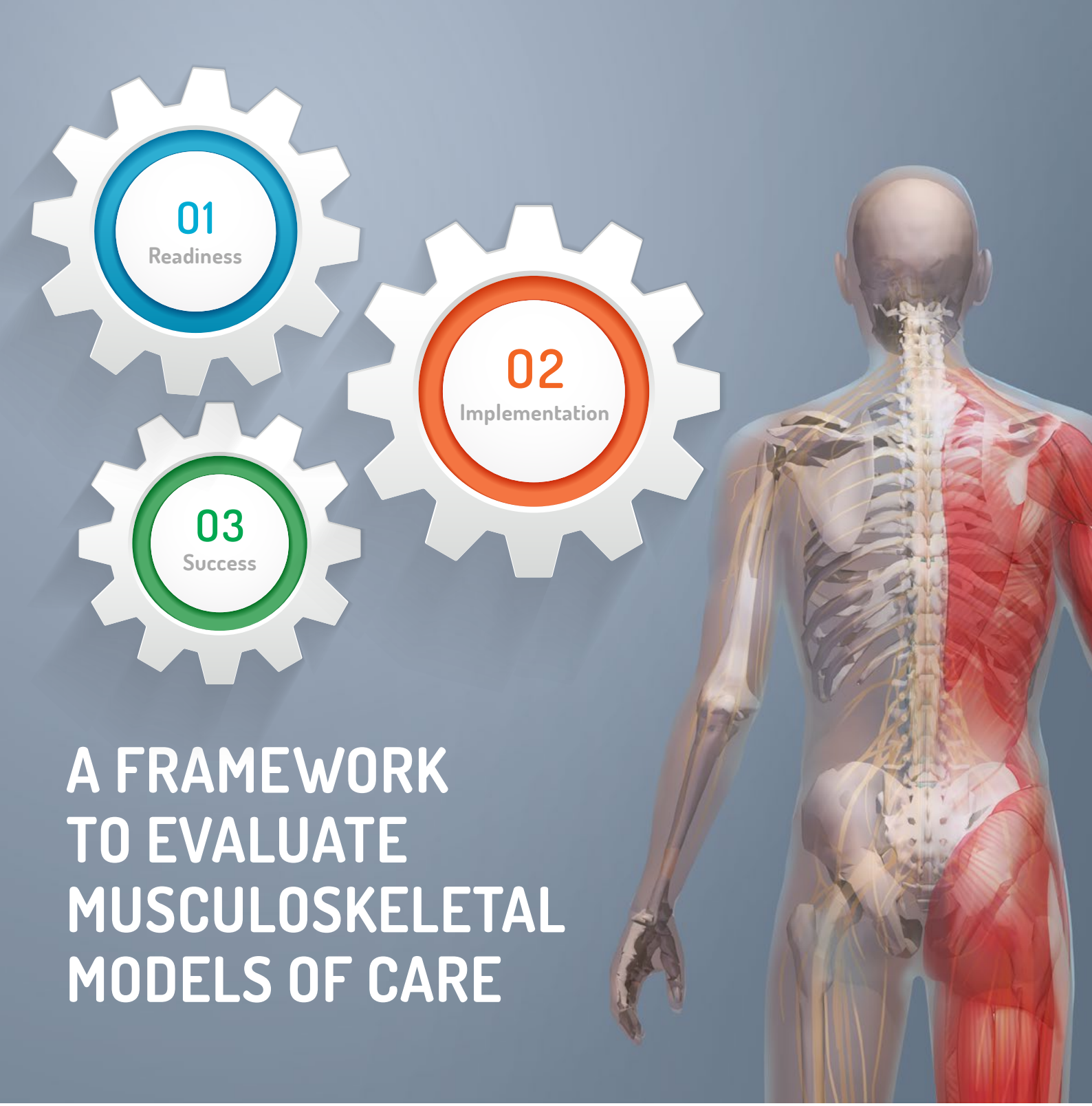

A FRAMEWORK TO EVALUATE MUSCULOSKELETAL MODELS OF CARE

Curtin University

GLOBAL ALLIANCE FOR MUSCULOSKELETAL HEALTH

GOVERNMENT OF WESTERN AUSTRALIA
PARTNER

ACI NSW Agency for Clinical Innovation

HealthSense

NSW GOVERNMENT Health
South Western Sydney Local Health District

BehaviourWorks AUSTRALIA

SUPPORTING ORGANISATIONS

The following organisations publicly support this evaluation framework.

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AMERICAN COLLEGE OF RHEUMATOLOGY (ACR)

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ARTHRITIS NEW ZEALAND

ASIA PACIFIC LEAGUE OF ASSOCIATIONS FOR RHEUMATOLOGY (APLAR)

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AUCKLAND UNIVERSITY OF TECHNOLOGY

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AUSTRALIAN PAIN SOCIETY

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BRITISH INSTITUTE OF MUSCULOSKELETAL MEDICINE

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NATIONAL RHEUMATOID ARTHRITIS SOCIETY (UK)

NORTH EAST QUALITY OBSERVATORY SERVICE (NEQOS) NHS (UK)

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FOREWORD

The burden of disease associated with chronic non-communicable diseases (NCDs), particularly musculoskeletal conditions, is now clear. Indeed, data from the most recent analyses of the Global Burden of Disease study unequivocally reinforce this issue.

Urgent and coordinated global action is required to address the rising burden of disease associated with these conditions to ensure health services can meet the current and future needs of health consumers. Supporting low and middle-income nations to develop appropriate responses now is essential.

Models of Care represent one approach to respond to the burden of NCDs. Models of Care outline the principles of best practice management for specific conditions, thus providing guidance for 'what works' and 'how to implement it'.

Although many nations are developing Models of Care to address NCDs, there remains inconsistency in the approach to their development and evaluation, making comparisons between them difficult. Further, achieving sustainable implementation is challenging. For these reasons, development of an internationally-informed framework to evaluate the 'readiness' of Models of Care for implementation and their 'success' after implementation is of international importance.

The Global Alliance for Musculoskeletal Health of the Bone and Joint Decade is pleased to be a partner on this project that aimed to develop such a framework. While the focus of the Framework has been on musculoskeletal health, the end products have relevance to Models of Care for NCDs generally.

As a global community, our call to action is to now use the Framework to support and optimise our development, implementation and evaluation endeavours to improve the lives of people who are at risk of, or live with, chronic NCDs.

Professor Anthony D. Woolf
Chair

Global Alliance for Musculoskeletal Health
of the Bone and Joint Decade

1 EXECUTIVE SUMMARY AND USING THIS REPORT

Models of Care are increasingly viewed as an effective strategy to improve health service planning and delivery for non-communicable diseases. Despite the increased attention towards Models of Care, a universal framework to evaluate a Model's readiness for implementation and success after implementation is lacking. This Framework addresses these important gaps.

THE FRAMEWORK AT A GLANCE

What is a Model of Care?

A Model of Care (**MoC**) is a principle-based guide that describes best practice care for particular health conditions or populations. The focus is on person-centred care and consideration of applicability in local settings. A MoC is not an operational plan for a health service or a clinical practice guideline.

Who uses Models of Care?

MoCs have cross-sector and multi-stakeholder relevance. Policy makers, health administrators and managers, service delivery organisations, clinicians, researchers, funders, advocacy organisations and consumers use MoCs to inform best practice planning and delivery of health services.

Purpose of this project and the Framework

To develop a comprehensive evaluation framework to assess the *readiness* for implementation and *success* after implementation of musculoskeletal MoCs. The Framework provides principle-based guidance on evaluating these important areas. Particular emphasis is placed on ensuring the Framework is applicable across a diverse range of environments and contexts.

What is the Framework designed to do and why should I use it?

The Framework is designed to help individuals and organisations tasked with the planning, implementation or evaluation of MoCs.

Specifically, the Framework can be used to:

- Develop a clear and concise MoC document that is acceptable to local stakeholders.
- Judge whether a MoC is ready for implementation → *Readiness Stream*.
- Guide the initial implementation process → *Initiating Implementation Stream*.
- Consider performance measures that are likely to indicate the MoC is successful → *Success Stream*.

Part 4 of this report, "*Putting the Framework into practice*" provides practical examples of how the Framework could be used in practice.

Development of the Framework

The Framework was developed using a four-phase approach, drawing on the knowledge and experiences of 93 international experts across 30 countries.

- **Phase 1:** Identification of the important concepts that underpin 'readiness' and 'success' of MoCs, based on in-depth interviews with Australian experts.
- **Phase 2:** Assessment of these concepts and their further development with an international panel of experts using an eDelphi method.
- **Phase 3:** Translation of the concepts into a usable and meaningful Framework for end users using a Knowledge-to-Action approach.
- **Phase 4:** Testing of the accuracy and acceptability of the Framework with the international expert panel.

How to use the Framework

The Framework has three streams:

i. *Readiness*.
ii. *Initiating implementation*.
iii. *Success*.

Each stream has a number of domains and each domain has a number of themes. Each domain and theme is numbered to allow easy navigation across the Framework (Figure 1). Use the map on page 11 to identify relevant parts for your work.

Themes marked with a gold star have been identified as essential to a particular stream (see essential checklist on page 12). Other themes should be viewed as important, but not necessarily essential in all settings.

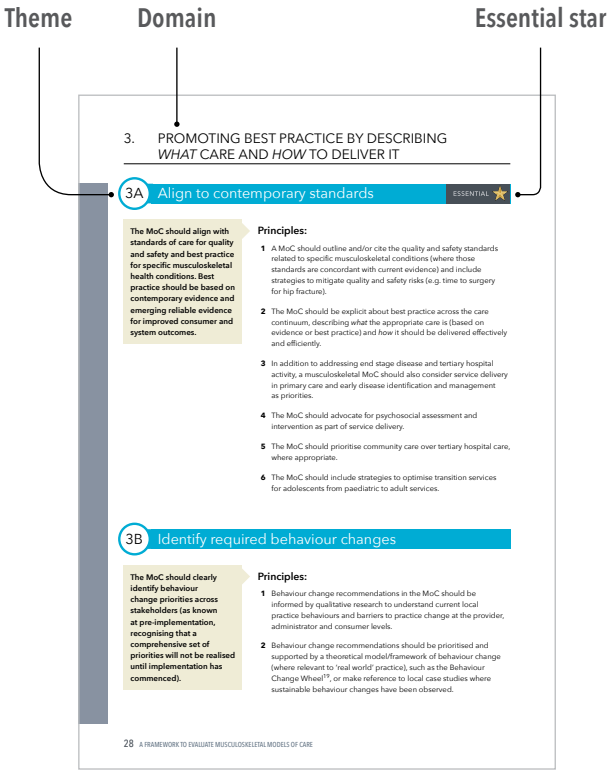

Figure 1: Example of Framework layout

HOW TO USE THIS DOCUMENT AND THE FRAMEWORK

The document as a whole

The document is divided into five parts:

- Part 1 is the executive summary.
- Part 2 provides the background to the project.
- Part 3 contains the Framework.
- Part 4 provides scenarios of how the Framework could be applied in practice.
- Part 5 contains supporting information – definitions, acknowledgements and references.

The Framework in Part 3

The Framework contains three STREAMS:

Stream 1. *Readiness* (blue section): this stream outlines what should be included in a regional or national MoC, how it should be presented and the process of development. This stream is relevant to developers at a national or regional level.

Stream 2. *Initiating Implementation* (orange section): this stream describes how to approach implementation after a MoC has been developed. It provides guidance on what to consider for optimising implementation success and how to develop an implementation plan. This stream is relevant to those tasked with implementation of a MoC, usually at a local or regional level.

Stream 3. *Success* (green section): this stream considers how to approach evaluation, including both formative evaluation and impact evaluation that includes consumer and system-relevant outcomes. This stream is relevant to those tasked with monitoring the outcomes of a MoC, usually at a local or regional level.

Important notes for interpreting the Framework (Part 3):

- Within each stream are a number of DOMAINS.
- Within each domain are a number of THEMES.
- Essential themes are indicated by a gold star.
- A number of PRINCIPLES underpin each theme.

Figure 2 below shows how the Framework is structured using this hierarchy.

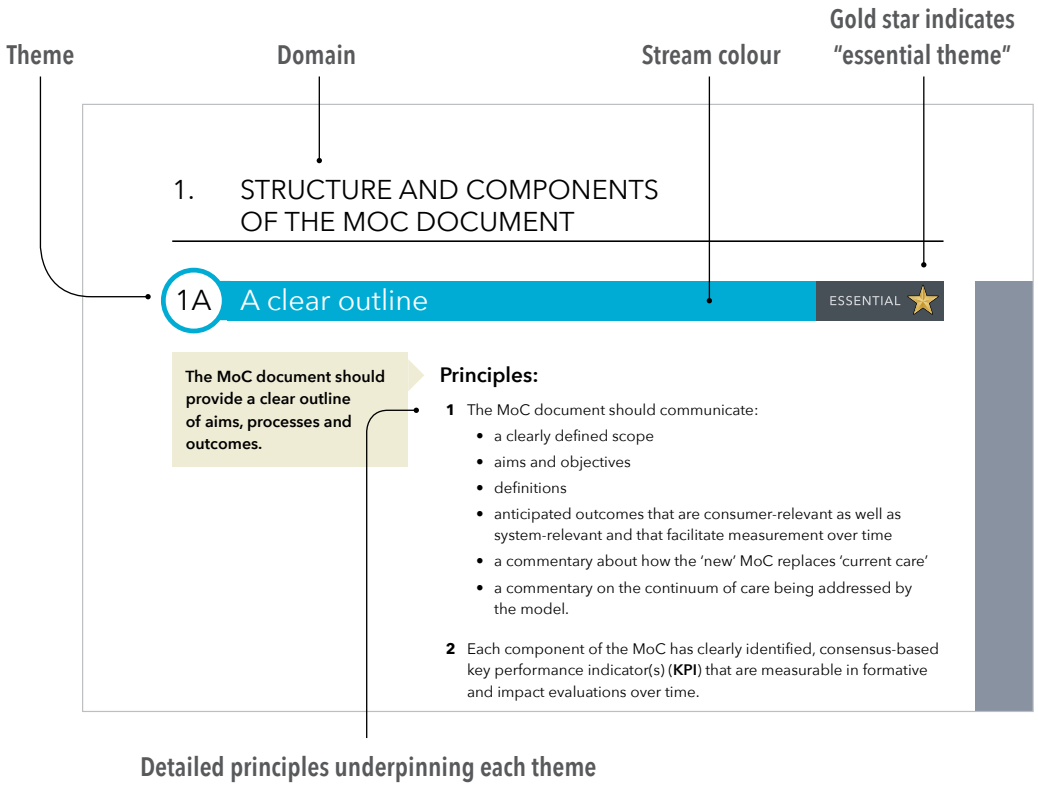

Figure 2: Structure of the Framework illustrating a stream, domain, theme and principles. Here, the Readiness stream is used as an example.

Additional section for Success stream

The *Success stream* contains additional information on performance indicators/methods/data. This additional information recommends the "how to" with respect to undertaking evaluation activities (Figure 3).

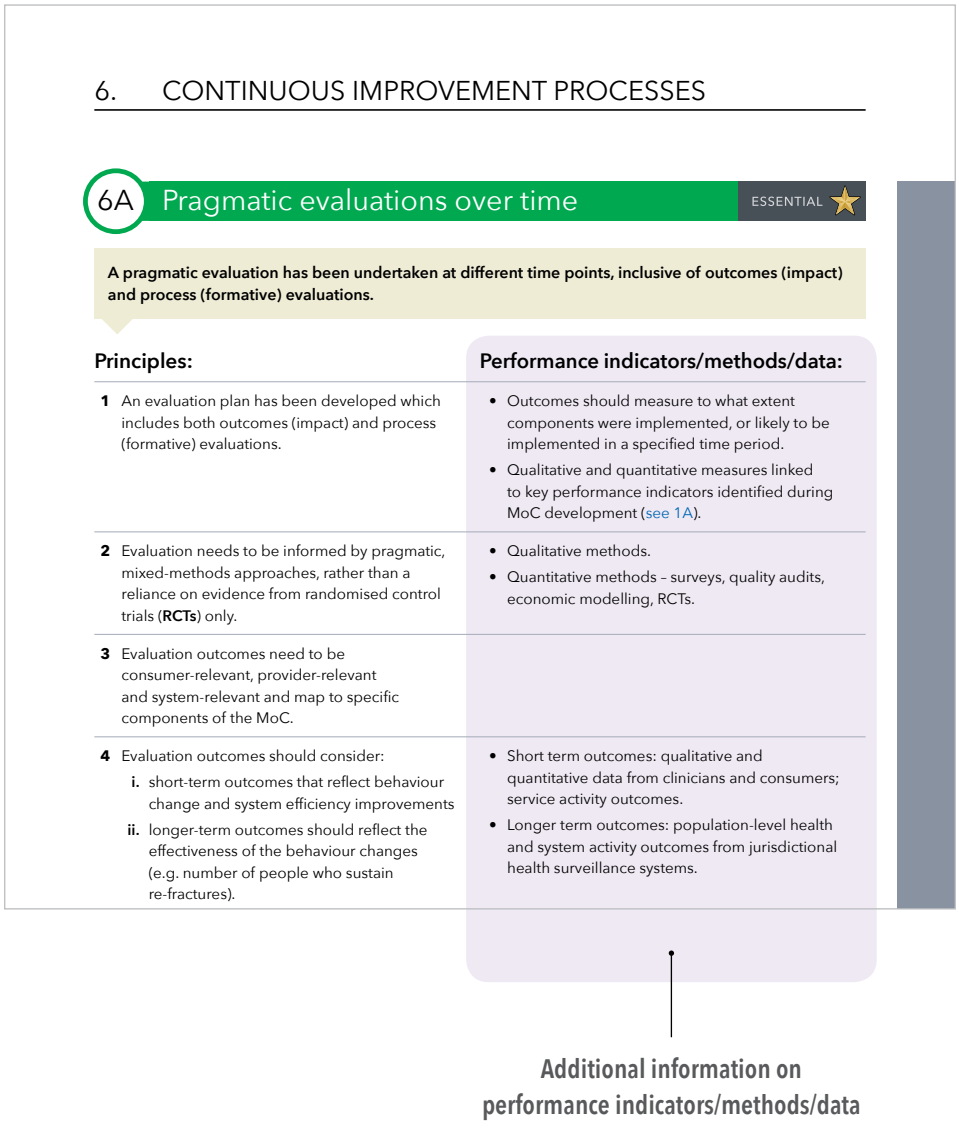

Figure 3: Schematic of the Success stream illustrating the additional section related to performance indicators/methods/data.

NAVIGATING THE FRAMEWORK FOR THE EVALUATION OF MUSCULOSKELETAL MODELS OF CARE

READINESS STREAM

1 Structure and components of a MoC document

- **1A** A clear outline
- **1B** A data-driven case for change
- **1C** Define the target population/priority groups
- **1D** Cost-effectiveness data

2 Engagement and consultation

- **2A** Important stakeholders
- **2B** What to ask and explore
- **2C** Seeking endorsement
- **2D** Identifying and supporting local champions

3 Promoting best practice care by describing *what* care and *how* to deliver

- **3A** Align to contemporary standards
- **3B** Identify required behaviour changes
- **3C** Utilise different service delivery modes
- **3D** Specify communication and referral pathways

4 Consumer centric

- **4A** Practical, user-friendly recommendations
- **4B** Partnership-based service delivery and funding

INITIATING IMPLEMENTATION STREAM

5 Optimising implementation and evaluation success

- **5A** Assessing system readiness
- **5B** Linking to local resources
- **5C** Identifying likely workforce requirements
- **5D** Building a comprehensive implementation plan
- **5E** Formative evaluation of MoC components
- **5F** Establishing a multidisciplinary User Reference Group

SUCCESS STREAM

6 Continuous improvement process

- **6A** Pragmatic evaluations over time
- **6B** Quality assurance and troubleshooting mechanisms
- **6C** Data collection for key performance indicators
- **6D** Promoting research priorities

7 Key performance indicators

- **7A** Consumer relevant outcomes
- **7B** Service delivery partnerships and pathways
- **7C** Cost-effectiveness
- **7D** Stakeholder behaviour change

8 Engagement and participation

- **8A** Awareness and knowledge of the MoC
- **8B** Reach to target population
- **8C** Satisfaction with processes and programs

9 Uptake and integration

- **9A** Adaption across settings
- **9B** Innovative changes to service resourcing
- **9C** The MoC becomes routine business
- **9D** The MoC is utilised as a resource
- **9E** The new MoC replaces the previous MoC

Figure 4: Orientation map for the Framework illustrating the 3 streams (3 colour bands), domains within the streams (blocks) and themes in the domains.

A CHECKLIST OF ESSENTIAL ITEMS FOR EVALUATING MODELS OF CARE

The checklist below is a quick reference tool that contains only the essential evaluation areas, as determined by the expert panel that informed the development of the Framework. The checklist should be used in conjunction with the full Framework (Part 3 of this report), rather than a stand-alone resource.

READINESS STREAM	ESSENTIAL ★	
1A	The MoC document should provide a clear outline of aims, processes and outcomes.	☐
1B	The MoC document should outline a well-developed and objective 'case for change' argument based on local, regional or national circumstances.	☐
1C	The MoC should clearly define the target population and identify any specific priority groups.	☐
2A	The MoC should be informed by meaningful engagement and consultation with a broad range of stakeholders.	☐
3A	The MoC should align with standards of care for quality and safety and best practice for specific musculoskeletal health conditions.	☐
4A	The MoC should be consumer-centred in all aspects and user-focused when describing recommendations for implementation.	☐

INITIATING IMPLEMENTATION STREAM	ESSENTIAL ★	
5D	An implementation plan should be developed which includes guiding principles to inform the development of locally-relevant project or business plans to facilitate implementation of specific components of the MoC.	☐

SUCCESS STREAM	ESSENTIAL ★	
6A	A pragmatic evaluation has been undertaken at different time points, inclusive of outcomes and process evaluations.	☐
6B	The MoC has ongoing quality assurance and troubleshooting processes.	☐
6C	Data collection processes have been established to measure pre-defined key performance indicators (**KPIs**).	☐
7A	Over time, there is evidence of improved consumer experiences, access, health outcomes and quality of life.	☐
7D	Once fully implemented, there is behaviour change amongst stakeholders, led initially by opinion leaders, aligned to the recommendations of the MoC.	☐
8A	There is an awareness of the MoC amongst stakeholders and organisations (inclusive of consumers) in the long term.	☐
9A	The MoC has adaptability to be implemented in different contexts/environments/cultures and evolves over time.	☐

SETTING THE SCENE

2

Context

The global burden associated with chronic, non-communicable diseases is enormous; particularly those conditions associated with morbidity, of which musculoskeletal conditions are ranked amongst the highest[1]. For example, in the most recent Global Burden of Disease Study (GBD 2013), musculoskeletal conditions accounted for 23.3% of global Years Lived with Disability (**YLDs**) for non-communicable diseases (**NCDs**), second only to mental and substance use disorders (25.8% of YLDs)[1]. Further, low back pain was identified as the leading condition associated with morbidity. Importantly, improving musculoskeletal health enables more effective management of other chronic health conditions[2].

Models of Care

The term "Model of Care" is not new. It has been used for many years to describe different aspects of health service delivery[3]. Other terms, such as 'care pathways' or 'standards of care' have also been used interchangeably with 'Models of Care'. While terminologies and scope may vary between nations, most of these general health service frameworks have a common purpose, which is to deliver effective and efficient consumer-centred healthcare.

In the context of this project we define a Model of Care as:

A Model of Care (**MoC**) is a person-centred and principle-based guide, usually presented as a document that describes:

- evidence-informed, best practice care for particular health conditions (in this case, musculoskeletal conditions)
- *what* care should be provided
- *how* it should be delivered at a regional or national level.

A MoC is not an operational plan for a health service or a clinical practice guideline. MoCs are usually implemented as health services at a local level.

MoCs are increasingly viewed as an effective strategy to improve health service planning and delivery for NCDs. MoCs are being developed across the globe, for a range of health conditions. In the context of the clinical focus of this project, musculoskeletal health, a broad range of MoCs have been developed for high income[4,5,6] as well as middle- and low-income nations[7,8].

Generally, MoCs are developed in response to an identified population health need, for example, osteoarthritis care. They are designed to be nationally or regionally relevant, and therefore, contextually 'sit' within regional or national health systems.

MoCs are reflective of regional or national health policies, governance, funding, infrastructure and workforce characteristics and cultural sensitivities. When integrated into health systems in this manner, MoCs can serve as important platforms on which to drive reforms in health service planning and delivery.

Despite the increased attention directed towards the development, implementation and evaluation of MoCs,[2,4,5,9] there remains no globally-informed framework to evaluate and guide these processes‡. This project developed an evaluation framework to address this gap. Specifically, two contemporary issues were considered:

1. **Optimising development for sustainable implementation.**

   A range of system, organisational and provider factors can be a barrier to achieving sustainable implementation of MoCs[10]. There is merit, therefore, in optimising the 'readiness' of a MoC for implementation by considering what might be an ideal MoC development process and one, which will also enable sustainable implementation.

‡ At the time of this report, a Canadian tool had been developed in 2012[9]. However, this tool was developed specifically for Canada and limited in detail to a checklist approach.

2. **Evaluating outcomes of Models of Care.**
   Evaluation of MoCs is critical as a step to inform and drive health reform and share evaluation experiences between countries. Identifying indicators of success and guiding how to measure these indicators is important for:
   a. local stakeholders such as governments
   b. sharing outcomes
   c. undertaking benchmarking internationally and across jurisdictions.

The Framework

The Framework is intended to complement both MoCs in development and those already implemented.

The Framework is designed to assist users in:

- judging whether a MoC is *ready* for implementation
- preparing for *implementation*
- planning evaluation and/or considering whether a MoC has been *successful* in implementation.

The Framework also supports the World Health Organisation's (**WHO**) approach to assessing nations' challenges and opportunities for health systems to improve outcomes related to NCDs[11]. Whereas the WHO approach is based on a broad policy response to NCDs inclusive of cancer, cardiovascular disease, chronic obstructive pulmonary disease and diabetes, this Framework is specific to musculoskeletal MoCs.

Guiding Principles

The Framework is grounded on six guiding principles:

1. The Framework is focused on improving consumer health outcomes and system-relevant outcomes for non-communicable diseases, particularly musculoskeletal conditions.
2. While the focus of the Framework is on musculoskeletal health conditions, it is equally applicable to other non-communicable diseases that are best managed through a Chronic Care approach[12].
3. The Framework is intentionally detailed to provide a 'best case scenario' or 'gold standard' approach to evaluating the readiness and success of MoCs. As such, it should be interpreted as a guide or resource with particular attention paid to components of the Framework that have been identified as 'essential'.
4. The Framework is designed to be flexible, so it may be applied to MoCs in different settings and in developing and developed nations.
5. The Framework is empirically-derived by a panel of international experts to reflect best evidence and practice and a 'real world' pragmatic approach to evaluation.
6. In considering its application to MoCs, the Framework is designed with the intention that it may articulate with regional or national health policy related to chronic health conditions and existing regional or national system performance frameworks.

Intended audience

The Framework is relevant to any person or individual who is tasked with the development, implementation or evaluation of MoCs. As such, the Framework is applicable to multiple stakeholder groups across different settings including:

- policy makers/governments
- service organisations
- clinical societies/associations/networks
- consumer advocacy groups and other non-government organisations
- researchers
- health funders/administrators.

While consumers, consumer organisations and clinicians have informed the Framework, it is not intended to be a resource for individual consumers and clinicians.

Our approach to developing the Framework

Consistent with Guiding Principle 5, the Framework was developed in a formal research context. Human Research Ethics Committee approval was granted to undertake the research by Curtin University, Western Australia. The research was conducted in partnership with tertiary institutions, government departments, a tertiary hospital and consultancy organisations in Australia, as well as with the Global Alliance for Musculoskeletal Health of the Bone and Joint Decade.

Our approach involved four phases, as outlined 1–4 below (Figure 5).

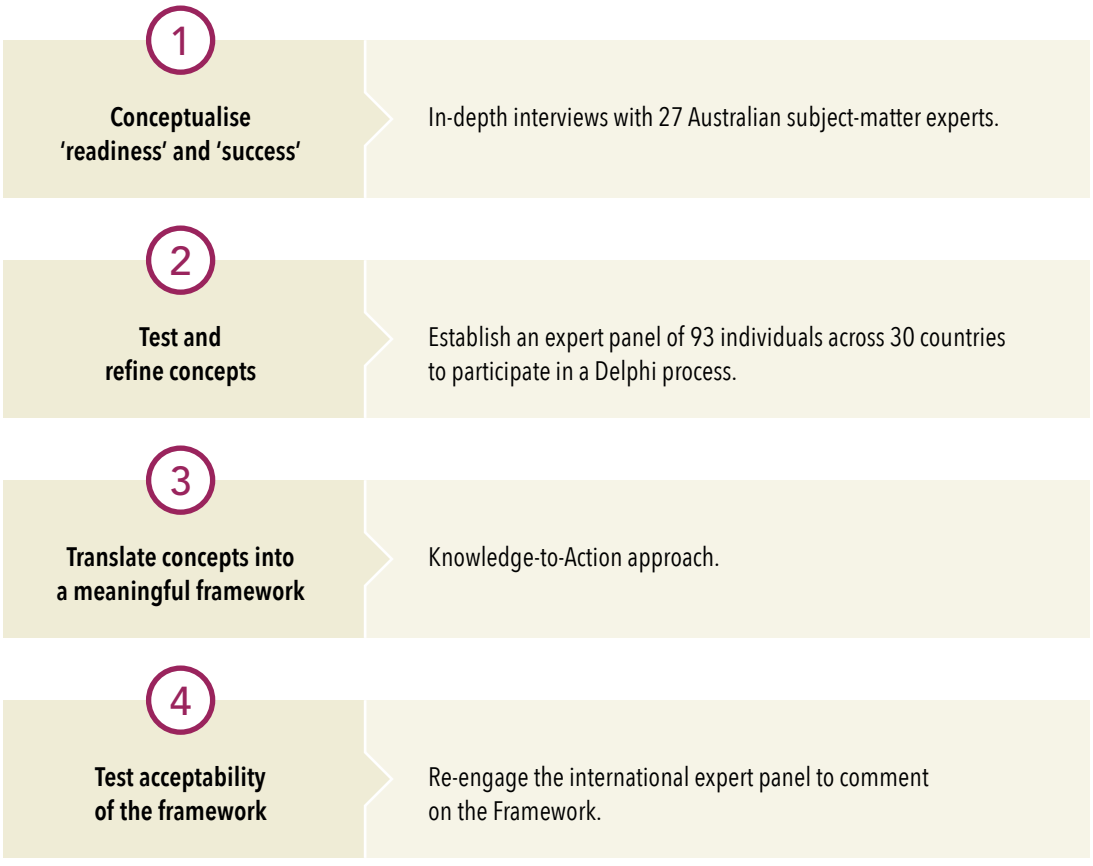

Figure 5: The four development phases informing the Framework.

Phase 1

Senior-level, multidisciplinary experts (policy makers, health service managers, insurers, advocacy organisations, clinicians, researchers and consumers) in musculoskeletal MoCs were sampled from three Australian states. Structured in-depth telephone interviews were conducted with 27 experts to explore:

- perceptions on the evaluation of MoCs
- concepts that should be included in an assessment of 'readiness' for implementation and 'success' after implementation.

Verbatim transcripts of the interviews were analysed to derive key themes relating to evaluation of readiness and success. These key themes and the associated detailed commentaries from the transcripts were used to develop an initial draft Framework. Further detail about this phase and its outcomes has been published[13].

Phase 2

In collaboration with the Global Alliance for Musculoskeletal Health, an international panel of experts in musculoskeletal MoCs was established. The panel included the Australian experts from Phase 1. A total of 93 individuals across 30 countries participated, as displayed in Figure 6 below.
Of the 30 countries represented, 63.3% were from high-income economies, 26.7% from middle-income economies and 10.0% from low-income economies, based on the 2016 World Bank classifications.

Using a standard eDelphi process, the panel iteratively provided feedback and scoring on the themes related to readiness and success that had been previously derived from Phase 1. Panellists also voted on which themes were 'essential' for the Framework. A theme was classified as 'essential' when ≥80% of panellists nominated this category.

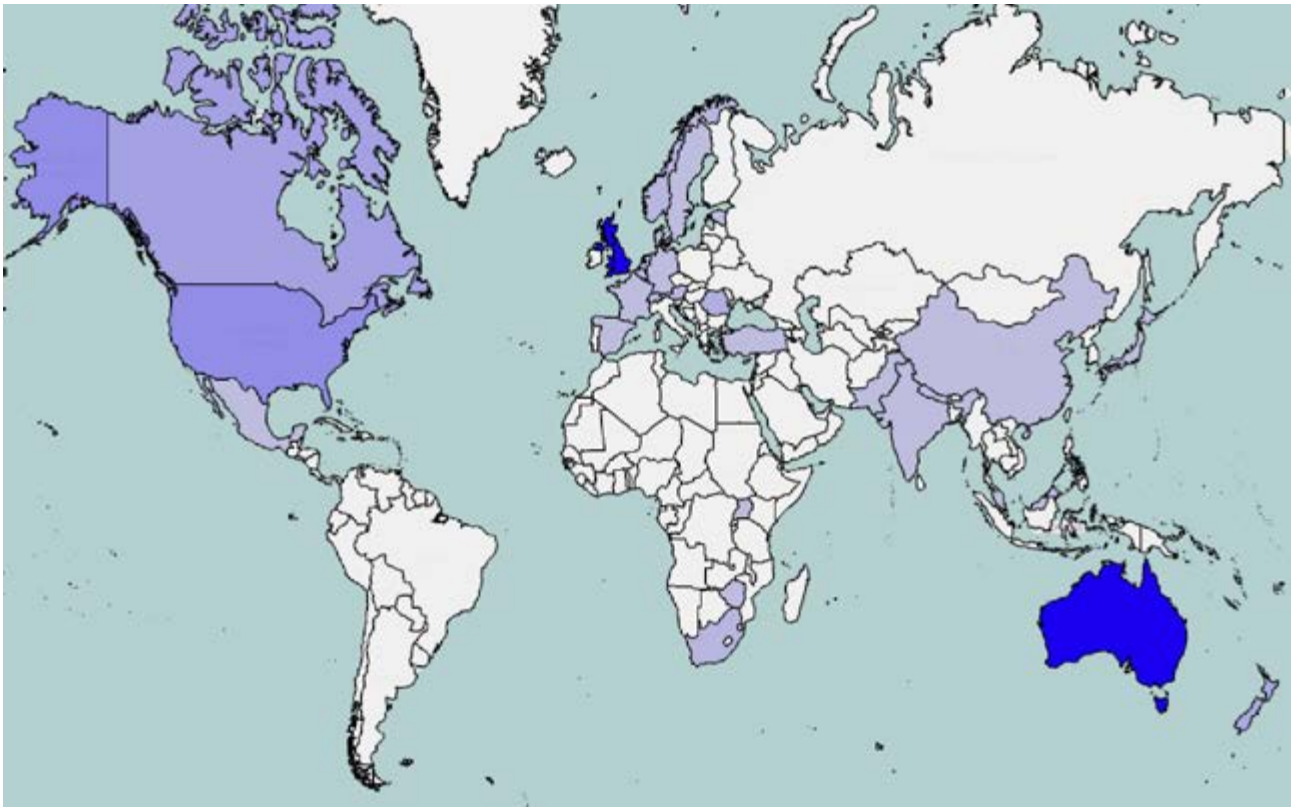

Figure 6: A global heat map showing locations of the expert Delphi panel. Darker shading reflects a greater proportion of panellists in a given location. Note the inclusion of developing and developed countries.

Phase 3

The multidisciplinary project team participated in a workshop to translate the data from Phases 1 and 2 into a meaningful Framework for end users. The methods used to design the workshop were based on a Knowledge-to-Action approach[14], informed by evidence from the Australasian Cochrane Centre[15,16].

This involved development of a briefing document synthesizing key issues. Subsequently, a high-level, facilitated day-long discussion was undertaken in which information and questions for deliberation articulated in the briefing document were discussed to achieve the explicit aim of orienting the data into a usable Framework for end users[17,18].

Phase 4

The same international panel from Phase 2 then scored and commented on the final version of the Framework. Key outcomes from the Delphi phase are summarised in the box below.

Key results from the Delphi panel

- Panel members strongly agreed with the draft Framework, with 'partly agree' or 'completely agree' scores ranging from 96.7–100% across the themes.
- 14 themes were classified as 'essential'.
- Panel members strongly agreed or agreed that the final Framework report was useful (98.8%), usable (95.1%), credible (100%) and appealing (93.9%).
- 96.3% strongly supported or supported the structure of the Framework as it was presented.
- 100%, 96.3% and 100% strongly supported or supported content within the readiness, initiating implementation and success streams, respectively.

3 THE FRAMEWORK

READINESS STREAM

This stream is relevant to developers at a national or regional level.

This stream outlines:

- *what* should be included in a regional or national MoC
- *how* it should be presented and the process of development.

KEY DOMAINS

1. Structure and components of a MoC document
2. Engagement and consultation
3. Promoting best practice by describing *what* care and *how* to deliver it
4. Consumer centric

1. STRUCTURE AND COMPONENTS OF THE MOC DOCUMENT

1A A clear outline

ESSENTIAL

The MoC document should provide a clear outline of aims, processes and outcomes.

Principles:

1 The MoC document should communicate:

- a clearly defined scope
- aims and objectives
- definitions
- anticipated outcomes that are consumer-relevant as well as system-relevant and that facilitate measurement over time
- a commentary about how the 'new' MoC replaces 'current care'
- a commentary on the continuum of care being addressed by the model.

2 Each component of the MoC has clearly identified, consensus-based key performance indicator(s) (**KPI**) that are measurable in formative and impact evaluations over time.

3 The MoC should identify the extent to which it aligns with current health policy, strategy and frameworks.

4 The MoC clearly outlines its core components (i.e. the 'must have') to achieve the anticipated outcomes.

1B A data-driven case for change

ESSENTIAL

The MoC document should outline a well-developed and objective 'case for change' argument based on local, regional or national circumstances.

Principles:

1 The 'case for change' should provide justification for a change to current service delivery and outline best practice, as informed by information available at the time, including:

- consumers' needs
- contemporary evidence for best practice
- current local practice behaviours in the sector that are discordant with contemporary evidence
- jurisdictional or national data reflecting burden of disease and system impacts.

2 There should be evidence that the current local service and provider environment is well understood, demonstrated by a comprehensive review of existing services, practice culture and referral behaviours. Aggregate information (informed by local audits and qualitative research with stakeholders) should include:

- *who* provides care
- *where* is care provided
- *how* is care accessed
- *what* are the blocks to care co-ordination
- *where* are the care gaps/access blocks
- *how* does the consumer typically move through the system now and *what* are their needs
- *what* are the current governance arrangements around service delivery
- *what* are the currently available funding streams.

3 Recommendations should not be based solely on evidence from randomised controlled trials (**RCTs**). The MoC should reflect a balance between academic literature and current practices in terms of what works and what is feasible to integrate in the current system.

4 Where the MoC refers to evidence for effective/ineffective interventions it should, where possible, make clinically-usable recommendations i.e. provide guidance on what interventions or behaviours *should* be provided, rather than focusing on what *not* to do.

5 The MoC should detail the processes used to identify and interpret evidence quality and relevance.

6 Development of the MoC should include a horizon scan of new opportunities (infrastructure, technologies, therapies, policies) and MoCs in other healthcare systems to ensure it is contemporary.

1C Define the target population/priority groups

ESSENTIAL

The MoC should clearly define the target population and identify any specific priority groups.

Principles:

1. The target population should be broadly defined, including specific information about health conditions within and outside the scope of the MoC (including comorbidities).
2. Justification for the target group should be informed by local data that demonstrate where services are needed the most.
3. The MoC should identify the factors that may affect reach to the target population e.g. access, cost, geography and knowledge of service through qualitative engagement with the target population.
4. The MoC should consider how the target population may vary across urban, regional and rural geographies as well as variance across indigenous and non-indigenous communities and communities of different socioeconomic statuses and ages.

1D Cost-effectiveness data

Where feasible, the cost-effectiveness of the proposed MoC should be outlined based on modelling, or existing evidence relevant to the local setting (e.g. data acquired in developed nations cannot be reliably translated to developing nations). Where reliable data are unavailable, the MoC should make recommendations about how to evaluate this in implementation.

Principles:

1. Where possible, professional health economics advice should be sought in the development phase of the MoC and in planning cost-effectiveness evaluation in implementation trials.
2. The MoC should outline the likely local cost-effectiveness of the proposed model and identify where and how it is more cost-effective than current care, including cost to consumers. If reliable cost-effectiveness/cost savings data are not available, the MoC should provide recommendations on how to evaluate these factors as implementation commences e.g. through pilot studies.
3. Where cost savings are examined, cost shifting must be considered. For some, MoCs cost savings may not be expected.
4. The longer-term economic viability of the proposed MoC should be discussed.
5. The descriptors around cost-effectiveness and resource efficiencies should be based on system-relevant metrics that are meaningful to service administrators (e.g. cost per episode of care).

2A Important stakeholders

ESSENTIAL

The MoC should be informed by meaningful engagement and consultation with a broad range of stakeholders (individuals and organisations) from inception to final development.

Principles:

1 The MoC should be informed by stakeholders across the care continuum and identified through thorough mapping of typical consumer pathways.

2 The MoC should outline a robust method of stakeholder identification, engagement and consultation across all development stages. At a minimum, stakeholders should include:

- consumers/carers
- subject matter experts or opinion leaders in musculoskeletal health
- local clinical and administrative champions who are supported by their organisation to adopt a leadership position in the development, communication and implementation of the MoC
- non-expert clinicians (e.g. generalists)
- academic and non-academic clinicians
- service administrators/managers
- jurisdictional funders/policy makers
- individuals who are likely to be tasked with implementation of a MoC in target settings
- representative organisations (e.g. clinical organisations)
- non-government sector (e.g. consumer advocacy organisations)
- private service providers and insurers.

3 The nomination and selection processes related to expert working groups should be documented to provide transparency of decisions made.

4 The MoC should provide evidence that there has been active engagement and commitment from executives of organisations in the public and private sectors.

5 A communication strategy should be developed to promote awareness of the MoC development (and subsequently implementation) across the sector.

2B What to ask and explore

Consultation outcomes should be defined and integrated into the final MoC.

Principles:

1 Throughout the development process, the MoC should document:

- the consistency of stakeholders' perceptions/understanding of what needs to be done for implementation, particularly views on the urgency to change the current service model(s)
- awareness amongst service providers of current problems with service delivery and willingness to work toward a solution
- whether stakeholders are ready to work together, change resourcing patterns and/or relinquish control of certain services
- the level of engagement from primary care service providers with the proposed MoC.

2 The ability to reach the target population and determine their acceptability/interest related to the MoC needs to be evidenced by mixed-methods research approaches (i.e. incorporating qualitative and quantitative approaches).

3 The MoC should outline current practice behaviours of clinicians and consumers and identify which components could be targeted to achieve improved outcomes.

2C Seeking endorsement

The MoC should be publicly endorsed by clinical and other organisational stakeholders as far as is practical and socially appropriate for local settings.

Principles:

1. Where feasible, the MoC should be endorsed and actively advocated by influential individuals and organisations, including consumer organisations. However, the process of attracting and confirming endorsement should not be a barrier to initiating implementation efforts.

2. The MoC should receive commitment from organisations to implement strategies (as evidenced through organisation-specific action plans, strategies, position statements), which are consistent with the recommendations in the MoC.

3. The MoC should be 'signed off' by an authorising agency, for example a government department.

2D Identifying and supporting local champions

The MoC development process should identify, engage and actively collaborate with local champions, where appropriate for the model and the environment in which it is to be implemented.

Principles:

1. The MoC should identify local champions across relevant sectors in the community to encourage and support development and implementation of the MoC.

2. Champions should be both clinical and non-clinical (e.g. consumers, managers, administrators, funders).

3. The champions tasked with spearheading the MoC should be up-skilled in implementation science or change leadership in order to act as effective change agents.

3. PROMOTING BEST PRACTICE BY DESCRIBING *WHAT* CARE AND *HOW* TO DELIVER IT

3A Align to contemporary standards

ESSENTIAL

The MoC should align with standards of care for quality and safety and best practice for specific musculoskeletal health conditions. Best practice should be based on contemporary evidence and emerging reliable evidence for improved consumer and system outcomes.

Principles:

1 A MoC should outline and/or cite the quality and safety standards related to specific musculoskeletal conditions (where those standards are concordant with current evidence) and include strategies to mitigate quality and safety risks (e.g. time to surgery for hip fracture).

2 The MoC should be explicit about best practice across the care continuum, describing *what* the appropriate care is (based on evidence or best practice) and *how* it should be delivered effectively and efficiently.

3 In addition to addressing end stage disease and tertiary hospital activity, a musculoskeletal MoC should also consider service delivery in primary care and early disease identification and management as priorities.

4 The MoC should advocate for psychosocial assessment and intervention as part of service delivery.

5 The MoC should prioritise community care over tertiary hospital care, where appropriate.

6 The MoC should include strategies to optimise transition services for adolescents from paediatric to adult services.

3B Identify required behaviour changes

The MoC should clearly identify behaviour change priorities across stakeholders (as known at pre-implementation, recognising that a comprehensive set of priorities will not be realised until implementation has commenced).

Principles:

1 Behaviour change recommendations in the MoC should be informed by qualitative research to understand current local practice behaviours and barriers to practice change at the provider, administrator and consumer levels.

2 Behaviour change recommendations should be prioritised and supported by a theoretical model/framework of behaviour change (where relevant to 'real world' practice), such as the Behaviour Change Wheel[19], or make reference to local case studies where sustainable behaviour changes have been observed.

3C Utilise different service delivery modes

The MoC should consider different delivery modes known to be effective to reach the target population, while maintaining fidelity to any critical aspects of the MoC.

Principles:

1 The MoC should consider:

- service providers who can cater to culturally and linguistically diverse groups
- provision of information/resources in different languages and targeted to different age groups (e.g. adolescents)
- information, communication and resource delivery channels that are accessible to people with disabilities and those who live in rural and remote areas (e.g. telehealth, social media).

3D Specify communication and referral pathways

The MoC should describe an ideal consumer journey through the system and suggest referral and communication pathways between service providers to facilitate a seamless journey for the consumer and their information, recognising that these pathways may need iteration during implementation.

Principles:

1 Ideal communication and referral strategies between providers and organisations should be described with explicit mention of transition processes between services/organisations.

2 The MoC should consider how care should be delivered where musculoskeletal health conditions are comorbid with other chronic health conditions.

3 Ideally, multidisciplinary services for consumers should be co-located or digitally connected to minimise travel burden for consumers/families.

4A Practical, user-friendly recommendations

ESSENTIAL

The MoC should be consumer-centred in all aspects and user-focused when describing recommendations for implementation.

Principles:

1. The MoC should use language that is consumer-centred and use terminology or concepts that are meaningful to typical end users (e.g. service managers/funders).
2. The MoC should not be too large, or have too many recommendations. It needs to be presented in a manner that is directly usable and have an accompanying implementation plan and/or guidance for the development of a detailed Model of Service Delivery or business plan for a local setting.
3. Recommendations for implementation may include a range of issues to enable improved consumer outcomes, e.g. changes to health service delivery practices, changes to funding models, research priorities, health professional training, development of consumer resources, and so on. The relative priority of these recommendations may change over time.
4. The MoC should outline an improved consumer flow/journey through the system compared to the status quo.

4B Partnership-based service delivery and funding

The MoC should promote cross-sectoral pathways and priorities in service delivery and service funding (e.g. public-private partnerships).

Principles:

1. The MoC should give examples and encourage development of effective, collaborative models of service delivery and service funding in line with its recommendations.
2. The MoC should be amendable to funding support from different sectors of the health system.

INITIATING IMPLEMENTATION STREAM

This stream describes how to approach implementation after a MoC has been developed. It provides guidance on what to consider for optimising implementation success and how to develop an implementation plan. This stream is relevant to those tasked with implementation of a MoC, usually at a local or regional level.

KEY DOMAIN

5. Optimising implementation and evaluation success

5. OPTIMISING IMPLEMENTATION AND EVALUATION SUCCESS

5A Assess system readiness

The health system is dynamic and as such it is recognised that it will never be completely 'ready' for implementation since the system is constantly evolving. Therefore, it is important to identify critical components in the system that will impact on implementation efforts.

Principles:

The MoC should identify any local, jurisdictional or national systems, infrastructure, resources (e.g. funding, workforce) and processes that need to be considered to support implementation of the MoC and its evaluation at a local level; ideally evidenced by a system audit (refer to section 1B). Guidance should be provided on:

- what systems/resources are needed for successful implementation, in particular funding models and existing workforce volumes and distributions
- the state of readiness of systems/resources to support the MoC, as informed by thorough consultation with the local sector
- strategies to ensure sustainability of the necessary system modifications
- partnership opportunities to support implementation initiatives, such as funding for pilot evaluations, workforce positions (e.g. conjoint roles) and the potential for research-practice partnerships for evaluation.

5B Linking to local resources

The implementation plan should contain, or link to, local resources to support implementation of specific components of the MoC.

Principles:

1 The implementation plan should specify whether specific business plans or detailed service delivery models are required for particular components of the MoC. Alternatively, a framework for such business plans/detailed service models for end users could be included.

2 The implementation plan should include practice enablers to maximise uptake in target environments e.g. decision tools, care pathways/algorithms available to clinicians. Enablers should consider the recognised components of behaviour change[19].

3 Where possible, local implementation support should be available to assist sites to implement a MoC successfully. Possible examples include:

- web portal with online implementation training
- assistance with trouble shooting
- phone support to a coordinating agency, group training, email distribution list for receiving updates/new tools to support implementation.

5C Identifying likely workforce requirements

The implementation plan should consider workforce implications and indicative capacity requirements, recognising that flexibility and continuous re-calibration are required as implementation progresses.

Workforce volumes, distributions and activities should remain the decision and responsibility of individual health services.

Principles:

1 Local workforce requirements to support implementation to achieve effective, integrated care should be identified within the implementation plan including:

- minimum competencies for safely and effectively delivering the recommended care
- minimum service and performance standards for the workforce and delivery sites for dealing effectively with arthritis, osteoporosis, pain and effectively supporting consumers to engage in disease-appropriate self-management behaviours
- existing frameworks to support workforce roles recommended by the MoC e.g. nurse practitioners, extended scope of practice roles and assistant roles
- behaviour change strategies for primary care providers, particularly general practitioners, to support consumers to engage in co-care (with a focus on weight loss, physical activity and exercise).

2 The implementation plan should consider whether local staff are empowered to implement system changes and whether they have the skills, knowledge and attitudes to do so. If not, strategies to address these potential barriers should be included, based on behaviour change principles (refer to 3B).

3 The implementation plan should include skills/knowledge training recommendations for key personnel involved in the implementation of the MoC.

4 A contemporary musculoskeletal MoC should also support up skilling of non-traditional primary care providers e.g. pharmacists, fitness instructors etc. in developed countries and relevant care providers in developing countries.

5 Outreach services should be inclusive of training for local clinicians in order to build local workforce capacity (e.g. the World Spine Care initiative[7]).

5D Building a comprehensive implementation plan ESSENTIAL

Once the MoC document has been completed, an implementation plan should be developed which includes guiding principles to inform the development of a locally relevant project, or business plans to facilitate implementation of specific components of the MoC.

Principles:

1 The implementation plan should be based on, or supported by:

- results from local pilot studies that identified and mitigated barriers and enablers (formative evaluation)
- planned or opportunistic partnerships between service providers and responsiveness to current opportunities and contexts
- a specific implementation theory/framework, particularly as it relates to supporting behaviour change of those people involved in implementing the MoC (such as the Behaviour Change Wheel[19])
- a formal change management process.

2 The implementation plan should:

- include key performance indicators (consumer and system-relevant), as recommended by the MoC developers
- include an outline of cost or resourcing requirements (e.g. units of each resource) for the various implementation phases, relevant to the system and the consumer
- allow some flexibility in the MoC implementation, particularly for rural and remote areas
- describe the available or proposed funding models to support implementation of the MoC across different settings
- include an ongoing plan for engagement with local stakeholders
- identify specific components of the MoC that can be implemented in specific health sectors in a prioritised manner.

3 The implementation plan should clearly outline evaluation processes (e.g. data collection systems).

4 The implementation plan must recognise that updating will be required as new evidence, technologies and workforce roles evolve. In these circumstances, the developers should update the MoC.

5E Formative evaluation of MoC components

Formative evaluation of some service components of the MoC should be undertaken to demonstrate proof of concept, inform (but not prescribe) a larger-scale rollout and attract engagement and resourcing at scale.

Principles:

1. Formative evaluation is important to identify implementation barriers, cost-effectiveness estimates and attract buy-in across the sector by demonstrating that the MoC is effective and adaptable across environments. However, formative evaluation outcomes should only be used as a guide, since scaling up implementation from a pilot to a large scale will require adaptability.
2. Pilot sites need to be varied and represent the larger scale, not just the sites/people who are ready adopters.
3. Formative evaluation must include key performance indicators (**KPIs**) that are that are identical to the planned KPIs for larger-scale roll-out, including economic analyses.
4. Information and evidence from formative evaluations or large-scale implementation of other comparable MoCs should be considered, where relevant.
5. Recognise that where only components of the MoC are piloted (based on identified priority components), the results of individual components may vary when a total MoC is implemented.

5F Establishing a User Reference Group

A multidisciplinary User Reference Group should be established to oversee implementation planning and execution.

Principles:

1. The User Reference Group (**URG**) should be multidisciplinary (inclusive of consumers and carers) and ideally be clinically-led.
2. The URG should have executive-level endorsement to support changes to implementation approaches.
3. The URG should review implementation and outcomes over time and recommend changes to the MoC developers.
4. The URG should monitor and respond to upstream and downstream consequences of implementing the MoC, such as impacts on service access and efficiency in other services/clinical areas.

SUCCESS STREAM

This stream considers how to approach evaluation, including both formative evaluation and impact evaluation that includes consumer and system-relevant outcomes. This stream is relevant to those tasked with monitoring the outcomes of a MoC, usually at a local or regional level.

KEY DOMAINS

6. Continuous improvement processes
7. Key performance indicators
8. Engagement and participation
9. Uptake and integration

6A Pragmatic evaluations over time

ESSENTIAL

A pragmatic evaluation has been undertaken at different time points, inclusive of outcomes (impact) and process (formative) evaluations.

Principles:	Performance indicators/methods/data:
1 An evaluation plan has been developed which includes both outcomes (impact) and process (formative) evaluations.	• Outcomes should measure to what extent components were implemented, or likely to be implemented in a specified time period. • Qualitative and quantitative measures linked to key performance indicators identified during MoC development (see 1A).
2 Evaluation needs to be informed by mixed-methods approaches, rather than a sole reliance on evidence from randomised control trials (**RCTs**) only.	• Qualitative methods. • Quantitative methods – surveys, quality audits, economic modelling, RCTs.
3 Evaluation outcomes need to be consumer-relevant, provider-relevant and system-relevant and map to specific components of the MoC.	
4 Evaluation outcomes should consider: **i.** short-term outcomes that reflect behaviour change and system efficiency improvements **ii.** longer-term outcomes should reflect the effectiveness of the behaviour changes (e.g. number of people who sustain re-fractures).	• Short term outcomes: qualitative and quantitative data from clinicians and consumers, service activity outcomes. • Longer term outcomes: population-level health and system activity outcomes from jurisdictional health surveillance systems.
5 The evaluation plan has the flexibility to capture outcomes (positive or negative) that have been achieved which are not directly related to the implementation of the MoC, including unplanned achievements.	• Qualitative methods.
6 The adaptability of the MoC to different settings is a preferred indicator of success than implementation fidelity.	• Qualitative methods to understand implementation fidelity.

6B Quality assurance and troubleshooting mechanisms

ESSENTIAL

The MoC has ongoing quality assurance and troubleshooting processes in place.

Principles:	Performance indicators/methods/data:
1 Systems or strategies have been developed to address implementation 'hurdles'.	• Ongoing implementation risk assessment/audit. • Qualitative methods to identify barriers/enablers to implementation.
2 Identification and documentation of "lessons" that can be applied to achieve more successful implementation of other MoCs or implementation in another setting.	• Qualitative assessments with stakeholders to identify barriers/enablers to implementation.
3 There is flexibility in processes/programs to respond to emerging evidence for new technologies, programs or interventions; or experiences of users.	• Regular review/updates of peer-reviewed literature to identify new evidence. • Qualitative assessments with stakeholders (interviews, focus groups) to identify changing practice behaviours. • Audits are undertaken to ensure changes to the MoC have been made appropriately, e.g. via a User Reference Group (see 5F).
4 Regular audits of consumers' pathways of care are undertaken to ensure alignment with the MoC recommendations.	• Qualitative assessments with stakeholders (interviews, focus groups) to measure satisfaction with services.

6C Data collection processes for key performance indicators

ESSENTIAL

Data collection processes have been established to measure pre-defined key performance indicators (KPIs), as well as KPIs that are later identified to be important.

Principles:	Performance indicators/methods/data:
1 Consumer-relevant (e.g. quality of life) and system-relevant data collection processes have been implemented that measure and monitor the MoC impact through routine surveillance initiatives maintained by agencies.	• Health surveillance registries. • System activity databases.
2 As implementation progresses, further important key performance indicators (**KPIs**) are identified and are added or replace original KPIs.	• Qualitative assessments with stakeholders to identify barriers/enablers to implementation.

6D Promoting research priorities

The MoC identifies and promotes research priorities.

7A Consumer relevant outcomes

ESSENTIAL

Over time, there is evidence of improved consumer experiences, access, health outcomes and quality of life.

Principles:	Performance indicators/methods/data:
1 Improved consumer **experiences** relating to services and pathways measured through: • Satisfaction with both access to, and quality of, healthcare services. • Improved health literacy. • Consistency of service quality and access across sites. • Improved self-management support from providers and shared decision-making between providers and consumers.	• Qualitative methods. • Quantitative surveys with consumers/families.
2 Improved **access** for consumers measured through: • Access to services and information close to home, where clinically appropriate. • Effective services, especially in ambulatory care and community settings. • Reduced inequalities to accessing care.	• Qualitative methods and surveys with consumers/families. • Service indicators such as: – waiting time to access services – episodes of multidisciplinary service uptake between groups with varying access inequality prior to implementation of the MoC.
3 Long term consumer **health outcomes** should include: • Positive changes in function/participation and the experience of disability. • Improved quality of life. • Population health outcomes (measured as a long term outcome) e.g. joint replacement rates, obesity, re-fracture rates.	• Standard PROMIS tools (where applicable). • System indicators, such as: joint replacement rates, fracture/re-fracture rates and obesity prevalence. • Data sources include routine jurisdictional health surveillance initiatives, population health registries.

7B Service delivery partnerships and pathways

There is evidence of improved consumer pathways and establishment of partnerships and workforce efficiencies (longer term outcome).

Principles:	Performance indicators/methods/data:
1 Consumer pathways, as defined in the MoC, are implemented as evidenced through: • Patient flow e.g. timely and appropriate access to surgery, such as total joint replacement within 180 days of being placed on a waitlist. • Early identification/diagnosis. • Transition services for adolescents. • Timeliness of services (e.g. waitlist no longer than 6–12 weeks for early inflammatory arthritis review). • Patient safety outcomes. • Reduction in unnecessary referrals, interventions and diagnostic tests (e.g. imaging for non-specific back pain).	• System activity metrics (e.g. referrals, access points, episodes of care for a given diagnosis). • Qualitative methods with consumers/families and surveys. • System activity data from data sources that track episodes of care for specific diagnoses such as the Electronic Persistent Pain Outcomes collaboration initiative.
2 Improved service partnerships between hospitals and community services/primary care.	• Stakeholder feedback via surveys and qualitative methods. • Establishment of service or purchasing agreements that reflect recommendations in the MoC.
3 Workforce efficiencies: • Extended scope of practice or advanced practice roles implemented. • Professional development/training initiatives commenced. • Extent to which interprofessional practice is being adopted.	• Establishment of governance frameworks to support new workforce roles. • Appointments for specific workforce roles. • Development and evaluation of professional development resources/initiatives. • Episodes of care data by discipline.
4 Changing service utilisation: • Shift in services from tertiary to primary care. • Appropriate evidence-based interventions being accessed.	• Healthcare utilisation information collected via consumer surveys.

7C Cost-effectiveness

Where reliable and sufficient data are available, the cost-effectiveness of the MoC is determined (estimated through modelling or measured in the long term) or cost utility evaluation undertaken.

Principles:

Cost-effectiveness measured through:

- Unit cost per patient treated.
- Jurisdictional costs over time for specific conditions.
- Cost shifting from one sector to another.
- Disability adjusted life years (**DALYs**) saved or quality adjusted life years (**QALYs**) gained.
- Resources per patient outcome, inclusive of social care.
- Cost to the consumer.

Performance indicators/methods/data:

- Jurisdictional or site-specific data on costs of service delivery, inclusive of public and private systems.
- Direct service costs to consumers.
- Healthcare utilisation data from consumer surveys.

7D Stakeholder behaviour changes

ESSENTIAL

Once fully implemented, there is behaviour change amongst stakeholders, led initially by opinion leaders, aligned to the recommendations of the MoC.

Principles:

1 Practice behaviours among providers (led initially by local opinion leaders) and consumers related to the recommendations of the MoC are observed, including:

- Enhanced care coordination by healthcare professionals across sectors.
- Improved self-management/self-monitoring by consumers.
- Increased interaction between administrators/executives and clinicians relating to service delivery.
- Increased interprofessional practice across sites.
- Changes to referral rates or other behavioural change metrics by discipline.

2 There is increased adoption of the MoC, as evidenced by increased behaviour change across the sector (clinicians and sites) – i.e. a 'ripple effect'.

Performance indicators/methods/data:

Examples of specific indicators:

- Number of health assessments.
- Review of prescriptions.
- Supporting physical activity as a primary intervention for chronic conditions such as osteoarthritis care.
- Data methods include audits and surveys, audits of the consumer pathway, data characterising episodes of care by discipline.
- Implementation of referral/care co-ordination pathways consistent with the Model of Care, such as *Health Pathways* or *Map of Medicine*.

8A Awareness and knowledge of the MoC

ESSENTIAL

There is an awareness of the MoC amongst stakeholders and organisations (inclusive of consumers) in the long term.

Principles:	Performance indicators/methods/data:
1 There is an awareness of the MoC or its recommended services across a broad range of stakeholders, including consumers/carers.	• Surveys/audits among stakeholders: – % heard of MoC/its services – % aware of MoC/its services – % read MoC. • Qualitative methods supported by quantitative outcomes, where feasible.
2 Assessment of knowledge and attitudes of service providers, administrators and consumers relating to: • Understanding of how their role fits in as part of the MoC. • Working effectively to support broad direction of MoC. • Support/commitment to the MoC. • Extent to which the MoC is part of day-to-day activities.	• Qualitative methods (interviews, focus groups), supported by quantitative outcomes, where feasible.
3 Community awareness of the impact of musculoskeletal health conditions.	• Policy statements about population health related to musculoskeletal conditions.
4 Uptake of resources for consumers.	• Utilisation of non-government organisations' resources.

8B Reach to target population

A cohort of the target population for which the MoC was developed has interacted with the MoC.

Principles:	Performance indicators/methods/data:
1 Proportion of target population that the MoC has reached through programs, activities or other specified modes in the MoC are measured.	• Utilisation of services for different musculoskeletal conditions. • Comparison of patient demographics compared to broader target population demographics.
2 The population that has been 'reached' by the MoC is comparable with known demographics of the target population to ensure representativeness.	• Consider demographics relating to age, gender, location (urban, regional, rural), racial diversity, diagnoses.

8C Satisfaction with processes and programs

There is evidence of satisfaction among service providers and consumers with the MoC and its implementation compared with service delivery pre-implementation, as informed through ongoing consultation with stakeholders.

Principles:	Performance indicators/methods/data:
1 There is evidence of satisfaction among service providers and consumers with processes and programs associated with the MoC and/or analysis to understand reasons for dissatisfaction.	• Surveys with stakeholders and qualitative methods.
2 There is increased confidence among service providers with the services provided to consumers.	• Surveys with stakeholders and qualitative methods.

9A Adaptability across settings and responsiveness ESSENTIAL

While retaining its core features, the MoC has adaptability to be implemented in different contexts/environments/cultures and evolve over time as new evidence, technologies or workforce roles emerge, or as contextual demands require.

Principles:	Performance indicators/methods/data:
1 Stakeholders or organisations have adapted the MoC or its components to their settings, while maintaining fidelity to its core features.	• Proportion of locations/organisations that have implemented the MoC as a whole and/or in components.
2 The extent of adaptability will depend on the system-level focus of the MoC – national, regional, or local; developing or developed countries.	• Proportion of core elements/components/ programs of the MoC that have been consistently implemented across different environments.
3 The MoC should be viewed as a 'living resource' that can be updated over time as new evidence, technologies and workforce roles emerge or experiences with implementation efforts (e.g. implementation failures and successes) emerge.	• Identification of where implementation of the MoC has deviated and whether sites are still achieving outcomes consistent with the objectives of MoC.

9B Innovative changes to service resourcing

Innovative service provision and workforce models associated with the MoC are implemented.

Principles:	Performance indicators/methods/data:
1 Changes in resource allocations (e.g. workforce roles) are observed to support the MoC implementation.	• Qualitative methods. • Service audits.
2 Service activities relevant to the MoC are being resourced or adequately provided when resources are redistributed.	• Policy/contractual changes related to funding arrangements.
3 Resourcing for services/activities discordant with the MoC have been reduced and reallocated to services/activities aligned to the MoC.	• Frameworks available to support workforce roles aligned to the MoC.
4 The MoC becomes part of service agreements or activity-based funding arrangements.	• Improved purchasing or service agreements. • Implementation of referral/care co-ordination pathways consistent with the Model of Care, such as *Health Pathways* or *Map of Medicine*.

9C The MoC becomes routine business

The MoC becomes part of routine business for the sponsor organisation and other organisations in the longer term.

Principles:	Performance indicators/methods/data:
1 Organisational position statements or strategies have changed to align with the MoC.	• Review of organisational strategies/business plans.
2 Key elements of the MoC have been incorporated into the core business of target organisations (e.g. strategies, business plans, referral and care co-ordination pathways).	• Review of organisational strategies/business plans.
3 The MoC is considered as standard of care for organisations.	• Review of organisational strategies/business plans.

9D The MoC is utilised as a resource

The MoC is being used as a resource across the sector to communicate best practice care.

Principles:	Performance indicators/methods/data:
1 Practice behaviours aligned to the MoC have been integrated into the curriculum of universities and other training organisations.	• Surveys and audits.
2 The MoC has been referenced in government and research publications or public reports.	• Citations of the MoC in reports or publications.
3 The MoC is used/referenced to develop policies, strategies or clinical guidelines in organisations.	• Recognition of the MoC in health policy.
4 The MoC recommendations have been incorporated into discipline-specific guidelines, in particular primary care guidelines.	• Recognition of the MoC in clinical guidelines.
5 The MoC has links to best practice consumer resources.	

9E The new MoC replaces the old MoC

There is evidence of the MoC replacing previous MoC/practices, where appropriate.

Principles:	Performance indicators/methods/data:
1 Practices that are not consistent with the new MoC have been discontinued.	• Data methods include surveys, audits of health services. • Qualitative and survey-based research with consumers who are interacting with health services.

PUTTING THE FRAMEWORK INTO PRACTICE

4

This section provides examples of how the Framework could be applied in practice. While the examples are based on musculoskeletal conditions, they are equally relevant to other non-communicable diseases.

Three scenarios are described, which demonstrate application of the three streams of the Framework. Following each scenario is a schematic of the process described.

EXAMPLE SCENARIOS

1. Using the Framework to judge the readiness of a Model of Care for osteoarthritis

2. Using the Framework to assess preparedness for implementation or prepare for implementation

3. Using the Framework to judge the success of a Model of Care for osteoporosis

SCENARIO 1: USING THE FRAMEWORK TO JUDGE THE READINESS OF A MODEL OF CARE FOR OSTEOARTHRITIS

The Department of Health in a particular jurisdiction has identified the need to address the rising burden of disease associated with hip and knee osteoarthritis (**OA**) in the community. An expert group of clinicians and other stakeholders have developed a MoC for osteoarthritis and are keen to implement it.

Given the limited resources for new health services and programs and diverse views and practices on the management of OA, the development group is concerned about how the MoC will be accepted and supported by the local healthcare sector. The group refers to the Readiness stream of the Framework to benchmark the content of their MoC and the processes undertaken to develop it.

From a process perspective, the Readiness stream can be considered in three phases:

1. Target and address a local health issue (Figure 7) inclusive of:
   - **1.1** defining and describing the problem
   - **1.2** mapping the evidence
   - **1.3** developing preliminary recommendations.
2. Establish a consultation network (Figure 8).
3. Deliver a Model of Care document based around a consumer's journey (Figure 9).

Phase 1: Target and address a local health issue

1.1: Defining and describing the problem

✓ Clearly define the local health issue to be addressed – in this case hip and knee OA.

✓ Describe the problem based on local and national data and issues of importance to local consumers and service providers.

✓ Inform this 'case for change' based on thorough consultation with a range of stakeholders (e.g. consumers/carers, clinicians, consumer advocacy group, policy makers, researchers, service providers).

1.2: Mapping the evidence for addressing the health problem, in this case OA. Describe *what* care should be provided and *how* it should be delivered.

Relevant evidence is likely to include a mix of the following, according to what is available and feasible locally:

- Established standards for service safety and quality for OA (e.g. those produced by eumusc.net and reported recently).[20]
- Beliefs and attitudes of local service providers regarding OA co-care (e.g. important components of a care pathway).
- Searching for what has worked elsewhere (e.g. other countries) and what might be some future developments (horizon scan) in therapies, workforce roles, programs or interventions for OA e.g. physiotherapy triage roles.
- Best practice based on high-level research evidence (for example, meta-analyses, systematic reviews, randomised controlled trials) for OA.
- Local audits and experience to identify what works locally for OA.
- Describe how the consumer journey might be improved, particularly as it relates to pathways between services and the important components of care (e.g. process of referral from primary care to other service providers).

1.3: Developing preliminary recommendations

For example:

- All patients diagnosed with OA should receive education about exercise and weight loss.
- Multidisciplinary teams should manage advanced OA.

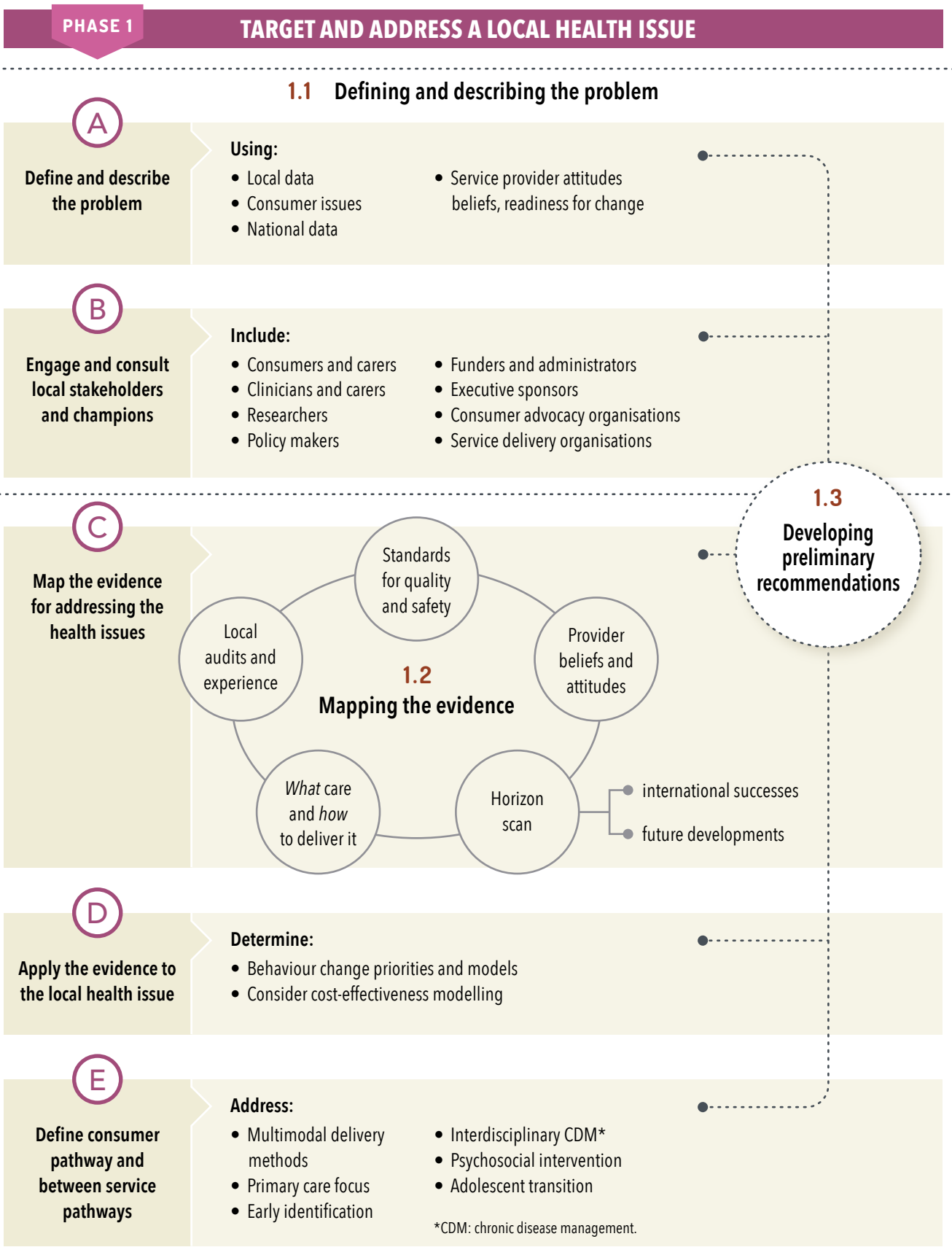

Figure 7: Schematic of Readiness Stream Phase 1 involving targeting a local health issue, mapping evidence and developing preliminary recommendations.

Phase 2: Establish a consultation network

- Identify and engage a broad range of stakeholders across the health sector, inclusive of consumers and carers, who can comment on:
  - the consumer pathways described for OA
  - recommendations for service and resource improvements (see 1.3).
- Where relevant, stakeholders of different ages, socioeconomic status and geographies should be consulted.
- The recommendations should specify *what* care should be provided and *how* it should be delivered.
- Identify and engage with local champions who can help drive local consultation efforts.
- Consult with these stakeholders on the draft MoC for OA and iterate according to feedback. For example, stakeholders may seek further clarification on workforce roles.

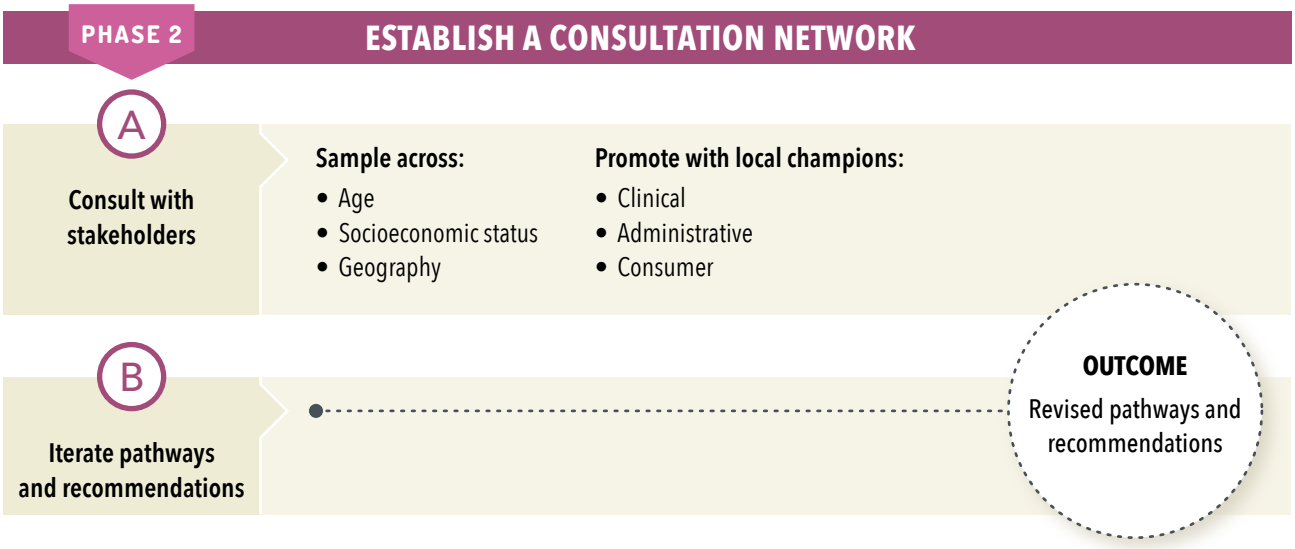

Figure 8: Schematic of Readiness Stream Phase 2 involving establishing a consultation network and iteratively refining recommendations for the MoC.

Phase 3: Deliver a Model of Care document based around a consumer's journey

- The final Model of Care document for OA is based on the cumulative output of Phases 1 and 2 and framed around a consumer journey.
  - For example, the Model of Care describes components of care from diagnosis to end-stage disease management, inclusive of resources and interventions to assist the person with OA.
- Ideally, the document should contain specific components:
  - Aims and scope.
  - Consumer KPIs such as access to care, wait times.
  - System-relevant KPIs such as cost per episode of care.
  - Data-driven case for change such as metrics around prevalence, impact and costs of care.
  - A locally-informed commentary around current systems and behaviours.
  - A commentary around how the proposed MoC aligns with jurisdictional health policy, chronic disease management frameworks etc.
  - Clear recommendations, prioritised for implementation, describing *what* care and *how* it should be delivered.
- The Model of Care should ideally be publicly endorsed by an authorising agency (e.g. government department) and a consumer version should be made available.

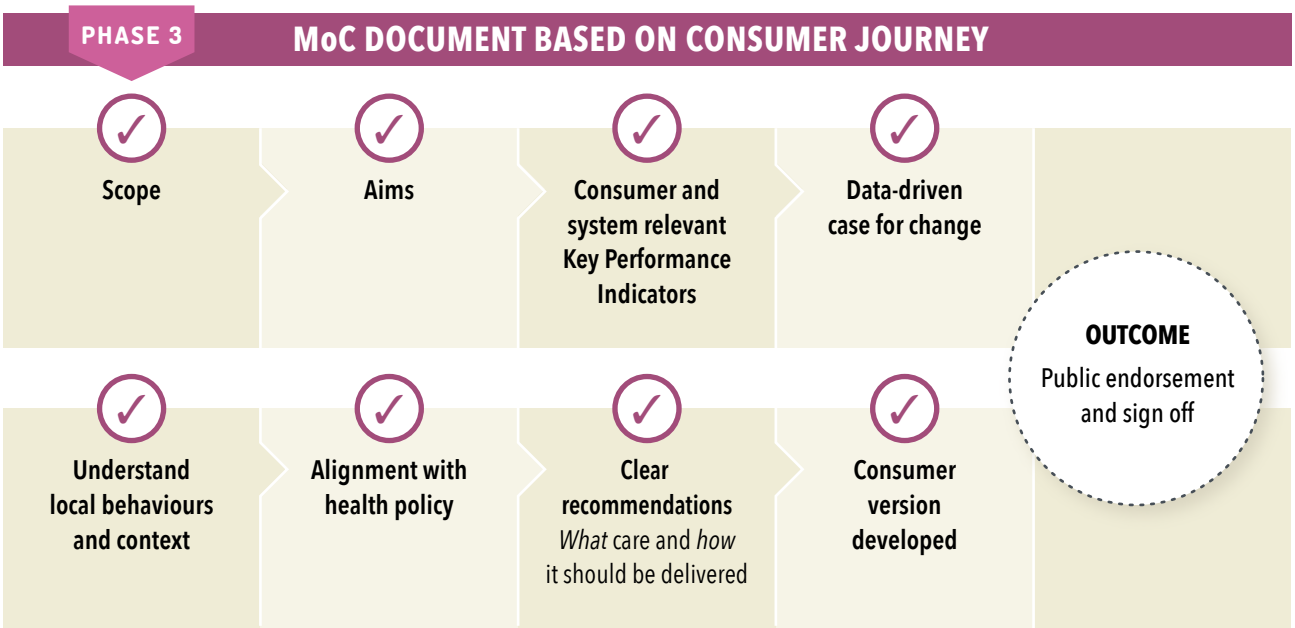

Figure 9: Schematic of Readiness Stream Phase 3 outlining recommended components of the final MoC document.

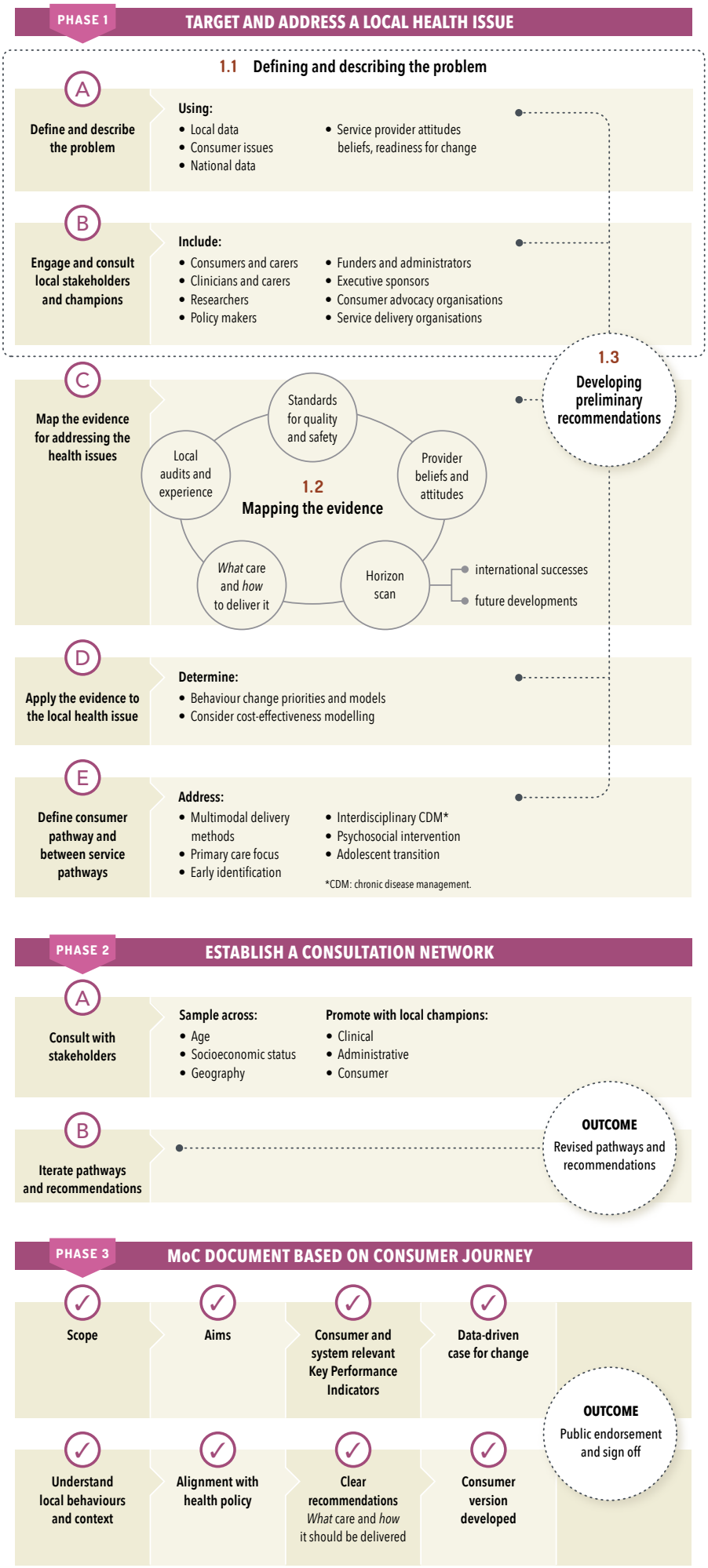

Figure 10:
Schematic of Readiness Stream Phase 3 outlining recommended components of the final MoC document.

SCENARIO 2: USING THE FRAMEWORK TO ASSESS PREPAREDNESS FOR IMPLEMENTATION OR PREPARE FOR IMPLEMENTATION

A MoC has been developed to improve care for people living with chronic back pain. Having considered the Readiness stream of the Framework and deemed the development process for the MoC to have been optimal, the developers now wish to prepare for its implementation within their local health system.

Initiating implementation of the MoC is primarily based on developing an appropriate implementation plan for local users.

This is informed by a formative evaluation/pilot studies **(Phase 1)** to assess the local feasibility of the MoC and key performance indicators identified for evaluation purposes (see Figure 11).

The implementation plan should provide guidance for the development of detailed business cases or project management plans to enable local users to implement components of the MoC (Phase 2).

- **Phase 2A:** Prepare an implementation plan (Figure 12).
- **Phase 2B:** Prepare local business cases or project management plans (Figure 13).

Phase 1: Formative evaluation

After developing the MoC, a formative evaluation is undertaken to consider:

- The development process of the MoC.
- Any likely barriers and enablers to implementation.
- Cost modelling related to the MoC.
- The feasibility of key performance indicators.

This information informs the development of an Implementation Plan for the MoC.

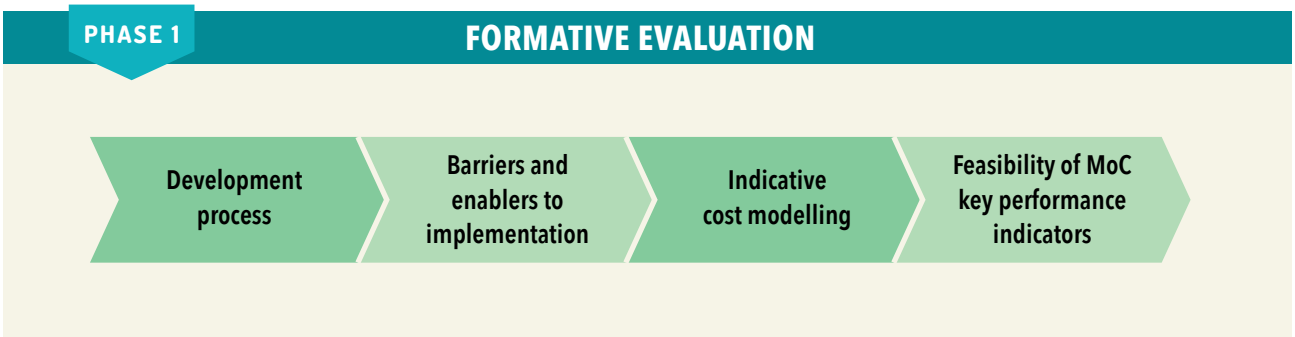

Figure 11: Elements of formative evaluation to assess local feasibility of the MoC

Phase 2: Enable local users to implement components of the MoC

Phase 2A: Prepare an implementation plan

The Implementation Plan should consider:

- Judging the likely readiness of the local health system to implement the MoC:
  - particularly as it relates to the will of the sector, infrastructure and resourcing and workforce capacity requirements (e.g. appropriate training in pain management).
- Determine requirements for data collection systems.
- Partnership opportunities (e.g. conjoint employment between a hospital and community health service).
- Costs required for implementation (e.g. salary triage officers).
- A plan for ongoing consultation with stakeholders.
- Further iterations of the Plan based on consultation with stakeholders and findings from formative evaluations.

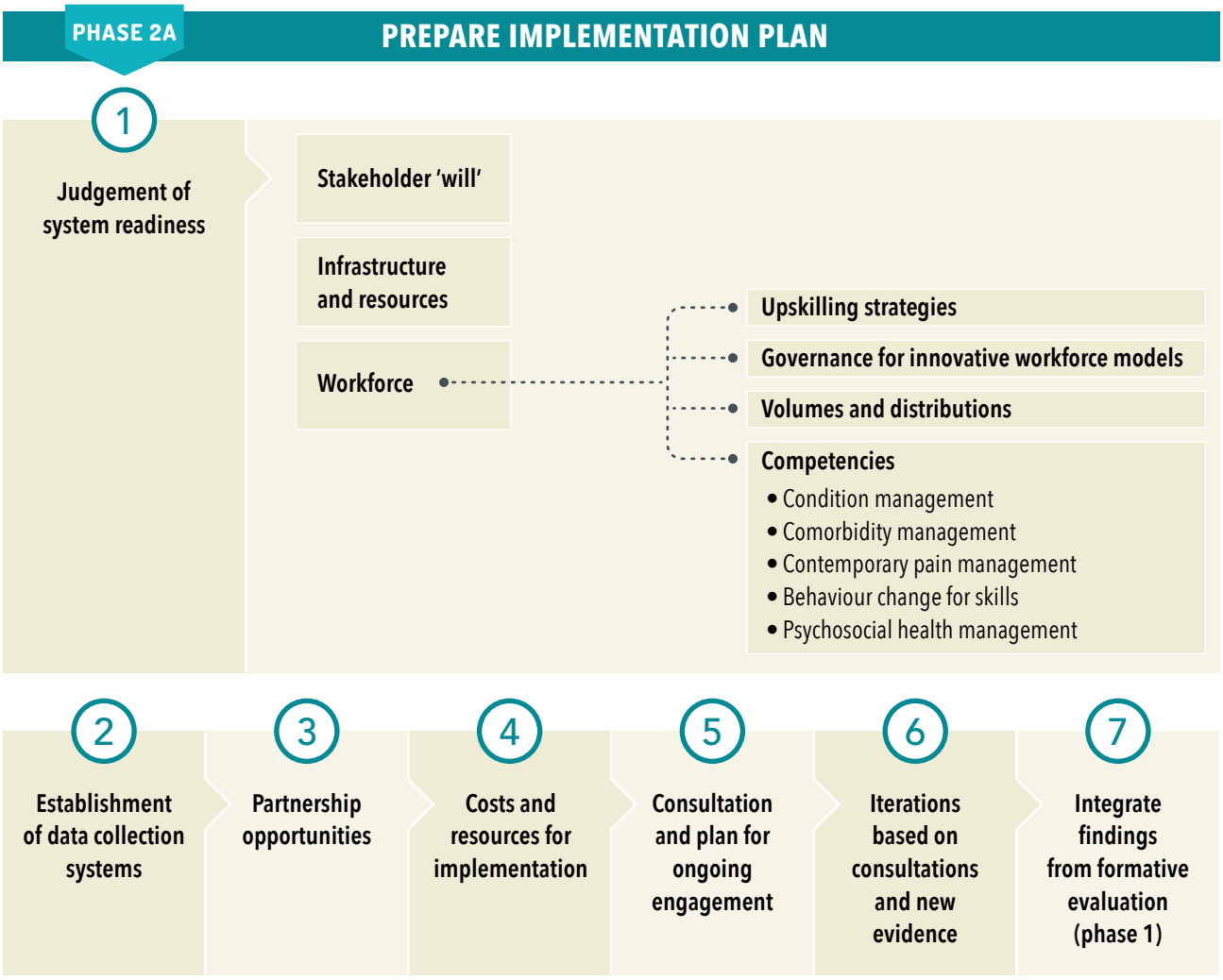

Figure 12: Schematic of Phase 2A of the Initiating Implementation Stream illustrating components in the development of an implementation plan.

Phase 2B: Prepare local business cases and project management plans

The Implementation Plan is used to inform detailed operational plans for local settings in the form of business cases and project management plans.

- For example, the establishment of a local triage process for people presenting to emergency departments with back pain.

The implementation of the MoC is likely to be most successful when local business and project management plans consider and establish key enablers including:

- Data collection systems, e.g. systems to track pain and disability outcome measures for consumers with back pain.
- Clinical tools, e.g. imaging/opioid guidelines for general practitioners.
- Upskilling strategies for the workforce – (e.g. professional development opportunities related to self-management support) and consumers (e.g. consumer website about effective pain management options).
- A communication strategy about the MoC to inform local stakeholders.
- Support for implementation by a central agency or User Reference Group.
- Guiding principles described in the Implementation Plan.
- Clearly outlined indicators to measure effectiveness (e.g. function for consumers and reduced system costs for misuse of imaging/opioids).

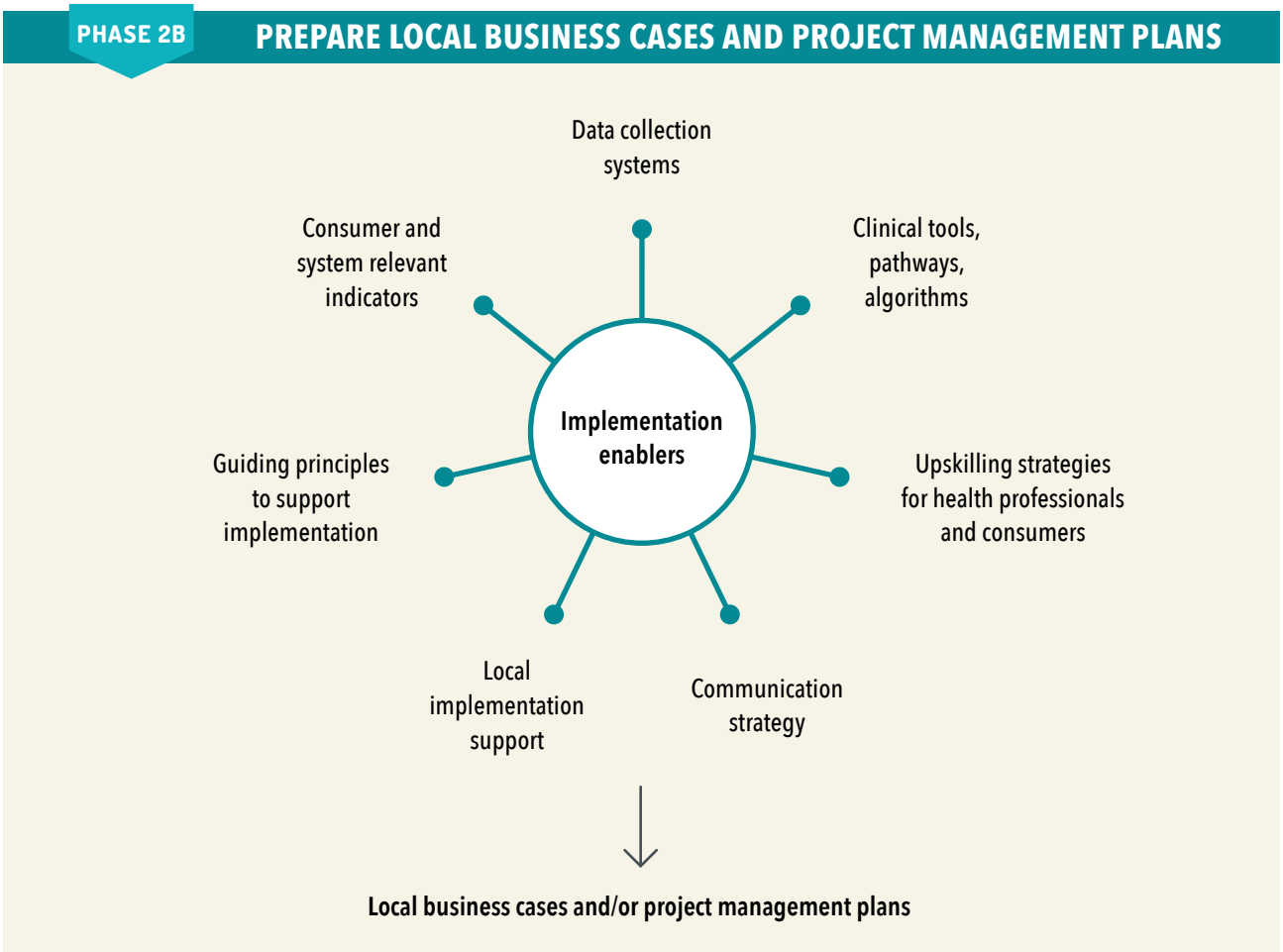

Figure 13: Schematic of Phase 2B of the Initiating Implementation Stream focusing on the development of local business cases and project management plans, informed by the Implementation Plan.

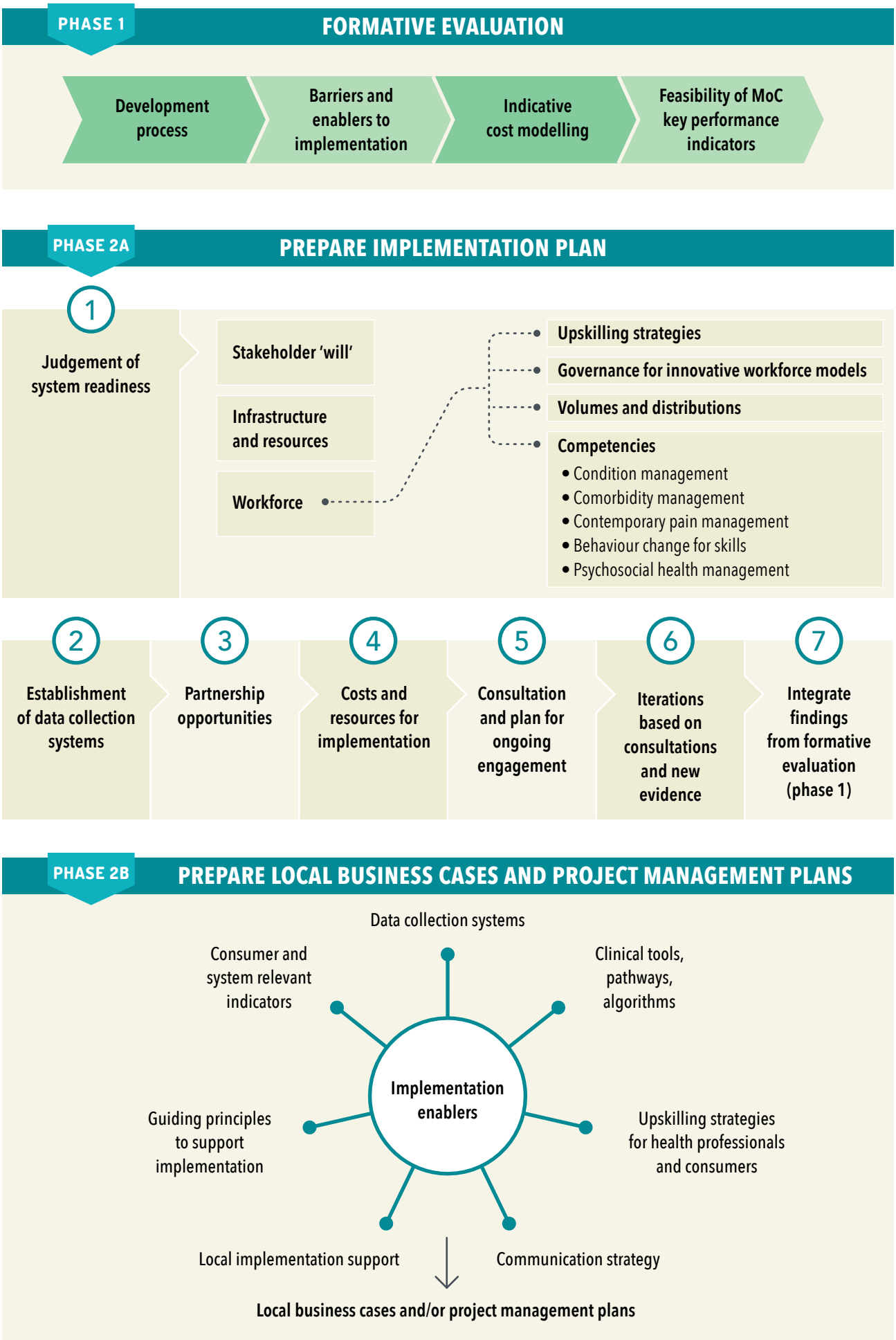

Figure 14: Composite schematic of Initiating Implementation Stream

SCENARIO 3: USING THE FRAMEWORK TO JUDGE THE SUCCESS OF A MODEL OF CARE FOR OSTEOPOROSIS

A MoC for osteoporosis has been implemented across tertiary hospitals in a health area for a number of years.

The MoC is based around identification and management of minimal-trauma fractures using a Fracture Liaison Service. The service was identified as a strategy by local stakeholders and informed by international best practice models[21,22]. Having supported the MoC for a number of years, health administrators now wish to understand whether the MoC has been successful.

Having established local data collection systems as part of the implementation preparation phase (refer to scenario 2), impact evaluations are now undertaken. Three components should be considered in the judgement of success:

1. Undertaking impact evaluation, inclusive of:
   - **1.1** Measurement of system-relevant indicators of success.
   - **1.2** Measurement of consumer indicators of success.
2. Ongoing implementation quality assurance.
3. Sector-based indicators of success.

1: Establishment of local data collection systems for impact evaluation

- As part of the Initiating Implementation Stream, local data collection systems and processes should be established (refer to scenario 2).
- These systems should be able to measure system and consumer-relevant indicators of success through pragmatic, mixed-methods approaches in impact evaluations.

1.1: Measurement of system-relevant indicators of success

- Partnerships, e.g. between hospitals and osteoporosis support organisations.
- Costs, e.g. system costs for re-fracture admissions[23] and orthopaedic surgeries.
- Service use, e.g. re-admissions for fractures.
- Workforce roles, e.g. establishment of Fracture Liaison Services across sites.
- Behaviour changes, e.g. screening and management for osteoporosis after minimal trauma fracture.
- MoC in routine business, e.g. the extent to which Fracture Liaison Services are implemented across a system in a recurrent manner.

1.2: Measurement of consumer outcomes

- Consider consumers' experience with health services and components of care on the service pathway (e.g. wait time to surgery).
- Ease of access to services (e.g. access to bone densitometry).
- Consumer-relevant health outcomes (e.g. measured via survey).

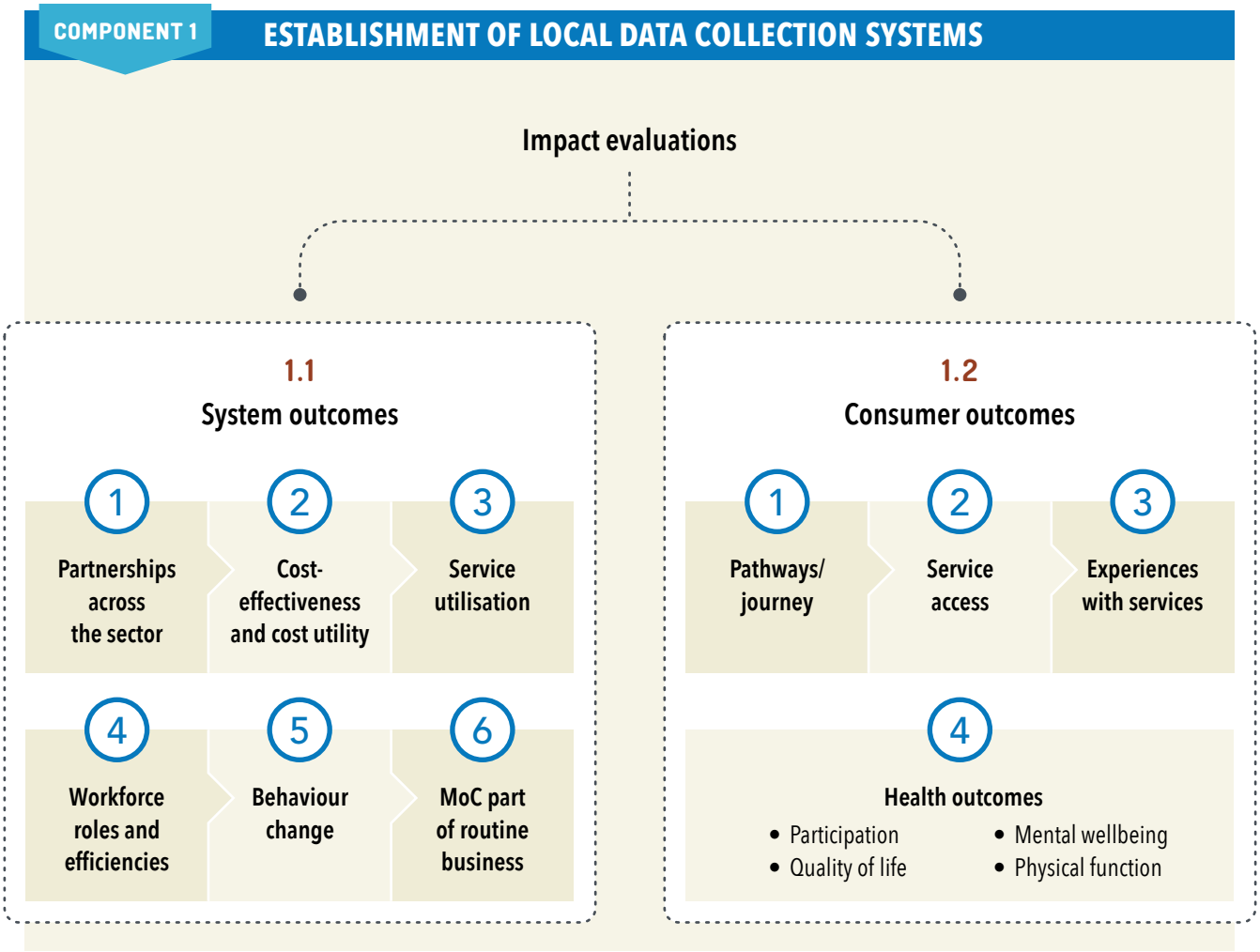

Figure 15: Schematic of component 1 of the Success Stream identifying relevant system and consumer-relevant indicators of success.

Component 2: Ensure ongoing implementation quality assurance

- Establish a multidisciplinary and clinically-led User Reference Group (**URG**) (refer to Initiating Implementation Stream, Figure 14) to support implementation efforts.
- The URG should update the Implementation Plan and MoC based on:
  - new evidence
  - feedback from stakeholders
  - audits of the consumer pathway (e.g. from fracture presentation to screening and management of osteoporosis).

Component 3: Determine whether sector-based indicators of success have been observed

Relevant indicators may include:

- Awareness of the MoC (e.g. fracture liaison services) by local providers.
- The MoC is used as a resource (e.g. for service planning at other sites).
- Identifying research priorities (e.g. long term cost-effectiveness of Fracture Liaison Services).
- Satisfaction among stakeholders (e.g. referrals from emergency departments to fracture clinics).
- Adaptability of the MoC to different settings, such as rural settings.[24]
- Evidence that the target population has benefited (e.g. the re-fracture rates rate per head decline in the long term).

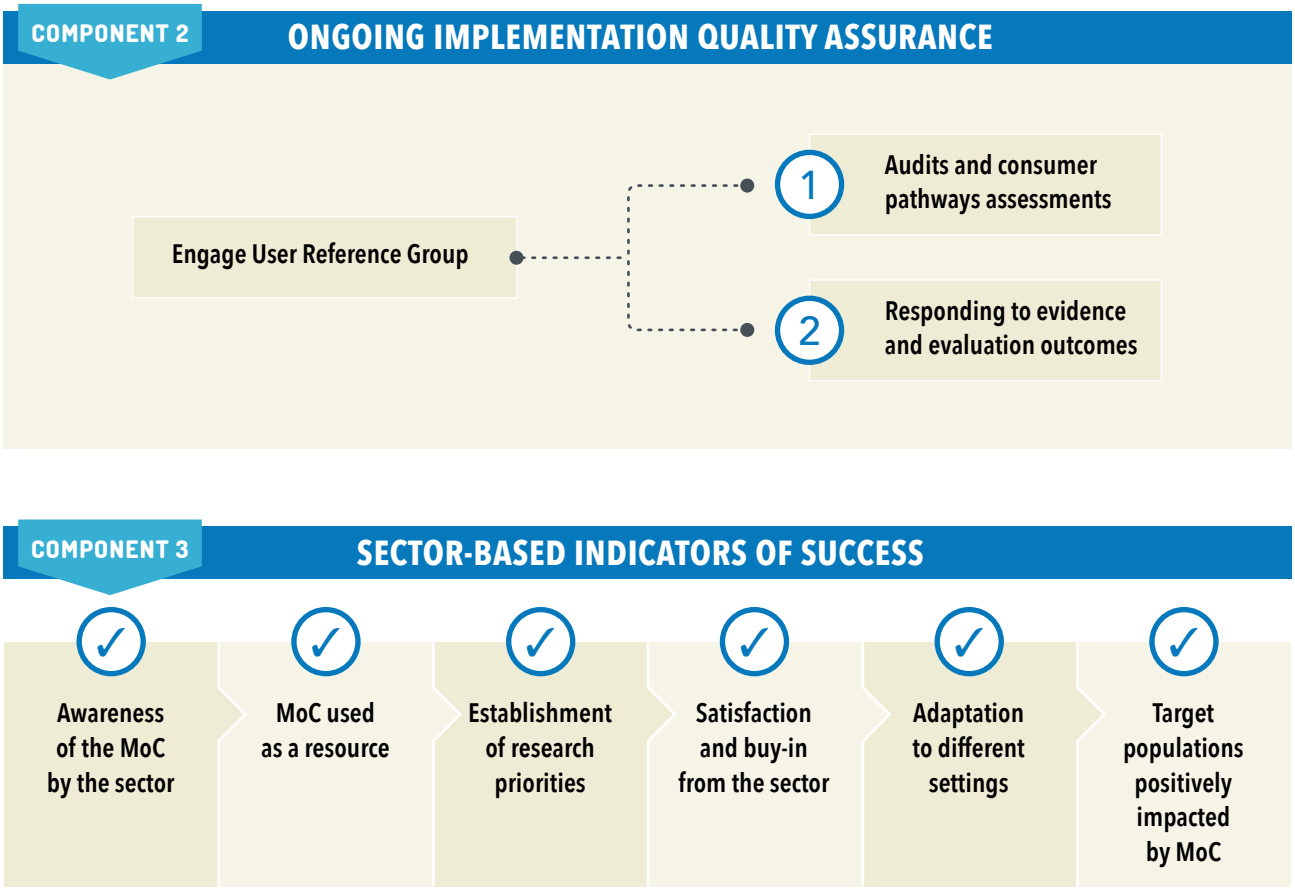

Figure 16: Schematic of components 2 and 3 of the Success Stream outlining a User Reference Group (**URG**) to support implementation quality assurance and indicators of sector-based success of the MoC.

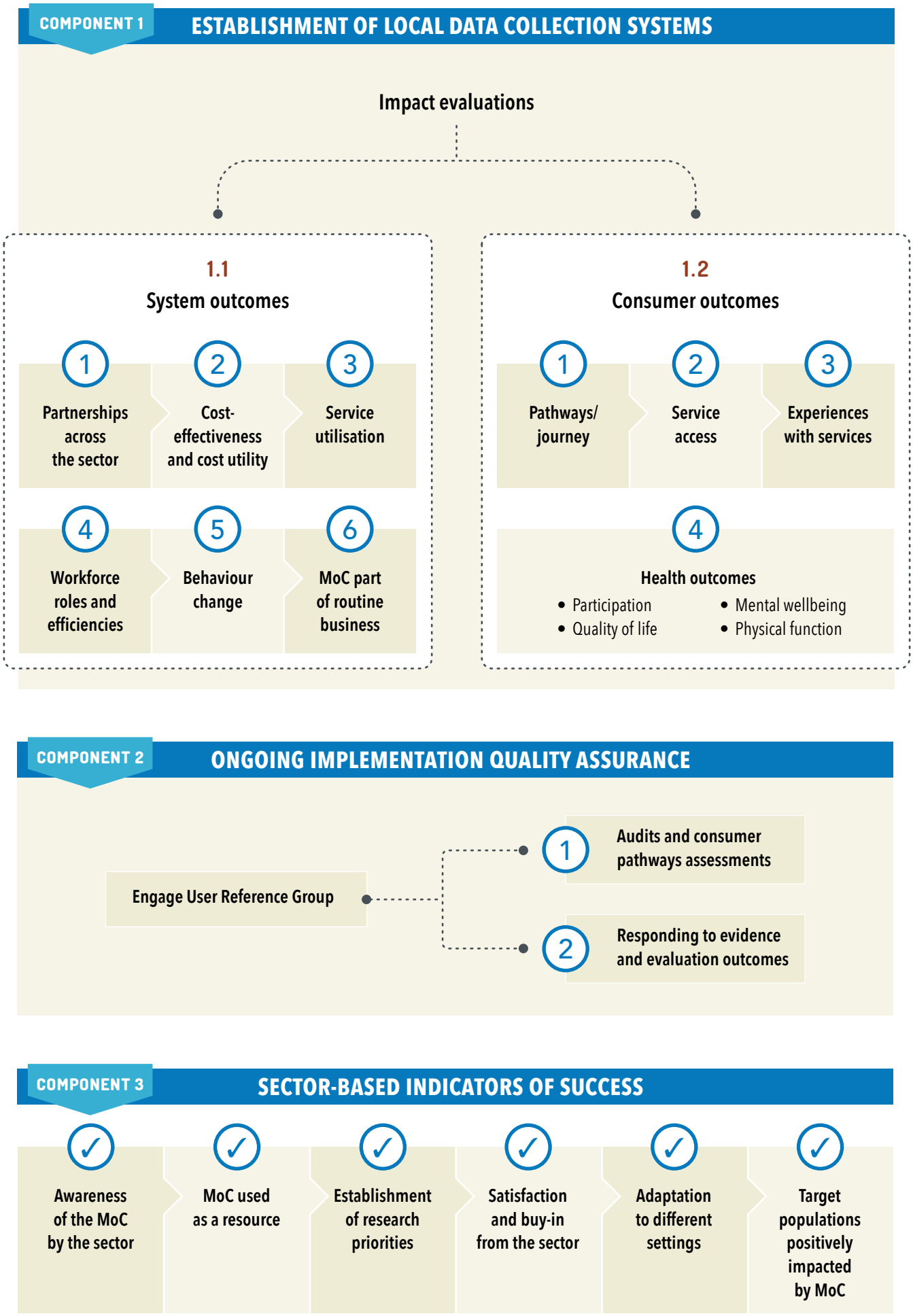

Figure 17: Composite schematic of Success Stream

5 SUPPORTING INFORMATION

DEFINITIONS OF TERMS

Champion: influential individuals who are recognised opinion leaders or 'change agents' in their community or profession, or individuals who are invested in health reform initiatives and can advocate effectively for change.

Co-care: refers to a co-operative approach to care delivery and evaluation undertaken between a health professional(s) and the consumer of the care, together with their family or guardians.

Consumer: any actual or potential recipient of healthcare (e.g. patient in hospital, client in a health centre, person seeking health information via the Internet). In this context, the term 'consumer' does not relate solely to a monetary transaction for a health service.

Cost-effectiveness: analysis that compares the relative costs and outcomes of different Models of Care. In this way, cost is balanced against health outcomes.

Consumer outcome/consumer-centred: an outcome relevant to a consumer of a health service or resource, such as a patient. Consumer-centred outcomes typically include function, quality of life and satisfaction with health services.

Cost shifting: moving or reallocating a cost from one part of the health system to another. Therefore, cost shifting does not infer a cost saving.

Disability Adjusted Life Year (DALY): A measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.

Delphi: a research method involving a structured communication approach with a panel of subject matter experts to explore issues around a topic and sometimes reach a consensus.

End user: an individual or organisation who uses a resource or product after it has been fully developed.

Formative evaluation: a method for judging the worth of a program, while the program activities are forming (in progress). Formative evaluation assesses program design, early implementation and associated outcomes and is generally undertaken before a program is implemented across a system. A formative evaluation is sometimes conducted on a pilot of a Model of Care in a selected site(s), or on the first phase of implementation. The data and findings from a formative evaluation can be used:

- As the basis to determine the impact that a Model of Care might have if it was systematically implemented.
- To further refine the Model of Care by establishing early outcomes arising from programs and to identify areas requiring improvement.
- To enhance the probability of achieving program outcomes in the short, medium and longer term[25].

Framework: a structure that underlies and integrates a set of concepts or principles in a meaningful way to allow use by others.

Horizon scan: a non-systematic review, informed by experts, of likely future initiatives that will influence the Model of Care. Examples include new therapies for treating diseases, new workforce roles, new programs or policies.

Impact evaluation: an assessment of how the intervention being evaluated influences outcomes, whether these effects are intended or unintended. An impact evaluation forms part of a summative evaluation which assesses the quality, outcomes and impact of a Model of Care[25].

Implementation science: the study of methods to promote the uptake of research findings into routine healthcare policy and practice.

Key Performance Indicator (KPI): metric used to define and measure progress towards achieving an objective, outcome or goal. KPIs are objective and quantifiable and often time-based.

Model of Care (MoC): is a person-centred and principle-based guide, usually presented as a document, that describes evidence-informed, best practice care for particular health conditions (in this case, musculoskeletal conditions). It outlines *what* care should be provided and *how* it should be delivered. A Model of Care is not an operational plan for a health service or a clinical practice guideline. MoCs are usually implemented as health services at a local level.

Non-communicable disease (NCD): condition or disease that is non-infectious or non-transmissible. NCDs usually refer to chronic diseases that last for long periods of time and progress slowly.

Practice enablers: tools, strategies, resources or systems that equip providers to deliver best practice care.

Patient Reported Outcomes Measurement Information System (PROMIS): It is a system of highly reliable, precise measures of patient–reported health status for physical, mental, and social well–being (see http://www.nihpromis.org/about/overview).

Quality Adjusted Life Year (QALY): A generic measure of disease burden, including both the quality and the quantity of life lived. It is used in assessing the value for money of a health intervention and forms part of a cost utility analysis.

Qualitative methods: a research approach that aims to explore in detail an audience's range of behaviours and the perceptions that drive them, with reference to specific topics or issues. A range of methods can be undertaken, such as interviews and focus groups.

Readiness: the extent to which a Model of Care is ready for implementation, based on specific development processes.

Randomised Controlled Trial (RCT): a gold standard research design to assess the effectiveness of an intervention where people being studied are randomly allocated to either a group that receives an intervention or to a comparison group.

Subject matter expert: a person who is an authority in a particular area or topic.

Success: the extent to which the desired consumer and system-relevant outcomes have been achieved after a Model of Care has been implemented.

System outcome: an outcome relevant to the health system function or governance. The outcomes generally relate to service use, service funding and workforce.

Years Lived with Disability (YLD): a measure of disability or morbidity that characterises the number of years of productive life lost due to disability. For further information, see: http://www.who.int/healthinfo/global_burden_disease/metrics_daly/en/.

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