Everybody MOVE:

Improving outcomes in musculoskeletal health

August 2017

If you are struggling with musculoskeletal pain and fatigue, call the MOVE Help Line on **1800 263 265** or visit **move.org.au**

www.pwc.com.au

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Foreword

We know the conditions, we know the cost. Now we have answers.

Everybody MOVE: Improving outcomes in musculoskeletal health is a roadmap for how to bridge the gap between what we currently do and what would actually have the biggest impact. It builds on the case made in A Problem Worth Solving, providing critical analysis of the evidence and a disruptive challenge to the way we tackle the astounding prevalence rates and socioeconomic impact.

The reward is clear. Embracing these recommendations will reap enormous savings for the health system and lift productivity. But foremost, it is about helping real people. Living with a musculoskeletal condition can test even the most resilient. They affect all ages, are insidious, debilitating and often invisible.

It's time to work together, embrace change and focus on what matters.

MOVE is providing a national voice for muscle, bone & joint health, linking the myriad of conditions in our sector. We commit our organisation to the cause – with compassion, courage and selflessness, we can transform musculoskeletal care in Australia.

We thank PwC for their professionalism in contributing to this vision.

Board of Directors, MOVE

Executive summary

Background

Musculoskeletal conditions affect over 6.8 million Australians with the number predicted to increase as the population continues to age. The high burden of disease for these conditions currently account for $9.2 billion in direct health system cost and additional costs to the economy through absenteeism and lower productivity than might otherwise be the case, with consumers impacted across all life stages.

Five specific conditions (chronic back pain, osteoarthritis, osteoporosis and osteopenia, rheumatoid arthritis and juvenile arthritis) have been reviewed with opportunities for improvement identified to enhance the outcomes individuals are able to achieve.

The approaches to improve the outcomes for individual consumers look to increase prevention activities across the continuum of care as well as improve the capacity and capability of services within the primary care setting, to assist consumers to work with their providers to improve self-management.

Scope and approach

For this review the current activities have been documented and compared to local and international practice in delivering services for the five targeted conditions. Areas for improvement were identified either through consistent availability of services or the creation of new services. A high level evaluation of the benefits and costs was performed to ensure the suggested interventions add value to the system as a whole.

Testing of the insights and possible areas for improvement and how best to implement these suggested improvements has been completed with key representatives spanning consumers, clinicians, insurers, primary and secondary care providers and other professional representative organisations.

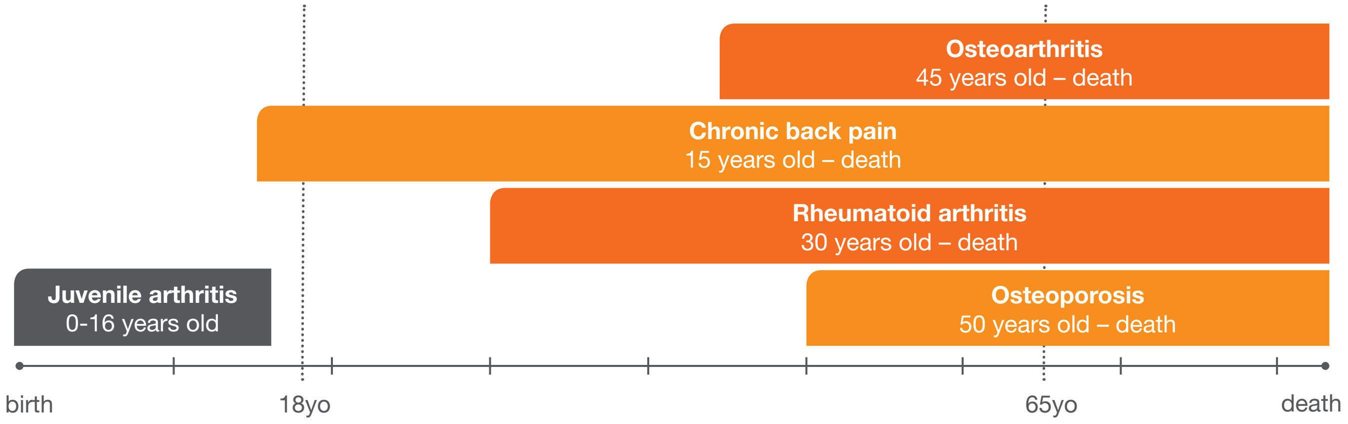
Improvement opportunities

System wide and condition specific prospects which could improve consumer outcomes have been identified and the underpinning development strategies to address inconsistencies in care delivery are explored in the report.

The inherent linkages across the health system (primary, secondary and tertiary) and musculoskeletal conditions and other comorbidities, need to be optimised in order for collaborative, financially viable and evidence-based practices to become embedded in all health service offerings.

Specifically, addressing current barriers in the system around service delivery models, funding structures and the capability of clinicians in the system is explored through the improvement opportunities. All of these are designed to improve the outcomes and quality of life of individual consumers.

Musculoskeletal conditions impact consumers across all life stages



Movement is the overarching key message

People living with muscle, bone and joint conditions are struggling to manage their health. Outcomes under the current health system are suboptimal and the costs are high.

Three system wide pillars were identified to improve quality of life and achieve cost-effective outcomes.

1. Fund only what works

This involves applying a dynamic lens to resource allocation. Incentivising effective prevention, funding interdisciplinary teams and reducing ineffective interventions will have positive impacts on consumer outcomes, reduce demand for services and cut health care costs over the long term.

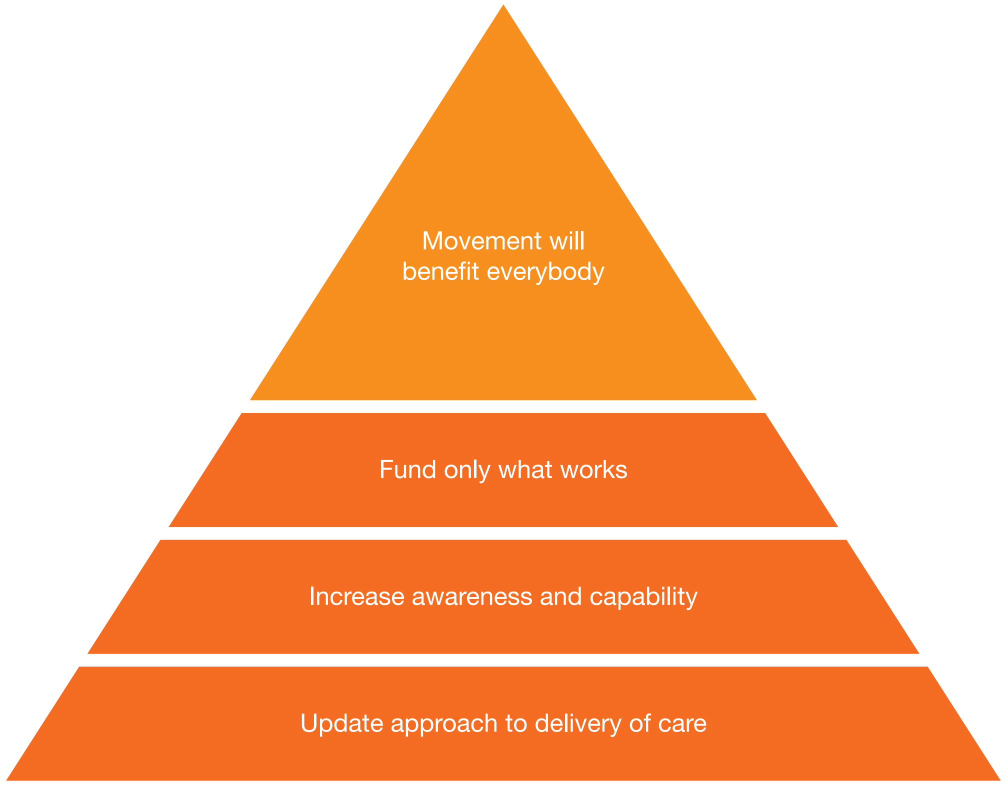
2. Increase awareness and capability

A strong focus on primary prevention and early intervention will help consumers understand the benefits of self-management. A better musculoskeletal focus in curricula for undergraduate medical, nursing and allied health courses and in GP training would increase capacity and drive more effective care.

3. Update approach to delivery of care

Using integrated workforce models to create an efficient allocation of activity across the system will improve consumer outcomes – often at lower cost.

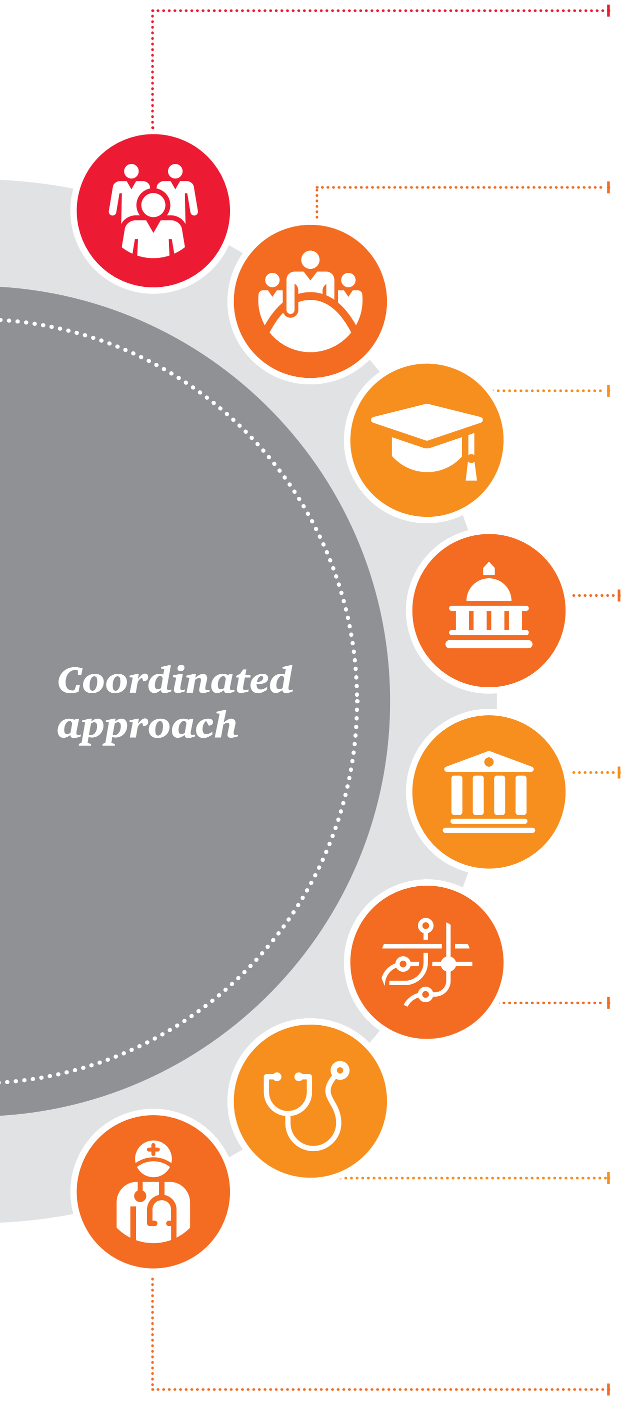
System wide changes



A number of actions are required to optimise outcomes for consumers

Application	Recommendation	Description
System wide	1. Fund only what works	*Create alternative funding streams for allied health clinicians to provide subsidised services to consumers, either through the Medicare Benefits Scheme (MBS) or Primary Health Networks (PHNs)*
	2. Increase awareness and capability	*Use education modules and curriculum for undergraduate and postgraduate clinicians and enhance information available to consumers*
	3. Update approach to delivery of care	*Enhance the use of interdisciplinary teams, increase exercise through inclusion as a 'vital sign' and make movement part of health checks for those aged over 50 years*
Chronic back pain	4. Reduce unnecessary radiology imaging	*Create disincentives for use of imaging that does not lead to changes in clinical outcomes, particularly from primary care providers*
	5. Increase use of interdisciplinary teams	*Use more allied health resources to manage referral demand for specialist clinics and optimise non-surgical management where clinically appropriate*
Osteoarthritis	6. Movement as first line therapy	*Increase clinicians' awareness of strengthening exercises as a first line therapy*
	7. Standardise interdisciplinary triage	*Use more allied health clinicians to triage referrals to specialist orthopaedic services for joint replacements*
	8. Remove unnecessary interventions	*Restrict subsidisation of procedures that are not founded in evidence or do not improve outcomes, for example knee arthroscopies and long term opiate use*
Osteoporosis and osteopenia	9. Increase screening of post-menopausal women	*Lower the age of subsidised bone mineral density testing for post-menopausal women to 65 years*
	10. Increase fracture liaison services	*More consistent access to fracture liaison services in all public hospitals to reduce second fractures for people with minimal trauma fractures*
Rheumatoid arthritis	11. Enhance access to subsidised biologics	*Remove restriction on the maximum number of subsidised biologics a consumer can access through the PBS*
	12. Faster referral to specialist services	*Increase awareness of rheumatoid arthritis in primary practitioners so that consumers are referred to specialist services faster*
Juvenile arthritis	13. Improve transition to adult services	*Increase the range of services available, particularly psychological supports, to consumers who are transitioning from child to adult services*
	14. Longitudinal research into outcomes	*Increase the body of knowledge on outcomes achieved by Australians with juvenile arthritis*

Having the right stakeholders working together is essential



Consumers

Consumers will be critical to drive the changes through self-management of their conditions. Empowering them with evidence-based information so they actively participate in their care will be essential.

Representative Organisations

Bringing together medical, nursing and allied health representative organisations through advocating for common approaches will amplify the messages to improve the management of musculoskeletal conditions. For example, the RACGP will need to be engaged to promote GP trainee education modules.

Universities

Increasing the training and education of clinicians at an undergraduate level will build awareness in the appropriate management of musculoskeletal conditions. Universities will also be central to increasing the body of knowledge by leading research into these conditions.

Commonwealth Government

As the main funder of primary services the Commonwealth Government will be essential to drive improvements in the funding model for musculoskeletal conditions to promote efficient and effective care.

State and Territory Governments and Local Government

As the funder of public hospitals the State and Territory Governments will need to play a role in redefining the service models in the acute and sub-acute health services by enhancing the utilisation of interdisciplinary teams. Local governments will play a key role in implementing 'healthy' urban planning principles and ensuring community access points.

Primary Health Networks

PHNs can utilise outcome-based commissioning to engage interdisciplinary teams across the healthcare continuum for their geographies to enhance outcomes. Their approach can be tailored to the needs of the local population.

Health Service Providers

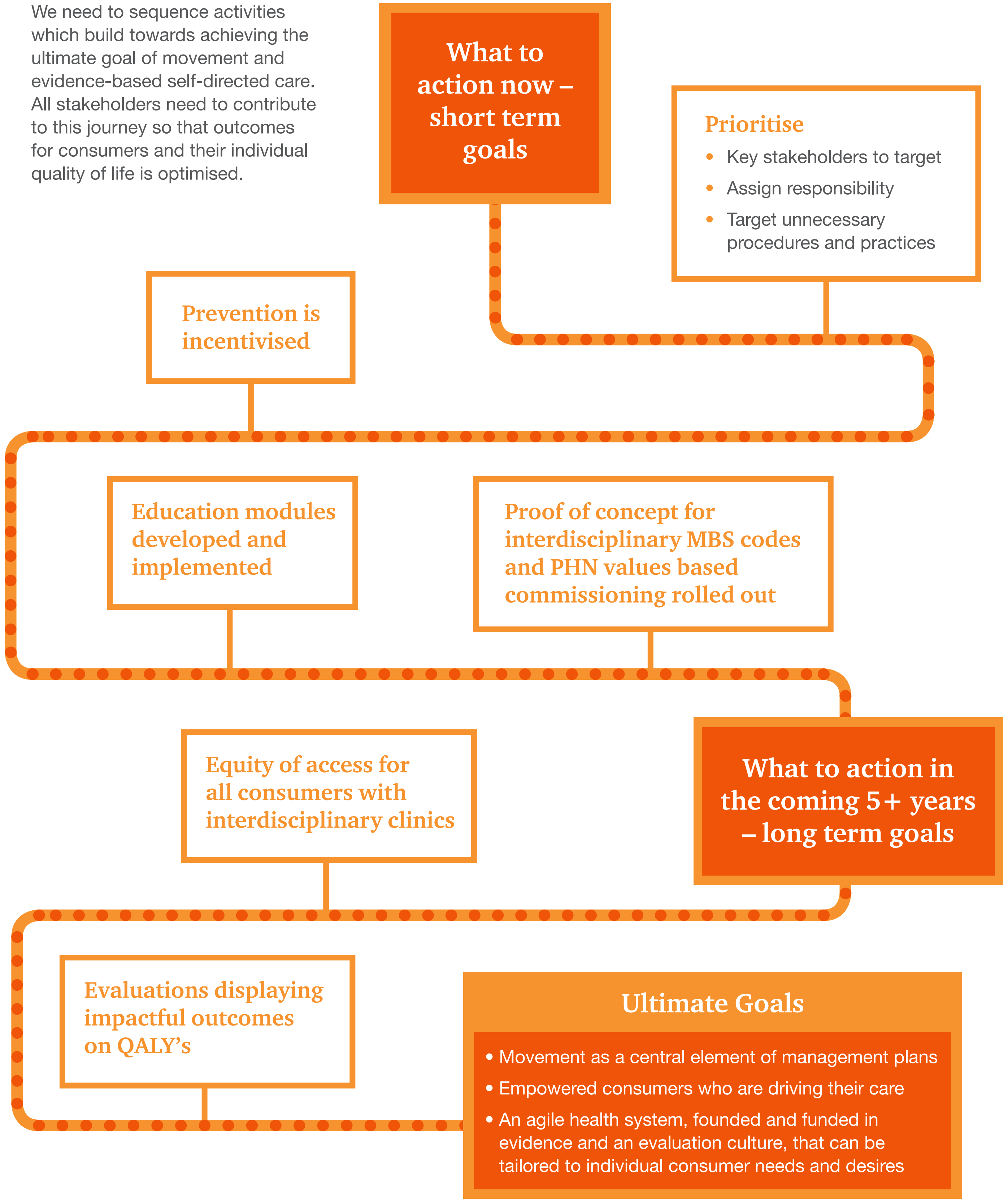
Individual health services should be engaged as they deliver the services required by consumers with musculoskeletal conditions and are the providers of specialist services. They will need to be involved to assist in the allocation of activity across the healthcare continuum and assist in the education of trainees.

Clinicians

Using an interdisciplinary approach we can improve the efficacy of service delivery across the system, as well as increase the capability of clinicians to deliver high quality and safe care to consumers.

A roadmap for the future highlights several early wins

We need to sequence activities which build towards achieving the ultimate goal of movement and evidence-based self-directed care. All stakeholders need to contribute to this journey so that outcomes for consumers and their individual quality of life is optimised.



What to action now – short term goals

Prioritise

- Key stakeholders to target
- Assign responsibility
- Target unnecessary procedures and practices

Prevention is incentivised

Education modules developed and implemented

Proof of concept for interdisciplinary MBS codes and PHN values based commissioning rolled out

Equity of access for all consumers with interdisciplinary clinics

What to action in the coming 5+ years – long term goals

Evaluations displaying impactful outcomes on QALY's

Ultimate Goals

- Movement as a central element of management plans
- Empowered consumers who are driving their care
- An agile health system, founded and funded in evidence and an evaluation culture, that can be tailored to individual consumer needs and desires

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Background

Musculoskeletal conditions can be managed better

Background

6.8 million Australians have musculoskeletal conditions resulting in a $9.2 billion direct health cost and further costs from reduced productivity.

Consumers diagnosed with these conditions find themselves having to manage chronic conditions with impacts on their quality of life and ability to participate in activities that they find enjoyable and fulfilling.

Despite the increasing prevalence and higher burden of disease for these conditions, the models of care, where they exist for each of the conditions, have either not evolved with the latest evidence and/or there is inconsistent application to consumer care.

Underpinning the models of care are activities and interventions available to consumers and their treatment teams. These activities are defined by local and international evidence supporting their application. The activities can be classified into three settings:

- *Prevention* – activities that are intended to reduce the onset and slow the progression of a condition, including self-management and public health campaigns
- *Primary care* – activities that are delivered through community settings and involve the input of a range of clinicians, for example, general practitioners, nurses, physiotherapists, exercise physiologists, occupational therapists and pharmacists
- *Tertiary* – activities and interventions delivered through hospitals to diagnose or treat musculoskeletal conditions in either an inpatient or outpatient setting

Context

PwC has been engaged by *MOVE muscle, bone & joint health (MOVE)* to examine the management principles for five musculoskeletal conditions:

- Chronic back pain
- Osteoarthritis
- Osteoporosis and osteopenia
- Rheumatoid arthritis
- Juvenile arthritis

MOVE selected these conditions for review on the basis of their high prevalence within the Australian population and relevance to Commonwealth, State and Territory and Local government.

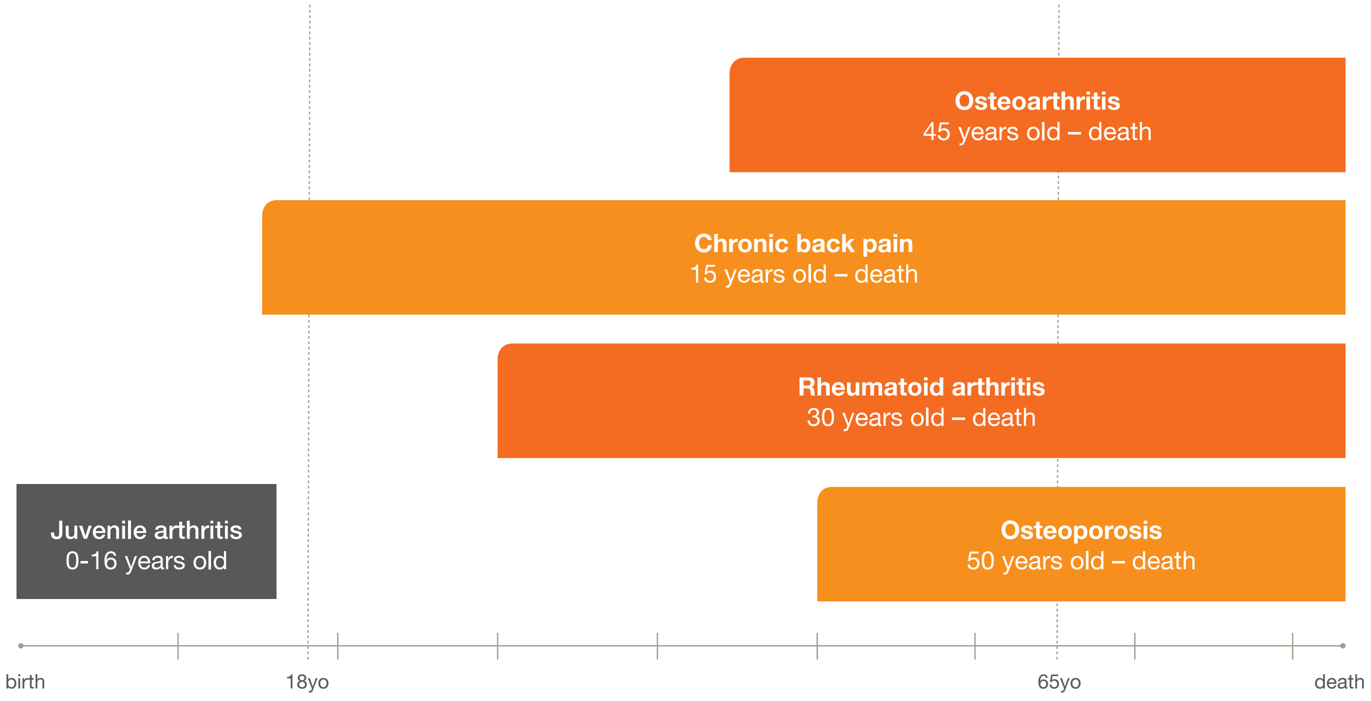
The report outlines an examination into the management principles for each of the conditions. PwC has drawn on the latest evidence and practice both in Australia and internationally, to identify opportunities to influence how care is delivered.

Musculoskeletal conditions affect 6.8 million Australians across all life stages

Some interventions are aimed at a broad reach to the whole population whereas others are targeted to specific conditions and life stages.

Importantly, the activities and interventions are available when consumers need them most in order to optimise their quality of life. The age distribution of common musculoskeletal conditions is demonstrated in Figure 1.

Figure 1. Musculoskeletal conditions impact consumers across all life stages



Musculoskeletal conditions are strongly linked to other comorbidities

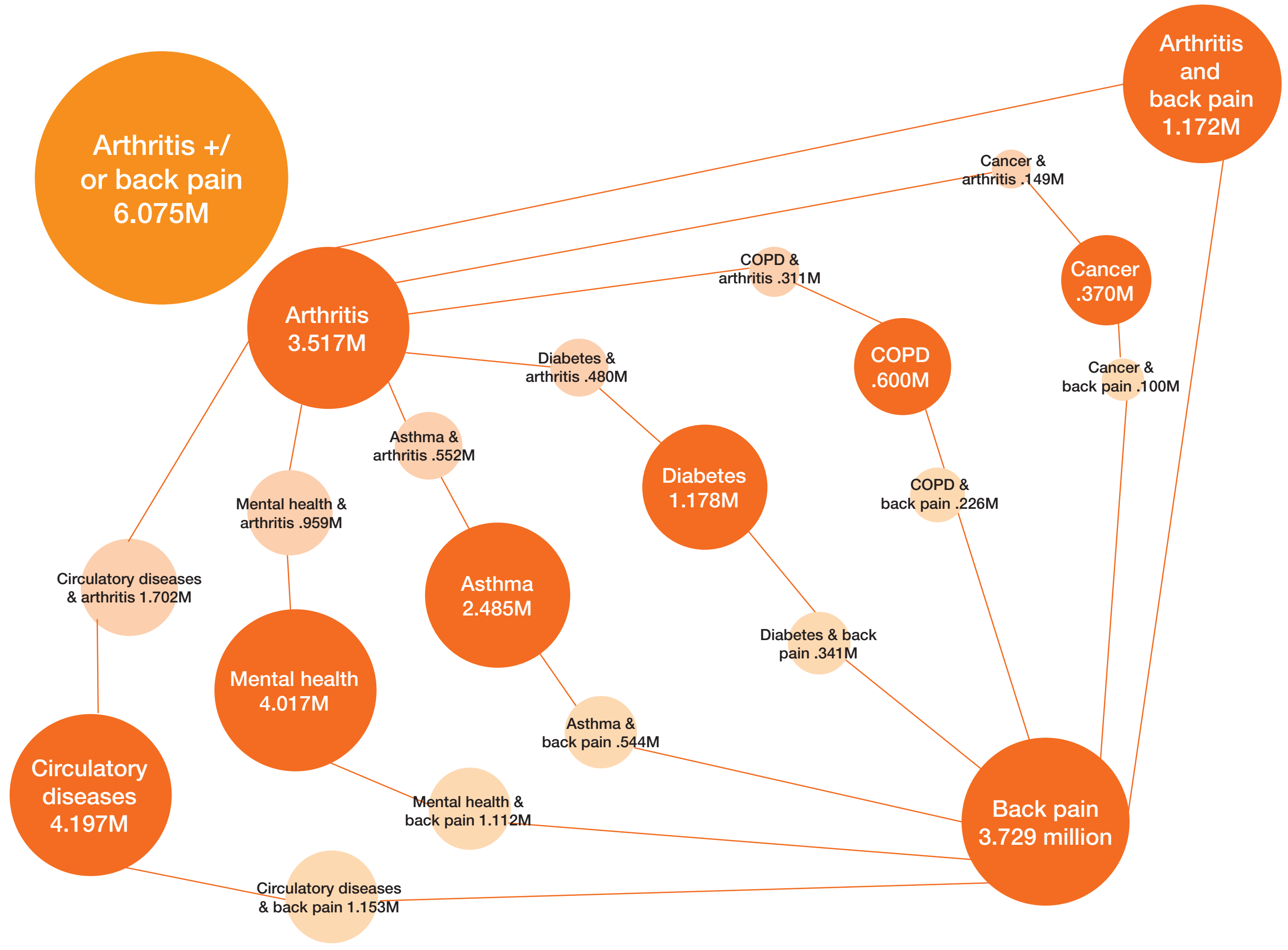
According to the Australian Institute for Health and Welfare, approximately 5.3 million Australians have two or more chronic diseases (arthritis, asthma, back pain, cancer, chronic obstructive pulmonary disease, cardiovascular disease, diabetes and mental health conditions). Comorbidities can indicate the presence of more severe disease resulting in higher health care costs.

Those aged over 65 are 60% more likely to have two or more comorbidities. Those living in low socioeconomic areas and regional and remote areas also have disproportionally higher comorbidity rates.

Arthritis with cardiovascular disease and arthritis with back pain account for two of the most commonly occurring comorbidity combinations. Appropriate management of musculoskeletal conditions in order to drive improvements in the management of other conditions, is highlighted in Figure 2.

Underpinning the management of the conditions is the importance of movement and an active lifestyle. Targeting movement for people with musculoskeletal conditions is able to bring about positive impacts on a number of linked comorbidities.

Figure 2: Number of people living with co-morbid musculoskeletal conditions and other chronic diseases



Source: Analysis by PwC and MOVE based on ABS data

Methodology

The scope of the work undertaken in this engagement included:

- Literature scan of latest evidence-based practice
- Two workshops to develop and test strategic options underpinning each of the musculoskeletal conditions
- Key targeted stakeholder interviews to further test findings from literature review and gain insights into current and future impacts on management principles

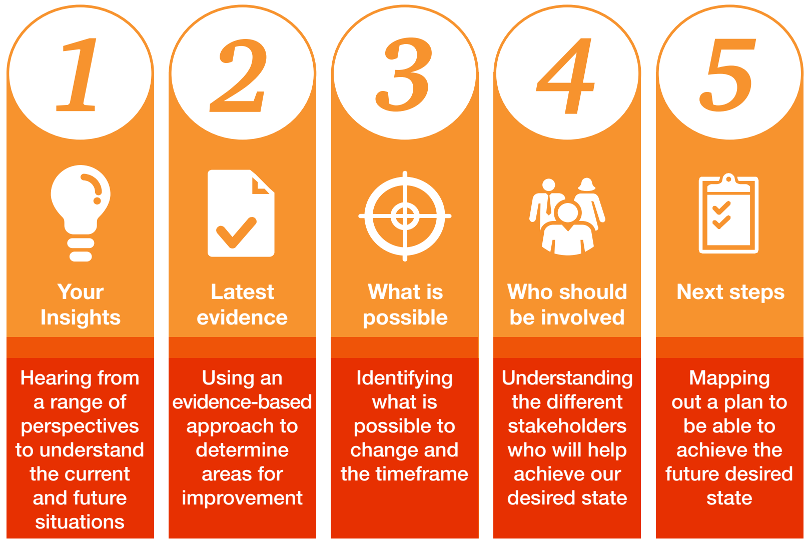
PwC utilised both the workshops and targeted interviews to further build understanding of management principles. Figure 3 provides an outline of the objectives for each of these sessions and how they would then contribute to this report.

Consumer centred developmental approach

In order to develop an understanding of the current activities across the care continuum from prevention through to tertiary care, PwC documented the range of activities with the consumer at the centre, to recognise the relationships that the care settings play across the consumer journey and to identify where current practices compared to latest evidence and the consistency of its application. An initial assessment of the application of the evidence for each condition was completed using the system outlined in Figure 4.

This approach highlighted gaps between the evidence base and the service models, areas where current services are not contributing to outcomes or where there is inconsistent availability of services.

Figure 3: Objectives of the stakeholder consultations



1	2	3	4	5
Your Insights	**Latest evidence**	**What is possible**	**Who should be involved**	**Next steps**
Hearing from a range of perspectives to understand the current and future situations	Using an evidence-based approach to determine areas for improvement	Identifying what is possible to change and the timeframe	Understanding the different stakeholders who will help achieve our desired state	Mapping out a plan to be able to achieve the future desired state

Figure 4: Application of evidence

Implemented best practice needs to be consistently applied

Pockets of best practice but needs to be scaled to ensure equity of access and benefits to all consumers

Evidence does not support ongoing incorporation in practice

System wide recommendations

Movement will benefit everybody

It is estimated that up to 27% of Australia's population are living with one of the five musculoskeletal conditions.

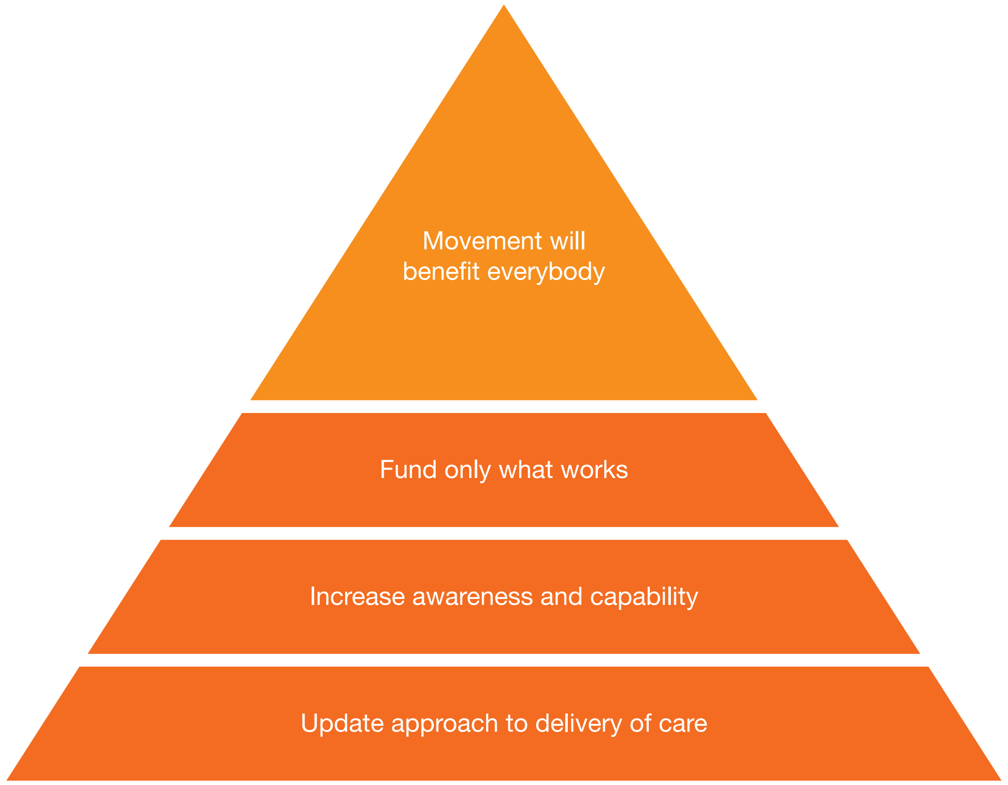
Looking across the conditions, there are a number of strategies which can be employed both at the population level and across the system to drive improvements in consumer outcomes. These are specifically looking into:

- Inefficiencies in the current funding structure of the health system which rewards activity rather than outcomes and an inefficient allocation of resources between different care providers and settings
- Education and the curriculum for clinicians during their undergraduate/ pre-licensure training
- Using integrated workforce models to create an efficient allocation of activity across the system.

Figure 5 highlights the **critical importance of movement as an overarching element of the solution.**

Given the linkage between musculoskeletal conditions and other comorbidities such as obesity, cardiovascular disease and mental health, there are clear benefits for consumers with musculoskeletal conditions utilising movement, exercise and weight management in their treatment regimen to handle their pain and improve function.

Figure 5: System wide changes



Recommendation 1: Fund only what works

The current funding system has not kept pace with the evolution of treatment and management options for the five musculoskeletal conditions. Reimbursement is currently based on activity inputs rather than outputs or outcomes and is incentivised towards medical intervention (including surgical and pharmacological interventions).

Funding allied health clinicians to triage and manage consumers has the ability to release capacity within the system and lead to a more efficient allocation of activity.

Redistributing activity across different service providers and settings will release funding capacity within the system and may allow for more efficient and effective management of consumers' conditions, as shown in Figure 6. More efficient services would need to be reimbursed in a similar way to the medical model in order to promote access to effective services. Creating a funding stream for allied health clinicians to triage consumers referred to specialist units may be able to manage the demand for these services as well as optimise non-surgical management in the first instance. This has been proven to work in health services across Australia for example Osteoarthritis Hip and Knee Service (OAHKS) clinics.

Figure 6: Redefining the funding system

To enable redistribution there are two possible options:

a) the creation of a new Medicare Benefits Schedule code for allied health triage and review for consumers, or

b) through the commissioning framework and funding of Primary Health Networks (PHNs).

These triage services could be conducted by physiotherapists, exercise physiologists or occupational therapists and require a referral from a general practitioner in order to build an inter-disciplinary approach to management of individual consumers.

For consumers with private health insurance there could also be opportunities for the insurers to incentivise their members to adopt healthy behaviours. Currently, legislative restrictions prevent insurers applying this broadly to their members through rebates or reductions in their premiums. Removing these restrictions can have a positive long-term impact on the demand for health services.

Outcome-based commissioning by PHNs

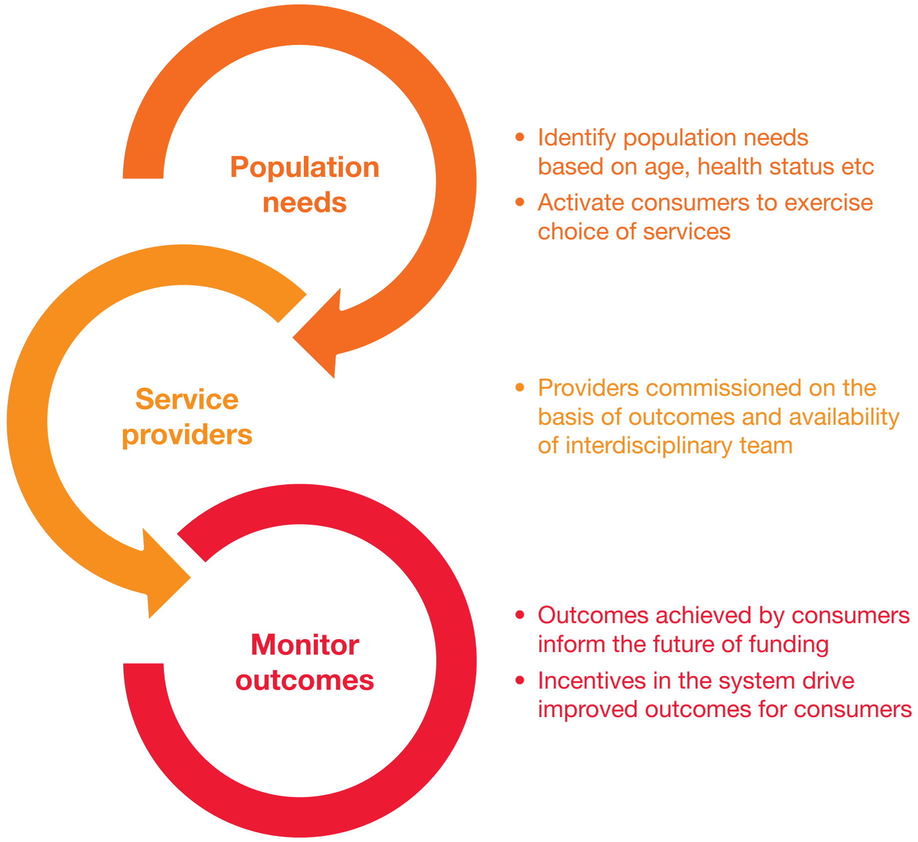
The management of musculoskeletal conditions by a true interdisciplinary team could be used as the lead for integrated care commissioning through the PHNs. The PHNs are in the unique position of coordinating care across the heath care continuum and are able to bring together the different services to drive improved outcomes for consumers.

PHN's would be able to commission providers to deliver interdisciplinary services in the community to optimise management for individual consumers. Because of the links between musculoskeletal conditions and other comorbidities they would be able to bring together treatment activities as well as targeted prevention strategies to deliver overall value to the health system.

Importantly, they will also be able to commission based on outcomes and local needs. This has been successfully done under some Medicare Locals, for example, the S.T.E.P.S. program commissioned by Perth Metro North Medicare Local. This specifically addressed a shortage of specialist pain management services through an interdisciplinary approach.

The revenue for the commissioned services would be sourced from PHN annual funding and would be flexible to target the needs of individual populations and geographical areas. Outcome based commissioning models may be a more flexible option than creating a one-size-fits-all reimbursement through the MBS and allow performance to be actively monitored by the PHN, as outlined in Figure 7.

Figure 7: Outcome-based commissioning



Recommendation 2: Increase awareness and capability

Based on the different approaches taken to managing musculoskeletal conditions, there is an opportunity to increase the awareness of both clinicians and consumers in the management of the different conditions. The purpose of this is to improve the diagnosis and ongoing management for individual consumers.

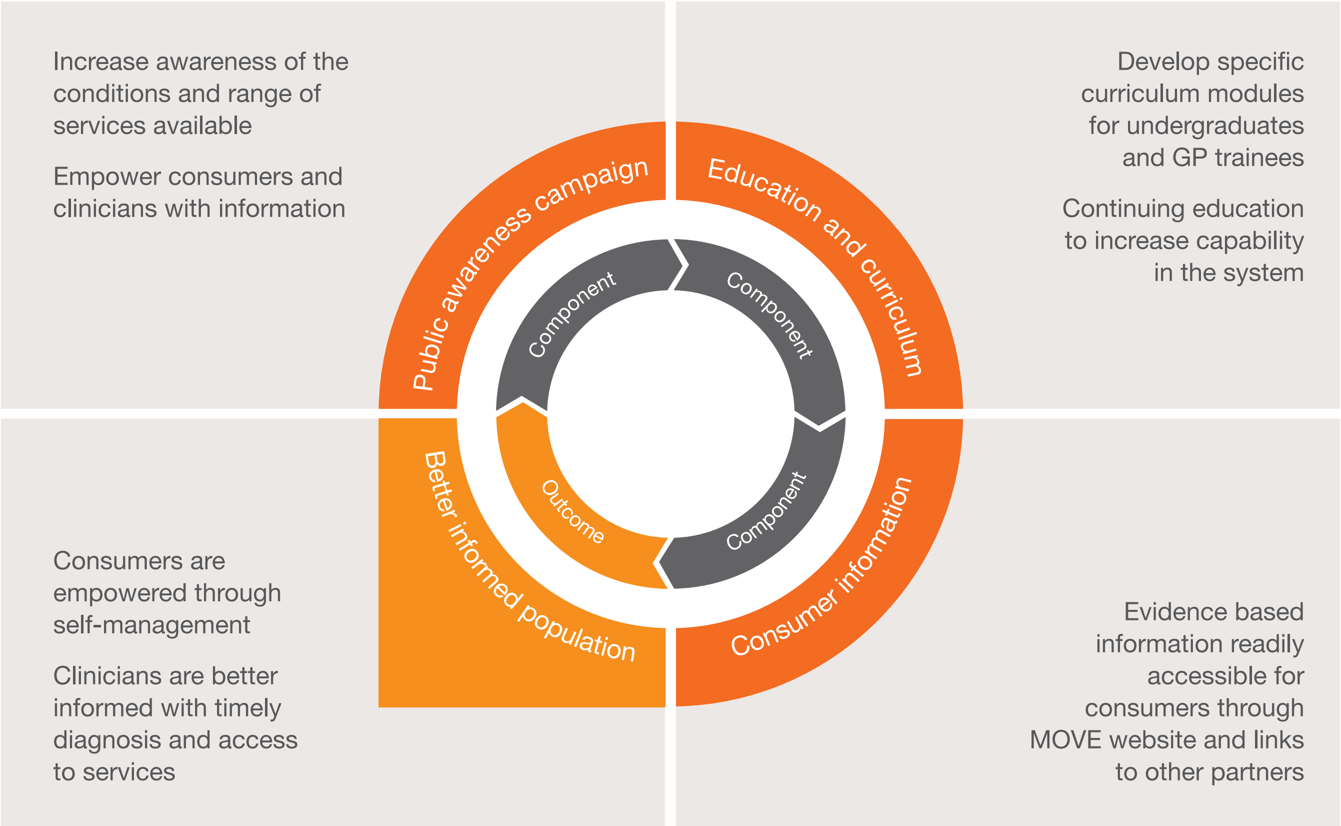
Increasing the availability and quality of the musculoskeletal curriculum for undergraduate and postgraduate medical, nursing and allied health clinicians has the potential to improve the diagnosis and ongoing management of these conditions. Increasing the capability of GP trainees in the first instance through targeted musculoskeletal education can improve initial management and more appropriate referrals.

At the same time providing **consistent access to high quality, evidence-based information for consumers** to guide the appropriate management of their conditions is also a key to increasing the role individuals can play in driving the prevention and co-management of their musculoskeletal conditions.

Underpinning all of this is the need to increase levels of exercise and physical activity to manage pain and fatigue, improve function and address progression of the conditions. Movement is underutilised in each of the five conditions and can provide benefits to consumers across all stages and progression of their conditions.

The MOVE website could become a portal which can be accessed by consumers and clinicians to source up-to-date and credible information for the management of specific conditions and support this activity, as summarised in Figure 8.

Figure 8: System wide capability activities



Recommendation 3: Update approach to delivery of care

We need to align the suite of services available to consumers to the latest evidence and recommended guidelines. Increased awareness and implementation of musculoskeletal management guidelines will promote better care, as will appropriate funding and reimbursement models. A key driver for funding change is that Australia faces an ageing population, who will be living for longer with at least one of these musculoskeletal conditions, therefore subsidised services are pivotal for equitable access.

Using allied health professionals can mean increasing demand for, and participation in, exercise and activity.

Enhanced deployment of interdisciplinary teams to be involved in:

- *Triage:* utilising physiotherapists in both the primary and tertiary setting, to determine if a referred consumer is a surgical candidate or whether they would benefit more from non-surgical management
- *Diagnosis:* improved access to allied health clinicians in the community and specialty centres/units would reduce the time to diagnosis and commencement of the appropriate treatment to optimise outcomes for individuals
- *Treatment:* utilising a broader range of clinicians such as exercise physiologists to prescribe exercises for consumers can reduce the time to initiation of targeted and tailored treatment as well as create a more efficient allocation of activity across the healthcare continuum

Measuring and documenting a consumer's exercise or activity level like other vital signs (for example blood pressure and pulse) would cement in the mind of both clinicians and consumers the importance of this in the management of the conditions. Therefore, we are recommending that exercise or physical activity be included as a vital sign measure in the standard clinical care for all consumers in Australia's health system.

Linked to this is a recommendation to **include a movement and physical function review for musculoskeletal conditions as part of health checks for the Australian population aged 50 years or over, every 5 years.** Health checks can identify any issues early and promote a strategy to help consumers improve function and quality of life. Figure 9 presents a summary of the proposed changes.

Figure 9: Delivery of care

Condition specific recommendations

Chronic back pain

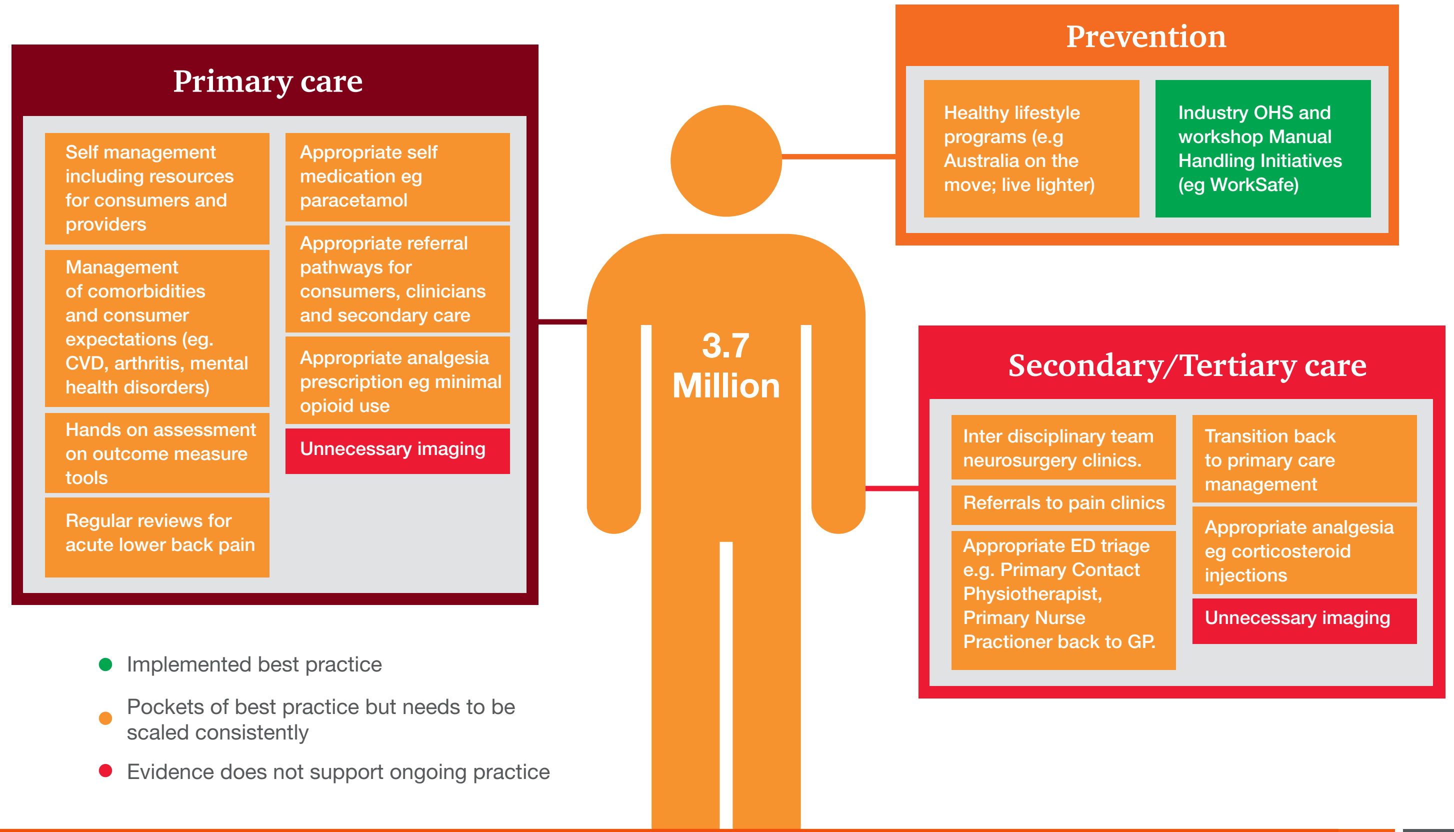
3.7 million Australians live with chronic back problems, with consumers making greater use of pain-related medications and health care resources in comparison to those without chronic back pain. For example 27% of hospitalisations were due to low pack pain. Further, 1.2 million people with a disability also experience a chronic back issue. Overall, 16% of the population have back pain.

It is reported that 70-90% of people will experience an episode of lower back pain during their lifetime. Given that most of the disability and associated costs relate to the condition when it becomes chronic, it is vital to understand the factors that lead to chronicity (demographic, psychological and occupational) and the clinical predictors that can be used to warn against such an outcome.

Key insights from literature scan and stakeholders

- Unnecessary imaging requests which do not lead to change in management, as highlighted red in Figure 10
- Limited 'hands on' assessment of consumers in primary care because of a lack of awareness of the conditions by primary care providers is contributing to sub-optimal management and may be leading to avoidable hospital activity
- There is a direct link between other conditions such as depression and anxiety and the development and impact of chronic back pain
- There have been good results from public awareness campaigns aimed at prevention, particularly in the workplace, to raise awareness of the need for appropriate diagnosis and management of back pain
- There is an overuse of tertiary specialist services and an underutilisation of primary care and prevention through a lack of expertise and understanding.

Figure 10: Current management of chronic back pain and areas for improvement



Recommendation 4: Reduce unnecessary radiology imaging

For the majority of consumers imaging is unlikely to help identify their cause of pain, alter treatment or decrease recovery time. The 2014 *Bettering the Evaluation And Care of Health (BEACH)* data found that GPs and allied health practitioners account for over 80% of all imaging requests and that the number of investigations ordered increased despite the publication of guidelines cautioning against their use in the management of chronic back pain.

By creating a consistent guideline-based approach to using radiological imaging appropriate for chronic back pain, where imaging is only ordered by specialists when it is likely to be required for surgery or other condition management, it is expected that we could prevent approximately 620,000 unnecessary GP and allied health X-ray and computed tomography (CT) imaging requests.

To achieve this there are two key initiatives and activities:

- Align the updated guidelines with the MBS reimbursement schedule and the current MBS review
- Create agreement on the guidelines with the key representative organisations and raise awareness amongst clinicians and consumers

Initial estimates indicate that creating consistency in the approach and messaging in diagnostic and treatment guidelines could achieve annual direct benefits of approximately $107 million*.

What are the activities?

- Align the updated guidelines with the MBS reimbursement schedule through supporting other peak bodies to work with the Commonwealth Government and the current MBS review
- Use *'choosing wisely'* material and strategy as leverage to advocate for evidence-based practice
- Engage with key representative organisations (covering medical and allied health professionals) to promote the utilisation of the updated imaging guidelines
- An awareness campaign with clinicians about the utilisation of imaging and updated guidelines
- Develop resources for consumers regarding the utilisation of imaging.

Who will be involved?

- Commonwealth Government
- Australian Medical Association
- Australian Orthopaedic Association
- Australian Rheumatology Association
- Royal Australian College of General Practitioners
- Australian Physiotherapy Association
- Chiropractors' Association of Australia
- *MOVE* and other consumer advocacy groups

**See Appendix B (page 49) for detailed working and sources used in estimation of annual benefits*

Recommendation 5: Increase use of interdisciplinary teams

Specialist outpatient clinics and advanced musculoskeletal services predominantly operate in public secondary or tertiary hospital settings with considerable waiting times and poor access. The extended waiting times can lead to the development of chronic symptoms, costly and unnecessary tests and poorer health outcomes.

By providing consistent access to interdisciplinary triage teams to manage referrals in the primary care setting, all consumers will have timely access to initial assessment and the ability to optimise non-surgical management in the community. Reducing the reliance on overstretched public hospital services can utilise alternate workforce models to assess and manage back problems.

A recent report on a primary care interdisciplinary back pain clinic with 292 consumers, outlined a direct health cost saving of approximately $53,000 in the first 12 months of the clinic. To achieve continued growth of interdisciplinary clinics there are two key steps:

- Alignment of clinic funding with the MBS reimbursement schedule and the current MBS review
- Create agreement of the funding between primary and secondary care to ensure sustainability of model

Initial pilot projects are reporting considerable savings primarily due to the avoidance of unnecessary imaging and approximately $2.3 million* in savings with avoidance of surgery.

What are the activities?

- Engage with the Commonwealth and each of the State and Territory Government Health Departments to develop business cases for the establishment of community based interdisciplinary back pain clinics
- Engage with key representative organisations (for example RACGP, AMA, AOA, RACS, APA) to rollout these clinics
- Create partnership agreements with acute services, Primary Healthcare Networks, PHI's and community services to address equity of access to evidence based practice
- Rollout services to each of the PHN networks initially, commencing with larger metropolitan centres and then cascading through regional areas
- Monitor activity/performance of services through regular evaluations.

Who will be involved?

- Commonwealth Government
- State and Territory Health Departments
- Australian Medical Association
- Primary Health Networks
- Public health services
- Australian Orthopaedic Association
- Royal Australasian College of Surgeons
- Australian Rheumatology Association
- Royal Australian College of General Practitioners
- Royal Australian College of Physicians
- Australian Physiotherapy Association
- Exercise & Sports Science Australia
- *MOVE* and other consumer advocacy groups

**See Appendix B (page 50) for detailed working and sources for the savings estimate*

Osteoarthritis

2.1 million Australians are affected by osteoarthritis (OA), as shown in Figure 11. It is the predominant reason for knee and hip replacement surgery in Australia, with a 29% rise in the rate of total knee replacements and a 31% rise in hip replacements from 2005 – 2015.

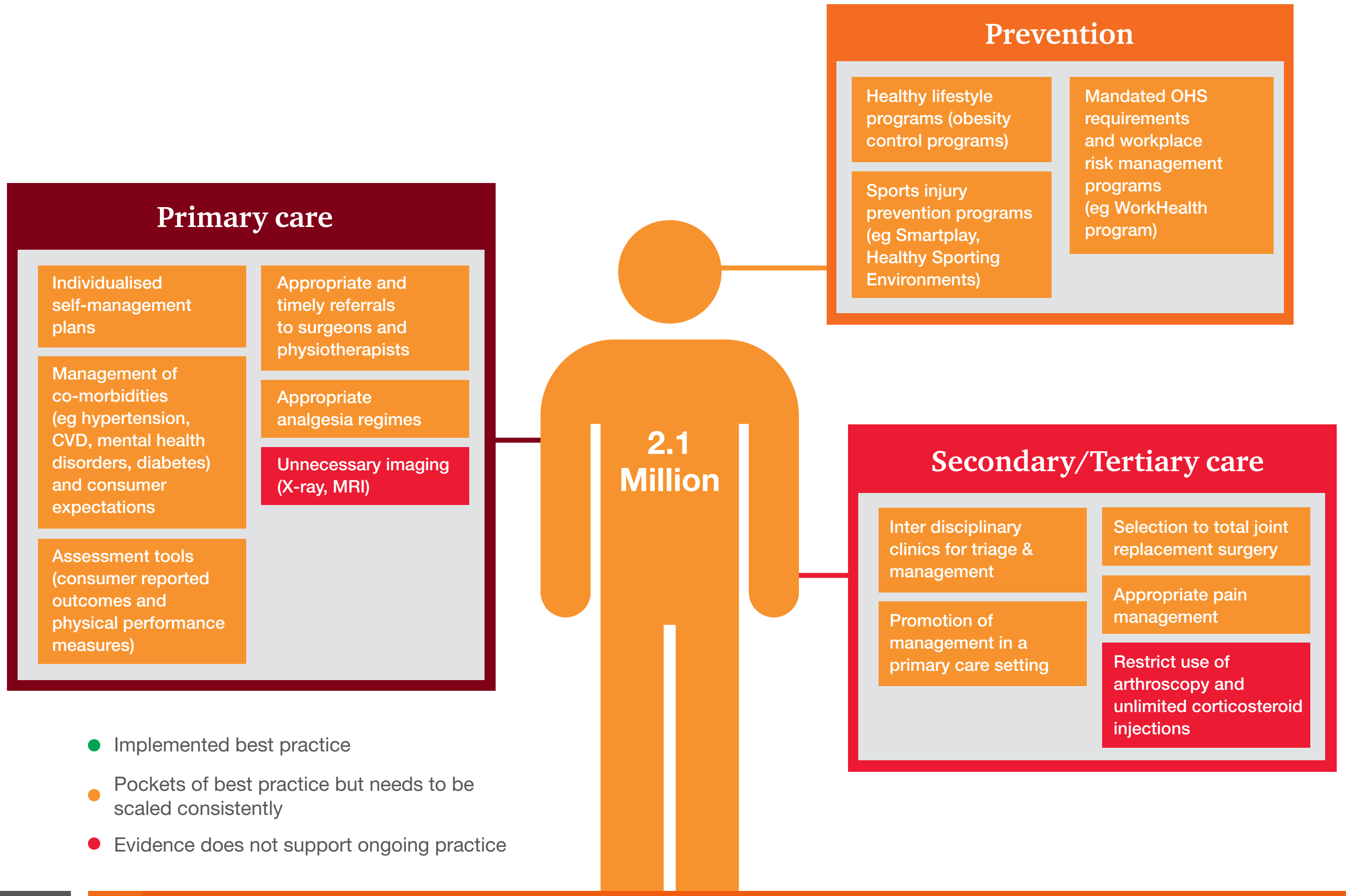
Non-surgical management strategies, especially for knee osteoarthritis, have been outlined as a key cost saving mechanism with both health and economic benefits by:

- Reducing the demand for knee replacements with savings predicted at $233 million by 2030 for the health system
- Improving workforce participation with an estimated yearly reduction of $9.9 million in welfare payments and increased income tax revenue of $8.4 million per year by 2030

Key insights from literature scan and stakeholders

- Inconsistent use of healthy lifestyle interventions such as improving diet and physical activity levels and other preventative measures
- Inconsistent access to interdisciplinary teams to triage and manage consumers referred for specialist opinion and management
- Underutilisation of exercise and other non-surgical management approaches for initial management
- Inconsistent approaches to empowering self-management of conditions by consumers
- Ongoing use of diagnostic knee arthroscopy for osteoarthritis in Australia despite limited evidence to support its utilisation in clinical practice and Australian Orthopaedic Association position statement.

Figure 11: Current management of osteoarthritis and areas for improvement



Recommendation 6: Movement as a first line therapy

There are substantial cost savings for the public healthcare system if effective non-operative strategies are implemented to manage osteoarthritis, particularly knee osteoarthritis.

A combined diet and appropriate exercise program rolled out nationally could potentially result in approximately 42,000 additional quality adjusted life years (QALYs) for consumers with mild to moderate knee OA, which equate to a cost per QALY of $1,877. For consumers with severe knee OA, avoiding surgery by participation in a comprehensive non-surgical appropriate exercise and weight management intervention program could lead to a cost saving of approximately $192m by 2020 due to surgery avoidance in the first year after the intervention program.

To achieve this saving we would look to amend the current MBS reimbursement schedule for allied health to remove the five visit cap, allowing appropriate ongoing follow-up and management for individual consumers.

By instituting an accessible exercise program there is a potential saving of $970* on average for every person diagnosed with osteoarthritis, of which there are currently 2.1 million.

What are the activities?

- Increase the awareness of clinicians in the supporting evidence through engagement with professional medical and allied health representative organisations
- Align with the MBS reimbursement schedule through supporting other peak bodies to work with the Commonwealth Government and the current MBS review
- An awareness campaign to promote access and national rollout
- Utilisation of interdisciplinary triage teams as a referral and management point
- Engage with key professional colleges (for example RACGP and RACP) to promote the utilisation of the new reimbursement code.

Who will be involved?

- Commonwealth Government
- State and Territory Governments
- Primary Health Networks
- Private health insurers
- Australian Medical Association
- Australian Physiotherapy Association
- Exercise and Sports Science Association
- Australian Practice Nurse Association
- Royal Australian College of General Practitioners
- Australian Rheumatology Association
- *MOVE* and other consumer advocacy groups

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*See Appendix B (page 51) for detailed working and sources for the potential saving estimate

Recommendation 7: Standardise interdisciplinary triage

The primary purpose of interdisciplinary clinics is to improve access to non-operative management for those consumers accessing services.

Examples of good public hospital practice are the Osteoarthritis Hip and Knee Service (OAHKS) in Victoria and the Osteoarthritis Chronic Care Program (OACCP) in New South Wales, which coordinate the management and conservative treatment (reduce pain, increase functional capacity and improve quality of life) of people with hip or knee osteoarthritis and assist in the management of public hospital waiting lists. The system and workforce changes with this model have shown improved use of limited services, management plans for consumers, improved GP collaboration and consumer satisfaction.

Unfortunately these services are offered predominantly at public tertiary hospitals with limited access in regional and rural areas. Increasing the number of clinics available nationally would improve access and defer surgery.

It is expected that interdisciplinary clinics could deliver approximately $4.2 million of annual savings* in direct public healthcare costs nationally. To achieve this there are two approaches:

- MBS reimbursement code for allied health
- Interdisciplinary clinics consistently available throughout Australia in both the primary and secondary public care setting

Interdisciplinary clinics need to be rolled out across the country to achieve scalable benefits of approximately $4.2 million per year.

What are the activities?

- Develop business cases which can be presented to State Governments to implement the interdisciplinary triage clinics in all public hospitals
- Present the business cases to community health services for implementation in suitable communities
- Engage with key medical and allied health professional colleges to promote the model.

Who will be involved?

- Commonwealth Government
- State and Territory Government
- Public health services
- Primary Health Networks
- Australian Orthopaedic Association
- Australian Rheumatology Association
- Australian Physiotherapy Association
- Royal Australian College of General Practitioners
- Royal Australian College of Physicians
- Exercise & Sports Science Australia
- *MOVE* and other consumer advocacy groups

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*See Appendix B (page 52) for detailed working and sources for the potential saving estimate

Recommendation 8: Remove unnecessary interventions

Arthroscopy

Evidence indicates that arthroscopic debridement for osteoarthritis of the knee does not show benefit for consumers with undiscriminated OA.

The implementation of evidence into practice can be delayed for many years and health system factors may contribute to this delay. Consumers may preferentially seek surgical intervention before trying a non-operative approach despite evidence questioning its effectiveness.

Given the health system and subsequent economic benefits of physical activity and diet programs for knee OA, consumers should be actively encouraged by both GPs and surgeons to try these evidence-based practices in the first instance.

MBS refunds vary between $272.95 for a diagnostic knee arthroscopy and $343.95 for a diagnostic hip arthroscopy. Approximately 2,928 arthroscopic procedures are performed annually across private and public health services. Given the lack of evidence of the efficacy of these procedures there is a potential cost saving of $10 million per year.*

In order to optimise the savings we would actively pursue the amendment of the current MBS reimbursement numbers (49557, 49563 and 49360) to align with evidence-based practice.

Incentivise services that are known to improve consumer outcomes. Reducing knee arthroscopy could save $10 million per year.

What are the activities?

- Engage with the Commonwealth Government to update the MBS schedule with amended number for arthroscopic procedures
- Engage with the private health insurers to guide the interventions and procedures performed through the private health system
- Engage with key medical and allied health professional colleges to promote evidence-based care
- Develop consumer resources to reduce demand pressures.

Who will be involved?

- Commonwealth Government
- Private health insurers
- Australian Orthopaedic Association
- Australian Medical Association
- Royal Australian College of General Practitioners
- *MOVE* and other consumer advocacy groups

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*See Appendix B (page 53) for detailed working and sources for the potential saving estimate

Recommendation 8: Remove unnecessary interventions (Continued)

Long-term opiate use

$589 million is spent annually on opiates for consumers with musculoskeletal conditions which could be doing them more harm than good.

The use of opiate analgesics for the treatment of acute musculoskeletal pain has been well established. However, there is limited evidence on the efficacy of long-term usage and in fact they may lead to more harm which would outweigh any potential benefits.

Figure 12 shows that long-term opiate use contributes to:

- Increased incidence of falls due to their sedative effects
- Increased confusion in older consumers and additive effects to other sedative medications
- Physical and psychological dependence

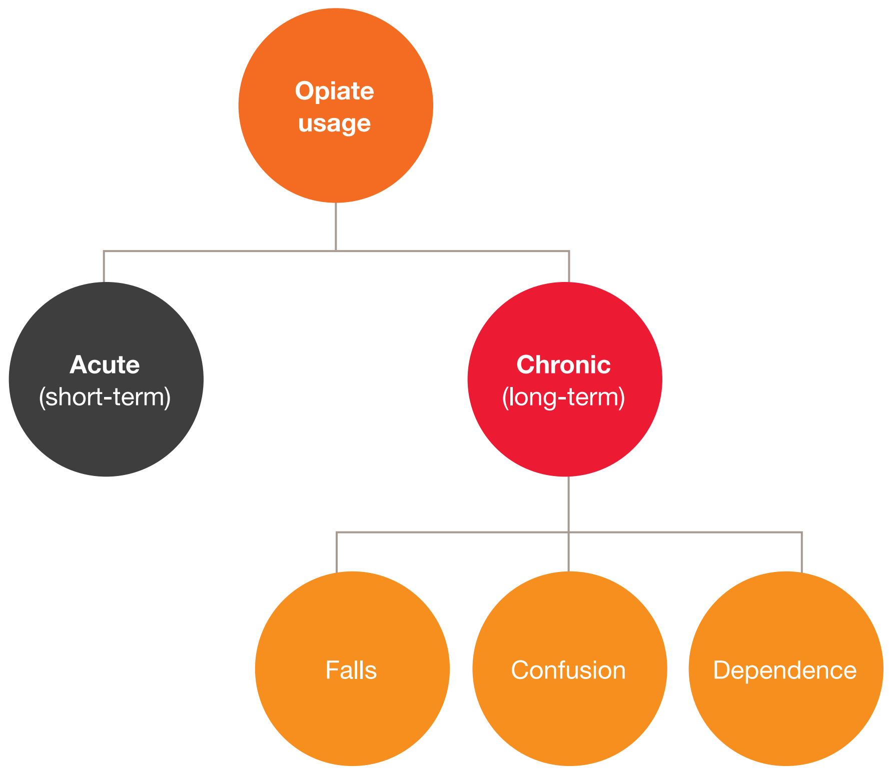
The cost implications of these side effects, particularly falls, with an ageing population could be considerable due to the direct healthcare costs from fractures related to minimal trauma falls.

Reducing the use of long-term opiates makes good clinical sense and will have positive flow-on effects to the growing Pharmaceutical Benefits Scheme (PBS) expenditure.

A small percentage reduction in the prescribing of opiates through clearer long-term management strategies for consumers can have a measurable and sustained positive impact on PBS expenditure, on top of the avoided costs through reduced adverse events (such as falls leading to fractures) and associated acute healthcare costs.

Reducing opiate usage by 2% can save avoidable adverse events as well as $12 million in direct PBS expenditure annually.

Figure 12: Mapping opiate usage in musculoskeletal conditions



Source: Pharmaceutical Benefits Scheme (Australian Government)

Osteoporosis and osteopenia

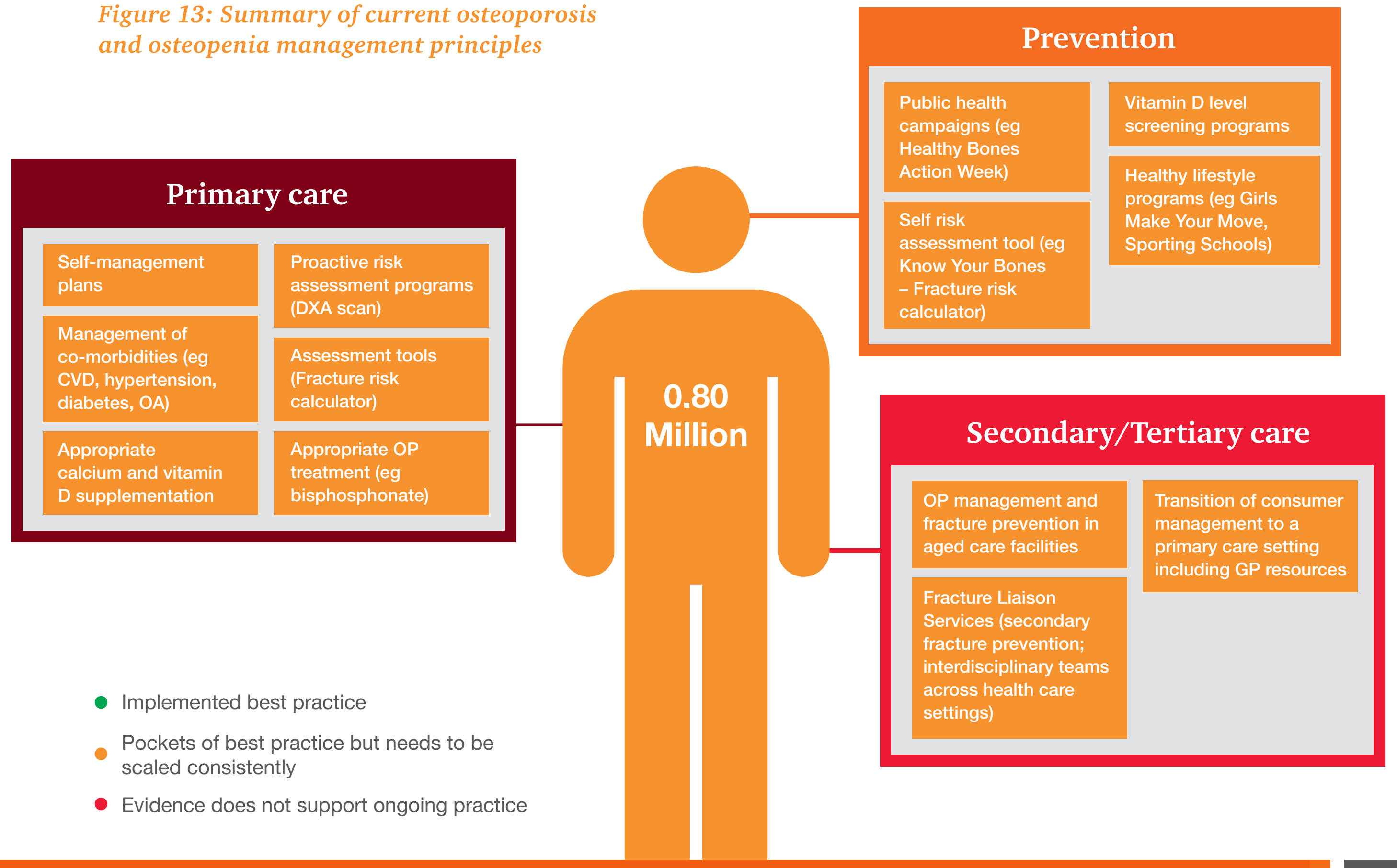
According to the 2014-15 National Health Survey, 800,000 Australians have osteoporosis or osteopenia (OP) as per Figure 13. Most consumers are not diagnosed until a minimum trauma fracture occurs, therefore it is likely the actual number of Australians living with OP is significantly higher and cost saving of potential interventions may be understated.

While there have been advances in treatment options for osteoporosis and osteopenia, there still remains a high mortality rate following hip and other fragility fractures for older consumers. The benefits of a healthy diet and physical activity have been highlighted as a key area to prevent development of OP following peak bone mineral density in people's late teens and early 20's. The diagnosis of osteoporosis or osteopenia is either through screening radiology such as a dual-energy x-ray absorptiometry (DXA) scan or following a minimal trauma fracture, whereby screening takes place.

Key insights from literature scan and stakeholders

- There are benefits from commencing treatment early through early screening for people at risk of developing osteoporosis or osteopenia
- Adherence to therapy is a key issue – the majority of consumers cease therapy 12 months after commencement due to a range of factors including fear of developing side effects
- Fracture Liaison Services to reduce secondary fractures have been demonstrated to be cost-effective but they are not consistently available for consumers
- The evidence is unclear about the benefits of Calcium and Vitamin D supplementation and their appropriate place of therapy
- There are clear benefits from weight bearing exercise and activity in reducing the risk of developing osteoporosis/osteopenia and minimising falls risk
- There is underutilisation of risk screening tools.

Figure 13: Summary of current osteoporosis and osteopenia management principles



Recommendation 9: Increase screening of post-menopausal women

Post-menopausal women are more at risk of developing osteoporosis and evidence indicates that performing a DXA scan from age 65 is a reliable diagnostic modality for osteoporosis. Early diagnosis and treatment is then able to prevent minimal trauma fractures in the age group 65-69 years, which is estimated to be 4,200 fractures annually.

By commencing appropriate treatment early for this population it is expected that we could prevent all of these fractures which would deliver $20 million of net annual savings in direct healthcare costs. To achieve this:

- Allow MBS reimbursement for DXA screening for post-menopausal women between the ages of 65 and 70 years

Initial estimates indicate that investing in earlier screening for this population could achieve annual direct benefits to the health system of $20 million.

What are the activities?

- Engage with the Commonwealth Government to update the MBS schedule for DXA screening for post-menopausal women aged over 65 years
- Engage with key medical professional colleges to promote screening
- An awareness campaign for consumers.

Who will be involved?

- Commonwealth Government
- Endocrinologists
- Royal Australian College of General Practitioners
- Royal Australian College of Physicians
- Australian Rheumatology Association
- *MOVE* and other consumer advocacy groups

*See Appendix B (page 54) for detailed working and sources for the potential saving estimate

Recommendation 10: Increase fracture liaison services

Fracture Liaison Services have been demonstrated to be cost-effective in Australian health services. The service is an ambulatory outpatient service where consumers are referred following a minimal trauma initial fracture. These services are intended to appropriately screen consumers for a diagnosis of osteoporosis and commence the most appropriate treatment regimen for them.

There is an opportunity to create a consistent approach across all Australian public hospitals to have these services available. It has been reported that the re-fracture rate is 30% for all consumers and if this is applied to the total number of fractures, there are potentially 44,000 fractures annually that can be avoided and the associated direct health costs.

If secondary fractures are able to be avoided, this could deliver $24 million in direct healthcare cost savings annually. Including additional broader healthcare costs indicates that there is a considerably higher potential saving to the community.

What are the activities?

- Engage with each of the State and Territory Government Health Departments to develop business cases for the establishment of the fracture liaison services
- Rollout the services to each major hospital
- Monitor the activity and performance of the services through periodic evaluations.

Who will be involved?

- State and Territory Health Departments
- Public heath services
- Key endocrinologists in each state and territory
- Royal Australian College of Physicians
- Royal Australian College of General Practitioners
- *MOVE* and other consumer advocacy groups

*See Appendix B (page 55) for detailed working and sources for the potential saving estimate

Rheumatoid arthritis

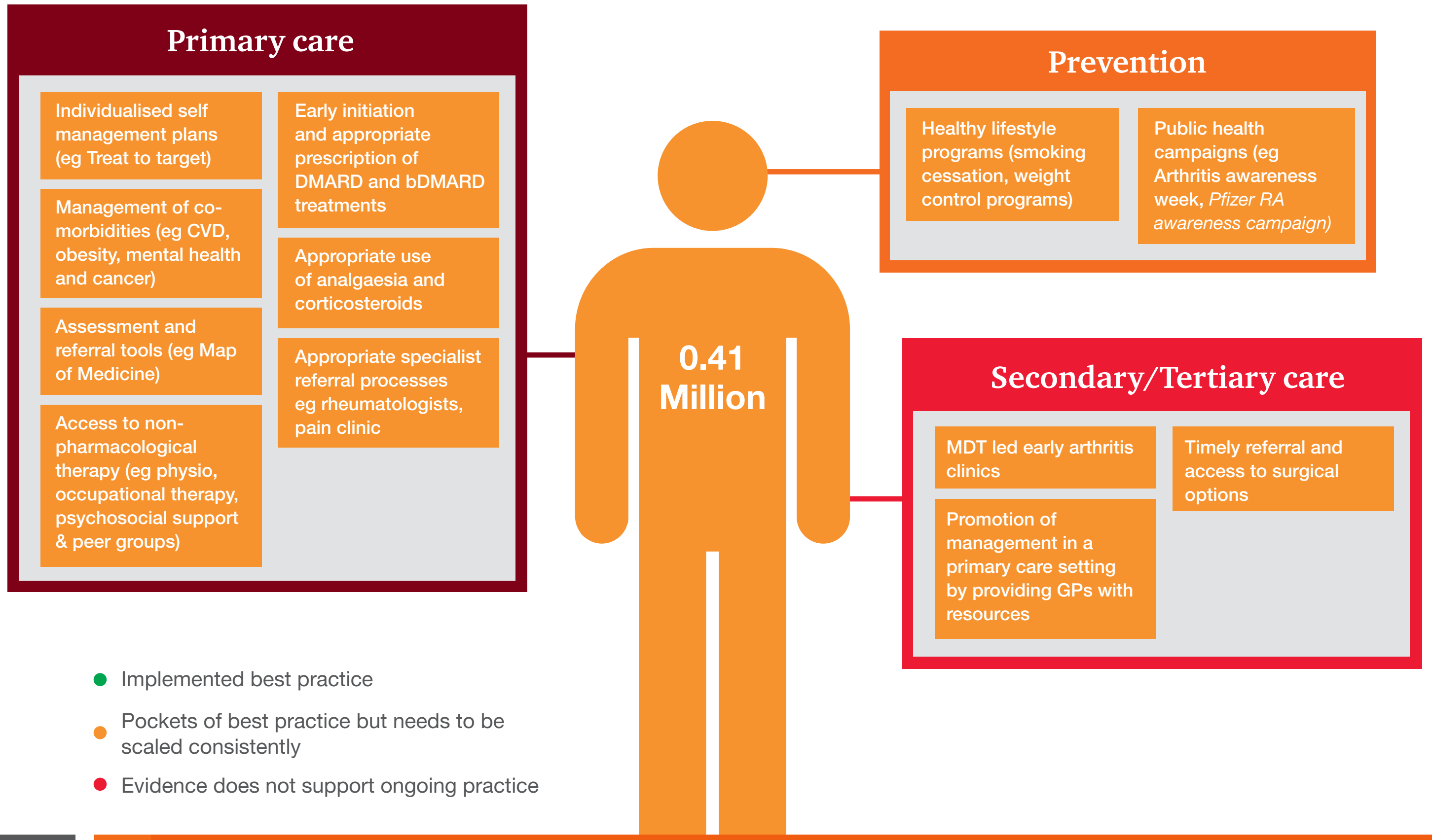
Rheumatoid arthritis (RA) is estimated to affect 410,000 people in Australia and is the predominant inflammatory arthritis diagnosis, as shown in Figure 14. People are often diagnosed with rheumatoid arthritis in Australia from age 30 which means that optimising the management of this condition can have significant benefits for workforce participation and the broader economy.

Because of the disease process, most of the focus is on early diagnosis and access to novel targeted biologic medications that are becoming available in Australia. While the cost of these are higher relative to traditional pharmacological therapies such as methotrexate and leflunomide, their efficacy and side effect profiles make them a preferred option for consumers.

Key insights from literature scan and stakeholders

- Use of biologic medications in moderate disease can improve consumer outcomes
- There are delays to access specialist services through limited knowledge of primary practitioners to diagnose rheumatoid arthritis in younger consumers
- There are benefits to increasing activity and exercise levels in consumers diagnosed with rheumatoid arthritis
- Limited ability to prevent the development of rheumatoid arthritis so the focus is on early diagnosis, management and treatment
- There are reports from consumers that suggest they delay transition from one biologic agent to another because of the cap on PBS subsidisation.

Figure 14: Summary of the current rheumatoid arthritis management principles



🟢 Implemented best practice

🟠 Pockets of best practice but needs to be scaled consistently

🔴 Evidence does not support ongoing practice

Recommendation 11: Enhance access to subsidised biologics

The current PBS authority requirements for the biologic medications indicated for rheumatoid arthritis allow for the use of three different subsidised chemical entities. Biologic medications target specific components of the immune system rather than the broad effects of other more traditional medications.

For young consumers this may mean that they remain on one biologic beyond its useful life in order to preserve access to other subsidised agents into the future. Limited access may impact their quality of life and the outcomes they can achieve.

The intention is to work with the Commonwealth Government and pharmaceutical companies to update the PBS authority restrictions to reflect the anticipated treatment length for these consumers and clinical practice to optimise their outcomes.

The intent would be to expand access to biologics for consumers with moderate disease rather than treatment-resistant severe rheumatoid arthritis in order to optimise their quality of life.

Ensuring consumers have timely access to biologics has the potential to improve the quality of life for individuals.

What are the activities?

- Engaging with the Commonwealth Government and pharmaceutical companies to amend the maximum of three subsidised biologic agents for rheumatoid arthritis through the PBS so there is no cap
- Engaging with the Commonwealth Government and pharmaceutical companies to update the PBS authority requirements to include subsidy of biologics for moderate disease.

Who will be involved?

- Commonwealth Government
- Pharmaceutical companies with either established biologic agents or a pipeline which includes biologics for rheumatoid arthritis
- Medicines Australia
- Pharmacy Guild of Australia
- Australian Rheumatology Association
- *MOVE* and other key consumer advocacy groups

Recommendation 12: Faster referral to specialist services

We need to increase awareness amongst clinicians to improve diagnosis. Increased awareness would be achieved through new education and curriculum modules directed towards medical undergraduates and GP trainees and continuing professional development modules for current registered GPs. The purpose would be to increase their understanding and capability to diagnose and refer to specialist services.

Through appropriate and timely referrals to specialist services and the increased capability within primary care, it is not anticipated that there would need to be an increase in the capacity of the system. Rather, we would likely see more activities to manage consumers' conditions in the primary care setting which would release capacity within the specialist services to manage demand for reviews.

Increasing the skills of the primary care clinicians to manage consumers with rheumatoid arthritis, there will likely be an improvement in the consumer experience when accessing these services. As they are able to receive the care in the community rather than relying on specialist services, this will mean that there will be a reduced impact on their lives through the condition.

Oversight of treatment by specialists through early diagnosis contributes to optimising outcomes for consumers.

What are the activities?

- Development of the specific content for the education and curriculum modules for undergraduate training
- Development of education and curriculum module for GP trainees and ongoing continuing professional development modules
- Increased awareness of primary care clinicians eg physiotherapists and practice nurses.

Who will be involved?

- Royal Australian College of General Practitioners
- Royal Australian College of Physicians
- Pharmacy Guild of Australia
- Australian Rheumatology Association
- Universities to develop the undergraduate curriculum modules
- *MOVE* and other consumer advocacy groups

Juvenile arthritis

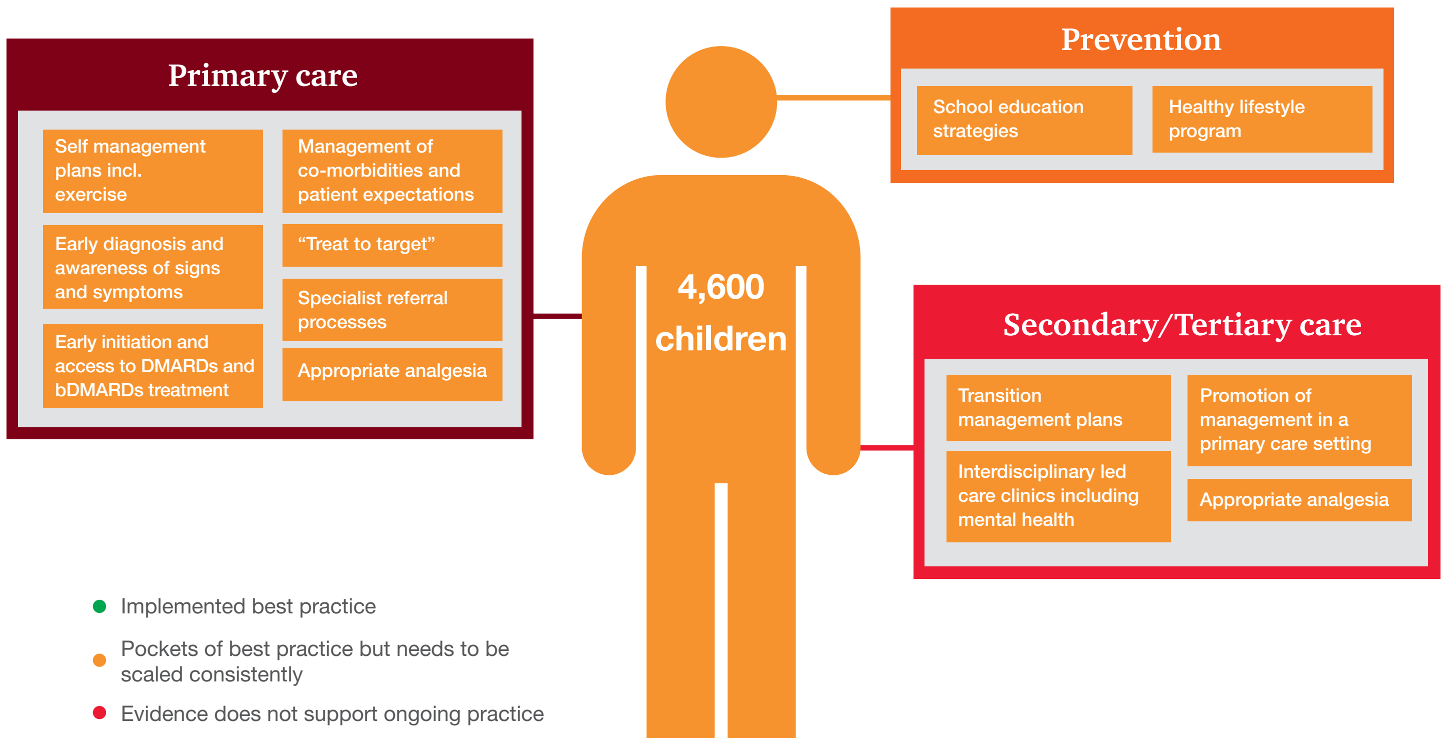
More children live with juvenile arthritis than with juvenile diabetes. It is estimated that approximately 4,600 children are living with juvenile arthritis in Australia in any given year. Juvenile arthritis impacts attendance and participation at school which then flows through to participation in the workforce and family life.

Parents may need to take time off work to attend appointments or care for an unwell child thereby impacting their productivity and workforce participation. Juvenile arthritis can have far reaching impacts on the broader economy. Consumers will be impacted by these conditions directly or indirectly for their entire lives. Management principles are outlined in Figure 15.

Key insights from literature scan and stakeholders

- There is conflicting international evidence about the impact of juvenile arthritis on school attendance and the long-term impacts on workforce participation and employment. There is no Australian evidence on the long-term impacts of management which could be referenced
- The transition from adolescence to adulthood is difficult for these consumers as they need to transition service providers and there is not a consistent level of access to supports (particularly psychological supports) to assist in the transition
- Treatment guidelines are moving towards a 'treat to target' philosophy rather than the traditional treatment and management plan
- There are benefits from early diagnosis and access to specialist treatment services.

Figure 15: Summary of the current juvenile arthritis management principles



Recommendation 13: Improve the transition to adult services

The transition of consumers from child to adult services has been identified as a critical and daunting time for consumers. They see a transition in their management team, with whom they have built a strong relationship over many years. In conjunction with the normal issues for adolescents, changes to their care team can result in considerable stress and anxiety in preparing for the transition. The *My Health Record* is one platform that has been identified as a possible enabler of transition management.

There are limited supports currently to assist in the transition for these consumers. Psychological support and whole of life support have been identified as particular areas of need.

Juvenile arthritis transition programs similar to other chronic juvenile conditions (such as diabetes) need to be developed. The aim of this would be to help young adults connect to services and maintain their health as they progress education, careers and relationships.

Increasing the suite of transition services, particularly psychological support, can assist in the smooth transfer of adolescent consumers to adult services.

What are the activities?

- Develop transition supports for adolescent consumers
- Increased access to services through subsidised services linked to health services
- Increase utilisation of the *My Health Record* with complete histories including imaging etc.

Who will be involved?

- Young people with juvenile arthritis
- Key opinion leaders in juvenile arthritis
- Public health services
- Commonwealth Government
- State and Territory Governments
- *MOVE,* other consumer advocacy groups and peer support groups

Recommendation 14: Longitudinal research into outcomes

There are limited data sources available on the longitudinal impacts of juvenile arthritis on school and workforce participation over the long-term. While there are studies and evidence available from international experience, it is unclear how applicable this is in the Australian context given the differing education and health systems.

There is a need for all stakeholders to collaborate to increase the body of knowledge locally on the long term impacts of juvenile arthritis. This knowledge can then be used to inform care and associated services. This will require input from consumers, carers, universities, researchers, clinicians, health services, schools, teachers and employers to bring a complete picture of how best to optimise outcomes.

Enhancing the evidence base of the long-term impact of juvenile arthritis will allow for better design of services to optimise outcomes for individuals.

What are the activities?

- Identification of the appropriate longitudinal study design
- Access to long-term funding sources to support the research and to understand outcomes.

Who will be involved?

- Young people living with juvenile arthritis
- Key opinion leaders in juvenile arthritis
- Health services and schools
- Parents and carers
- Universities and research institutions (for example Australian Arthritis & Autoimmune Biobank Collaborative)
- Commonwealth Government
- State and Territory Governments
- *MOVE,* other consumer advocacy groups and peer support groups

Summary of recommendations

Application	Recommendation	Description
System wide	1. Fund only what works	*Create alternative funding streams for allied health clinicians to provide subsidised services to consumers, either through the Medicare Benefits Scheme (MBS) or Primary Health Networks (PHNs)*
	2. Increase awareness and capability	*Use education modules and curriculum for undergraduate and postgraduate clinicians and enhance information available to consumers*
	3. Update approach to delivery of care	*Enhance the use of interdisciplinary teams, increase exercise through inclusion as a 'vital sign' and make movement part of health checks for those aged over 50 years*
Chronic back pain	4. Reduce unnecessary radiology imaging	*Create disincentives for use of imaging that does not lead to changes in clinical outcomes, particularly from primary care providers*
	5. Increase use of interdisciplinary teams	*Use more allied health resources to manage referral demand for specialist clinics and optimise non-surgical management where clinically appropriate*
Osteoarthritis	6. Movement as first line therapy	*Increase clinicians' awareness of strengthening exercises as a first line therapy*
	7. Standardise interdisciplinary triage	*Use more allied health clinicians to triage referrals to specialist orthopaedic services for joint replacements*
	8. Remove unnecessary interventions	*Restrict subsidisation of procedures that are not founded in evidence or do not improve outcomes, for example knee arthroscopies and long term opiate use*
Osteoporosis and osteopenia	9. Increase screening of post-menopausal women	*Lower the age of subsidised bone mineral density testing for post-menopausal women to 65 years*
	10. Increase fracture liaison services	*More consistent access to fracture liaison services in all public hospitals to reduce second fractures for people with minimal trauma fractures*
Rheumatoid arthritis	11. Enhance access to subsidised biologics	*Remove restriction on the maximum number of subsidised biologics a consumer can access through the PBS*
	12. Faster referral to specialist services	*Increase awareness of rheumatoid arthritis in primary practitioners so that consumers are referred to specialist services faster*
Juvenile arthritis	13. Improve transition to adult services	*Increase the range of services available, particularly psychological supports, to consumers who are transitioning from child to adult services*
	14. Longitudinal research into outcomes	*Increase the body of knowledge on outcomes achieved by Australians with juvenile arthritis*

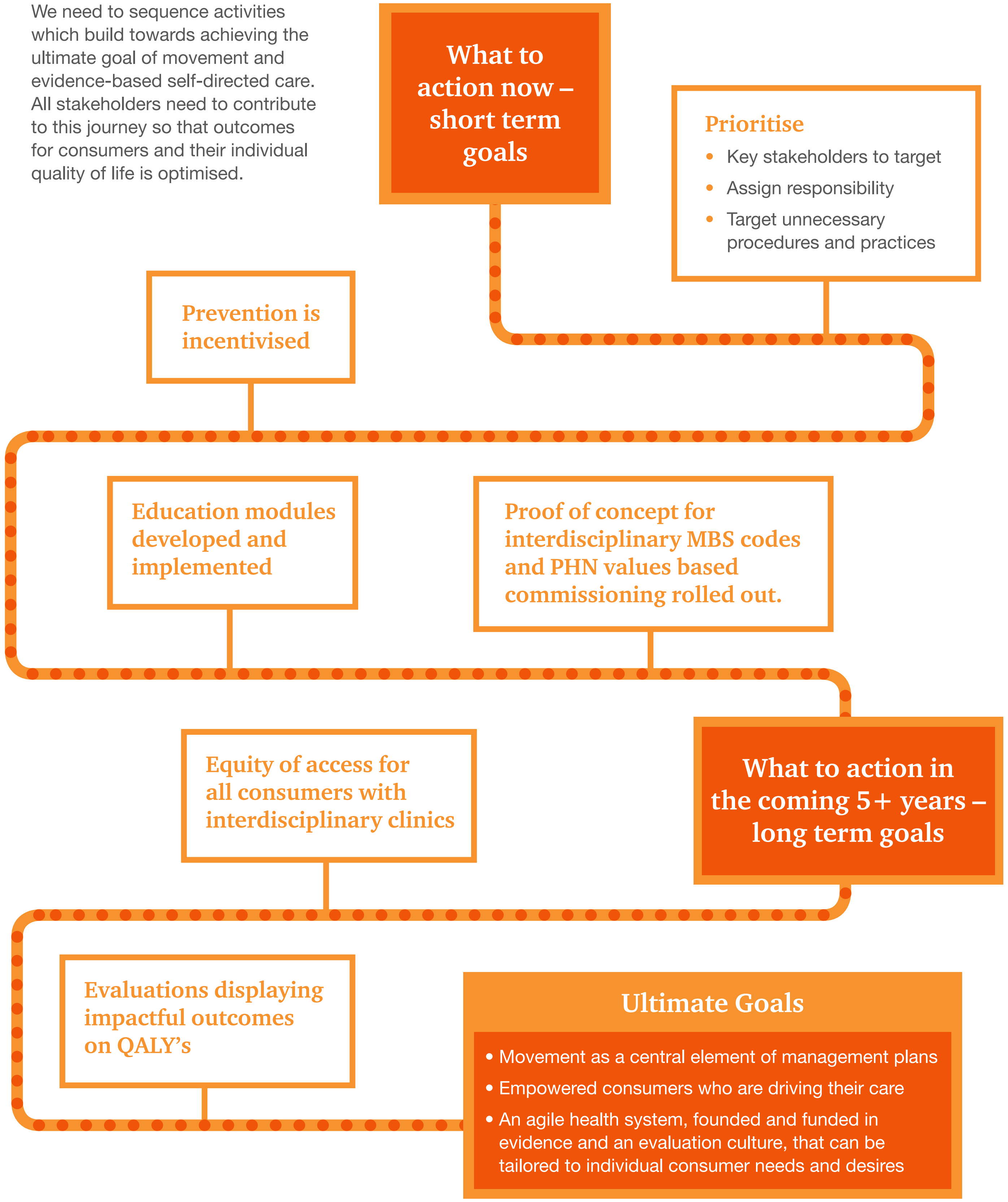
Next steps

There are many opportunities for collaboration to improve consumer outcomes

Application	Recommendation	Consumers	Medical colleges	Nursing colleges	Allied health organisations	C'wealth government	Key clinicians	Universities	Health services	State and Territory Governments	Local government	PHNs
System-wide	1. Fund only what works	X				X	X					X
	2. Increase awareness and capability	X	X	X	X		X	X	X			
	3. Update approach to delivery of care	X					X		X			
Chronic back pain	4. Reduce unnecessary radiology imaging	X					X		X			
	5. Increase use of interdisciplinary teams	X	X	X	X	X	X		X	X		X
Osteoarthritis	6. Movement as first line therapy	X	X	X	X		X		X			
	7. Standardise interdisciplinary triage	X					X		X			X
	8. Remove unnecessary interventions	X	X		X	X	X		X	X		
Osteoporosis	9. Increase screening of post-menopausal women	X	X			X	X		X			
	10. Increase fracture liaison services	X	X				X		X	X		
Rheumatoid arthritis	11. Enhance access to subsidised biologics	X				X	X					
	12. Faster referral to specialist services	X	X				X		X	X		
Juvenile arthritis	13. Improving transition to adult services	X	X			X	X		X	X		
	14. Longitudinal research into outcomes	X	X		X		X	X	X			

A roadmap for the future highlights several early wins

We need to sequence activities which build towards achieving the ultimate goal of movement and evidence-based self-directed care. All stakeholders need to contribute to this journey so that outcomes for consumers and their individual quality of life is optimised.



What to action now – short term goals

Prioritise

- Key stakeholders to target
- Assign responsibility
- Target unnecessary procedures and practices

Prevention is incentivised

Education modules developed and implemented

Proof of concept for interdisciplinary MBS codes and PHN values based commissioning rolled out.

Equity of access for all consumers with interdisciplinary clinics

What to action in the coming 5+ years – long term goals

Evaluations displaying impactful outcomes on QALY's

Ultimate Goals

- Movement as a central element of management plans
- Empowered consumers who are driving their care
- An agile health system, founded and funded in evidence and an evaluation culture, that can be tailored to individual consumer needs and desires

Appendix A: Literature insights

Chronic back pain

Summary of the literature	Implications for management principles
• Prevalence:~3.7 million Australians (16%) of the population. Estimated that 70- 90% of people will live with lower back pain (LBP) in some form at some point in their lives. • Evidence suggests early appropriate care of acute LBP may reduce the number of people who develop chronic LBP post acute LBP episode (48% at 3 months and 30% at 12 months). Acute LBP ideally managed in primary care, using *3 triage classifications,* where follow up over time can be provided and self management supported in a 'wellness' model. • Key areas to address back pain management: - Application of more appropriate clinical examination and stratified primary care management (STarT Back tool and treatment pathways matched to risk groups) and use of radiological imaging only when necessary. - Better use of analgesia/appropriate pain management reducing the use of opioid analgesics particularly in the long term. - Enhance consumer education (use of online resources eg. painHEALTH) on self-management and conversion of evidence into practice. - Education about chronic pain for care providers including health professionals, consumers, general public, policy makers, industry (workplace) and insurers. - Improved risk stratification to personalise evidence-based care. - Multidisciplinary rehabilitation (physical, psychological, educational and work related components). • Prevention: primary, secondary and tertiary defining where changes in management along the consumer journey can reduce disability: - Health policy changes. - Service delivery – provision of person centred management. - Health outcomes and economic data.	*~$4.8 billion direct costs of managing back pain, of which ~$220 million was reimbursed by Medicare in 2013 for spinal imaging (international guidelines state imaging can be avoided).* *By moving back pain management to the primary care setting, need to ensure that there is consistency of access (prevalence of disease, distribution of health workforce, potentially preventable hospital presentations, Category 4 and 5 Emergency Department presentations).* *Harnessing eHealth technologies to build capacity, data collection and self-management.* *Biopsychosocial models.*

Osteoarthritis

Summary of the literature	Implications for management principles
• Prevalence: 9% of Australians have osteoarthritis (OA) in 2014-15 (approximately 2.1 million); 29% rise in total knee replacement and 31% rise in hip replacement surgery from 2005-06 to 2014-15. • A paradigm shift in service design and delivery from chronic management focused to management throughout the consumer journey. • Prevention: 1. Weight control; 2. Minimise joint injury; 3. Prevent occupational overuse. • Early detection and diagnosis: 1. Evidence shows that imaging of joints for ongoing OA management in the absence of condition change has limited value; suggest reducing unnecessary and inappropriate use of imaging; 2. Use innovative screening tool: telephone, internet-based tool. • Early treatment: - Enhance the support for self-management and non-pharmacological treatments (provided by GPs, nurses, physiotherapists; using online programs) given the evidence of their effectiveness. - Set individual treatment plan with a shared target determined by both consumers and health professionals. - Redesign clinical surgery pathway (GP - physiotherapist - orthopaedic surgeon) to reduce or delay joint replacement surgery (evidence from OAHKS, OACCP models of care). - Update eligibility criteria for joint replacement (emerging evidence implicate the effectiveness of eligibility based on both modifiable risk factors and clinical indicators; evidence on predictive factors of consumers who may have worse outcomes from surgery). - Limit the use of knee arthroscopy.	*Consistent application of the physiotherapy-led triage services for total knee replacements (TKR) and total hip replacements (THR).* *Cessation of procedures with poor evidence base.*

Appendix A: Literature insights (Continued)

Osteoporosis

Summary of the literature	Implications for management principles
• Prevalence: Osteoporosis Australia Burden if Disease estimates that 4.74 million Australians, aged over 50 years have osteopenia or osteoporosis of whom approximately 1.04 million have osteoporosis and 3.70 million have osteopenia. In the 65-69 year age group 5.7% of men and 24% of women have osteoporosis. According to the 2014-15 National Health Survey, 800,000 Australians have osteoporosis or osteopenia (OP). • Prevention: - Emerging evidence of school education program (exercise and diet) and vitamin D supplementation programs in adolescence (female<18 years; male<20 years); - Self risk assessment tools; guidelines on exercise and diet; increase awareness. • Early diagnosis: - Proactive risk assessment programs: (a) Incorporate fracture risk assessment in health assessment checks; (b) Use fracture risk calculators; (c) Expand dual energy x ray absorptiometry (DXA) scan criteria; - GP engagement programs. • Refracture prevention: - Extensive evidence on the effectiveness of applying a Fracture Liaison Officer model of care; - Cost-effectiveness of supporting dental check-up for high-risk groups prior to oral bisphosphonate treatment; - Self-management resources, increase awareness of supporting programs and services for people with osteoporosis.	*Introduction of vitamin D supplementation in schools for particular age groups.* *National screening program for specific population groups (analogous to breast cancer screening).*

Rheumatoid arthritis

Summary of the literature	Implications for management principles
• Prevalence: 2% of Australians, approximately 0.41 million people in 2014-15. • Evidence emphasises the “window of opportunity” for rheumatoid arthritis (RA) treatment, correspondingly, recommendations focus on early diagnosis and early treatment. • Prevention: 1. Smoking cessation; 2. Weight control. • Early detection and diagnosis: - Reduce delays in seeking medical attention: 1. Public health campaigns to increase awareness; 2. Community case-finding strategies. - Reduce delays in GP referral: Increase implementation of clinical guidelines: 1. Education programs; 2. Handy assessment tools; 3. Internet-based tools and programs to assist management and referral. - Reduce waiting list to rheumatologist assessment: Early arthritis clinics, triage by rheumatology nurse, trained GP or allied health professionals. • Early treatment: - Pharmacological treatment: o Evidence demonstrates the effectiveness of early initiation of disease-modifying anti-rheumatic drug (DMARD) and, for certain RA subtypes, biological disease-modifying anti-rheumatic drug (bDMARD). o Strategies: 1. Set individualised treatment plan (treat to target, ongoing monitoring); 2. Update PBS eligibility criteria for DMARD and bDMARD; 3. Limit long-term use of non-steroidal anti-inflammatory drugs, analgesics and corticosteroids; 4. Increase application of telehealth and outreach rheumatology services for rural and remote areas; 5. Management: ‘one-stop’ multidisciplinary clinic; nurse-led care. - Self-management and non-pharmacological treatment: - Strategies: 1. Interventions to support self-management; 2. Effectiveness of exercise, physical therapy, occupational therapy and psychosocial support.	*Early access to DMARDs and bDMARDs to slow progression of the disease.*

Appendix A: Literature insights (Continued)

Juvenile arthritis

Summary of the literature	Implications for management principles
• Current prevalence: 1 in 1,000 children (0.1%) (4,600 children at any one time). • Benefits from early diagnosis and access to treatments (specifically DMARDS and bDMARDs). This is described as the "window of opportunity" which for this consumer group can have long-term impacts on their outcomes. • Some issues in timely access to specialist services - WA Health have developed alternative pathways for access. • Emerging evidence of the importance of the transition of adolescent consumers to adult services, particularly from a psychological point of view. • Emerging view of the concept of 'treat to target' or 'tight control' strategies to guide therapy into the future. Previously, the end-points of treatment have been relatively poorly defined. This is important as it is difficult for these consumers to remain in remission without continued use of medications. • The long-term benefits of exercise for these consumers is uncertain though they are encouraged to swim and cycle to reduce the chances of deconditioning which can impact the outcomes achieved by individual consumers. • Evidence from the USA indicates that there is no difference in the educational and vocational outcomes for children with juvenile arthritis compared to those without. Having said this there is evidence from the UK and Bangladesh that children with a diagnosis of juvenile arthritis do have a higher absentee rate from school.	*Early access to treatments (DMARDs) for consumers.* *Facilitating access to supports and aids to optimise outcomes.* *Providing additional non-pharmacological interventions (especially psychological support).*

Appendix B: Detailed modelling

Chronic back pain: Reduce unnecessary radiology imaging (Recommendation 4)

Benefit estimates

Input price for MBS reimbursement of X-rays and CTs	×	# of individuals accessing unnecessary requested spinal X-rays and CTs	=	Total annual saving that is available with disincentivisation of unnecessary imaging across the back pain care continuum
X-ray ordered by GP (MBS #58106) ***$77.00***		**245,779**		**$106,527,979**
X-ray ordered by GP (MBS #58112) ***$97.25***		**93,256**		
X-ray ordered by Allied Health (MBS #58121) ***$110.00***		**99,171**		
CT's ordered by GP (MBS #56223) ***$240.00***		**281,771**		
MBS Schedule		MBS Review Taskforce 2016		MBS Review Taskforce 2016

Chronic back pain: *Increase use of interdisciplinary teams (Recommendation 5)*

Existing system cost estimates

Cost of delivering 2 x 3.5 hour clinics for 48 weeks per year

$98,784

Back Pain Assessment Clinic Evaluation Report 2015 (BAC)

×

Assumption of number of clinics that could operate across Australia

30

2014-2015 AIHW data for principal referral hospitals www.aihw.gov.au/haag14-15/hospital-resources/

=

Total annual cost of back pain assessment clinic in Australia

$2,963,520

Proposed future system cost estimates

Potential number of individuals who could avoid major neurological surgery if referred to clinic annually (Public)

Current State: Assumption of #referrals (DRG I09B/5% of patients that proceed to surgery = 42,200) x MBS Specialist Review ($118.50)

–

Future State: 42,200 x Triage clinic cost per patient (assumption of $98,784/1020 which was the number of patients on the waiting list for the BAC clinic) + 5% of patients who still see surgeon and undergo surgery (2110 I09B)

x$118.50 MBS #6013)

Independent Hospital Pricing Authority (Rd 18 NHCDC), Medicare Benefits Schedule (#6013), Back Pain Assessment Clinic Evaluation Report 2015

=

Total annual cost of surgery that could be avoided with interdisciplinary clinics

$5,000,700 - $4,385,635 = $615,065

Net impact

Total annual savings that could further be directed to interdisciplinary clinics

$2,348,455

DRG: Diagnosis related group

Osteoarthritis: *Movement as first line therapy (Recommendation 6)*

Cost estimates

Input price for MBS reimbursement of allied health review

$62.25

Medicare Benefits Schedule (#10960)

×

Proportion of Australian population with knee OA (mild to severe) who would benefit from exercise and avoid total knee replacements (TKR)

428,846

Brand et al(2014), Counting the Costs and AIHW

=

Total annual cost of avoiding TKJR by having an allied health led exercise program

$26,695,664

Benefit estimates

Input price for DRG of TKR in the public health sector (I04B)

$18,868

Independent Hospital Pricing Authority (Rd 18 NHCDC)

×

Total number of TKR undertaken in the public sector (I04B)

9,838

Independent Hospital Pricing Authority (Rd 18 NHCDC)

=

Estimated annual benefit of exercise programs in the avoidance or delay of TKJR

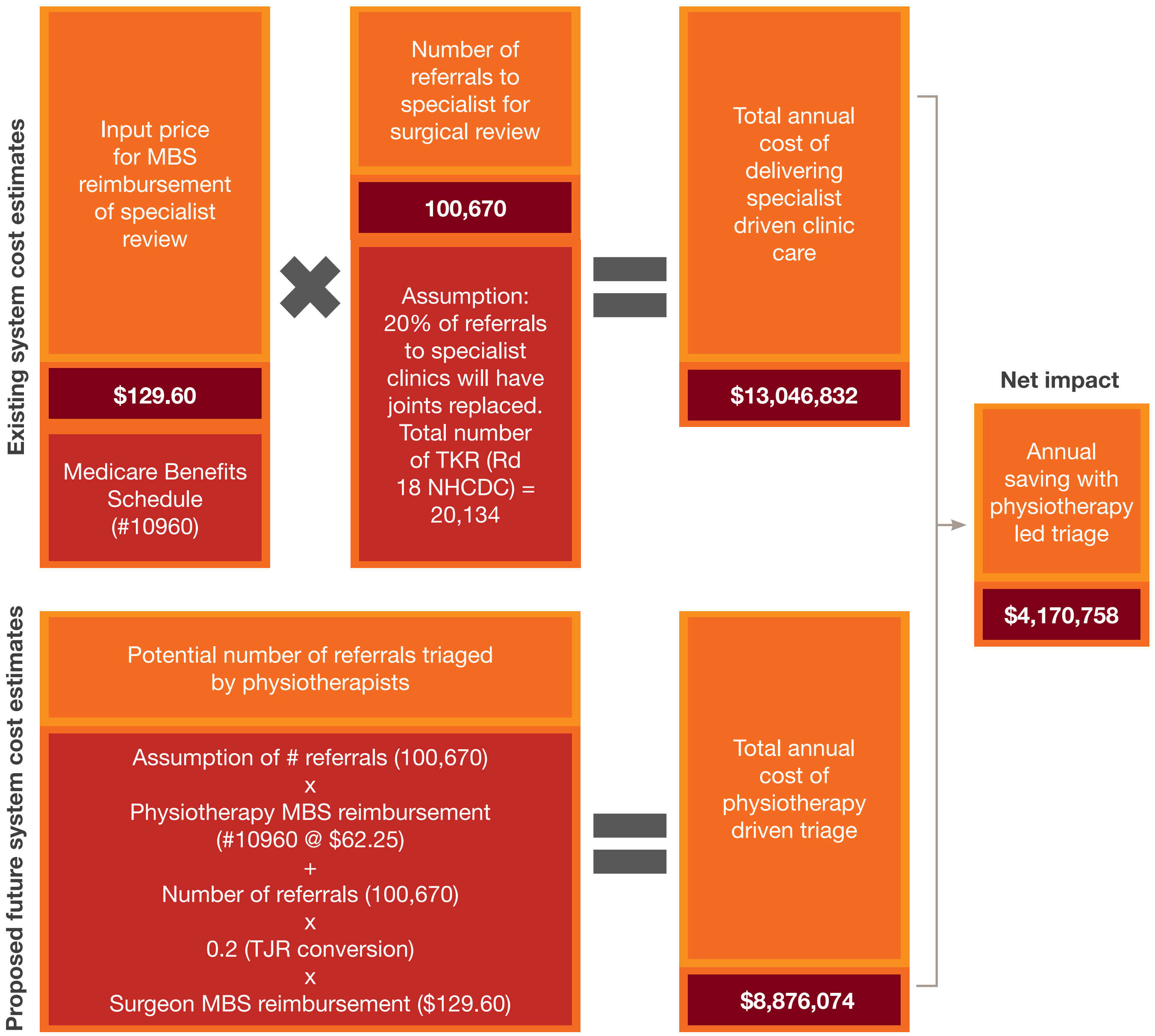
$185,623,384

Net impact cost saving of avoidance or delay in TKJR by utilisation of exercise

$158,927,721

DRG: Diagnosis related group
TKR: Total knee replacement

Osteoarthritis: *Standardise interdisciplinary triage (Recommendation 7)*



Existing system cost estimates

Input price for MBS reimbursement of specialist review

$129.60

Medicare Benefits Schedule (#10960)

✖

Number of referrals to specialist for surgical review

100,670

Assumption: 20% of referrals to specialist clinics will have joints replaced. Total number of TKR (Rd 18 NHCDC) = 20,134

=

Total annual cost of delivering specialist driven clinic care

$13,046,832

Proposed future system cost estimates

Potential number of referrals triaged by physiotherapists

Assumption of # referrals (100,670)
x
Physiotherapy MBS reimbursement (#10960 @ $62.25)
+
Number of referrals (100,670)
x
0.2 (TJR conversion)
x
Surgeon MBS reimbursement ($129.60)

=

Total annual cost of physiotherapy driven triage

$8,876,074

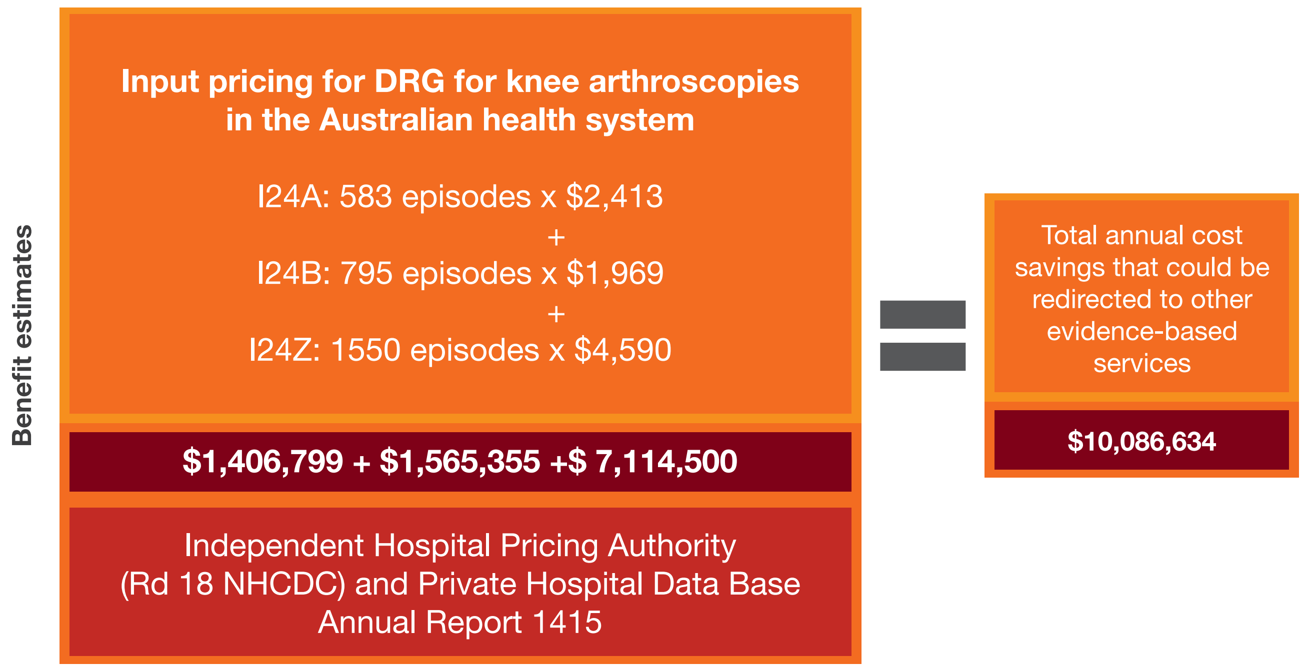
Net impact

Annual saving with physiotherapy led triage

$4,170,758

TJR: Total joint replacement
THR: Total hip replacement
TKR: Total knee replacement

Osteoarthritis: *Remove unnecessary interventions – knee arthroscopy (Recommendation 8)*



Benefit estimates

Input pricing for DRG for knee arthroscopies in the Australian health system

I24A: 583 episodes x $2,413
+
I24B: 795 episodes x $1,969
+
I24Z: 1550 episodes x $4,590

$1,406,799 + $1,565,355 +$ 7,114,500

Independent Hospital Pricing Authority (Rd 18 NHCDC) and Private Hospital Data Base Annual Report 1415

=

Total annual cost savings that could be redirected to other evidence-based services

$10,086,634

DRG: Diagnosis related group

Osteoporosis: *Increase screening of post-menopausal women (Recommendation 9)*

Cost estimates

Input price for MBS reimbursement of a DXA scan	×	Australian population of post-menopausal women aged 65-70	×	Number of individuals accessing the DXA scans annually	=	Total annual cost of the additional screening for post-menopausal women in Australia
$102.40		**583,778** (total pop) **50%** (% of females)		**20%**		**$5,977,887**
Medicare Benefits Schedule (#12315)		Australian Bureau of Statistics		Assumption		**$5,977,887**

Net impact

Annual saving with early DXA screening for post menopausal women	**$20,505,203**

Benefit estimates

Cost of a Fractured Neck of Femur in Australian Public Hospitals	×	Number of annual hospitalisations for minimal trauma fractures in women aged 65-69	=	Total annual benefit of the additional screening for post-menopausal women in Australia
$6,298		**4,205**		**$26,483,090**
Independent Hospital Pricing Authority (Rd 18 NHCDC)		Australian Institute for Health and Welfare		

Osteoporosis: *Increase fracture liaison services (Recommendation 10)*

Cost estimates

Cost of delivering a Fracture Liaison Service to an individual consumer	×	Number of individuals with fractures who will be referred to the service annually	=	Total annual cost of the Fracture Liaison Service in Australia
$1,716		**140,822**		**$241,650,552**
Yates et al (2014)		Australian Institute for Health and Welfare		

Net impact

Annual saving with fracture liaison services	**$24,418,535**

Benefit estimates

Number of individuals with fractures who will be referred to the service annually	×	Proportion of people with an osteoporotic fracture who live with a refracture	×	Cost of a fractured neck of femur in the Australian public hospital system	=	Total annual benefit of the Fracture Liaison Service in Australia
140,822		**30%**		**$6,298**		**$266,069,087**
Australian institute for Health and Welfare		Medicare Benefits Schedule (#12315)		Independent Hospital Pricing Authority (Rd 18 NHCDC)		

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Notes

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