortunately swimming and cycling will not help my bones.*		*Regular exercise (at least three times per week)*	

Preventing falls	*Balance and mobility exercises can help reduce falls. A safe home environment and treating other risk factors will also help reduce my falls risk.*		*Regular balance training (at least three times per week)*	
I am also concerned about				

I have been referred to

e.g. Stepping on program	*When, what to remember or important information*
Dietitian	
Gym orexercise program	
or you could combine with table below	

My upcoming appointments and reviews

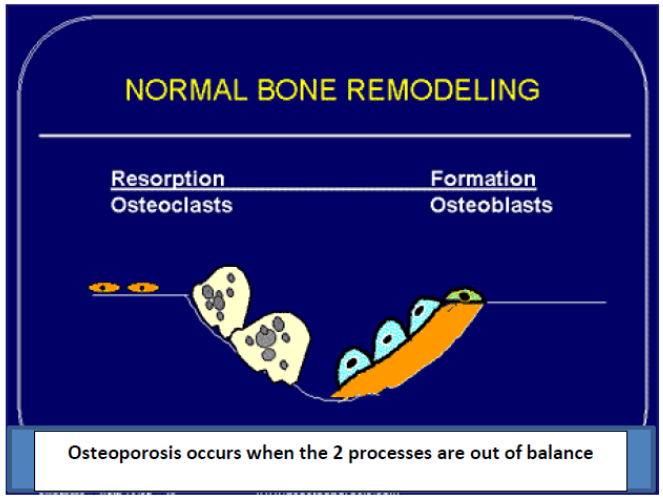
	When	**What to remember or important information**
Bone mineral density scan	*e.g. date or two years*	
Medical consultation	*e.g. date*	
See my GP	*e.g. 6 weeks*	
ORP review	*e.g. 6 months*	
Alternatively the referrals to services could go here		
e.g. Education and/or exercise classes		

e.g. Stepping On program		
e.g. Dietitian appointment		

Who to contact if I have questions

Add in ORP Service and contact details

Sample template



Your risk of refracture	Within 5 years	Within 10 years
Any fracture		
Hip fracture		

Your refracture risk can be halved with the correct management of your bone health and falls risk.

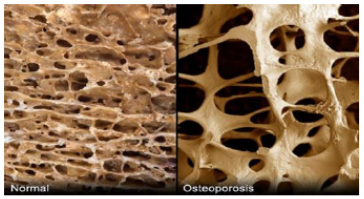
Useful websites:

www.osteoporosis.org.au comprehensive information about osteoporosis including fact sheet – calcium, exercise, Vitamin D and medications

www.activeandhealthy@nsw.gov.au – find an exercise class near you!

https://arthritisnsw.org.au/wp-content/uploads/2013/01/exercise-guide-consumers-final-08.pdf - Exercises for bones and balance

RNSH Osteoporosis Refracture Prevention (ORP) Service



My Bone Health Management Plan

_____

Please discuss your Bone Health Management Plan with:

- The ORP Medical Specialist at your next ORP clinic visit
- Your General Practitioner at your next GP consultation
- Other people helping you to manage your health

NSW GOVERNMENT Health Northern Sydney Local Health District

Date ...../...../.....	◯ My bones are NORMAL	◯ My bones are OSTEOPENIC	◯ My bones are OSTEOPOROTIC

DO I NEED MEDICATION TO MAKE MY BONES STRONG? (Talk to Specialist/GP)

◯ **No, not recommended. Reason:**

◯ **Yes, recommended.**

				
Tablet 1 per week	**Tablet 1 per month**	**Injection 6 monthly**	**Infusion once per year**	**Injection daily**

WHEN SHOULD I RETURN TO THE OSTEOPOROSIS CLINIC FOR REVIEW?

BMD scan		**Medical Consult**	

CALCIUM per DAY				1000mg =3 serves dairy 1300mg= 4 serves dairy **Supplement: YES / NO**
VITAMIN D	 			NEEDS TO BE **>70nmol/L** **Supplement: YES / NO**
EXERCISE	◯ **Falls prevention**	Leg strengthening	Core strengthening	Balance challenging
	◯ **Resistance (strengthening)** -weights/gym	Arm muscles	Leg muscles	Spinal muscles
	◯ **Weight bearing aerobic**	High Impact	Moderate Impact	Low Impact
LIFESTYLE	◯ **Reduce SMOKING** ◯ **Reduce ALCOHOL** ◯ **Referral to Stepping On falls prevention program**			

The purpose of this Management Plan is to optimise ways in which your refracture risk can be reduced as much as possible. We aim to develop a Management Plan according the medical evidence and your preferences.

GOALS	**Write down the ways in which you could reach your recommended and agreed bone strength goals**
Adequate calcium	
Adequate Vitamin D	
Adequate Exercise	
Other goals	
FALLS PREVENTION – what else can I do?	
REFERRALS AND RECOMMENDATIONS	
IMPORTANT INFORMTATION	
1. Please ask the Specialist if you need to return to clinic for a REVIEW visit. **2. You need a REFERRAL from your GP for this appointment and/or a BMD.** **3. PLEASE ENSURE you keep your REVIEW APPOINTMENT(s) by noting the date in a diary or calendar. If you cannot attend let us know as early as possible.**	

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