

GUIDE

Osteoarthritis Chronic Care Program Site Manual

Musculoskeletal Network



The Agency for Clinical Innovation (ACI) works with clinicians, consumers and managers to design and promote better healthcare for NSW. It does this through:

- *service redesign and evaluation* – applying redesign methodology to assist healthcare providers and consumers to review and improve the quality, effectiveness and efficiency of services
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- *initiatives including guidelines and models of care* – developing a range of evidence-based healthcare improvement initiatives to benefit the NSW health system
- *implementation support* – working with ACI Networks, consumers and healthcare providers to assist delivery of healthcare innovations into practice across metropolitan and rural NSW
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- *continuous capability building* – working with healthcare providers to build capability in redesign, project management and change management through the Centre for Healthcare Redesign.

ACI Clinical Networks, Taskforces and Institutes provide a unique forum for people to collaborate across clinical specialties and regional and service boundaries to develop successful healthcare innovations.

A key priority for the ACI is identifying unwarranted variation in clinical practice. ACI teams work in partnership with healthcare providers to develop mechanisms aimed at reducing unwarranted variation and improving clinical practice and patient care.

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Contents

Contents	ii
1. Introduction	1
2. Purpose	1
ACI Musculoskeletal Network Contacts.....	1
3. NSW Model of Care for Osteoarthritis Chronic Care Program	2
Executive Summary	2
Background	2
The Model of Care	2
Evaluation.....	3
4. Getting Started	5
4.1 Identify Sponsors, Clinical leadership and governance and Service leads	5
4.2 Roundtable Discussion	5
4.3 Musculoskeletal Steering Group	6
4.4 Conduct an Implementation Assessment	6
4.5 Additional Implementation Support Tools.....	7
5. Planning: Local Service Setup	8
5.1 Review Key Documents	8
5.2 The Resource Needs	8
5.2.1 Workforce	8
5.2.2 Technology	10
5.2.3 Infrastructure and Equipment.....	11
5.3 Preparing for Service Delivery.....	12
6. Key Components of the NSW Model of Care for the Osteoarthritis Chronic Care Program	13
6.1 Coordinated multidisciplinary team approach.....	13
6.3 Comprehensive Assessment.....	14
6.3.1 Health beliefs, expectations and current knowledge.....	18
6.3.2 Health behaviours and risk factors	18
6.3.3 History of the condition.....	18
6.3.4 Physical examination and assessment of function and performance.....	19
6.3.5 Falls Risk Screening	19
6.3.6 Health Status/ Health Related Quality of Life	19
6.3.7 Identification of comorbidities	20
6.3.8 Physical and Clinical assessments	20

6.3.9 Psychosocial assessment	21
6.3.10 Medication Assessment	22
6.3.11 Patient Reported Measures (PRMs).....	22
6.3.12 Comprehensive assessment in practice	24
6.4 Health education and self-management support	25
6.4.1 Development of a personalised management plan.....	26
6.4.2 Timely and efficient communication	27
6.4.2 Health education and self-management resources	27
6.5 Exercise and weight loss.....	29
6.5.1 Exercise	29
6.5.2 Weight loss	30
6.6 Pain management.....	30
6.7 Care coordination.....	31
6.8 Routine and planned reviews	33
6.9 Appropriate and timely access to surgery.....	33
6.10 Quality improvement	35
7. Evaluation and Monitoring	35
8. ACI Support.....	36
9. Resources	37
10. References	38
Appendix 1: Implementation Assessment	40
Appendix 2: Osteoarthritis Chronic Care Program Coordinator Position Description	42
Appendix 3: Assessment tools	46
Appendix 4: Height, weight, BMI and Waist circumference guidelines.....	55
Height.....	55
Weight.....	55
Body mass index (BMI)	55
Waist circumference	56
Heart rate, blood pressure and oxygen saturation	57
Blood glucose levels.....	57
Appendix 5: Assessment and ongoing monitoring of people with chronic conditions.....	58
Appendix 6: Personalised management plan	63
Appendix 6: 6 Minute Walk Test Instructions	64

1. Introduction

The NSW Model of Care for Osteoarthritis Chronic Care Program (OACCP) was developed and launched in 2012. The model provides a framework to support the consistent delivery of evidence based conservative management for people with osteoarthritis of the hip and/or knee. It is a person centred holistic program that incorporates interventions to support self-management of the individual's physiological and psychosocial needs. The model of care supports best practice health care through coordinated, multidisciplinary teams working together aiming to improve outcomes for people whose primary concern is the management of their osteoarthritis of the hip or knee. Implementing the OACCP in local settings results in:

- appropriate and timely access to elective hip or knee joint replacement surgery through early identification of people who need escalation up the surgical waitlist based on increasing symptoms and decreasing quality of life; and those who determine their new skills in self-managing the OA results in less pain, improved function and quality of life and their determination that surgery is not required at this time
- Improved preparation of participants for their surgery through proactive comorbidity management, home modifications and greater understanding and expectations of surgery.

2. Purpose

This site manual has been developed to support and guide local sites with the implementation of the NSW Model of Care for Osteoarthritis Chronic Care Program. It outlines the key features and requirements of the model of care and provides supplementary tools and resources intended to guide services/ Local Health Districts in constructing their own localised model of care within their local context. 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 for those with osteoarthritis of the hip and/or knee have access to conservative multidisciplinary management strategies in order to improve patient outcomes, experience and satisfaction with care.

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3. NSW Model of Care for Osteoarthritis Chronic Care Program

Executive Summary

Background

Osteoarthritis is one of the leading causes of disability worldwide and the most common chronic condition of the joint affecting Australians. Driven by an ageing population and increasing prevalence of obesity, it is expected to affect three million people by 2032, an increase of 58% from 2012. Individuals with osteoarthritis live with chronic pain, physical disability and functional impairments as well as sleep, social and work difficulties. Additional to the individual burden is the societal cost of osteoarthritis that includes high healthcare cost and utilisation, workforce and productivity losses, as well as indirect care costs. This means that current practices for the management of osteoarthritis, which are often analgesia until referral for elective joint replacement, are unsustainable. Conservative estimations of the total cost of arthritis and other musculoskeletal conditions were \$55.1 billion in 2012. Australia now has the world's highest standardised rate for knee replacements compared to other OECD countries and 77% of the osteoarthritis healthcare costs are spent on hospital admitted patients.

There is a common misconception that osteoarthritis is an inevitable part of ageing and that joint replacement surgery is needed to manage symptoms of pain, loss of function and physical difficulties. There is a global and national consensus for the use of conservative management to relieve pain, minimise disability and slow disease progression. Evidence supports the inclusion of exercise, injury avoidance, weight loss, self-management, pharmacological pain management and timely access to surgery as effective strategies for managing osteoarthritis. Despite this, current practice in NSW demonstrates that almost 70% of individuals who are placed on the elective waiting list for hip or knee joint replacement have not previously accessed conservative care. Best practice treatment for hip and knee osteoarthritis involves a multidisciplinary skilled team providing a comprehensive and integrated program delivered using the tenets of the chronic care model. A multidisciplinary chronic care program utilising conservative management interventions forms the key activities of the Musculoskeletal Networks Osteoarthritis Chronic Care Program.

The Model of Care

The NSW Model of Care for the Osteoarthritis Chronic Care Program (OACCP) was launched in 2012 in response to long waiting lists for elective hip and knee replacement surgery, proliferation of those with poorly controlled or assessed comorbidities, and many on the list who would respond well to conservative care options. This revealed the need for a model of care that enabled a coordinated, multi-disciplinary approach, utilisation of conservative care for the management of osteoarthritis and optimisation of comorbidity management, their social and psychological health.

People who access the OACCP experience significant hip or knee pain most days of the previous month attributable to osteoarthritis of the hip or knee. The model of care is based on national and international published evidence, advice from clinical, research and management experts across NSW, and guided by lessons learnt in implementation. Central to this model is a **dedicated OACCP coordinator**, who will lead and work within a multi and interdisciplinary team.

OACCP coordinators;

- provide overall coordination of the Osteoarthritis Chronic Care program (OACCP)
- lead a multidisciplinary team to plan, deliver and evaluate the program
- support the team to deliver the OACCP using behaviour change methodology with the participant at the centre of all planning and decision-making
- provide care coordination, comprehensive assessment and collaborative care planning for the individual accessing the service
- maximise self-management support through provision of education and utilisation of behaviour change strategies to facilitate health behaviour change
- provide access and behavioural support to core conservative treatments of exercise, weight loss, self-management education and support, and pain management
- support access to services that can optimise an individual's comorbidity management, their social and psychological health
- link people to community-based, complementary lifestyle support services
- support the team to follow up participants over time to ensure the planned interventions are carried out and the individual's needs are addressed
- enable individuals to access appropriate and timely surgery based on clinical need.

The model of care is guided by chronic care principles and incorporates the use of behaviour change methodology to support and empower people with osteoarthritis of the hip and/or knee to engage in self-determined health behaviour changes in line with conservative care recommendations. Through appropriate enrolment, utilisation of conservative treatments and improved processes for timely access to surgery and readiness for surgery there is significant benefits to be made by the health system.

Evaluation

After about three years of implementing the model of care in various sites across NSW, ACI engaged Deloitte Access Economics to undertake a formative evaluation of the OACCP. The evaluation report was released in July 2014. The evaluation was to ascertain the applicability of the model of care across the variable pilot sites in NSW. Service sites were representative of metropolitan, regional and rural services. The Formative Evaluation revealed that the Model of Care is applicable across a range of geographical and healthcare settings in NSW.

Key outcomes included:

- **appropriate waitlist** for elective joint replacement surgery – 11-17% removed from the waiting list for knee replacement surgery in consultation with their surgeon and GP. Participants were on average feeling able to make this decision at about 26 weeks into their conservative care self-managed program. Improvements in their pain and function gave them the confidence in this decision-making
- **appropriate escalation** for elective joint replacement surgery - about 4% of those attending the OACCP for the management of hip osteoarthritis, were supported by the team in highlighting the need with their surgeons and general practitioners for escalation due to increased pain and decreased function despite conservative management.
- **improved readiness for surgery** with reduced rates of deferment at the point of admission for those proceeding to surgery. This was achieved through proactive co-morbidity

management, identification of home modification needs and improved understanding and expectations of surgery and hospitalisation processes and outcomes by the individual early in the waitlist process.

Furthermore, if the model of care is implemented in its entirety across NSW highly positive outcomes can be achieved for patients and health services. These include, but not limited to:

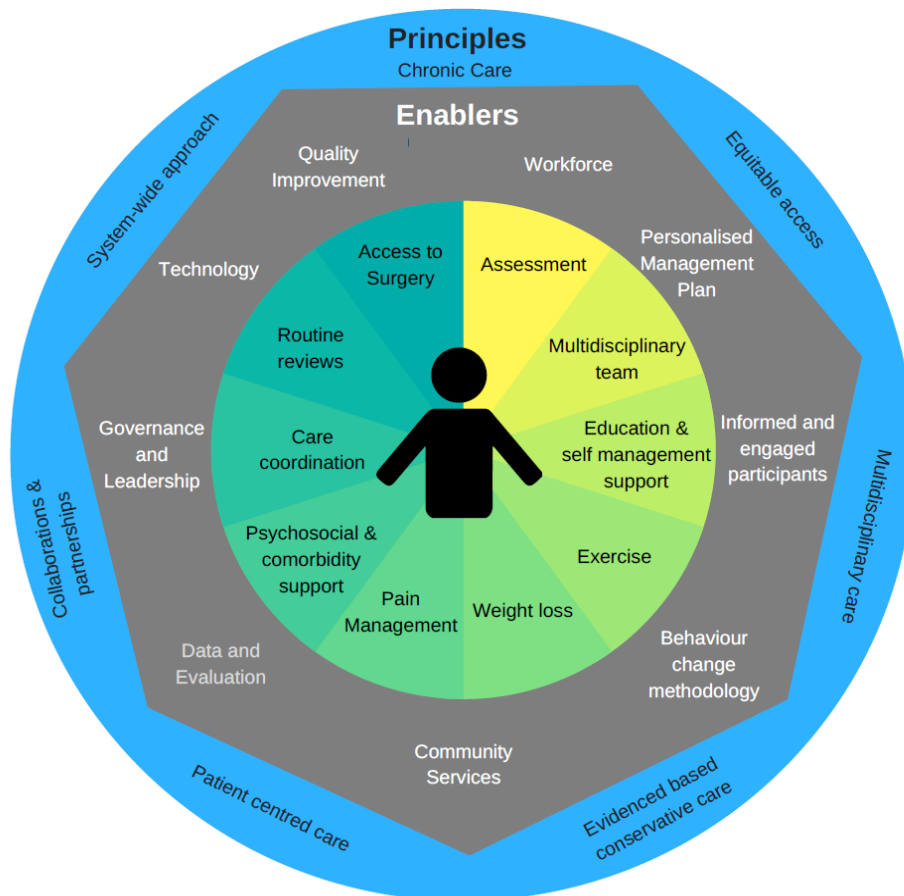
- over 8,314 patient separations could be avoided
- around 50,925 bed days could be used for other patients
- notional costs avoided of \$152.5 million could be realised.

The revised version of the model of care in 2017 for the Osteoarthritis Chronic Care Program includes evidence determined since the original version was launched in 2012, additional concepts that are included as part of care and support for people with chronic conditions in 2017, and is aligned with the latest guidelines nationally and internationally.

Implementation:

Since the original pilot in 11 sites in 2011 - 2014, the model of care has been implemented as part of normal service provision at numerous public hospitals and a small number of private hospitals or clinics. As part of the NSW Government Leading Better Value Care initiative, all Local Health Districts in NSW will be implementing the model of care in the 2017/18 financial year with consolidation in the following years to ensure sustainability of local service models.

Diagram 1 Graphic depiction of the core elements of the Osteoarthritis Chronic Care Program, key enablers and underlying principles.



4. Getting Started

4.1 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.

4.1.1 Executive Sponsor

It is essential that executive and senior management support is identified at the outset. The Sponsor's 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.

4.1.2 Clinical Leadership and Governance

Clinical leadership and governance must be identified to support the service. The clinical leader/champion should be a clinical expert with credibility in musculoskeletal health, 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, general practice, or rehabilitation.

4.1.3 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 Osteoarthritis Chronic Care Program (OACCP) 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, typically senior allied health clinicians or clinical nurse consultants.

4.2 Roundtable Discussion

A start-up meeting should be held at each district at the commencement 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, rehab physicians, pain specialists, geriatricians, nurses, allied health, musculoskeletal coordinators and support staff, primary health clinicians/ networks and consumers.

Discussion should include:

- service/ Clinical Governance
- the current context of service delivery
- the OACCP model of care
- how to implement local services in alignment with the model of care
- resource needs
- formalise 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.

4.3 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 health worker 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 a specific Musculoskeletal Steering Group is utilised, the group will report up to the Sponsor and/or the overarching governance committee on service progress.

Activities of the Steering Group will follow on from the initial roundtable discussions including:

- defining and documenting the Steering Groups Terms of Reference (ToR)
- formalising the Service/ Clinical Governance Framework
- identifying and analysing the current approach to the service delivery (if any) e.g. data to inform service need, existing service provision and utilisation
- review the model of care (and relevant supporting guidelines/standards) and consider how this will translate into local practice e.g. conducting a self-assessment, identifying issues and gaps and prioritising solutions, consideration of service and resource needs
- planning the localised delivery of model of care and preparing for service delivery by the agreed launch date e.g. service site/setting, infrastructure, technology, workforce, service pathways/ participant journey, communication and referral pathways (*more detail is provided in Section 5 – Planning: Local Service Set Up*)
- defining the evaluation approach e.g. key questions and data that will need to be collected and measured (*more detail is provided in Section 7 – Evaluation and Reporting*)
- developing the communication plan e.g. key messages, the method (meetings, newsletters, the Local Health District intranet, websites, emails, reports, presentations) and frequency
- considerations for the long term sustainability of the service.

4.4 Conduct an Implementation Assessment

The purpose of conducting the implementation 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 [Implementation checklist](#) is provided in Appendix 1.

The benefits of the implementation assessment may be:

- generate awareness and understanding of the OACCP model of care including underlying principles and elements of care delivery

- assist in developing a comprehensive and shared understanding of what currently exists for OACCP or osteoarthritis management 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 Osteoarthritis Chronic Care Program, the Assessment Tool can be used to aid the planning process for new services.

For sites that are already implementing an Osteoarthritis Chronic Care Program (or elements of that service) the assessment tool should be completed quarterly to identify progress made towards meeting the key requirements of the model of care 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. OACCP 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.

4.5 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](https://www.aci.health.nsw.gov.au/make-it-happen/implementation-support) provides a number of resources and tools to assist the implementation process.

<https://www.aci.health.nsw.gov.au/make-it-happen/implementation-support>

- The [Implementation Guide](#) found on the webpage provides detailed guidance through the phases and steps involved in successful implementation.

The Centre for Healthcare Redesign (CHR) 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.

<https://www.aci.health.nsw.gov.au/make-it-happen/centre-for-healthcare-redesign>

5. Planning: Local Service Setup

5.1 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 the management of osteoarthritis of the hip and/or knee:

- NSW Osteoarthritis Chronic Care Program Model of Care¹
- Australian Commission on Safety and Quality in Health Care, Osteoarthritis of the Knee Clinical Care Standard, 2017²
- Royal Australian College of General Practitioners, Guideline for the non-surgical management of hip and knee osteoarthritis, 2010³

5.2 The Resource Needs

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

5.2.1 Workforce

OACCP Coordinators: Central to the Osteoarthritis Chronic Care Program is the appointment of OACCP Coordinators to provide Care Coordination and Case Management. This coordinator demonstrates capability to work in their nominated profession with an advanced scope of practice. The key role of the coordinator is to lead and coordinate the development, implementation and ongoing evaluation of the OACCP through delivering expert chronic care and musculoskeletal assessment and interventions.

They have a dedicated role that includes service planning and review, engagement of the multidisciplinary team, and support of the team to deliver the Service.

The OACCP Coordinators have a role in patient activities but within the team context. These patient activities include:

- assessment
- collaborative care planning
- health education
- referral to appropriate interventions and community support services that support the conservative management of osteoarthritis as well
- appropriate and timely access and preparedness for elective joint replacement surgery.

The OACCP Coordinator/s 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.

Ideally the Coordinator will be a senior allied health professional or clinical nurse consultant (CNC) who has extensive experience in the provision of care to people living with chronic conditions within the community. Suggested classification includes CNS, RN 8, AHP3.

OACCP Coordinators will have extensive experience in the public health system, have tertiary qualifications and can demonstrate an understanding the chronic care model as well as the clinical, social and psychological care needs of the 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.
- Advanced knowledge of musculoskeletal chronic conditions is an advantage

A Position Description Template has been created to support the recruitment of suitable Musculoskeletal Coordinators to fulfil this position. See Appendix 2.

Training and development may be required to prepare the appointed Musculoskeletal Coordinator for the role. A key element to the Osteoarthritis Chronic Care Program Model of Care 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 which 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*.

Service leads: Each Local Health District should consider allocating a senior clinician to lead the service provision across the Local Health District to;

- Provide leadership and coordination of the local musculoskeletal service implementation
- Will have clinical responsibilities but be actively involved in the development, review and evaluation of service delivery.
- Experience in project management and/or managing a team
- Must have dedicated project time.
- Fosters a culture of quality improvement to maximise the impact of the service.
- Be clinical leaders within musculoskeletal health, suggest classification could include clinical nurse consultants (CNC 2), nurse managers, or senior allied health clinicians (AHP 4).

This person may be a coordinator and service lead across OACCP or within a LHD you may have a MSK service lead that oversees both OACCP and ORP.

Medical Officer: The engagement of a medical officer is necessary to provide clinical leadership and governance to the program. Key aspects of the role includes;

- Clinical expert with credibility in the musculoskeletal health specialty, with a special interest in the service. For example, the clinical leader may be a senior clinician from rheumatology, orthopaedics, endocrinology, and/or rehabilitation
- Provide clinical expertise for local project teams
- Key influencers to support successful local service implementation
- Actively involved in development and review of service delivery
- Committed to provide ongoing support, problem solving and prioritisation of identified opportunities for improvement

Multidisciplinary team members: The local service model must support access for all to a multidisciplinary team to meet the chronic care needs of individuals accessing the service. This may include the use of existing internal clinical resources, from public health, medical, allied health and nursing teams as well as through existing services in the primary care and community setting. With regards to the management of OA the specific disciplines may include:

- GPs as leader of the individual's healthcare and their practice staff
- Specialist doctors from the fields of medicine and surgery (rheumatologist, general practitioner, sports medicine physician, general physician, orthopaedic surgeon)
- Physiotherapists
- Nurses
- Occupational Therapists
- Dieticians
- Exercise Physiologists
- Psychologists
- Social Workers
- Generalist counsellors
- Pharmacists
- Podiatrists
- Others as identified as necessary

Administrative Support: This role is not to be underestimated. Administration Officers at each site are needed to support the Osteoarthritis Chronic Care Program and fulfil duties including;

- patient registration
- booking patient appointments
- providing patient reminders
- ensuring communication between the service and the primary and secondary care clinicians
- billing
- data entry and collation
- other administrative support as required.

5.2.2 Technology

The technology requirements to implement the model are to be considered early in the planning process. Delivery of the Osteoarthritis Chronic Care Program will require:

- the establishment of local data collection and management solutions to assist with clinical management of patients over time and the patient and service reporting requirements

- methods and tools to support the Musculoskeletal Coordinator in patient identification (ideally services will have access to digital referral for admissions information and/or specialist referrals)
- the development of new forms required for documentation within clinical systems
- means and processes in which to capture and document Patient Reported Measures/ Patients Reported Experience Measures (ideally within the existing clinical systems).

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.

5.2.3 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 deliver 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:

- space to deliver group education sessions as a part of the suite of options to support self-management
- access to the required equipment (computer, projector, screen, whiteboard, flip chart, chairs etc.) must be available.
- an area to undertake functional assessment e.g. a timed up and go or a walk test.

If the purchase of any required equipment is needed, this should be enabled at the outset. For example, in order to complete a thorough and comprehensive assessment the following is required:

- sphygmomanometer and stethoscope
- blood glucose testing machine and strips
- body weight scales
- height measuring tools
- a stop watch for timed mobility tests
- anatomical models, posters, and other equipment that support self-management.

5.3 Preparing for Service Delivery

In preparing for service delivery, time must be allocated before delivery of care to patients begins to work on:

- 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, and culturally and linguistically diverse
- establishing and documenting service delivery processes and procedures – which must be regularly updated, centrally located and easily available to all team members
- 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 i.e. correspondence/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
- communication and promotion of 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 the Osteoarthritis Chronic Care Program and Osteoporotic Refracture Prevention 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, Osteoarthritis Chronic Care Programs may be able to leverage, modify and adapt existing Osteoporotic Refracture Prevention Services materials and resources to address the specific requirements of the Osteoarthritis Chronic Care Programs and the target cohort needs.

6. Key Components of the NSW Model of Care for the Osteoarthritis Chronic Care Program

6.1 Coordinated multidisciplinary team approach

Allocation of a coordinated multidisciplinary team to work in partnership with individuals to meet their holistic chronic care needs

The OACCP team is led by a dedicated **Osteoarthritis Chronic Care Program (OACCP) Coordinator**. They will be a collaborative leader of the multidisciplinary team.

Each site will draw from these disciplines as available locally and as needed for their cohort of participants. All team members must demonstrate an understanding and belief of the substantial benefit to be found in an interdisciplinary approach to chronic care. Team members will have a deep understanding of behaviour change theories which are essential to support behaviour change in the targeted population. The team members will have knowledge of how and where individuals can gain access to their day-to-day needs to maintain or enhance their musculoskeletal health. They will have a goal of providing the most appropriate care in the most appropriate place for each individual to help them to self-manage their OA with conservative treatments. Participants will have the opportunity to maximise these benefits with a view to avoiding or delaying joint replacement surgery, if appropriate.

6.2 Access to Conservative care

Conservative management is offered as the first line treatment for those with Osteoarthritis of the knee and/or hip. All patients referred for admission for elective hip and/or knee joint replacement surgery in NSW public hospitals are supported to access conservative care prior to surgery.

Conservative management refers to the non-surgical treatments that provide symptom relief, alter the disease progression and offers an approach that allows patients to take control and adjust to the realities of living with osteoarthritis.

This includes education and self-management, exercise (land or water based structured progressed aerobic, strengthening and neuromuscular exercise) and weight management as well as pharmacological and non-pharmacological therapies for pain management. Internationally there is good evidence to guide conservative OA management as a first line treatment.

While the OACCP is applicable across the OA disease spectrum, given the substantial pressure on public hospitals for elective joint replacement surgery, the NSW wide implementation will in the first instance focus on those people accessing NSW public hospitals through the surgical waitlists for elective hip or knee joint replacement or directly through specialist doctors.

Individuals who are awaiting elective joint replacement surgery or are referred through their specialist doctor for conservative OA management are eligible to participate in the OACCP if they meet two clinical criteria.

1. Pain associated with their knee and/or hip on most days of the last month
2. Visual Analogue Scale (VAS) or The Numeric Pain Rating Scale (NPRS) pain score of ≥ 4 (out of 10) at the initial assessment (confirmed either over the phone or at the initial visit)

People accessing hospital services that do not meeting eligibility should be advised to access conservative care as described in this model of care, through community based settings such as general practice and/or in collaboration with community allied health. Community options could include local exercise programs such those to be found at

<http://www.activeandhealthy.nsw.gov.au/>

Other options are Self-management services provided my consumer organisation such as Arthritis NSW, and web-based Health Weight for Life accessed at <https://oa.hwfl.com.au/>.

All people identified within the target population group will be contacted by the OACCP service to initiate conservative care. This should be done as part of standard care with an “opt out” rather than “opt in” service. This initial contact is used to provide health education promoting the conservative management of osteoarthritis and facilitate the person’s engagement in service. This initial contact with the person by coordinator member of the clinical team is considered the first occasion of service when there is a discussion involving clinical content (i.e. all people identified and contacted should be registered and recorded under the NAP service types for OACCP). 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** – typically these are for 60 - 90 minutes with the OACCP Coordinator and multidisciplinary team members. A confirmation letter including a patient information brochure should be posted out to the person.
2. **Decline service participation.** It is suggested a letter is posted to the person to reinforce the importance of conservative care for osteoarthritis management and considerations for improved readiness for surgery, as well as indicating where they can receive care and who they should contact if they choose to engage in services in the future.
3. **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 Osteoarthritis Chronic Care 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 General Practitioner.

6.3 Comprehensive Assessment

A systematic and formal assessment is undertaken that is holistic and patient centred in consideration of the physical, psychosocial and comorbidity needs of the patient.

The OACCP coordinator and multidisciplinary team will be tasked with undertaking a comprehensive assessment for all people attending the Osteoarthritis Chronic Care Program.

Care should be delivered within a coordinated chronic disease management model, keeping with the Wagner Chronic Care approach⁴. A holistic patient centred comprehensive assessment looks to understand and monitor what’s important to an individual with OA and factors that can impact their ability to self-manage. This includes primary measures of pain, function and quality of life as well as any psychosocial and comorbidities influences on the quality of life or ability to participation in activities of daily living including work, social and leisure activities (discussed in section 6.3 below).

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 as well as psychological or social factors impacting on their overall health and well-being.

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

Component of comprehensive assessment could include;

- health beliefs, expectations and current knowledge
- health behaviours and risk factors
- history of the condition
- measuring general health status/ health related quality of life (HRQoL)
- a physical examination of symptoms and assessment of function and performance
- identification of comorbidities
- monitoring relevant physical and clinical measures
- current use of medications;

The table below details key components and recommended tools to be considered with an individual;

Table 1: Key components and recommended tools for comprehensive assessment

	Considerations	Recommended tools	Detailed/ additional options
Health beliefs, expectations and knowledge	<ul style="list-style-type: none"> • Current knowledge on condition, treatment and management options • Expectations and beliefs relating to symptoms, treatments and/or management 	<ul style="list-style-type: none"> • Current OA knowledge • Self-efficacy • Lifestyle expectations • Attitudes to exercise • Expectations of Surgery 	
Disease specific	<ul style="list-style-type: none"> • History of condition • Symptoms • Impact on usual activities • Management strategies used/tried 	<ul style="list-style-type: none"> • HOOS/KOOS • Oxford 	
Pain	<ul style="list-style-type: none"> • Medications used to manage pain and their side effects • Self-help strategies used 	<ul style="list-style-type: none"> • VAS • NPRS • PROMIS 29 	
Function	<ul style="list-style-type: none"> • Impact on activities of daily living, social and leisure activities • Sleep • Fatigue • Mobility • Falls risk 	<ul style="list-style-type: none"> • HOOS/KOOS/Oxford • PROMIS 29 • 30 Sec chair test • 40M fast paced walk • Timed up and go 	<ul style="list-style-type: none"> • 6 minute walk • FROP-Com Screen • Falls Risk Assessment Tool (FRAT) • The Falls Efficacy Scale-International (FES-I)

Health Status/ Health related Quality of Life		<ul style="list-style-type: none"> PROMIS 29 	<ul style="list-style-type: none"> EQ5D AQoL
Comorbidities	<ul style="list-style-type: none"> Impact on quality of life or ability to self-manage Drug appropriateness and interactions Fitness of surgery Falls 		<ul style="list-style-type: none"> FROP-Com Screen Falls Risk Assessment Tool (FRAT) The Falls Efficacy Scale-International (FES-I)
Psychosocial factors	<ul style="list-style-type: none"> Mood Work impact Social roles and support networks Leisure interests 	<ul style="list-style-type: none"> PROMIS 29 Social history (work status, social support) 	<ul style="list-style-type: none"> DASS
Patient experience		<ul style="list-style-type: none"> PREMs (<i>under development</i>) 	<ul style="list-style-type: none"> Focus groups Case studies

* Adapted from Figure 1 Holistic assessment of person with OA from National Institute for Health and Care Excellence, 2014, Osteoarthritis: care and management⁵

Utilising appropriate patient reported outcome measures throughout the assessment process provides valuable information about the person's health and well-being from their own perspective and helps to identify what is important to the individual as well as their specific care needs.

6.3.1 Health beliefs, expectations and current knowledge

Identifying and understanding personal factors helps to ensure care is suitably tailored to the needs of the individual.

In particular, factors such as ethnicity, culture, education, literacy, employment, as well as family and social relationships and supports will provide information about the person's daily life and potential influences to ongoing access and engagement in care.

This includes consideration of current knowledge on their condition, treatment and management options. Additionally, details about personal preferences, beliefs, expectations and goals of care should be established at the outset

The assessment of health beliefs, expectations and knowledge could include;

- current OA knowledge
- self-efficacy
- lifestyle expectations
- attitudes to exercise
- expectations of surgery

6.3.2 Health behaviours and risk factors

It is important to gather information about the person's past and current lifestyle and behaviours as well as any risk factors.

A complete lifestyle assessment will cover diet and nutrition; physical activity and exercise; sedentary behaviours; sports, recreation and leisure pursuits; work/occupation history; smoking status; alcohol consumption and drug use etc.

Considerations for the risk factors for OA would include:

- being overweight or obese
- a previous significant injury to the joint
- repetitive movements associated with an occupation

6.3.3 History of the condition

A detailed history of the persons OA should describe:

- the onset of OA
- their experience of pain and other symptoms of OA such as stiffness and swelling
- effect of OA on their ability to do usual daily activities, and participant in home, work, leisure and social pursuits. Considerations should be given to: performance of ADLs, home and family duties, work status, participation in physical activity and leisure, quality of sleep, fatigue, relationship and social history etc.; any modifications or adjustments the person has made or that is required to perform particular tasks and activities; additional support

needs and requirements; the emotional impact/ thoughts and feelings the person has towards their current functional abilities.

- current and previous management attempts and coping strategies. What are they currently doing to manage their condition? Their level of engagement in self-management. What have they tried in the past? What helps, what doesn't? Adherence to treatment and interventions etc.

It is recommend that services use an appropriate Hip and/or Knee OA specific patient reported outcome measure such as HOOS/KOOS or OHS/OKS to assess and monitor OA specific outcomes of pain, symptoms, function, and quality of life (*see Appendix 3 for details*)

6.3.4 Physical examination and assessment of function and performance

The physical examination should always include primary measures of pain and function.

Pain

- Ask participants if they have had pain on most days in the past month.
- The Visual Analogue Scale (VAS) or the Numeric Pain Rating Scale (NPRS) can be used to monitor levels of pain (*see Appendix 3 for details*).

Functional ability and performance

- Conduct an appropriate physical performance measures (*see Appendix 3 for minimum recommendations and details*).

6.3.5 Falls Risk Screening

Pain and decline in function from knee or hip OA may impact upon mobility and contribute to risk of falls. 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^{6,7}.

- 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 observing their gait, their transfer from sitting to standing or ability to stand on one leg. Preferably this should be assessed through the administration of a simple and validated screening test plus observation and discussion with the individual person (*see Appendix 3 for details of validated tools*)

6.3.6 Health Status/ Health Related Quality of Life

The use of tools designed to measure health status/ health related quality of life, allows for a complete understanding of the person's needs and circumstances to ensure that all factors affecting a person's health and well-being are known and to facilitate better informed and appropriate planning of care. These tools can also be used to measure the effects of treatments and interventions on chronic conditions over time.

- There are a variety of Patient Reported Outcomes Measures that assess physical, mental, and social- (*see Appendix 3 for details*).
- As a minimum, the ACI Musculoskeletal Network suggests the use of Patient-Reported Outcomes Measurement Information System (PROMIS-29) for all people attending the Osteoarthritis Chronic Care Program to capture patient centered indicators of health status.

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.

6.3.7 Identification of comorbidities

Understanding a person's comorbidities is an important part of providing chronic disease management services. A complete health and medical history including all current conditions and medications will help to identify any additional care needs and will allow coordinators to plan, facilitate and support people to access the care they need. This may include referrals to appropriate health care providers and services such as, falls prevention, diabetes education, cardiac or pulmonary rehabilitation services when required.

Additionally, as part of pre-operative procedures the optimisation of comorbidity management is crucial. Therefore there is a two-fold reason for OACCP teams to understand and support optimal management of an individual's comorbidities. OACCP teams don't need to have in-depth knowledge regarding the various comorbidities but certainly an ability to identify if the need for further care is required and how to access the care at various levels e.g. general practitioner, specialty physicians and chronic disease management teams.

The inclusion of a nurse as part of the multidisciplinary team has been shown to be beneficial in regard to comorbidity assessment and contemporary management. Their enhanced knowledge and experience of comorbidity and medication management enhances self-management support provided by the team, as well as accessing care as required.

6.3.8 Physical and Clinical assessments

Physical and clinical assessments will include:

- height (m)
- weight (Kg)
- BMI (kg/m²)
- waist circumference (cm)
- heart rate with basic assessment of regularity (bpm)
- blood pressure measurement (mmHg)
- Oxygen Saturation (%)
- Blood glucose levels in the presence of diabetes

To complete the clinical assessment the team members may require some up skilling if they are not confident in carrying out some of these measures. However, with the right health professionals engaged in the team all will be provided with expertise.

Height, Weight, BMI and waist circumference measurement guidelines in Appendix 4 are adapted from the NHMRC Clinical practice guidelines⁸ for the management of overweight and obesity in adults, adolescents and children in Australia.

Further information on physical and medical assessment recommended to be undertaken prior to exercise testing can be found at Appendix 5.

6.3.9 Psychosocial assessment

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

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

Therefore OACCP assessments cover all these factors:

- mental health
- social history including social support, relationships and leisure interests
- work impact

A standardised assessment tool/form will facilitate identifying this information and may include Patient Reported Outcome Measures (discussed in detail in Section 6.3 below)

Monitoring Mental Health

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

The PROMIS 29 includes two domains for depression and anxiety will be used initially to elucidate any concerns. If these domains identify the possibility of depression or anxiety OACCP teams will:

- administer the DASS 21 to further define, understand and measure the severity of emotional states of depression, anxiety and stress. (*see Appendix 3 for details*)
- include a discussion with the person on their reasoning for scoring high and the outcomes of the DASS21 completion will also inform this conversation and agreed plans of management with the person. In some instances this may include:
 - involvement in peer group sessions with OACCP participants and team members
 - a discussion with their GP
 - referral to a psychologist with agreement of their GP.

OACCP teams are required to be aware of their local mental health pathways to appropriate local services and for which circumstances these are to be activated e.g. when self-harm is disclosed.

Social History

It is required to assess an individual's:

- domestic status, especially if they live alone
- relationships and social supports
- ability to participate in activities of daily living inclusive of family duties and interests, and lifestyle activities
- financial and work concerns e.g. meeting obligations that may be impacted due to their significant osteoarthritis or comorbidities.

If any issues are identified then the OACCP team will ensure access to services as required such as social worker assessment and support.

6.3.10 Medication Assessment

Medication assessment will include:

- listing of prescribed and self-prescribed medications and supplements
- doses, frequency and timing
- adherence, effectiveness and side effects
- known allergies.

Key considerations to include that must be assessed by the individuals' GP, or OACCP team medical officer, or the OACCP team nurse:

- use of analgesia and possible interactions or contraindications
- polypharmacy that may require medical team assessment.

Each OACCP assessment will also review alternative strategies used for pain management such as heat application, support assistive devices and conservative care supplementation.

At each OACCP review, the medication form should be reviewed to identify any changes e.g. dose increased, decreased, ceased or unchanged since what was recorded at the previous assessment. In addition to identify if any other medications have been added to the individual's regimen.

The outcome of this review will add information required for the self-management support of maintaining medication regimens as the individual has agreed with their medical practitioner.

The team member to ideally undertake this review and self-management support will be a medical officer or a nurse.

6.3.11 Patient Reported Measures (PRMs)

Evidence is growing as to the value of the use of patient reported outcome measures (PROMs and patient reported experience measures (PREMs). Patient report outcome measures support OACCP teams to determine what is most important to the individual person and including their reported needs will form a firm base for partnership between the person and the OACCP team. On the other hand, Patient Reported Experience Measures help OACCP teams to improve the processes in working with people accessing the OACCP for support of their self-care of osteoarthritis. Trials of the OACCP have confirmed this with many teams reporting improved engagement of their participants, in comparison to previous clinical practice that used PROMs as research or quality improvement tools alone.

You can view an OACCP physiotherapist and consumer discussing the use of PROMs at <https://www.aci.health.nsw.gov.au/make-it-happen/prms/resources/video>

Patient Reported Outcome Measures (PROMs)

Measuring and recording outcomes from the person's perspective will provide valuable information about the person's health and well-being and helps to identify what is important to the individual person as well as their specific care needs. Utilisation of patient reported outcome measures (PROMs) must be incorporated into the assessment process.

PROMs are (patient) self-completed tools or questionnaires 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 include:

- establishing rapport and engagement with the individual 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 understanding of health service performance.

Some examples of PROMs that may be used in the delivery of musculoskeletal services are included in *Appendix 3 under the domains of Pain, Quality of life, Hip and Knee OA specific outcomes, Psychological discomfort/Distress and Falls-Self efficacy*

As a minimum, the Osteoarthritis Chronic Care Program model of care includes the use of Patient-Reported Outcomes Measurement Information System (PROMIS-29) for all people attending the osteoarthritis chronic care program, to capture patient centred indicators of health status. 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 (HRQoL) 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.

Osteoarthritis Chronic Care Program teams will select the additional tools as required when there is a need to understand further - as identified through recording of their PROMIS 29 or through interview with the person - a person's own assessment of their pain, function and/or quality of life.

Patient Reported Experience Measures (PREMs)

Patient reported experience measures 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 include:

- 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
- recommendation of the service to family and friends.

6.3.12 Comprehensive assessment in practice

OACCP coordinators will not know everything about all the conditions or issues that individual participants to the osteoarthritis chronic care program may present with. Nor will the coordinators 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.

PRMs in practice

The ACI Patient Reported Measures program will be used to support and enable the utilisation of PROMIS-29 and PREMs into practice.

Services should consider:

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

ACI is currently reviewing and determining the resources that OACCP teams will require to meet the electronic needs of PRMs. OACCP service sites are encouraged to maintain contact with the ACI Musculoskeletal Network to be up to date on progress for state-wide solutions.

6.4 Health education and self-management support

From the first assessment health education and self-management support is provided to enhance knowledge and support active and informed engagement in care. It will promote physical activity, weight management, pain management and osteoarthritis treatments to support symptom management and improve readiness for surgery.

Health education and self-management support is considered an integral part of any chronic disease management program. The OACCP Coordinator and multidisciplinary team will provide education about osteoarthritis to support active engagement and participation in effective osteoarthritis management. Utilisation of behaviour change methodology is required to support the required lifestyle and behaviour changes. From this process an individualised self management plan is developed in collaboration with the patient addressing their physical and psychosocial health needs

The use of behaviour change coaching is important in engaging the person in their self-management and promoting the uptake of lifestyle behaviours that impact OA management such as exercise, healthy nutrition, weight management, smoking cessation, pain management strategies or the use of mobility aids and assistive devices. A long term self-management approach is needed where the individual is supported to develop their knowledge, skills and confidence so they are able to self-manage in the long term.

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 (i.e. depression, social isolation, fear of falling) and co-morbidity health needs.

Health education will be evidenced based and address the fundamentals of osteoarthritis management and care as relevant to the individual including:

- osteoarthritis disease process
- appropriate diagnostics and surgical interventions principles of management and management options including those known to be effective, ineffective or where evidence is unclear, including the role of alternative medicines
- side effects, effectiveness and considerations for varying management options
- weight management
- exercise and physical activity

- pain medication
- aids and devices
- elective joint replacement surgery
- myth busting e.g. OA as a normal part of ageing, supplementation, arthroscopy, surgery just in case
- behaviour modifications including adherence to medication regimens, appropriate exercise habits, pacing of activity and weight reduction
- advice concerning appropriate footwear and other measures to unload damaged joints .

Effective health education and self-management support requires information and communication practices that consider the principles of adult learning, behaviour change methodologies and health literacy. It must be flexible and tailored to take into account the preferences of the person regarding the type or media, along with frequency of contact and the skills or competencies of individuals. It can be delivered individually or in groups through any combination of face to face, phone, digitally based (telehealth, apps) or paper based methods or resources.

It is highly recommended that the initial consultation is delivered in person with subsequent interventions or reviews delivered in a method that is most conducive for the person. Information should be presented in easy to read language and where possible translated for locally relevant languages and cultural needs.

6.4.1 Development of a personalised management plan

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

Personalised care is essential to addressing individuals' 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 for the Osteoarthritis Chronic Care Program. It will document the care and management of the person including the clinical and medical management approach i.e. initiation and prescription of medications and supplementation regimens, as well as specific goals and action plans to address conservative care options i.e. exercise, diet and lifestyle, that are aligned and appropriate to their needs, circumstances, preference and context.

Key principles for developing effective management plans include:

- acknowledging the person's central role in their care and fostering a sense of personal responsibility for their own health care
- collaboration and engaging 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
- using 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 linkages with community resources
- planned follow up consultations and reviews.

A template of the Personalised Management Plan is provided in Appendix 5. All attempts should be made to ensure the Personalised Management 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 Personalised Management Plan be developed and integrated within the eMR if available, to enable sharing, review and update by all relevant stakeholders.

6.4.2 Timely and efficient communication

Communication between primary and secondary care OACCP team members is required to facilitate reinforcement and continuity of care across health care settings and to work collaboratively towards optimum adherence by the participants of the OACCP with treatment and recommendations.

OACCP Coordinators must ensure there is an effective process in place to ensure the Personalised Management Plan is appropriately communicated to the person's general practitioner as well as any specialist medical services, nursing, allied health clinicians and community service providers who are engaged in providing care and services for the person.

The purpose is to:

- facilitate reinforcement and reassurance of treatment regimens and interventions as recommended from and to the OACCP
- 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 e-enabled solutions such as discharge letter functionality within eMR, electronic referral processes and communication systems between service providers should be considered if, and where available.

6.4.2 Health education and self-management resources

The following are some of the resources available to support health education and self-management.

Australian Commission on Safety and Quality in Health Care (ACS&QHC)

Osteoarthritis of the Knee Clinical Care Standard, May 2017. Available at:

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

The Royal Australian College of General Practitioners (RACGP)

Musculoskeletal guidelines for primary care practitioners.

Available at: <http://www.racgp.org.au/your-practice/guidelines/musculoskeletal/>

Arthritis/Osteoporosis NSW

- Health information
- Community education
- Seminars and webinars
- Self-management programs (\$)(Challenging Arthritis, Osteoarthritis of the Knee Self Management Program and Moving On)

Available at: <https://arthritisnsw.org.au/>

Arthritis Australia

- Health information
- Health professional education, supplement and treatment information, latest research, position papers, and current statistical
- Community education
- My joint pain – consumer website (free)
- Translated information

Available at: <http://www.arthritisaustralia.com.au/> , <https://www.myjointpain.org.au/>

Healthy weight for life

This private company provides a web and telephone support service for earlier adopter private insurance companies to support those with hip or knee OA identified with radiological evidence, a BMI \geq 28 and where the individual has or is likely to seek orthopaedic assessment for consideration of elective joint replacement surgery with improved fitness for surgery required.

Available at: <https://healthyweightforlife.com.au/>

Stay active and on your feet

- 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 Department of Health – translated in a number of languages

Available at: www.activeandhealthy.nsw.gov.au

Get healthy information and coaching services

Provides free and confidential telephone-based information only or 6 month coaching program

Available at: <http://www.gethealthynsw.com.au/program>

6.5 Exercise and weight loss

Each person should be encouraged and supported to increase exercise levels and for those who are overweight or obese to lose weight.

6.5.1 Exercise

Physical activity is defined by the US National Institute of Health (NIH) consensus statement as “as any bodily movement produced by skeletal muscles that require energy expenditure and produces progressive health benefits”.

Exercise is defined as “planned physical activity with bodily movements that are structured and repetitive, performed for the purpose of improving or maintain physical fitness”.

Physical activity and exercise are beneficial to reduce pain, improve physical function, promote functional independence, improve aerobic capacity, muscular strength, coordination and balance, manage weight, improve quality of life and delay the onset of disability.

Exercise advice should be tailored to an individual’s needs and preferences with consideration of their functional impairments and comorbidities.

The **Australia physical activity and sedentary guidelines recommendations** have been developed for both adults (18-64 years) and older Australians (65+ years) and should be used as guidance. Consideration of how these can be implemented in the situation of significant OA and their co-morbidities. All people with OA should be encouraged to increase their physical activity, participate in exercise and reduce sedentary behaviour. This is promoted across all levels of the OA spectrum and should be started as early as possible in OA care.

Despite the benefits, the rates for achieving physical activity recommendations are lower for people with OA. This may be accounted for by the variety of physical, psychological, social and environmental barriers such as fear of experiencing or worsening pain, lack of (or awareness of) programs or facilities that meet specific needs or belief that they are able to take some control over symptom management and disease progression.

Evidence suggests there is no clear specific type or mode of exercise that is superior. Exercise should include a combination of aerobic, lower limb strengthening, balance and neuromuscular or range of motion exercises. This could be land or water based with consideration of personal preference, functional limitations, local availability and costs.

Individuals will be encouraged to set exercise goals and develop action steps as part of their personalised management plan. The use of health education and behaviour change methodology should be used to address barriers and facilitators to achieving lifestyle change^{9,10}.

Exercise can be delivered directly as part of OACCP service, facilitated through referral to other hospital based services, within the community or home based.

Where specific advice and support is required for exercise prescription this should be undertaken by suitable qualified professionals (Physiotherapist, Exercise Physiologist) and/or consideration of a referral to such professionals.

6.5.2 Weight loss

For those that are overweight or obese, interventions to support the individual to lose weight will be offered. This includes education on the impact excess weight can have on pain, functional impairments and disease progress for those with OA, influence on treatment availability and outcomes of surgery.

While encouraging overweight or obese people to lose weight is the ultimate aim, this needs to be managed on a case to case basis with consideration of other psychosocial and comorbid factors. For some, this may mean the aim may be to support people to avoid further weight gain to prevent worsening symptoms¹¹. Weight loss of 5-10% has been shown to reduce loading on the knee joint with symptomatic improvement in pain, function, mobility and quality of life irrelevant of severity of existing joint damage¹²⁻¹⁴.

Individuals should be encouraged to set goals that promote weight loss or weight maintenance as part of their personalised management plan. This could include goals around self-initiated changes to their diet and/or exercise levels, accessing dietician consultation, participation in local weight management programs or accessing the Get Healthy NSW service. Supporting people to lose weight often needs appropriate expertise to address the complex interaction of diet, exercise or activity and behaviour change theories. The implementation of behaviour change concepts underpins successful engagement of the person who needs to lose weight.

6.6 Pain management

All people with OA are supported to achieve effective pain management through a combination of pharmacological, psychological and physical therapies prior to consideration of surgery.

Pain management is recognised as one the most important factors for people with OA. Pain levels, their impact on lifestyle and psychological health, and current pain management strategies (medication and self-help strategies) should be assessed during the comprehensive assessment. As well as through pharmacological treatments, effective pain management will address the psychological, physical and social contributions to pain. This holistic approach with support active self-management and could include strategies of education, graded exercise program, pacing techniques, mind body therapies such as relaxation, medication or yoga and psychological therapies such as cognitive behavioural therapies.

All participants taking analgesic medication should have a pharmacologic review and be inclusive of over the counter, complementary and prescription therapies. This review should be done by a nurse, pharmacist or medical practitioner as part of the OACCP process.

Medication review should consider;

- current medications their effectiveness in managing pain
- unanticipated drug interactions
- inappropriate medication e.g. long term use of opiates
- polypharmacy e.g. multiple varieties of NSAIDs or exceeding paracetamol limits
- potential complications to their existing comorbidities e.g. poorly controlled hypertension and using NSAIDS.

Engagement and communication of all those involved in the management of pain is crucial to ensuring a coordinated and integrated approach as well as consistency in the messaging. This needs to be inclusive of primary care practitioners and those being managed by specialty medical teams.

A Home Medicines Review (HMR) MBS item (900) allows for a GP initiated medication review for those patients living in the community. This is a collaborative medication review aiming to maximise the individual persons benefit from their medication regimens. This team based approach may include the GP, preferred community pharmacy and members of the OACCP team. For more information see:

http://www.health.gov.au/internet/main/publishing.nsf/Content/medication_management_reviews.htm

6.7 Care coordination

Any physical, psychosocial and comorbidity needs identified through the assessment are addressed as part of the person centred chronic care approach.

The OACCP provides a system for coordinating care and disease management interventions, and supporting people to better manage their health. Coordinators will be responsible for establishing and fostering relationships and streamlining referral pathways to a range of multidisciplinary services and programs. This includes facilitating appropriate delivery of care, referrals and linkages to hospital and community services, supporting the person to navigate effectively and efficiently through the health care system and communicating information among all service providers and health care entities who are involved in or responsible for different aspects of care. The level of coordination required depends on the individual's musculoskeletal, co-morbidities or psychosocial needs. All participants undergo an initial face-to-face assessment where their physical health, disease status, co-morbidities, quality of life and psychological status are evaluated. From this assessment and in collaboration with the person an individualised patient management plan is developed with various options for the delivery of care chosen.

Common considerations that may be needed on an individualised basis include:

- Comorbidity management. This may include referrals to appropriate health care providers and services such as, falls prevention, diabetes education, cardiac or pulmonary rehabilitation services when required.
- Assistive aids and devices. This should be considered for those people with OA who have difficulties with activities of daily living and in enabling the participation in lifestyle management changes such as increased exercise e.g. walking sticks and frames. For those who might require home modifications before or after surgery this could include an OT referral (if not part of OACCP team) for a home assessment addressing any of the required home modifications. This is addressed at entry to the OACCP and thus at least six months before the planned surgical date.
- Nutrition and dietician support. For weight management, weight gain, adequate nutrition or access to food requirements.
- Psychosocial management. All OACCP participants will be screened for psychological distress through the PROMIS 29 tool with those scoring highly on the domains for depression and/or anxiety also completing the Depression, Anxiety and Stress Scale (DASS 21). Those who are found to have moderate or high levels of depression, anxiety or

stress, OACCP teams are required to be aware of their local mental health pathways to appropriate local services and for which circumstances these are to be activated e.g. when self-harm is disclosed.

- Social support. Formal assessments may identify issues that require intervention provided by social worker and/or a psychologist. These may include, but not limited to; coping with work, family or carer needs, financial issues and access to social security organisations.

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

General practitioners are central to the coordination of care for people with osteoarthritis, as outlined in the RACGP and ACSQH guidelines for care of patients with OA. They are key members of the multidisciplinary team and provide access to key elements of chronic disease management, especially within the primary care or community sectors. While chronic illnesses are increasingly impacting their roles and workload, there are opportunities for the OACCP to support GPs in the management of people with OA.

Involvement of primary care clinicians and the Primary Health Network in service planning and development is recommended to define aims, roles and responsibilities, resource commitments, communication and performance indicators to support collaborative service delivery. This may be essential if a site's sustainability plan includes the use of CDM items or future delivery within the community.

Care pathways

The development of clinical pathways for the chronic disease management of OA will support access to and enables all team members to understand how the people accessing the OACCP enters, participates and is evaluated as they progress through the Program. Care pathways are an integral element of chronic care services as described in the Chronic Care Model². Evidence for care pathways in the management of people awaiting elective hip and/or knee joint replaces can be found in the *NSW Evidence Review for the Pre, Peri and Post-operative Care of People Requiring Elective Hip and Knee Replacement Surgery*¹⁵.

Service directories

Local service directories build a record of available options for services that may be required for people who participate in the OACCP. Those services included will be from within Local Health Districts as well as those outside of the jurisdiction of LHDs. Examples will include various types of other chronic disease services, fall's Prevention, exercise groups for mature people both within and outside of gymnasiums, local private allied health providers, community transport, interpreter services, multicultural and Aboriginal health workers.

Care Delivery

People entering the OACCP may receive care delivery in a variety of methods including face to face assessment, telephone, telehealth or digital based assessments and/or support. OACCP may be accessed from the hospital service site, primary care or community setting and/or with self-directed interventions. Where ever possible face to face assessments should be completed and the location for care that will work best for the local population and available resources e.g. monthly community based clinics, telehealth. The decision on which option to undertake will be

made by each individual in conjunction with the OACCP team members at the time of initial assessment, and once their personalised goals are set and their management plan development. The decision will be made with consideration of the person's preference, their individual care needs and the availability of services in the local area.

6.8 Routine and planned reviews

There in ongoing care to review each person's progress, make adjustments to treatment based any changing needs provide ongoing self-management support at three, six, nine and twelve months.

Routine and planned reviews are offered as part of the chronic disease management of OA to assess progress, provide ongoing self-management support and to evaluate, follow up and make adjustments to treatment based any changing needs. The OACCP model of care ensures the person is reassessed after their initial assessment at 12, 26, 38 and 52 weeks.. Further reviews will be required based on the individual's needs. It should be emphasised to the individual that these reviews are an integral part of supported chronic disease management and that evaluation in NSW has revealed the best outcomes happen with regular and formal assessment that identifies individual needs in an early timeframe.

Reviews should include:

- monitoring of symptoms and treatment responses using the same tools as used in assessment
- review of psychosocial and comorbidity needs
- monitoring progress of the agreed Personalised Management Plan
- If required, a discussion regarding new treatment options
- 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
- review of their current understanding of their condition and existing treatments, and providing an opportunity to discuss any concerns they may have or provide further education.
- monitoring and evaluation of health outcomes.

Documentation of this review is important to demonstrate that re-assessment has been undertaken. Ideally this will occur within the eMR if available.

6.9 Appropriate and timely access to surgery

For persons who are not responding to conservative management, they are offered timely access to elective joint replacement surgery. Persons who are progressing to surgery are adequately prepared

For individuals with significant OA who are not responding to conservative management, they are offered timely access to surgery. Elective joint replacement surgery is appropriate for those with severe OA where pain and functional limitations greatly affect their quality of life, despite the use of conservative treatments. Elective joint replacement surgery can, in most cases, significantly decrease pain and improve function for individuals with severe OA.

Preparation for surgery

OACCP is an important component of preparation for elective surgical hip and/or knee joint replacement. It supports the participants to make informed decisions about surgery. The OACCP team helps individuals in their preparation through providing clear information about:

- the procedure
- the risks and benefits of surgery
- understanding of the pre, peri and post operative processes
- recovery and post-operative care provided.

In addition to supporting an understanding of realistic expectations of surgery, early identification of commodity management, home modifications and support needs has been shown through formative evaluation to improve outcomes post-surgery including length of stay, return to home and satisfaction of the management approach for individuals.

Acceleration to surgical intervention

If individuals have worsening symptoms and functional impairment despite accessing conservative care, they should be referred for specialist attention with consideration for acceleration to surgery. Locally pathways for surgical escalation should be formalised and agreed. Consideration should be given to both clinical presentations and outcomes scores (HOOS/KOOS/Oxford). Participants who have either knee dysfunction and a Knee Osteoarthritis Outcome Score (KOOS), or hip dysfunction and Hip Osteoarthritis Outcome Score (HOOS), of less than or equal to 30 out of 100 should be considered for accelerated surgical intervention¹⁶. While this score provides a good indication of disease specific impact, a thorough investigation of other outcome measures should be undertaken in conjunction with this score when determining escalation for orthopaedic assessment.

On confirmation of the participant's deterioration to a point which requires escalation to surgical intervention in the short term, discussion with the individual's medical team should occur as soon as possible. This communication is to be followed with formal correspondence to the medical or surgical referrer, documenting the results of the OACCP assessment and the reasons for escalation. A copy will be forwarded to the participant's GP if he/she is not the referrer. The OACCP participant should remain in the program in the interim for optimisation of their co-morbidities, management of pain and interventions aimed at alleviating psychosocial issues. Early surgical assessment should be prioritised.

Discharge

Discharge from the OACCP occurs for those who complete the 12 month program, have accessed elective joint replacement surgery or elected to not receive further support (ie after they have removed themselves from the waiting list and feel able to self-manage). Re-entry to OACCP is possible if their referrer believes this is necessary, as long as they fulfil the original inclusion criteria.

6.10 Quality improvement

The delivery of services is routinely assessed and improved on, in relation to patient reported outcome and experience measures.

Assign regular time in the service weekly plan to critique service interventions and processes, to follow-up on patient care, to conduct literature reviews seeking solutions to identified issues and to plan and implement quality improvement cycles as is required.

Services are encouraged to undertake regular reviews to ensure the quality of service delivery. This may be supported by the implementation checklist, feedback sought from participants (PREMS, Complaints) as well as staff and key stakeholders, audit of service and clinical data including PROMS 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.

7. Evaluation and Monitoring

A Monitoring and Evaluation Plan of the NSW Model of Care for Osteoarthritis Chronic Care Program 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 OACCP lies with the ACI Health Economics and Evaluation Team.

Local health districts will support the evaluation through reporting of quarterly monitoring measures, which include:

- # and % of eligible patients recruited to the program
- # and % of people assessed who have a management plan developed, measured as a % of the total referred for assessment
- # and % of patients having 3 months follow up after initial assessment
- # and % of people completing their recommended management within 3 months of assessment (60% target 2017/18)
- # referred to surgery (NWAUs, separations, beddays)
- # removed from surgical waitlist
- # escalated to surgical waitlist (NWAUs, separations, beddays)
- Inpatient utilisation (NWAUs, separations, beddays)
- Non-admitted utilisations (NWAUs, service events)

For further information about Monitoring and Evaluation, please refer to the Osteoarthritis Chronic Care Program Monitoring and Evaluation Plan

8. ACI Support

ACI 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 will 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 will share experiences in setting up and managing the services required for the patient cohorts
- service sites will present their progress in setting up and delivery of the models of care
- teams will be 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.

AIM Training for Project Leads

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

Musculoskeletal Tool Kit

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

These include:

- Implementation Assessment
- 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

ACI Musculoskeletal Contacts

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9. Resources

Arthritis NSW

<https://arthritisnsw.org.au/>

- Health information
- Community education
- Seminars and webinars
- Self-management programs (\$)(Challenging Arthritis, Osteoarthritis of the Knee Self Management Program and Moving On)

Arthritis Australia

<http://www.arthritisaustralia.com.au/>

<https://www.myjointpain.org.au/>

- Health information
- Health professional education, supplement and treatment information, latest research, position papers, and current statistical
- Community education
- My joint pain – consumer website (free)
- Translated information

The Royal Australian College of General Practitioners

www.racgp.org.au

- 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:

- Osteoarthritis Action Alliance; <http://oaaction.unc.edu/resource-library/>
- Exercise and Sport Science Australia, Consumer website; <http://exerciseright.com.au/>
- Stay active and on your feet; www.activeandhealthy.nsw.gov.au
- NSW Falls Prevention Program: <http://www.cec.health.nsw.gov.au/patient-safety-programs/adult-patient-safety/falls-prevention>

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Appendix 1: Implementation Assessment

Element or resources	Components of care
Governance	<p>1 Osteoarthritis Care delivery is based on chronic care principles</p> <p>The OACCP service is governed by a shared understanding, clear vision and strategies supporting the delivery of chronic care services for the management of osteoarthritis</p>
	<p>2 There is collaborative decision making for planning , implementation and evaluation</p> <p>A musculoskeletal steering committee responsible for the governance of OACCP consists of representation of all key stakeholders and promotes the achievement of the vision and strategies to achieve program outcomes</p>
Workforce	<p>3 Dedicated OACCP coordinator who is skilled to support a person's chronic care needs</p> <p>The OACCP coordinator has a dedicated role leading program delivery and is appropriately skilled in the management of people with osteoarthritis. There is dedicated FTE with the capacity to successfully meet the need of each OACCP site and achieve full coverage of the Local Health District's geographical area</p>
	<p>4 Multidisciplinary team access is facilitated to support the person's chronic care needs</p> <p>The local OACCP service delivery model provides access to a multidisciplinary team to meet the person's chronic care needs and for efficient and effective service delivery (including administrative support)</p>
	<p>5 A Medical Officer is engaged to support for the OACCP Service</p> <p>Engagement of medical officer to provide clinical governance and champion program</p>
IT	<p>6 IT functionality supports efficient and effective service delivery</p> <p>IT infrastructure supports the identification of eligible people, 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</p>
Access	<p>7 There is equitable access to the service</p> <p>The OACCP service model has appropriate reach and access for local community and priority population groups</p>
	<p>8 Easy identification of eligible individuals</p> <p>Effective and efficient processes for identification of person requiring access to OA conservative care</p>
Assessment	<p>9 Undertake a comprehensive assessment based on the holistic needs of the person</p> <p>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</p>
Health Education	<p>10 Health education builds understanding, engagement and empowerment for self management</p> <p>Health education is provided to all people within the OACCP on their condition and effective treatments and interventions to facilitate active and informed decision making</p>

Element or resources	Components of care
Self management support Development of a personalised management plan	11 All people are supported to engage in conservative care treatments and identified health behaviour changes There is access to and behavioural support to promote exercise, weight loss, education, self-management support, pain management and psychosocial and co-morbidity management.
	12 Collaborative personalised management plans cover the persons' 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
	13 Personalised Management Plans are shared with all relevant stakeholders The personalised management plan is provided to the person as well as being available to all care providers
Reviews	14 There is ongoing care through routine and planned reviews Care should include planned reviews at agreed intervals that are documented in the personalised management plan.
Surgery	15 There is appropriate access to surgery Appropriate waitlist management based on clinical need and people progressing to surgery are adequately prepared
	16 There is timely access to surgery Appropriate procedures are in place to allow timely surgery for people who are not responding adequately to conservation care
Reporting & evaluation	17 Data systems support quality and timely evaluation and reporting Appropriate reporting and evaluation capabilities exist allowing for service review at steering group meetings; quarterly reporting and quality improvement activities
Quality improvement	18 Improved quality of care is driven by patient outcomes and experiences Quality improvement activities are embedded in ongoing practice and related to patient report measures

Appendix 2: Osteoarthritis Chronic Care Program Coordinator Position Description

Position description

Position Title	Osteoarthritis Chronic Care Program Coordinator
Position Number	<add>
Department	<add department>
Health Service	<add Health Service>
Location	<add location>
Award Classification	Senior Allied Health Professional Level 3 or 4 Clinical Nurse Specialist 2 Clinical Nurse Consultant Grade 2
Responsible to	<add>
Responsible for	The development, implementation and evaluation of the Osteoarthritis Chronic Care Program at <your facility>, to ensure people with osteoarthritis of the hip and/or knee have access to comprehensive multidisciplinary conservative management in line with the ACI Osteoarthritis Chronic Care Program Model of Care. <i>ACI suggests many LHDs will require a 'lead' OACCP Coordinator with some lower level OACCP Coordinators working at different sites across the LHD.</i>
FTE	<1FTE>
Duration	<Permanent/Temporary Full-Time>

About <Local Health District>

Suggest 1-2 paragraphs

May include the key strategic directions of the health service

About <Department>

A few paragraphs about your department, aims, goals, etc

Purpose of the position

The OACPP Coordinator will work with the <Local Health District/hospital/other service setting> to develop, coordinate, implement and evaluate the < Local Health District/hospital/other service setting > *Osteoarthritis Chronic Care Program* that aligns with the *ACI Osteoarthritis Chronic Care Program Model of Care*. The service will provide comprehensive chronic care services to people who have osteoarthritis of the hip and/or knee who are waiting to undergo elective joint replacement surgery or are referred by their specialist for conservative management. This will include providing comprehensive holistic assessment; access to multidisciplinary care; psychological and social support; education and self-management support; promotion of lifestyle changes including exercise and weight loss; pharmacological management of pain; and undertaking routine and planned reviews.

Key accountabilities

The accountabilities of the OACCP Coordinator include, but are not limited to, the following:

- Work effectively with < Local Health District/hospital/other service setting > to develop, coordinate, implement and evaluate the < Local Health District/hospital/other service setting > *Osteoarthritis Chronic Care Program*.
- Work collaboratively with the identified medical clinical governance and medical practitioners of the < Local Health District/hospital/other service setting > *Osteoarthritis Chronic Care Program*.
- Work collaboratively with multidisciplinary team members within and outside of the < Local Health District/hospital/other service setting > *Osteoarthritis Chronic Care Program*.
- Actively facilitate access for participants to the < Local Health District/hospital/other service setting > *Osteoarthritis Chronic Care Program* including referral and flexibility of service provision.
- Provide comprehensive assessment, conservative care interventions, health education, self-management support and routine reviews for the participants of the *Osteoarthritis Chronic Care Program*.
- Ensure opportunities are available within the < Local Health District/hospital/other service setting > area to facilitate access to required multidisciplinary services and interventions for the participants of the *Osteoarthritis Chronic Care Program*. This may include at the health service site as well as in private and community settings in the local area.
- Maintain collegial collaboration and strong links with services providers both within the health service as well as in private and community settings in the local area to enable direct and timely referrals to services for participants of the *Osteoarthritis Chronic Care Program*.
- Responsible for the collection of outcome measurements and involvement in data collection to allow for evaluation of the *Osteoarthritis Chronic Care Program*.
- Responsible for developing procedures, practices, referral pathways and resources for the *Osteoarthritis Chronic Care Program*.
- Promote the importance and benefits of the *Osteoarthritis Chronic Care Program* to the wider <Local Health District> community – consumers as well as health professionals.
- 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> Osteoarthritis Chronic Care Program including input for ongoing evaluation across NSW.

Challenges / problem solving

- Leading of a new system of care for people with hip and/or knee osteoarthritis at < Local Health District/hospital/other service setting>.
- Supporting change and managing potential reluctance by medical/surgical staff to embrace the Program. Medical support and governance will be vital to the < Local Health District/hospital/other service setting> Osteoarthritis Chronic Care Program success.
- Obtaining engagement and acceptance for the Program from a wide variety of stakeholders and colleagues within a variety of chronic care services is required to effectively deliver the < Local Health District/hospital/other service setting> Osteoarthritis Chronic Care Program.
- Managing competing priorities of the day to day delivery of the Osteoarthritis Chronic Care Program
- Working in a continuously changing and challenging environment.

Communication

The OACCP Coordinator role involves liaising and communicating effectively and efficiently with < Local Health District/hospital/other service setting> 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:

- People with musculoskeletal conditions and their carers
- < Local Health District/hospital/other service setting> Osteoarthritis Chronic Care Program Advisory Group or Committee
- < Local Health District/hospital/other service setting> staff in all settings and disciplines relevant to <Local Health District> Osteoarthritis Chronic Care Program.
- ACI Musculoskeletal Network who can provide support to ensure the < Local Health District/hospital/other service setting> Osteoarthritis Chronic Care Program remains true to the ACI Osteoarthritis Chronic Care Program Model of Care 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 chronic care management for osteoarthritis.
- Primary Health Networks will become a key partner in the Osteoarthritis Chronic Care Program to foster primary care participation, advice, and partnerships to develop and refine the service.

Decision making

- Utilising clinical judgment in supporting individuals in the development and implementation of their management plans as part of the < Local Health District/hospital/other service setting> Osteoarthritis Chronic Care Program.

- 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 *Osteoarthritis Chronic Care Program* team and the Advisory Group or Committee

Selection criteria

- Relevant Allied Health or Nursing 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 successful leadership, program management and commitment to the provision of quality healthcare services.
- Current unrestricted NSW drivers licence.

Acknowledgement

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: Assessment tools

Physical Performance Measures												
Assessment Domain	Test	Description	Time	Criteria								
Pain	Visual Analogue Scale (VAS) for Pain	<p>A unidimensional measure of pain intensity. Participants are asked to report “current” pain intensity or pain intensity “in the last 24 hours” on a 10cm line scale - most commonly anchored by “no pain” (score of 0) and “pain as bad as it could be” or “worst imaginable pain” (score 10). The respondent is asked to place a line perpendicular to the VAS line at the point that represents their pain intensity. Using a ruler, the score is determined by measuring the distance (cm) on the 10-cm line between the “no pain” anchor and the patient's mark, providing a range of scores from 0–10.</p> <p>https://www.aci.health.nsw.gov.au/chronic-pain/health-professionals/assessment-beta</p>	<1 minute to complete	<p>The following cut points on the pain VAS have been recommended¹</p> <table border="1"> <tr> <td>No pain</td> <td>0 – 0.4 cm</td> </tr> <tr> <td>Mild pain</td> <td>0.5 – 4.4 cm</td> </tr> <tr> <td>Moderate pain</td> <td>4.5–7.4 cm</td> </tr> <tr> <td>Severe pain</td> <td>7.5– 10 cm</td> </tr> </table>	No pain	0 – 0.4 cm	Mild pain	0.5 – 4.4 cm	Moderate pain	4.5–7.4 cm	Severe pain	7.5– 10 cm
	No pain	0 – 0.4 cm										
Mild pain	0.5 – 4.4 cm											
Moderate pain	4.5–7.4 cm											
Severe pain	7.5– 10 cm											
	The Numeric Pain Rating Scale (NPRS)	<p>Similar to the VAS, the NPRS is a unidimensional measure of pain intensity in adults. It is a segmented numeric version of the VAS in which the person selects a whole number (0–10) that best reflects the intensity of pain - most commonly anchored by “no pain” (score of 0) and “worst possible pain” (score 10).</p> <p>https://www.aci.health.nsw.gov.au/chronic-pain/health-professionals/assessment-beta</p>	<1 minute to complete	Scores range from 0-10 points, with higher scores indicating greater pain intensity								
Function	30s Chair Stand Test (30s CST)	<p>Measures lower body strength and dynamic balance. Participants are instructed to complete as many chair stand repetitions as possible in a 30 second period. From the sitting</p>	1 -2 minute to complete	Normative scores for community residing older adults ²⁻³								

Function Minimum Requirement: 30s CST 40M Walk Test TUG	30s Chair Stand Test (30s CST)	<p>position, the participant stands up completely up so hips and knees are fully extended, then completely back down, so that the bottom fully touches the seat. This is repeated for 30 seconds. The score is determined by the number of repetitions completed in 30 seconds.</p> <p><i>Descriptions are readily available online at: http://www.topendsports.com/testing/tests/chair-stand.htm.</i></p>		<table border="1"> <thead> <tr> <th>Age</th> <th>Average Women</th> <th>Average Men</th> </tr> </thead> <tbody> <tr> <td>60–64</td> <td>12–17</td> <td>14–19</td> </tr> <tr> <td>65–69</td> <td>11–16</td> <td>12–18</td> </tr> <tr> <td>70–74</td> <td>10–15</td> <td>12–17</td> </tr> <tr> <td>75–79</td> <td>10–15</td> <td>11–17</td> </tr> <tr> <td>80–84</td> <td>9–14</td> <td>10–15</td> </tr> <tr> <td>85–89</td> <td>8–13</td> <td>8–14</td> </tr> <tr> <td>90–94</td> <td>4–11</td> <td>7–12</td> </tr> </tbody> </table> <p>High risk of falls for scores of less than 8 for women and men⁴</p>	Age	Average Women	Average Men	60–64	12–17	14–19	65–69	11–16	12–18	70–74	10–15	12–17	75–79	10–15	11–17	80–84	9–14	10–15	85–89	8–13	8–14	90–94	4–11	7–12
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90–94	4–11	7–12																										
40M Fast Paced Walk Test	Assesses short distance walking and changing direction during walking. Participants are asked to walk quickly and safely without overexerting themselves, twice back and forth over a 10 m walkway. The time it takes to cover 40m distance is recorded in seconds. The score is usually expressed as meters/second.	< 5 minutes	<p>Higher values represent better performance with normative speed reference values for healthy adults^{2,5}.</p> <table border="1"> <thead> <tr> <th>Age</th> <th>Average speed m/s Women</th> <th>Average speed m/s Men</th> </tr> </thead> <tbody> <tr> <td>50-59</td> <td>1.40 ± 0.15</td> <td>1.39 ± 0.23</td> </tr> <tr> <td>60-69</td> <td>1.28 ± 0.18</td> <td>1.36 ± 0.21</td> </tr> <tr> <td>70-79</td> <td>1.27 ± 0.21</td> <td>1.33 ± 0.20</td> </tr> </tbody> </table> <p>Gait speeds <1 meter/second identify a high risk of poor health-related outcomes in well-functioning older people⁶.</p>	Age	Average speed m/s Women	Average speed m/s Men	50-59	1.40 ± 0.15	1.39 ± 0.23	60-69	1.28 ± 0.18	1.36 ± 0.21	70-79	1.27 ± 0.21	1.33 ± 0.20													
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Function Minimum Requirement: 30s CST 40M Walk Test TUG	Timed Up and Go (TUG)	<p>Assesses basic mobility including strength, balance and agility. It measures the time in seconds for a person to rise from sitting from a standard arm chair, walk 3 meters, turn, walk back to the chair, and sit down.</p> <p><i>Descriptions are readily available online at:</i> http://www.unmc.edu/media/intmed/geriatrics/nebgec/pdf/railelderlyjuly09/toolkits/timedupandgo_w_norms</p>	< 3 minutes	<p>In healthy older adults, the mean times progressively increased with age^{2,7}</p> <table border="1"> <thead> <tr> <th>Age</th> <th>Time (s)</th> </tr> </thead> <tbody> <tr> <td>60 to 69</td> <td>8.1</td> </tr> <tr> <td>70-79</td> <td>9.2</td> </tr> <tr> <td>80-99</td> <td>11.3</td> </tr> </tbody> </table> <p>There is evidence that a result >14 seconds is predictive of an increased risk of falls⁸</p>	Age	Time (s)	60 to 69	8.1	70-79	9.2	80-99	11.3
	Age	Time (s)										
60 to 69	8.1											
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6 Minute Walk Test (6MWT)	<p>A test of aerobic capacity and long distance walking activity. The goal is for the individual to walk as far as possible in six minutes. The individual is allowed to self-pace and rest as needed as they traverse back and forth along a marked walkway – typically a 20m walkway. The distance covered in a 6-minute period is recorded in meters.</p> <p><i>Appendix 6 provides some information developed by the ACI MSK Network about conducting a 6MWT</i></p> <p><i>Further descriptions are readily available online at:</i> http://www.thoracic.org/statements/resources/pfet/sixminute.pdf</p>	<10 minutes	<p>The six minute walk distance in healthy adults has been reported to range from 400m to 700m⁹⁻¹⁰.</p> <p>Less than 320 m indicates risk of falls⁴</p> <p>Noticeable clinical difference was 54m¹¹ (in people with stable chronic obstructive pulmonary disease) or 50m in community living older adults¹²</p>									

Patient Reported Outcome Measures				
<p>Quality of Life/ Health status</p> <p>Recommended Tool <i>PROMIS 29</i></p>	<p>Patient-Reported Outcomes Measurement Information System (PROMIS-29)</p>	<p>The PROMIS-29 is a set of person-centered measures that evaluates and monitors physical, mental, and social health. It's used with the general population and with individuals living with chronic conditions. It includes seven health related quality of life (HRQoL) domains: pain interference, pain intensity, physical function, fatigue, depression, anxiety, sleep disturbance and satisfaction with social participation.</p> <p><i>http://www.healthmeasures.net/explore-measurement-systems/promis</i></p>	<p>2-3 minutes to complete</p>	<p>Raw scores are calculated for each domain and expressed as a T-Score, where 50 (+/- 10) is the average for the general population.</p>
	<p>The Assessment of Quality of Life – 6D scale (AQoL-6D)</p>	<p>AQoL-6D is a 20-item self-report measure of QoL and general functioning. Response options for each item include 4–6 levels, with higher scores indicating quality of life impairment. The 20 items of the AQoL-6D represent six domains, characterised as independent living, relationships, mental health, coping, pain and senses.</p> <p><i>http://www.aqol.com.au/</i></p> <p><i>There is no licence fee and no cost for downloading and using any of the AQoL instruments</i></p>	<p>2-3 minutes to complete</p>	<p>The AQoL instruments can be used to obtain an overall utility score as well as to separate scores for each dimension.</p> <p>Scoring algorithms are available from the AQoL web site (www.aqol.com)</p>
	<p>Euro Quality of Life (EQ-5D-5L)</p>	<p>EQ-5D-5L is a widely used instrument to measure health-related quality of life. It is applicable to a wide range of health conditions, and provides a simple descriptive profile and a single index value for health status.</p> <p>The descriptive system comprises five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each dimension has 5 levels: no</p>	<p>2-3 minutes to complete</p>	<p>Each of the 5 dimensions is divided into 5 levels of perceived problems:</p> <p>Level 1: indicating no problem Level 2: indicating slight problems Level 3: indicating moderate</p>

<p>Quality of Life/ Health status</p> <p>Recommended Tool <i>PROMIS 29</i></p>	<p>Euro Quality of Life (EQ-5D-5L)</p>	<p>problems, slight problems, moderate problems, severe problems and extreme problems. The patient is asked to indicate his/her health state by ticking the box next to the most appropriate statement in each of the five dimensions. The digits for the five dimensions can be combined into a 5-digit number that describes the patient's health state.</p> <p>There is also a 0-100 visual analogue scale, where the endpoints are labelled 'The best health you can imagine' and 'The worst health you can imagine' on which the participant reports their health-related quality of life.</p> <p>https://euroqol.org/</p> <p><i>Registration and Licencing is required to use EQ-5D-5L</i></p>		<p>problems Level 4: indicating severe problems Level 5: indicating extreme problems</p>
<p>Hip and Knee OA specific outcomes (e.g. pain, symptoms, function, quality of life)</p> <p>Minimum Requirement: <i>HOOS/KOOS</i> <i>or</i> <i>OHS/OKS</i></p>	<p>Knee injury and Osteoarthritis Outcome Score (KOOS)</p> <p>Hip disability and Osteoarthritis Outcome Score (HOOS)</p>	<p>The HOOS and the KOOS are questionnaires designed to measure symptoms and functional limitations associated with hip and knee osteoarthritis, and track disease progression. Both consists of 5 subscales; Pain, other Symptoms, Function in daily living (ADL), Function in sport and recreation (Sport/Rec) and knee related Quality of life (QOL). The previous week is the time period considered when answering the questions. Standardized answer options are given (5 Likert boxes) and each question is assigned a score from 0 to 4. Measures should be scored from best (4) to worst (0). Scores are summed for each domain and converted to a normalized score (100 indicating no symptoms and 0 indicating extreme symptoms)</p> <p>www.koos.nu</p>	<p>10 - 15 minutes</p>	<p>A score between 100 indicating no symptoms and 0 indicating extreme symptoms is calculated.</p>

		<i>HOOS and KOOS are in the public domain and are free of charge. No licensing or permission to use HOOS or KOOS is required.</i>		
<p>Hip and Knee OA specific outcomes (e.g. pain, symptoms, function, quality of life)</p> <p>Minimum Requirement: HOOS/KOOS or OHS/OKS</p>	Oxford Hip Score (OHS) and Oxford Knee Score (OKS)	<p>The 12-item OHS and OKS are widely used tools to measure pain and function in relation to daily activities such as walking, dressing, sleeping, etc. in people with symptomatic hip and knee joint dysfunction. It is short, reproducible, valid and sensitive to clinically important changes which are preferred by many orthopaedic surgeons due to ease of administration and widespread use.</p> <p>Each item of the Oxford Scores has allocated to it a score; 4 for the least limited response (e.g. no pain) and 0 for the most severe (e.g. severe pain). Scores are then calculated by adding item scores together to give an overall score of between 48 (no pain or limitation for all items) to 0 (severe pain or limitation for all items).</p> <p>https://innovation.ox.ac.uk/outcome-measures/oxford-hip-score-ohs/</p> <p>https://innovation.ox.ac.uk/outcome-measures/oxford-knee-score-oks/</p> <p><i>Licenses given to publicly funded healthcare and non-commercially funded academic research institutes free of charge</i></p>	<5 minutes	<p>The OHS and OKS provide a single summed score which reflects the severity of problems that the respondent has with his or her hip or knee. Scored 0–48 where 48 represents the best score</p> <p>There is reasonable evidence that an Oxford Score below 20 indicates a need for referral for discussion of joint replacement surgery.</p>
Psychological discomfort/ Distress	Depression, Anxiety and Stress Scale 21 (DASS 21)	The DASS 21 is used to assess the negative emotional states of depression, anxiety and stress. The DASS-21 is the short form version of the DASS-42 with 7 items for each domain. Subjects are asked to use 4-point severity/frequency scales (0 – 3) to rate the extent to which they have experienced	3 -5 minutes to complete	The DASS 21 scores are multiplied by 2 in order to make it comparable to the corresponding full DASS score

Psychological discomfort/ Distress <i>Use as indicated</i>	Depression, Anxiety and Stress Scale 21 (DASS 21)	each state over the past week. Scores for Depression, Anxiety and Stress are calculated by summing the scores for the relevant items.		<table border="1"> <thead> <tr> <th></th> <th>D</th> <th>A</th> <th>S</th> </tr> </thead> <tbody> <tr> <td>Normal</td> <td>0-9</td> <td>0-7</td> <td>0-14</td> </tr> <tr> <td>Mild</td> <td>10-13</td> <td>8-9</td> <td>15-18</td> </tr> <tr> <td>Moderate</td> <td>14-20</td> <td>10-14</td> <td>19-25</td> </tr> <tr> <td>Sever</td> <td>21-27</td> <td>15-19</td> <td>26-33</td> </tr> <tr> <td>Extremely Sever</td> <td>>27</td> <td>>19</td> <td>>33</td> </tr> </tbody> </table>		D	A	S	Normal	0-9	0-7	0-14	Mild	10-13	8-9	15-18	Moderate	14-20	10-14	19-25	Sever	21-27	15-19	26-33	Extremely Sever	>27	>19	>33
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DASS 21 is used widely in chronic care populations and is one of the preferred depression tools used in NSW chronic care settings. It is a short and easy tool for consumers to use, and is available in many languages common to NSW residents. http://www2.psy.unsw.edu.au/dass/over.htm <i>DASS 21 is public domain and free to use. Permission is not needed to use it.</i>																												
Falls Risk Screening																												
Balance and Mobility <i>Use as indicated</i>	Timed Up and Go (TUG)	<i>(see description above)</i>																										
Falls Risk <i>Use as indicated</i>	FROP-Com Screen ¹³	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. http://www.nari.net.au/resources/health-professionals/falls-and-balance	1–2 minutes	A score of more than 3 indicates increased risk of falling.																								

<p>Falls Risk</p> <p><i>Use as indicated</i></p>	<p>Falls Risk Assessment Tool (FRAT)¹⁴</p>	<p>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.</p> <p>https://www2.health.vic.gov.au/about/publications/policiesandguidelines/falls-risk-assessment-tool</p>	<p>1–2 minutes</p>	<p>Risk classified as low, medium or high by adding the four scores</p> <p>Low Risk: 5-11 Medium Risk: 12-15 High Risk: 16-20</p>
<p>Self-Efficacy</p> <p><i>Use as indicated</i></p>	<p>The Falls Efficacy Scale-International (FES-I)¹⁵⁻¹⁶</p>	<p>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)</p>	<p>2 – 4 minutes</p>	<p>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.</p>

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15. Lucy Yardley, Nina Beyer, Klaus Hauer, Gertrudis Kempen, Chantal Piot-Ziegler, Chris Todd; Development and initial validation of the Falls Efficacy Scale-International (FES-I). *Age Ageing* 2005; 34 (6): 614-619
16. Kim Delbaere, Jacqueline C. T. Close, A. Stefanie Mikolaizak, Perminder S. Sachdev, Henry Brodaty, Stephen R. Lord; The Falls Efficacy Scale International (FES-I). A comprehensive longitudinal validation study. *Age Ageing* 2010; 39 (2): 210-21

Appendix 4: Height, weight, BMI and Waist circumference guidelines

These guidelines are adapted from the NHMRC Clinical practice guidelines⁸ for the management of overweight and obesity in adults, adolescents and children in Australia.

Height

Use a height rule taped vertically to a hard, flat wall, with the base at floor level

Ask the person to remove their shoes, heavy outer garments, and hair ornaments

Ask the person to stand with his or her back to the height rule. The back of the head, back, buttocks, calves and heels should be touching the wall, and the person's feet together.

Ask the person to look straight ahead

Press hair flat and record height

If the person is taller than the measurer, the measurer should use a platform to avoid parallax error

Record the measure in metres, to two decimal places

Weight

Use a regularly calibrated scale on a hard, level surface

Ask the person to empty their pockets and remove shoes and heavy outer garments (coat, jacket)

Ask the person to stand centred on the scale with weight evenly on both feet

Record the weight in kilograms to one decimal place

If the person weighs more than the scale can measure, note this and the upper limit of the scale

Subsequent measure should ideally occur with the same set of scales, the same time of day and after usual activity.

Body mass index (BMI)

Body mass index is calculated [weight in kg / (height in metres)²]

BMI classification for adults

BMI (kg/m ²)	Classification
< 18.5	Underweight
18.5–24.9	Healthy weight range
25.0–29.9	Overweight
30.0–34.9	Obesity I
35.0–39.9	Obesity II
40.0	Obesity III

Considerations in interpreting BMI

Despite flaws with BMI in being unable to differentiate between contributions of body fat and lean mass, it is still a widely used and accepted tool being simple and easy to use. At a population level, it has consistently shown increased mortality and higher incidence of disease related to fat mass when BMI is greater than 30kg/m². Additional measures for abdominal adiposity such as waist circumference can also be utilised for measures of obesity and associated disease risks.

Considerations

- Individuals with the same BMI may have different ratios of body fat to lean mass
- People with high muscle mass (e.g. athletes) may have a lower proportion of body fat than less muscular people, so a higher BMI threshold can be considered
- Women have more body fat than men at equivalent BMIs
- People lose lean tissue with age so an older person will have more body fat than a younger one at the same BMI
- South Asian, Chinese and Japanese population groups may have more body fat at lower weights and be at greater risk of ill-health than people from other population groups, so a lower BMI threshold (e.g. > 23 kg/m²) may be considered
- Pacific Islander populations (including Torres Strait Islander peoples and Maori) tend to have a higher proportion of lean body mass, so a higher BMI threshold may be considered
- Aboriginal peoples have a relatively high limb to trunk ratio, so a lower BMI threshold may be considered
- Central (or abdominal) fat distribution increases health risk (see waist circumference)
- Central deposition of fat and decreased muscle mass with age may lead to no overall change in weight or BMI, but an increase in health risk
- Many Aboriginal people have proportionately more body fat and it is deposited centrally, so even modest levels of overweight are associated with increased risk of type 2 diabetes
- Some ethnic groups may also be more prone to visceral or subcutaneous fat accumulation at any given BMI.

Waist circumference

Waist circumference measurement is a clinically useful tool in assessing individual risk for chronic disease and for detecting obesity and where body fat is located. It is also useful in detecting changes in early fat loss. It can be an important sign of risk for developing an ongoing health problem such as Type II diabetes, heart disease and hypertension. It can also be a clinically and psychologically beneficial tool in indicating progress, detecting changes earlier and mitigating the impact of increased muscle gain with increasing physical activity levels.

Chronic disease risk according to waist circumference

Health Risk	Men	South Asian, Chinese and Japanese Men	Women	South Asian, Chinese and Japanese Women
Increased Risk	94 cm 37 Inches		80 cm 32 Inches	
High risk	>102 cm > 40 inches	>90 cm >35 cm	>88 cm >35 inches	>80 cm >32 inches

For Aboriginal peoples the risk of cardiovascular disease related to waist circumference is independent of other cardiovascular risk factors. There is a specific Aboriginal health assessment

MBS item number 715 that can be completed annually by their GP or through an Aboriginal Medical Service.

For South Asian, Chinese and Japanese adults there is lower threshold cut off for high risk.

Waist circumference is not an accurate measure in certain situations such a pregnancy or medical conditions where there is distension of the abdomen.

Measuring waist circumference

- Ask the participant to remove heavy outer garments, empty pockets and loosen any belt
- Using a stretch resistance tape measure
- Measure from the front while participant stands erect, with feet hip width apart and weight evenly distributed and ensuring normal breathing and at the end of exhalation;
- Measure the waist at the minimum diameter between the rib cage and the hips (the smallest possible measure);
- The tape should be loose enough to allow the measurer to place one finger between the tape and the person's body
- Measure to the nearest centimetre.

Heart rate, blood pressure and oxygen saturation

These parameters should be measured and recorded for all participants at formal progress assessments as well as before exercise testing. Assess for normal parameters and in the case of heart beat for irregularities.

Blood glucose levels

Blood glucose levels should be measured for participants with known diabetes (Type I or Type II) at each formal progress assessment and before undertaking any exercise testing. Participants should be instructed to bring their own glucose monitor, glucose replacement and diary to each assessment and perform their own test under supervision. This provides an opportunity to assess participants' self-management skills and understanding of the importance of monitoring and recording their blood glucose levels regularly, including prior to undertaking exercise. Blood glucose level monitoring is advised pre and post exercise sessions, whether in a health setting or self-directed exercise, as a learning exercise for the participant on how exercise can affect blood glucose levels and to monitor for changes - hypo or hyperglycaemic – that may require action.

Appendix 5: Assessment and ongoing monitoring of people with chronic conditions

Prerequisites for all participants prior to undertaking exercise/exercise testing:

- At least 2 hours after last meal eaten
- Has taken usual medications today
- Suitable footwear, and discussion on foot inspection, especially for people with DM who have high risk of peripheral neuropathies
- Consideration of safety for people with impairments e.g. poor sight, and incorporate usual mobility aids where necessary

Measure	Safe parameters	Signs and symptoms	Actions	Information
Systolic BP	< 180 mmHg		Medical review if above and actions taken to manage	
Diastolic BP	< 110 mmHg		Medical review if above and actions taken to manage	
Resting HR	< 100 bpm and regular (unless known benign VEBs or managed appropriately for AF)		If not sure, request GP or other medical assessment which will include an ECG at the minimum if new irregularity	AF should be controlled to less than 100 bpm. Most other tachycardias will have an origin that needs to be investigated and treated. Even a viral or bacterial infection can cause tachycardia and contraindicates exercise while present.
Oxygen saturation	Resting \geq 88% on room air or prescribed supplemental O ₂		Medical review	These are the parameters for those with diagnosed COPD. If oxygen saturations are < 95% despite deep coughing (to remove plug of mucous for example) then a medical review should be sought.
Shortness of breath	None at rest or, in the case of COPD, the person reports normality for them		Unexplained – stop exercise and check for causes: infection, COPD, cardiac – and action as required	

Measure	Safe parameters	Signs and symptoms	Actions	Information
Blood glucose level (BGL)	If person has DM: <ul style="list-style-type: none"> • BGL between 6 and 15 mmol/L • must have eaten today • carrying own glucose replacement 	Symptoms of hypoglycaemia may include: <ul style="list-style-type: none"> • shakiness • tingling lips • hunger • weakness • palpitations 	Ask all participants with DM to bring their own BGL measuring equipment and do all testing on themselves, including pre- and post-exercise for first 2 weeks of OACCP. If symptoms of hypoglycaemia occur, stop exercise and measure BGL.	This promotes self-management and provides an opportunity to check their technique and habits re BGL testing, and increase participants' understanding of variability of BGL. Important that the person knows that not eating prior to exercise is unsafe management of DM.
Infection	No flu/cold or other systemic active infection		No exercise until symptoms have abated for several days	
Feeling unwell		Dizziness, light headedness, feeling faint, nausea, uncharacteristic excessive sweating, confusion, ataxia, pallor, central cyanosis, cold clammy skin, severe fatigue, leg ache that curtails function, abnormal gait, e.g. leg cramps, staggering	Check for: <ul style="list-style-type: none"> • Low BGL in DM • Disturbed sleep • Dieting and not eating sufficiently • Constipation • Urinary symptoms • Taken routine medications • If no to the above, seek medical review 	
Peripheral vascular disease		Generally will have burning pain in legs after about 10 minutes of exercise or if activity is increasing in intensity	Aim to not stop activity if at all possible	Exercise is the best treatment, with interval training the best to gain improved functional ability and manage pain. Use a slow and long warm up with an equally long and slow cool down. Then aim for intervals of 2, 3 or 5 minutes of 'therapeutic' exercise with a 2-3 minute very slow interval between bursts of exercise.

Measure	Safe parameters	Signs and symptoms	Actions	Information
Cardiac failure	Known and appropriately managed so their heart failure is stabilised	<ul style="list-style-type: none"> • Unexplained shortness of breath • Palpitations • Peripheral oedema • Changed sleep patterns • Weight increases on consecutive days 	<p>Initially, assess the person for ongoing management – self-management skills plus regular medical review.</p> <p>If the person lacks self-management skills they need a cardiac rehabilitation referral and probably OACCP in conjunction with the CR team, e.g. OACCP health education components and exercise program in cardiac rehabilitation setting.</p> <p>If they have these skills and are stable, exercise can proceed but observe and check S&S each time they come in. Requires just a few questions as they arrive and is easy to pick up if the person is unwell or may be retaining fluid.</p>	<p>All persons with heart failure should have skills in:</p> <ul style="list-style-type: none"> • Daily weigh and a plan for management of weight increases on consecutive days • Salt reduction eating habits • Determining need for fluid restriction • Reviewing peripheral oedema • Reviewing sleeping habits and dyspnoea that may be a sign of fluid retention in the pulmonary vasculature • Taking medications at the best times to facilitate stability, e.g. ACEI and BB spread out with ACEI taken at night, so lowest BP occurs while sleeping
Acute coronary syndrome or cardiac surgery	None recent		<ul style="list-style-type: none"> • Must exercise in cardiac rehabilitation sessions if had ACS or cardiac surgery in past 8 weeks • After 8 weeks and is stable, can exercise in OACCP even if hasn't attended CR 	<p>In any case, if no CR it is best to facilitate a referral if the person agrees. A joint OACCP/CR would be ideal.</p>

Measure	Safe parameters	Signs and symptoms	Actions	Information
Chest discomfort	None at rest and during normal activities of daily living	<p>Can be pain or discomfort. Level of intensity is not the important factor: if the person can feel it, then action is required.</p> <ul style="list-style-type: none"> • Unexplained shortness of breath • Pain or discomfort is not localised, cannot point to the exact spot • Cannot be relieved with positioning, loosening of clothing • Heaviness • Tightness • Stabbing pain • Burning • In central, left or right chest • Left or right shoulder or arm • Central back • Radiating to jaw and ears – often described as ‘toothache’ 	<ul style="list-style-type: none"> • Unstable angina = that which occurs at rest or at low activity – no exercise and needs medical review • Avoid angina through appropriate warm up and cool down – aim to make sure the vasculature (including collaterals) is well dilated before exercise and allow for slow normalisation post exercise • If occurs during exercise, slow the activity down for a few minutes (cool down is especially important to a peripherally vasodilated person who has heart disease). After few minutes of slow activity, sit the person down and if they self-manage their angina, let them proceed. In any case, if discomfort or pain increases or is still reported 10 minutes after commencing treatment, follow local MET policy. If in a community setting, call for ambulance. 	Suspect all participants have heart disease unless otherwise discounted through maximal stress testing or other cardiological testing.
Recent embolism, thrombophlebitis	None present		Medical review	

Measure	Safe parameters	Signs and symptoms	Actions	Information
Aortic stenosis /incompetence	Minimal		Needs cardiology review before any exercise! Cannot exercise with 'severe' incompetence and only in CR with 'moderate' incompetence.	AS is a bit tricky as many older people will have 'severe' AS and not be operated on. Be guided by cardiology assessment – GP is not sufficient unless they can provide cardiology documentation that light intensity exercise can proceed.
Dissecting aneurysm	None present		No exercise	
Aortic aneurysm	None present		Medical review	Guidelines say an aneurysm <6 mm does not require surgery. Exercise at low intensity if medical approval provided. Generally will require tight management of blood pressure.

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Appendix 6: Personalised management plan

[Under development]

Appendix 6: 6 Minute Walk Test Instructions

The 6MWT is a commonly used measure of functional walking capacity for people with chronic disease. It is useful in tracking participants' progress and to measure the clinical and service outcomes of chronic care programs. Ideally, the Musculoskeletal Coordinator oversees the 6MWT, but any member of the multidisciplinary team may conduct the test.

To account for a learning effect, the baseline measure is created by a minimum of two walks performed on the same day with a 40-60 minute rest between tests, or by completion of the second test at the next visit. In view of the time taken to perform a repeat test and the time involved for the first assessment, only one 6MWT will be undertaken for the OACCP.

The track used must be flat, with no corners and measure at least 25m in length. Participants should be instructed to use bronchodilators and supplemental oxygen as required, and this must be standardised between tests for each participant. The test track must be standardised between participants, so results are accurate and reproducible. Measure and record oxygen saturation and heart rate prior to the test (baseline), at the three-minute mark (halfway) and at test completion. For participants with respiratory or cardiac concerns, these measures may be prudently taken at one-minute intervals during the test.

Standard instructions for performing the 6MWT include outlining the expectations of the test, a description of the 6MWT and familiarisation with the track to be used in the test. An example of instruction is below:

“The objective of this test is to walk as quickly as you can up and down the track for six minutes so you cover as much distance as possible. You may slow down, if necessary, but if you stop, you need to start to walk again as soon as possible. You will be regularly informed of the time that has passed, and you will be encouraged to do your best. Your goal is to walk as far as possible in six minutes. Please do not talk during the test unless you have a problem or I ask you a question. You must let a staff member know if you have any chest discomfort, dizziness or pain anywhere in your body. When the six minutes are up, you will be asked to stop exactly where you are. Do you have any questions?”

Encouragement must be standardised to ensure performance of the test is the same at each visit. Examples of encouragement include:

At one minute: “five minutes remaining [NAME]. Do your best!”

At two minutes: “four minutes remaining [NAME]. You are doing well - keep it up!”

At three minutes: “Half way there – three minutes to go [NAME]. Do your best!”

At four minutes: “Two minutes remaining [NAME]. You are doing well - keep it up!”

At five minutes: “One minute left [NAME]. Do your best!”

At six minutes: “Stop – stay exactly where you are!”

Each site should use instructions and encouragements that are suitable and appropriate to their participants. Although they do not have to be exactly as written above, they do need to remain consistent between tests and between participants.

Consider discontinuation of the 6MWT if the participant exhibits any of the following signs or symptoms:

- chest pain or discomfort

- mental confusion
- lack of coordination
- dizziness
- intolerable dyspnoea
- leg cramps or extreme muscle fatigue
- persistent oxygen saturation < 85% (for people with existing respiratory disease)
- other clinically warranted reasons

The test may continue in the presence of the above signs and symptoms at the discretion of the senior clinician. For further guidance on safety in exercise testing, please see Appendix 5. If the test is stopped it should be rebooked at a satisfactory time for the participant after management and resolution of the problem.

During the test, record each lap on a note pad. Six minutes after commencement, instruct the participant to “stop and stay where you are” while they continue walking on the same spot. Walking on the spot at completion averts ‘pooling’ of blood in the peripheral vasculature and a potential vaso-vagal event. Place a marker on the spot where the person stopped and then ask the person to continue walking slowly for a few minutes before sitting down. At completion of the test, record the person’s oxygen saturation and heart rate. Continue to observe the participant for at least 15 minutes following an uncomplicated test.

Results: Using a trundle wheel, measure the distance walked on the last lap. Tally the number of laps and multiply by the length of test track. Add the distance walked on the last lap to this figure. Record the distance in metres in the assessment notes. Also record the factor that most limited the person’s distance walked or main reason for stopping, from the following list:

- No limitation
- Pain in index joint
- Other musculoskeletal pain
- Breathlessness
- General fatigue
- Stopped for medical reason
- Other

