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### What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists

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<td>Complete List of Authors:</td>
<td>Gleadhill, Connor; The University of Newcastle, School of Medicine and Public Health; New South Wales Regional Health Partners Dooley, Katherine; Charles Sturt University, School of Health Sciences Kamper, Steven; University of Sydney School of Public Health, Musculoskeletal Health Sydney; Centre for Pain, Health and Lifestyle, Manvell, Nicole; NUmoves Physiotherapy Corrigan, Michael; Atune Health Centres Cashin, Aidan; University of New South Wales Faculty of Medicine, Prince of Wales Clinical School; Neuroscience Research Australia, Birrell, Andrew; Hunter New England Local Health District Donald, Bruce; Hunter New England Local Health District, John Hunter Hospital Physiotherapy Leyland, Murray; Thornton Physiotherapy Delbridge, Andrew; Regent Street Physiotherapy, Barnett, Chris; ORS Group Renfrew, David; Newcastle Performance Physiotherapy Lamond, Steven; Newcastle Knights Boettcher, Craig; The University of Sydney, Faculty of Medicine Chambers, Lucia; The University of Newcastle, School of Medicine and Public Health Maude, Travis; Advanced Physiotherapy Davis, Jon; PhysioStudio Hodgson, Stephanie; Hunter New England Local Health District Makaroff, Andrew; Employers Mutual Limited Wallace, James; PhysioStudio Kotrick, Kelly; Newcastle Performance Physiotherapy Mullen, Nicholas; Ethos Health Gallagher, Ryan; Honeysuckle Health Zelinski, Samuel; NUmoves Physiotherapy Watson, Toby; The Good Physio Davidson, Simon; The University of Newcastle, School of Medicine and Public Health; Hunter New England Local Health District, Population Health Viana Da Silva, Priscilla; The University of Newcastle, School of Medicine and Public Health; Hunter New England Local Health District, Population Health Mahon, Benjamin; Unified Health Delore, Caitlin; Regent Street Physiotherapy Manvell, Joshua; Hunter New England Local Health District</td>
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<td>Williams, Christopher</td>
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<td>Sydney, School of Health Sciences</td>
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**Keywords:**
- Musculoskeletal disorders < ORTHOPAEDIC & TRAUMA SURGERY
- Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT
- PRIMARY CARE
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What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists

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17 - Newcastle Aquatic Physiotherapy, Australia
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22 - Honeysuckle Health, Australia
23 - The Good Physio, Australia
24 - Unified Health, Australia
25 - APM Workcare, New Zealand
26 - Terrace Physio Plus, Australia
27 - Kinetic Sports Physiotherapy, Australia
28 - Recovery Partners, Australia
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Abstract:

Objectives:
To develop a physiotherapist-led consensus statement on the definition and provision of high-value care for people with musculoskeletal conditions.

Design:
We performed a three-stage study using RAND/UCLA methodology. We reviewed evidence about current definitions through a rapid literature review and then performed a survey and interviews with network members to gather consensus. Consensus was finalised in a face-to-face meeting.

Setting:
Australian primary care.

Participants:
Registered physiotherapists who are members of a practice-based research network (n=31).

Results:
The rapid review revealed two definitions, four domains of high value care and seven themes of high-quality care. Online survey responses (n=26) and interviews (n=9) generated two additional high-quality care themes, a definition of low-value care, and 21 statements on the application of high value care. Consensus was reached for three working definitions (high value, high quality, and low value care), a final model of four high value care domains (high-quality care; patient values; cost effectiveness; reducing waste), nine high quality care themes and 15 statements on application.

Conclusion:
High value care for musculoskeletal conditions delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. High quality care is evidence-based, effective, and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems.
Strengths and limitations of this study:

- This study used RAND/UCLA methodology to reach consensus and established protocols a priori.
- This study was co-produced with a research network of physiotherapists, who predominantly work in private practice.
- The perspectives included in this study may not be representative of all physiotherapists; the research network may share similar biases towards certain elements of care and a minority of participants were female.
- In step two, we may not have captured an accurate level of consensus in step two because we asked whether participants would change or add anything without explicitly asking whether they agreed to individual domains or themes.
- In step three, voting was not anonymous, and four participants left the meeting before statement fifteen (on Equitable care).

Key points:

What is already known:
- Physiotherapists should deliver high value care, however applying high value care is difficult due to ambiguity about what it is and how to deliver it.
- There is no consensus on the definition of high value care for musculoskeletal conditions.

What this study adds:
- We provide a definition of high value care for musculoskeletal conditions informed by clinician’s perspective.
- We provide accompanying statements to assist clinician’s application of high value care.

Clinical takeaways:
- Applying high value care involves considering four domains that contribute to value (high-quality care, patient values, cost effectiveness, and reducing waste). High quality care comprises nine themes; safe, connected, consistent, patient centred, evidence-based, timely, equitable, effective, and accountable.

Research takeaways:
- Future research should involve patients’ and other stakeholders’ perspectives on the definition of high value care for musculoskeletal conditions.

Policy takeaways:
- Our study data provides a framework through which policy makers can collaborate with clinicians to establish relevant benchmarks that incentivise high value care.
Introduction

Musculoskeletal conditions are prevalent and are the leading cause of years lost to disability worldwide (1, 2). Due to population growth and ageing, the global musculoskeletal burden is predicted to increase (1-5). Healthcare spending associated with musculoskeletal care typically outstrips spending on other health conditions (6-10). To address the growing musculoskeletal burden, there are increasing calls to provide high value care (11-15). High value care aims to provide cost-effective care that optimises patient outcomes (16). All health care professionals, including physiotherapists, should aim to deliver high value care, (17-19).

Definitions of high value care have lacked input from a number of perspectives, including the people who are tasked with delivering it. There is a great deal of literature that attempts to define care that is value-based (11, 14-16, 20-24). However, these definitions typically provide broad overarching frameworks with few tangible actions that individual clinicians take to improve the value of their care (11, 14-16, 20-24). Most definitions of high value care are not specific to musculoskeletal conditions or physiotherapy care (20-22, 25, 26). There is no consensus on the definition of high value musculoskeletal care for physiotherapists. Where literature is specific to physiotherapy, terms like high quality care, or evidence-based care are often conflated or used synonymously with high value care (13, 17, 18, 27-29).

Without input from clinicians about high value care and how it applies to practice, definitions may lack clinically applicable information and any intended impact on care delivery is unlikely to be realised.

Objectives:

We aimed to develop a physiotherapist-led consensus definition for, and statements about the provision of, high value care for musculoskeletal conditions. This study comprised three stages.

For stage one, we aimed to:
1. Synthesise the definitions currently used for a) high value care and b) high quality care in physiotherapy for musculoskeletal conditions.
2. Identify themes that are common across the definitions.
3. Develop draft definitions of high value care, and high-quality care for musculoskeletal conditions.

For stage two, we aimed to:
1. Gather feedback from physiotherapists in practice about our results from stage one.
2. Generate draft statements about how physiotherapists provide high value care in practice.

For stage three, we aimed to:
1. Agree upon final definitions and application statements among the participating physiotherapists via a consensus process.

Methods

We performed a three-stage study, which used adapted methods of the Research And Development/University of California Los Angeles Appropriateness Method (RAND) (Figure 1) (30). The RAND method was most appropriate for this study because it allows an expert
panel to discuss the results of each round through survey and a face-to-face meeting (30, 31). Our full study protocol is available on Open Science Framework at https://osf.io/hdufv/ (32).

[Insert Figure 1]

**Panel selection**

For all study stages, participants were members of a practice-based research network of physiotherapists in the Hunter Region of New South Wales, Australia (Table 1). We included participants if they were: 1) a network member and 2) a registered physiotherapist (not all network members are registered physiotherapists). Network members are clinicians who provide care for people with musculoskeletal conditions. Network members were also involved as working group members who assisted in data interpretation and contextualisation.

### Table 1: Panel selection, participant characteristics

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Group description, aim, composition, and contribution</th>
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</thead>
<tbody>
<tr>
<td>Review working group</td>
<td>8</td>
<td><strong>Description:</strong> This group is a subsection of network members who progressed the network’s research priorities, particularly around improving the quality of care for people with musculoskeletal conditions. This group met 5 times between August and November 2021.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Aim:</strong> This group aimed to co-produce a review that attempted to understand the terms high quality and high value care for musculoskeletal conditions.</td>
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<td></td>
<td></td>
<td><strong>Composition:</strong> Two females, six males, and nil non-binary. Three clinicians (BD, DR, NM, mean age 49; mean experience level 21 years (minimum 15 years, maximum 27 years), five clinician-researchers (CG, CW, KD, SD, PDS).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Contribution:</strong> All group members refined our initial research questions. CG, BD, CW, and KD performed searches and screened sources. CG extracted and analysed data. All group members contributed to data interpretation and created the original definitions, model, domains, and themes.</td>
</tr>
<tr>
<td>Consensus working group</td>
<td>9</td>
<td><strong>Description:</strong> This group is a subset of network members who undertook stage two research activities, which also provided research capacity building in our network. This group met 4 times between January and March 2022.</td>
</tr>
<tr>
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<td></td>
<td><strong>Aim:</strong> This group aimed to gather feedback from the wider network about our initial definitions, domains, themes and model of high value care for musculoskeletal conditions.</td>
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<tr>
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<td></td>
<td><strong>Composition:</strong> Two females, seven males and nil non-binary. Two clinician-researchers (CG) and eight clinicians (KK, MC, NMu, NM, NB, RG, SZ, mean age 26; mean experience level 6 years (minimum 1 year, maximum 13 years).</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Contribution:</strong> CG led data collection; KK performed one interview. All group members recruited participants for stage two. CG led data transcription; NB transcribed one interview. CG and RG coded survey data, CG led interview data coding. CG led analysis and category development, all members contributed to category development, domains, theme generation and refinement.</td>
</tr>
<tr>
<td>Consensus meeting group</td>
<td>16</td>
<td><strong>Description:</strong> This group consists of the eligible network members who attended the face-to-face consensus meeting.</td>
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<td><strong>Aim:</strong> This group aimed to agree (or disagree) on proposed additions and changes to the original model and accompanying statements on the application of high value care.</td>
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<tr>
<td></td>
<td></td>
<td><strong>Composition:</strong> Four females, 12 males, nil non-binary (mean experience level 18 years; minimum 4 years, maximum 34 years).</td>
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</tbody>
</table>
Network members (eligible to partake in the study) 31

Description: This group is the larger group of network members who provided their feedback on the original model.

Aim: The intent was to consult this group to inform changes to the model and understand physiotherapist’s perspectives on providing high value care for musculoskeletal conditions.

Composition: Seven females, 23 males, nil non-binary. 25 Members are private practice clinicians, representing 18 private practice clinics from the Greater Newcastle area of Hunter Region, NSW, Australia. Six members work in the public health system, representing the local health district (Hunter New England Local District).

Steering Committee 12

Description: This group provides high level strategic oversight to network activities and consists of physiotherapists, and other stakeholders for network operations.

Aim: This group aimed to approve the initial conceptual model and provide guidance on survey questions.

Composition: Three females, nine males, nil non-binary. Six members work primarily as clinical physiotherapists (five in private practice), three members are clinician-researchers, one is a medical doctor, one is a health service manager, and one is a rehabilitation provider.

*One participant left after accompanying statement 4, and two more participants after accompanying statement 14.

Stage one: Evidence review

We undertook a rapid review of the literature to assess existing definitions of high value and high-quality care.

We searched three databases (Medline, Embase and Cinahl) using terms for value, quality, and other synonyms, along with musculoskeletal and physiotherapy (33, 34). We used article reference lists, and internet search engines to pursue other sources and grey literature (34). Authors (CG, BD, CW) independently screened articles in duplicate. We thematically analysed data to establish common themes and develop draft definitions (35). We refined definitions, themes, and developed a conceptual model by discussing the relationship between themes.

Use of results

We provided an interim report of our review results to all participants (online supplement 1) who provided their feedback in stage two.

Stage two: Network feedback

Participants provided their feedback on the definitions, themes, and conceptual model from stage one through online surveys and individual semi-structured interviews.

Recruitment and data collection

We emailed all eligible participants (n=31, Table 1) the interim report, which included an invitation to complete a survey and volunteer for an interview. In the survey, participants provided data through Google Forms (Google, Alphabet Inc). Survey questions included: whether participants thought any changes needed to be made; participants’ general perspectives on high value care; and what themes they would prioritise in clinical practice (Appendix 1).
We held and recorded online interviews through Zoom (36). In the interviews, we asked participants about the application of high value care from their clinical experience using the domains and themes from stage one as a discussion guide (Appendix 1) (37).

**Data analysis**

We cleaned and transcribed interviews onto Google documents (Google, Alphabet Inc). Two authors coded survey data (CG and RG) (38), and CG coded all interview transcripts. Where participants answered the survey and took part in an interview, these data were coded as one case (38). We brought similar codes together to form categories and themes (39), using the original high value care model as a conceptual framework for theme development (40, 41). We aimed to generate themes in the form of a) additions or changes to the original high value care model, and b) statements about application of high value care from the clinician’s perspective. CG proposed preliminary themes, then the consensus working group (Table 1) refined and finalised themes through discussion. We considered data saturation by assessing whether new themes emerged with sequential interviews; once no new themes emerged, we determined that the data were sufficiently saturated (42, 43).

**Use of results**

Themes were summarised and incorporated into a new report and provided to all participants prior to the consensus meeting (found here: https://osf.io/hdufv/).

**Stage three: Consensus meeting**

We invited all eligible participants (n=31, Table 1) to the face-to-face consensus meeting through email. In reminder emails, we highlighted items likely to be controversial based on Stage 2 and asked participants to prepare their thoughts for these items in advance.

The consensus meeting was 4 hours in length. Participants voted to agree or disagree on each addition or change to the original model and each application statement. CG and SK facilitated the meeting. CG analysed the agenda items along with field notes and provided a summary report to participants. Following the meeting, we provided a final online document for comment and encouraged participants to comment on key areas of controversy.

**Criteria for consensus**

Our procedure for gaining consensus was prespecified as:

During stage two (network feedback):
- Participants answered the question ‘is there anything missing from our definitions and themes?’ and any revisions to stage one results were discussed in stage three (we did not set a level of agreement to reach consensus for this stage, rather participants made suggestions for improvement).

During stage three (meeting):
- All participants present voted on whether they agreed or disagreed to include changes and additions from step two in the final definitions and themes.
- Consensus was reached if >80% of participants agreed.
- If no consensus was reached initially, we facilitated a discussion about the concept. We first heard from participants who did not agree to inclusion, then from participants who agreed to include the item.
- If there was agreement on the general concept, we proposed items again with different wording and voted again.
- If still no consensus reached, items were not included (no consensus gained).
Patients and public involvement
We did not aim to involve patients and the public in this study, because we want to involve them in the next parts of our larger study which seeks to develop a more comprehensive model for high value care from the patient’s lens.

Results
Stage one: Evidence review
Thirty-nine sources were included in data extraction and synthesis (for full results, including PRISMA flow diagram, see https://osf.io/hdufv/) (32, 44). Twenty-five sources were academic journal articles (64%) and 14 (36%) were grey literature (government, international health body or professional organisation reports). Most (62%) sources provided high level conceptual guidance on high value care for health systems (11-16, 20-25, 45-55). Only seven sources (18%) provided recommendations for individual clinicians to assist in high value care application (19, 28, 29, 51, 56-59). Only one source (3%) involved care providers in developing clinical recommendations for osteoarthritis consultations (59).

We found that high value care typically consists of four domains (patient values, cost effectiveness, reducing waste, and high-quality care), in which high-quality care consists of seven themes (safe, connected, consistent, patient-centred, evidence-based, equitable) (Table 3). We summarised the contributory domains and themes to provide definitions for high value and high-quality care. We produced a conceptual model to illustrate the relationship between domains and themes, alongside the key stakeholders in care provision found in the literature (Figure 2).

Stage two: Network feedback
We received 26/31 (84%) survey responses and conducted 9 interviews. We determined that data was sufficiently saturated after the ninth interview. We received eight responses that suggested changes to the model.

Participants’ feedback led to two additional high quality care themes (Effective and Accountable). The top three themes were noted by participants when asked what domains or themes were most important in clinical practice: patient-centred (23/26 (88%)), evidence-based (15/26 (57%)), reducing waste (12/26 (46%)). We generated an additional definition for low value care, and 21 statements on application (Appendix 2) (32).

Stage three: Consensus meeting
16/31 (52%) of participants attended the consensus meeting. Two additional themes for high quality care reached consensus (Effective and Accountable care, Table 3), which were incorporated into our definitions and conceptual model. Consensus was reached on the additional definition of low value care. Fifteen application statements reached consensus. No disagreements were raised when we provided meeting participants with an opportunity to provide written feedback on the summary report.

Final output
The process resulted in the following definitions from a physiotherapist’s perspective.

High value care: Care that delivers most value for the patient, and the clinical benefits
outweigh the costs to the individual or system providing the care. Within high value care there are four contributing domains: high-quality care; patient values; cost effectiveness; reducing waste. See Table 2 for an explanation of high value care domains.

**High quality care:** Evidence-based, effective, and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems (connected) (see Table 3 for details).

**Low value care:** Care that is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.

The process also produced a conceptual model in Figure 2 that links the definitions with the context of care and 15 statements related to application of the domains and themes in practice (Figure 3).

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Table 2: Explanation of the domains of high value care.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Explanation from a physiotherapist’s perspective</th>
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<tr>
<td><strong>High quality care</strong></td>
<td>High quality care consists of nine themes (safe, connected, consistent, patient-centred, evidence-based, equitable, timely, effective and accountable). High quality care ensures care has potential for maximum clinical benefit and involves the consideration of all nine themes (safe, connected, consistent, patient-centred, evidence-based, equitable, timely, accountable, and effective).</td>
</tr>
<tr>
<td><strong>Patient values</strong></td>
<td>Providing high value care involves appreciating the patient’s values. Values are deep-seeded motivations that can drive behaviour. Patient expectations can reflect patient values, but often values are harder to discern without skilled communication. Applying high value care involves more than simply asking what the patient’s expectations are and matching care to these expectations.</td>
</tr>
<tr>
<td><strong>Cost effectiveness</strong></td>
<td>The general concept of cost-effectiveness in healthcare is the ratio of estimates for costs of treatment and its effectiveness from a specific perspective: patient, clinician, healthcare system. From a clinician’s perspective, a cost-effective service must take into account the revenue they gain from their service minus the associated costs the clinician incurs to provide it.* Clinicians must also consider what patients may be willing to pay for service provision.</td>
</tr>
<tr>
<td><strong>Reducing waste</strong></td>
<td>On an individual clinician level, reducing waste means decreasing the use of low value care options. Clinicians should remove unnecessary activities in the cycle of care, such as unnecessary tests, treatments, procedures and referrals.</td>
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</tbody>
</table>

* Our study sample predominantly consists of Australian physiotherapists working in a private practice.

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Table 3: Explanation of themes of high-quality care

<table>
<thead>
<tr>
<th>Themes found in literature</th>
<th>Definition from a physiotherapist’s perspective</th>
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<tr>
<th>Safe</th>
<th>Care that does not harm the patient. The clinician should aim to minimize harms and adverse events in care. Safe care should be well supported by policies and procedures and a clear reporting procedure.</th>
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<tr>
<td>Connected</td>
<td>Care that allows patients to move easily between and across sectors of healthcare (for example, between primary and tertiary care). Clinicians should prioritise efficient interprofessional communication and empower patients to maintain continuity over their own care.</td>
</tr>
<tr>
<td>Consistent</td>
<td>All care should be individualised in partnership with patients; however, clinicians should strive to reduce inappropriate variability in care. Reducing unwanted variability in care is important across episodes of care, but also across sectors and other practitioners. Clinicians can use guidelines to reduce care variability.</td>
</tr>
<tr>
<td>Patient-centred</td>
<td>Care that is respectful of and respective to individual patient preference, needs and values. This theme is similar to patient values, however patient values refer to understanding and operationalising what is valuable to the patient. Patient centredness ensures the patient is empowered to take an active role in their care. Specific clinical skills to enhance patient-centredness can include, but are not limited to, adapting communication and assessments according to patient’s needs, and partnering with patients to develop management plans.</td>
</tr>
<tr>
<td>Evidence-based</td>
<td>Care that is guided by up-to-date evidence. Practiced as evidence-based practice, which is as described by Sackett, “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.”</td>
</tr>
<tr>
<td>Equitable</td>
<td>Care that is of equal quality for all cultural backgrounds, age, gender, religion, sexual orientation, disability status, region, socioeconomic status or insurance coverage. For patients to take an active role in their care, they must first feel safe to be themselves and confident that they will be understood. Clinicians must ensure care is not just ‘one size fits all’ and work to have a full understanding of the patient’s identity, context, and cultural background. Clinicians should adapt their practice to meet varying cultural needs.</td>
</tr>
<tr>
<td>Timely</td>
<td>Care provided without extensive delay. It isn’t clear what the ‘right time’ might be for each individual patient. However, waiting for care leads to poor patient outcomes. Delayed care also leads to downstream costs for the healthcare system. Clinicians should strive to provide care without unnecessary delay.</td>
</tr>
</tbody>
</table>

**Themes added through consensus**

| Accountable | Care that is provided with the explicit understanding of being benchmarked against standards and open to critical appraisal by peers. |
Effective Care that achieves its intended outcome. Effective care and evidence-based care are subtly different. Effective care should be evidence based, but just being evidence-based is not sufficient for effective care. Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values.

Areas of disagreement
Appendix 2 lists areas of disagreement. Six statements did not reach consensus. Of these, three statements were included as accompanying explanatory text to domains and themes. The other three were not included in our definitions or model. Other areas of disagreement are discussed under research implications.

Discussion
Our study adds clinicians’ perspectives to previous definitions of high value musculoskeletal care. For physiotherapists, high value care is care that is high quality, incorporates patient values, is cost-effective, and reduces waste in the care cycle. High quality care is safe, connected, consistent, patient-centred, evidence-based, timely, equitable, effective, and accountable. While many domains and themes from our definitions and conceptual model are described in existing literature, participants highlighted the importance of additional themes of Effective and Accountable in defining high value care. We provide statements from the clinical perspective to assist with the application of high value care.

Strengths and limitations
This study was co-produced through all stages with a research network of physiotherapists to ensure clinician input into the definitions. Our study is relevant to the private practice environment, which is underrepresented in current literature describing value-based care and relevant for a significant proportion of physiotherapists (60). We used the RAND Method, which is a robust method for generating consensus-based definitions (30, 31).

The perspectives included in this study are unlikely be representative of all physiotherapists. Our study involved motivated physiotherapists and other musculoskeletal care stakeholders who likely share similar views and biases regarding high value care. Only four participants of the 16 attending the consensus meeting were female, which is not representative of the profession. In step one, we did not screen articles in duplicate. In step two, we asked whether participants would change or add anything without explicitly asking whether they agreed to individual domains or themes, which may not have captured an accurate level of consensus. In step three, voting during the consensus meeting was not anonymous, and we cannot rule out the possibility of some members swaying others. Four members left during the consensus meeting, because they had other commitments to attend. Twelve participants voted on statement 15 (on Equitable care), however none of the members who left provided any disagreement with the statement on the report following the workshop.

Clinical implications
Application of high value care: general information
Applying high value care involves being aware of multiple domains, themes and stakeholder perspectives. Previous definitions state that value can only be determined when the outcome of care is known (16, 49). However, our study highlights that clinicians consider value may be achieved through the care process. Value, therefore, is not something that is simply reached at a threshold or a concept that arises retrospectively. Traditional definitions of value also focus solely on the economic implications of care and encompasses a ratio of the cost relative to care outcomes (16, 49). Our study suggests there is much more to value for practising clinicians. Participants perceived high value musculoskeletal care to be a process, existing on a continuum, involving as many domains and themes as possible. Furthermore, while we present only the clinical perspective in our study, the delivery of high value care has contributions from different stakeholders; patients, clinicians, and healthcare systems (11). Participants felt that being aware of different stakeholders’ perspectives is integral to high value care. Our study suggests that high value care must balance these potentially conflicting perspectives and anchor care decisions on achieving the optimal outcome from the patient’s perspective.

Domains of high value care

Funding structures may incentivise care options that lead to low value care (Figure 3). Most participants in our study work in the Australian private sector (61). In this setting, a clinician can either see more patients per hour or reduce the costs to deliver care to maximise their income and ensure cost-effective delivery of care (62-64). Both options typically mean the clinician spends less time with the patient, which makes high value care less likely. To apply high value care, clinicians should be aware of the levers that might lead to low value care (62-65).

Removing unnecessary and wasteful care is a key contributor to high value care provision (12,13). Research on reducing waste commonly focuses on removing unnecessary tests, and procedures from practice in discrete care episodes (12, 13). Participants in our study expressed that a wider focus is important and reported additional wasteful elements like unnecessary referrals to other professionals should be reduced. Participants also reported a focus on clinical reasoning as a potential source of waste may be important.

In reducing waste from care, it is also important to define low value care because clinicians can understand what to avoid and remove from practice. The idea of avoiding low value care within musculoskeletal practice has traction within the literature (66,67). Low value care has been defined as care that provides little to no benefit to patients or where the risk of harm exceeds the probably benefit (68). The perspective gained in our study may assist in making the attempts at reducing waste more clinically applicable. A key component of low value care is a misalignment with both patient’s preferences and their goals (see statement five).

A key goal of high value care is aligning care outcomes to the patient’s values and experience of health (16, 25, 49). Patient values have been described as, “moral beliefs to which people appealed for the ultimate rationales of action” (69, pp 3) and reflect deep-seeded motivations for behaviour and life choices (69). Values can dictate what a patient will find valuable about the care process and care outcomes (70). There are tools that clinicians can employ to better align care with the patient’s values (71, 72). For example, patient-reported outcome measures, patient-reported experience measures and shared decision-making tools (71, 72). These tools, however, may not allow an in-depth understanding of
Skilled communication is a key mechanism to uncover a patient’s values (59). Communication should involve a two-way information exchange between patient and clinician so that both parties can learn from each other’s perspective and knowledge (59). An in-depth information exchange may contribute positive effects to care (73) but may also create value for the patient by improving their ability to make decisions about their health (74).

Applying themes of high-quality care

A requirement for high-quality care is Safe care (care that does not cause patient harm) (45). Evidence on harms from treatment has focused on biomedical harms like side-effects caused by medications (75). While important, evidence suggests that a traditional biomedical view on harms may not capture other sources of potential harm in care provision (76-81).

For example, the language used when communicating a diagnosis or imaging findings alter treatment intentions and initiate a low value treatment cascade leading to harm (78, 79). In our study, participants agreed that they should look beyond commonly considered harms like medication side-effects (Statement 12).

Participants in our study reported clinicians should strive to deliver care that is accountable. Peer review and auditing of clinical practice has promise to improve care standards (82-85). Clinicians in our study agreed that they should be open to having their practice and clinical reasoning reviewed by peers (statement 11). Discussing thought processes that lead to care decisions amongst peers may uncover flaws in reasoning and lead to improvements in care (82-85). There is evidence demonstrating that clinicians may be reluctant to expose their practice to auditing (86-88), which indicates that some aspects of practice auditing may take effort. However, critical appraisal of clinical reasoning and care decisions is low hanging fruit that individual clinicians can implement without significant change to practice.

Research implications

A key direction for future research is to incorporate other stakeholder perspectives. The patient’s perspective is central to high value care; we recommend the immediate next step for future research is to involve the patient’s voice to understand their perspective on receiving high value care. Other musculoskeletal clinicians and care stakeholders should be involved to understand their perspectives. Our definitions, themes, and model can function as a framework to assist in establishing a common language to discuss the concept of high value care. Following this next step, we recommend future research aims to understand the barriers and facilitators to applying our domains and themes to support better high value care application.

Our results suggest that clinicians perceive there to be a conceptual difference between the methods a clinician can successfully use to deliver evidence-based care and the traditional description of evidence-based care (89). However, dissenting opinion around the accompanying statements for effective care may allude to the group’s uncertainty about Effective care’s specific content and application. Consensus was also low for statement 14 about evidence-based care (Figure 3). Future research should determine whether other populations describe something like Effective care (the skills and process of applying Evidence-based care). Currently, we cannot rule out a persistent misunderstanding of the concept of Sackett’s original outline of evidence-based practice, which has been described elsewhere (88-91).
Future research on equity in primary care and physiotherapy is needed. Participants in our study described that access to private practice physiotherapy is not equitable when patients cannot cover the difference between the clinician’s fee for service and government funding options. Evidence suggests inequitable access to physiotherapy is a concern both in Australia and internationally (92, 93). However, access to care is only one aspect of equity. Equity is a very broad concept and poorly defined in the literature (94). Dissenting opinion on statement 15 about *Equitable* care (Figure 3) may point to a lack of common language and confusion about what equity means (95). Researchers should first provide a common language about equity, so clinicians can consider it in their practice more often (95).

**Policy implications**

Clinicians’ input is important for policy makers because they experience first-hand the judgements and resources that contribute to successful patient outcomes. Policy makers have placed importance on clinician-led efforts to generate consensus on what constitutes low value care (96-98). Our study data provides a framework through which to establish specific recommendations about high value care. Policy makers should work with clinician and consumers to collaboratively establish targets to incentivise high value care, which would supplement the disincentives for low value care.

Policy makers can also learn from the clinical perspective to understand systemic factors that make high value care difficult. Clinicians in our study felt that economic drivers in primary care can lead to low value care. Policy makers could trial different funding mechanisms in collaboration with care providers to determine the effects on care provision. Clinicians in our study viewed that economic factors may also impact equitable access of physiotherapy. Policy makers could consider alternate mechanisms to improve access to care.

**Conclusion**

This work highlights a clinical perspective on high value care for musculoskeletal conditions. Providing high value care was viewed by physiotherapists as a comprehensive construct, that involves more than providing evidence-based care. High value care includes high quality care (safe, connected, consistent, patient centred, evidence-based, timely, equitable, and accountable care), incorporates patient values, is cost-effectiveness, and reduces waste.

**Ethics approval**

This study was registered as low or negligible risk by the Hunter New England Research Ethics Committee (Approval No AU202202-09).

**Author contribution**

*Conceptualization:* This study was conceptualised by the Research In Practice Network. CG led the methodology and project administration. *Data collection:* CG led data collection throughout the project. Stage one (rapid review): BD, CG, CW performed searches and screened sources. Stage two (network feedback): CG and KK collected data, CG and NB transcribed interviews. Stage three (consensus meeting): CG collected data. *Analysis:* CG led data analysis throughout the project. Stage one (rapid review): BD, CG, CW, DR, KD, PDS, SD analysed data. Stage two (network feedback): CG and RG coded.
surveys and interviews. CG, KD, KK, MC, NB, NM, RG, SZ developed and finalised
categories and themes. Stage three (consensus meeting): CG analysed results and field
notes and NM, MC, NB, BD, ML, AD, CB, DR, CB, LC, TM, JD, SH, AM, JW, KK, NM, RG,
SZ, TW, SD, PDS all provided feedback on the results of stage three.
Writing: CG led the initial draft. All co-authors provided significant feedback on the initial draft
through a live online document.
Review & editing: Final drafting of the manuscript was completed by CG with assistance
from CW and SK.

Competing interests
Authors declare no competing interests.

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Data sharing
Deidentified participant data are available from corresponding author upon reasonable
request. All protocols are available from https://osf.io/hdufv/.

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Figures

Figure 1: Study stages and objectives

1. Rapid literature review
   Aims:
   1) Identify current definitions of high value care
   2) Describe common themes between them
   Method: Rapid review (Cochrane methods)
   Analysis: Thematic analysis to develop working definitions, themes, and conceptual model.

2. Network feedback
   Aims:
   1) Gather feedback from members
   2) Explore members' perception of high value care
   3) Understand how members provide high value care in practice
   Method: Online survey and semi-structured interviews.
   Analysis: Thematic analysis to make additions to the model and generate statements about high value care application.

3. Consensus Meeting
   Aim: 1) Determine level of agreement about additions to definitions, themes, conceptual model, and accompanying statements for high value care
   Method: Face to face meeting (4 hours long)
   Consensus criteria:
   - All participants present must vote on each item
   - >80% of participants agree.
   - If no agreement is reached initially, items can be edited and proposed again.
**Figure 2**: High value care conceptual model.

Blue themes were added through network feedback during stage two. Care should be taken not to interpret this model with any hierarchy of domains, themes, or stakeholders.
Figure 3: Consensus generated statements to assist the clinical application of high value care for musculoskeletal conditions.

**General statements:**

1. Different stakeholders may have different perspectives on what high value care is (16/16 (100%) agreement).
2. Different stakeholder perspectives should be considered when delivering high value care (15/16 (93.75%) agreement).
3. High value care is not an absolute threshold, rather it is a process of care delivery relative to the situation and context of care (16/16 (100%) agreement).
4. High value care can mean not providing care (16/16 (100%) agreement).
5. Low value care does not have to include all characteristics listed in our definition to be labelled low value care. For example, care can be low value when it is aligned with the patient’s goals but not delivered in a way specific to the patient’s preferences (15/15 (100%) agreement).

**Patient values:**

6. When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts about what care is best for the patient and what the patient expects to receive (15/15 (100%) agreement).
7. A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient centred care (15/15 (100%) agreement).
8. Meeting patient expectations may be necessary for high value care provision, but this alone does not constitute high value care (15/15 (100%) agreement).
9. To optimise the value of care, communication should involve a two-way exchange where patients learn from clinicians and clinicians learn from patients (13/15 (86.67%) agreement).

**Cost-effective:**

10. Funding structure may incentivise care options that maximise clinic income relative to clinician’s time, and lead to low value care provision (15/15 (100%) agreement).

**Accountable:**

11. Physiotherapists should be open to having their clinical reasoning, decision making, and care provision peer reviewed (14/15 (93%) agreement).

**Safe:**

12. The concept of harm in musculoskeletal conditions should be expanded to include how clinicians communicate with patients (13/15 (86.67%) agreement).

**Connected:**

13. Connected care should promote the connection of ideas and knowledge, not just the movement of patients across sectors and services (15/15 (100%) agreement).

**Evidence-based:**

14. All care providers, patients, and stakeholders should be critical of using low quality evidence to justify treatment (12/15 (80%) agreement).

**Equitable:**

15. Private practice physiotherapy is inequitable for those who cannot afford the fee for service (10/12 (83.33%) agreement).
Appendix 1: Survey and interview questions

A) High value care consensus survey questions

1. Is there anything missing from our definitions and themes?
2. What is your perception or opinion on high value care?
3. As a practising clinician, what do you prioritise out of the themes outlined above for high value and high-quality care?
4. Do you want to discuss these themes and definition further in a short 15-minute interview with us?

B) High value care consensus interview questions exploring knowledge gaps identified in our evidence review

Interview Guide Questions:

1. Is there anything you would like to expand on in reference to your answers to the survey?

2. Value(S)
   ● How do you know or measure how much the patient actually values a particular outcome?
     ○ Do you ever get a patient to rank particular outcomes?

3. Cost effectiveness
   ● In your view, how well do current concepts in high value care definitions capture what it is like to provide cost-effective care in private practice physiotherapy?
     ○ Are there other things that come into providing cost-effective care for YOU?
       For example, treatment that can be performed in the allotted time with patient.
     ○ What do you think about the cost the patient is willing to pay for treatment?
       Does this impact what ‘cost-effective’ care is?

4. Reducing waste
   Most ways to reduce overuse revolve around improved patient understanding and shared decision making. But these often revolve around specific, discrete aspects of care, like one-off decisions about treatment modalities/types.
   ● Are there aspects of shared decision making that may help reduce overuse?
     ○ For example, how do you decide where/what practitioner you will refer a patient?

5. Effective care
   ● In your view, how is effective care related to evidence based care?
     ○ Can you expand on how this plays out in practice?
     ○ Would you prefer the RIPN statement to include evidence-based care or effective care as a core component to high quality care? Why?

6. Measuring care
   There are currently no overarching standards or mechanisms to ensure care from physiotherapists is high quality (effective/evidence-based, safe, consistent).
   ● How would you measure care quality?
Is this different for the different constructs of quality as we found in our rapid review?

- Safety?
- Consistency?

- Do you think we need to include something about this in our RIPN statement?

7. Equitable care

From our rapid review, we’ve found that equitable care can be roughly defined as care that allows all people, from all walks of life, to shape, or be actively involved, in their care.

- How do you ensure equitable care in practice?
  - How can we do this better as a group (RIPN)?
### Appendix 2: Results of consensus meeting.

**Additions or changes to our model of high value care**

<table>
<thead>
<tr>
<th>Area</th>
<th>Item</th>
<th>Agreement</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High value care:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reducing waste domain</strong></td>
<td>1. Adding a definition for low value care:</td>
<td>13/16 (81.25%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>Low value care is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Add the following text:</td>
<td>16/16 (100%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>Waste is defined as a cycle of care issues such as unnecessary tests, treatments, procedures, and referrals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Add the following text under clinician:</td>
<td>15/16 (93.75%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>And processes that contribute to care (like clinical reasoning that lead to care decisions).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Patient values</strong></td>
<td>4. Change the domain name:</td>
<td>16/16 (100%)</td>
<td>Change wording</td>
</tr>
<tr>
<td></td>
<td>From Patient Centred (ValueS) to Patient values.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost effectiveness</strong></td>
<td>5. Change the domain name:</td>
<td>16/16 (100%)</td>
<td>Change wording</td>
</tr>
<tr>
<td></td>
<td>From Value/cost-effective to Cost effectiveness.</td>
<td></td>
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</tr>
<tr>
<td><strong>Effective</strong></td>
<td>6. Make Effective and Evidence-based two separate themes</td>
<td>16/16 (100%)</td>
<td>Make two separate themes. Effective modified to include statement 20 and 21.</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td>7. Add the following explanatory text for Effective theme:</td>
<td>16/16 (100%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>Care that achieves its intended outcome. Effective care and evidence-based care are subtly different.</td>
<td></td>
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<tr>
<td></td>
<td>Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27]</td>
<td>13/15* (86.67%)</td>
<td>Not agreed as a standalone statement</td>
</tr>
<tr>
<td></td>
<td>Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]</td>
<td>12/15* (80%)</td>
<td>Not agreed as a standalone statement</td>
</tr>
<tr>
<td>Area</td>
<td>Statement</td>
<td>Agreement?</td>
<td>Decision</td>
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<td>-----------------------------</td>
<td>---------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>High value care</td>
<td>1. Different stakeholders may have different perspectives on what high value care is.</td>
<td>16/16 (100%)</td>
<td>Agreed as standalone statement</td>
</tr>
<tr>
<td></td>
<td>2. Different stakeholder perspectives should be considered when delivering high value care.</td>
<td>15/16 (93.75%)</td>
<td></td>
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<tr>
<td></td>
<td>3. High value care is not an absolute threshold, rather it is a process of care delivery relative to the situation and context of care.</td>
<td>16/16 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. High value care can mean not providing care.</td>
<td>16/16 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Low value care does not have to include all characteristics listed in our definition to be labelled low value. For example, care can be low value when it is aligned with the patient’s goals but not delivered in a way specific to the patient’s preferences.</td>
<td>15/15* (100%)</td>
<td>Modified to include [and belief] from statement 16</td>
</tr>
<tr>
<td>High value care: Patient values</td>
<td>6. When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts and beliefs about what care is best for the patient and what the patient expects to receive.</td>
<td>15/15 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient care.</td>
<td>15/15 (100%)</td>
<td></td>
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<td></td>
<td>8. Meeting patient expectations may be necessary for high value care provision, but this</td>
<td>15/15 (100%)</td>
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<tr>
<td>Statement</td>
<td>Agreement</td>
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<tr>
<td>9. To optimise the value of care, communication should involve a two-way exchange where patients learn from clinicians and clinicians learn from patients.</td>
<td>13/15 (86.67%)</td>
<td></td>
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<tr>
<td>10. Funding structure may incentivise care options that maximise clinic income relative to clinician’s time, and lead to low value care provision.</td>
<td>15/15 (100%)</td>
<td></td>
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</tr>
<tr>
<td>11. Physiotherapists should be open to having their clinical reasoning, decision making, and care provision peer reviewed.</td>
<td>14/15 (93%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. The concept of harm in musculoskeletal conditions should be expanded to include how clinicians communicate with patients.</td>
<td>13/15 (86.67%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Connected care should promote the connection of ideas and knowledge, not just the movement of patients across sectors and services.</td>
<td>15/15 (100%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. All care providers, patients, and stakeholders should be critical of using low quality evidence to justify treatment.</td>
<td>12/15 (80%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Private practice physiotherapy is inequitable for those who cannot afford the fee for service.</td>
<td>10/12** (83.33%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. A clinician’s own belief system and values may contribute to a perceived tension between what the patient wants and what the clinician thinks is best for their health outcomes.</td>
<td>2/15 (13.33%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Reducing waste in musculoskeletal care should account for other aspects of the care cycle, such as unnecessary referrals.</td>
<td>0/15 (0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statement</td>
<td>Vote</td>
<td>Include</td>
<td>Comment</td>
</tr>
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<td>----------------------------------------------------------------------------</td>
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<td>---------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18. Clinical reasoning that may not reflect high value care, or give rise</td>
<td>0/16</td>
<td>Do not</td>
<td>to low value care, is a form of waste.</td>
</tr>
<tr>
<td>to low value care, is a form of waste.</td>
<td></td>
<td>include</td>
<td></td>
</tr>
<tr>
<td>19. More consistent use of high value care requires a commitment to a</td>
<td>2/15</td>
<td>Do not</td>
<td>benchmarked standard of care.</td>
</tr>
<tr>
<td>benchmarked standard of care.</td>
<td></td>
<td>include</td>
<td></td>
</tr>
<tr>
<td>20. <strong>Effective care should be evidence-based, but just being evidence-</strong></td>
<td>6/15</td>
<td>Include</td>
<td>as explanatory text for Effective theme (Agreement 13/15 (86.67%))</td>
</tr>
<tr>
<td><strong>Effective care should be evidence-based, but just being evidence-based is</strong></td>
<td></td>
<td>as explanatory text for Effective theme (Agreement 13/15 (86.67%))</td>
<td>not sufficient for effective care. [Agenda item 27]</td>
</tr>
<tr>
<td>21. Effective care is determined by the process of care, which is</td>
<td>0/15</td>
<td>Include</td>
<td>as explanatory text for Effective theme (Agreement 13/15 (86.67%))</td>
</tr>
<tr>
<td>underpinned by skilled communication and understanding patient beliefs</td>
<td></td>
<td>as explanatory text for Effective theme (Agreement 13/15 (86.67%))</td>
<td>and values. [Agenda item 28]</td>
</tr>
<tr>
<td>and values. [Agenda item 28]</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*One participant left the consensus meeting after accompanying statement 4.

**Three more participants left the consensus meeting before we finalised the voting on statement on accompanying statement 15. Statement 15 was originally worded, “Private practice physiotherapy is not equitable because those who cannot afford the fee for service may not be able to access private practice physiotherapy, and public funding options may not completely ameliorate the difficulty these patients experience in accessing care.” Participants felt that they were too uncertain about how publicly funded health service options (e.g., hospital outpatient departments) impact care access and decided to remove this statement.
What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists in New South Wales, Australia

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<table>
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<tr>
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<td>Hunter New England Local Health District</td>
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<td>Gibbs, Benedicta</td>
<td>APM Workcare</td>
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<td>Bolsewicz, Katarzyna</td>
<td>The University of Newcastle, School of Medicine</td>
</tr>
<tr>
<td>Williams, Christopher</td>
<td>The University of Newcastle; The University of</td>
</tr>
<tr>
<td></td>
<td>Sydney, School of Health Sciences</td>
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</table>

**Primary Subject Heading:** Public health

**Secondary Subject Heading:** Health policy

**Keywords:** Musculoskeletal disorders < ORTHOPAEDIC & TRAUMA SURGERY, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PRIMARY CARE, ORTHOPAEDIC & TRAUMA SURGERY
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What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists in New South Wales, Australia

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22 - Honeysuckle Health, Australia
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26 - Terrace Physio Plus, Australia
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Abstract:

Objectives:

To develop a physiotherapist-led consensus statement on the definition and provision of high-value care for people with musculoskeletal conditions.

Design:

We performed a three-stage study using RAND/UCLA methodology. We reviewed evidence about current definitions through a rapid literature review and then performed a survey and interviews with network members to gather consensus. Consensus was finalised in a face-to-face meeting.

Setting:

Australian primary care.

Participants:

Registered physiotherapists who are members of a practice-based research network (n=31).

Results:

The rapid review revealed two definitions, four domains of high value care and seven themes of high-quality care. Online survey responses (n=26) and interviews (n=9) generated two additional high-quality care themes, a definition of low-value care, and 21 statements on the application of high value care. Consensus was reached for three working definitions (high value, high quality, and low value care), a final model of four high value care domains (high-quality care; patient values; cost effectiveness; reducing waste), nine high quality care themes and 15 statements on application.

Conclusion:

High value care for musculoskeletal conditions delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. High quality care is evidence-based, effective, and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems.
Strengths and limitations of this study:

- This study used RAND/UCLA methodology to reach consensus and established protocols a priori.
- All stages of the study (from conception to manuscript writing) were co-produced with a research network of physiotherapists, who predominantly work in private practice.
- The perspectives included in this study may not be representative of all physiotherapists; a minority of participants were female and members of a research network likely share similar views about care value.
- Voting was not anonymous; participant's votes may have been influenced by other members.
- Four participants left the meeting before finalising all statements, because they had other commitments to attend, however they were asked to provide feedback following the workshop.

Key points:

What is already known:
- Physiotherapists should deliver high value care, however applying high value care is difficult due to ambiguity about what it is and how to deliver it.
- There is no consensus on the definition of high value care for musculoskeletal conditions.

What this study adds:
- We provide a definition of high value care for musculoskeletal conditions informed by clinician's perspective.
- We provide accompanying statements to assist clinician's application of high value care.

Clinical takeaways:
- Applying high value care involves considering four domains that contribute to value (high-quality care, patient values, cost effectiveness, and reducing waste). High quality care comprises nine themes; safe, connected, consistent, patient centred, evidence-based, timely, equitable, effective, and accountable.

Research takeaways:
- Future research should involve patients’ and other stakeholders’ perspectives on the definition of high value care for musculoskeletal conditions.

Policy takeaways:
- Our study data provides a framework through which policy makers can collaborate with clinicians to establish relevant benchmarks that incentivise high value care.
Introduction
Musculoskeletal conditions are prevalent and are the leading cause of years lost to disability worldwide (1, 2). Due to population growth and ageing, the global musculoskeletal burden is predicted to increase (1-5). Healthcare spending associated with musculoskeletal care typically outstrips spending on other health conditions (6-10). To address the growing musculoskeletal burden, there are increasing calls to provide high value care (11-15). High value care aims to provide cost-effective care that optimises patient outcomes (16). All healthcare professionals, including physiotherapists, should aim to deliver high value care (17-19).

Definitions of high value care have lacked input from a number of perspectives, including the people who are tasked with delivering it. There is a great deal of literature that attempts to define care that is value-based (11, 14-16, 20-24). However, these definitions typically provide broad overarching frameworks with few tangible actions that individual clinicians take to improve the value of their care (11, 14-16, 20-24). Most definitions of high value care are not specific to musculoskeletal conditions or physiotherapy care (20-22, 25, 26). There is no consensus on the definition of high value musculoskeletal care for physiotherapists. Where literature is specific to physiotherapy, terms like high quality care, or evidence-based care are often conflated or used synonymously with high value care (13, 17, 18, 27-29). Without input from clinicians about high value care and how it applies to practice, definitions may lack clinically applicable information and any intended impact on care delivery is unlikely to be realised.

Objectives:
We aimed to develop a physiotherapist-led consensus definition for, and statements about the provision of, high value care for musculoskeletal conditions. This study comprised three stages.

For stage one, we aimed to:
1. Synthesise the definitions currently used for a) high value care and b) high quality care in physiotherapy for musculoskeletal conditions.
2. Identify themes that are common across the definitions.
3. Develop draft definitions of high value care, and high-quality care for musculoskeletal conditions.

For stage two, we aimed to:
1. Gather feedback from physiotherapists in practice about our results from stage one.
2. Generate draft statements about how physiotherapists provide high value care in practice.

For stage three, we aimed to:
1. Agree upon final definitions and application statements among the participating physiotherapists via a consensus process.

Methods
We performed a three-stage study, which used adapted methods of the Research And Development/University of California Los Angeles Appropriateness Method (RAND) (Figure 1) (30). The RAND method was most appropriate for this study because it allows an expert
panel to discuss the results of each round through survey and a face-to-face meeting (30, 31). Our full study protocol is available on Open Science Framework at https://osf.io/hdufv/ (32).

[Insert Figure 1]

**Participant characteristics**

We recruited participants from a practice-based research network of physiotherapists in the Hunter Region of New South Wales, Australia (Table 1). We included participants if they were:

1) a network member
2) a registered physiotherapist
3) providing care for people with musculoskeletal conditions.

We excluded network members who were not registered physiotherapists. Some study participants were also involved as working group members who assisted in data interpretation and contextualisation.

**Table 1: Participant characteristics**

<table>
<thead>
<tr>
<th>Network members who were eligible for stage two and three</th>
<th>N = 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, female</td>
<td>7 (23%)</td>
</tr>
<tr>
<td>Clinical experience level, years, median (min, max)</td>
<td>12 (1, 34)</td>
</tr>
<tr>
<td>Works in private practice</td>
<td>25 (81%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage two: Network feedback</th>
<th>N = 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, female</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>Clinical experience level, years, median (min, max)</td>
<td>10 (1, 34)</td>
</tr>
<tr>
<td>Works in private practice</td>
<td>25 (81%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stage three: Consensus meeting</th>
<th>N = 16*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, female</td>
<td>4</td>
</tr>
<tr>
<td>Clinical experience level, years, median (min, max)</td>
<td>18 (4, 34)</td>
</tr>
<tr>
<td>Works in private practice</td>
<td>13 (81%)</td>
</tr>
</tbody>
</table>

*One participant left after accompanying statement 4, and two more participants after accompanying statement 14.

**Stage one: Evidence review**

We undertook a rapid review of the literature to assess existing definitions of high value and high-quality care.

We searched three databases (Medline, Embase and Cinahl) using terms for value, quality, and other synonyms, along with musculoskeletal and physiotherapy (33, 34). We used article reference lists, and internet search engines to pursue other sources and grey literature (34). Authors (CG, BD, CW) independently screened articles in duplicate. We thematically analysed data to establish common themes and develop draft definitions (35).

We refined definitions, themes, and developed a conceptual model by discussing the relationship between themes.

**Use of results**
We provided an interim report of our review results to all participants (found at https://osf.io/hdufv/) who provided their feedback in stage two.

**Stage two: Network feedback**

Participants provided their feedback on the definitions, themes, and conceptual model from stage one through online surveys and individual semi-structured interviews.

**Recruitment and data collection**

We emailed all eligible participants (n=31, Table 1) the interim report, which included an invitation to complete a survey and volunteer for an interview. In the survey, participants provided data through Google Forms (Google, Alphabet Inc). Survey questions included: whether participants thought any changes needed to be made; participants' general perspectives on high value care; and what themes they would prioritise in clinical practice (Appendix 1).

We held and recorded online interviews through Zoom. In the interviews, we asked participants about the application of high value care from their clinical experience using the domains and themes from stage one as a discussion guide (Appendix 1). We cleaned and transcribed interviews onto Google documents (Google, Alphabet Inc). Two authors coded survey data (CG and RG) (38), and CG coded all interview transcripts. Where participants answered the survey and took part in an interview, these data were coded as one case (38). We brought similar codes together to form categories and themes (39), using the original high value care model as a conceptual framework for theme development (40, 41). We aimed to generate themes in the form of a) additions or changes to the original high value care model, and b) statements about application of high value care from the clinician’s perspective. CG proposed preliminary themes, which were then refined and finalised themes through discussion among a group of authors. We considered data saturation by assessing whether sequential interviews led to new themes; once no new themes were identified, we determined that the data were sufficiently saturated (42, 43). All authors involved in developing themes are physiotherapists with lived experience of providing care to people with musculoskeletal conditions and members of the same research network. These factors have shaped data collection, analysis, and theme development.

**Use of results**

Themes were summarised and incorporated into a new report and provided to all participants prior to the consensus meeting (found here: https://osf.io/hdufv/).

**Stage three: Consensus meeting**

We invited all eligible participants (n=31, Table 1) to the face-to-face consensus meeting through email. In reminder emails, we highlighted items that had been added during Stage two and asked participants to prepare their thoughts for these items in advance.

The consensus meeting was four hours in length. Participants voted to agree or disagree on each addition or change to the original model and each application statement. CG and SK facilitated the meeting. CG analysed the agenda items along with field notes and provided a
summary report to participants. Following the meeting, we provided a final online document for comment and encouraged participants to comment on key areas of controversy.

Criteria for consensus

Our procedure for gaining consensus during stage three was prespecified as:

- All participants present voted on whether they agreed or disagreed to include changes and additions from step two in the final definitions and themes.
- Consensus was reached if 80% or more participants agreed.
- If no consensus was reached initially, we facilitated a discussion about the concept. We first heard from participants who did not agree to inclusion, then from participants who agreed to include the item.
- If there was agreement on the general concept, we proposed items again with different wording and voted again.
- If still no consensus reached, items were not included (we did not force consensus).

The level of agreement necessary for consensus was based on the level of agreement considered within normal limits of other consensus studies (44).

Patients and public involvement

We did not aim to involve patients and the public in this study, because we want to involve them in the next parts of our larger study which seeks to develop a more comprehensive model for high value care from the patient's lens.

Results

Stage one: Evidence review

Thirty-nine sources were included in data extraction and synthesis (for full results, including PRISMA flow diagram, see [https://osf.io/hdufv/]) (32, 45). Twenty-five sources were academic journal articles (64%) and 14 (36%) were grey literature (government, international health body or professional organisation reports). Most (62%) sources provided high level conceptual guidance on high value care for health systems (11-16, 20-25, 46-56). Only seven sources (18%) provided recommendations for individual clinicians to assist in high value care application (19, 28, 29, 52, 57-60). Only one source (3%) involved care providers in developing clinical recommendations for osteoarthritis consultations (60).

We found that high value care typically consists of four domains (patient values, cost effectiveness, reducing waste, and high-quality care) (Table 2), in which high-quality care consists of seven themes (safe, connected, consistent, patient-centred, evidence-based, equitable) (Table 3). We summarised the contributory domains and themes to provide definitions for high value and high-quality care. We produced a conceptual model to illustrate the relationship between domains and themes, alongside the key stakeholders in care provision found in the literature (Figure 2).

Stage two: Network feedback

We received 26/31 (84%) survey responses and conducted 9 interviews. We determined that data was sufficiently saturated after the ninth interview. We received eight responses that suggested changes to the model.
Participants’ feedback led to two additional high quality care themes (Effective and Accountable). The top three themes were noted by participants when asked what domains or themes were most important in clinical practice: patient-centred (23/26 (88%)), evidence-based (15/26 (57%)), reducing waste (12/26 (46%)). We generated an additional definition for low value care, and 21 statements on application (Appendix 2) (32).

Stage three: Consensus meeting
16/31 (52%) of participants attended the consensus meeting. Appendix 3 lists full results of the consensus meeting. Two additional themes for high quality care reached consensus (Effective and Accountable care, Table 3), which were incorporated into our definitions and conceptual model. Consensus was reached on the additional definition of low value care. Fifteen application statements reached consensus. No disagreements were raised when we provided meeting participants with an opportunity to provide written feedback on the summary report.

Final output
The process resulted in the following definitions from physiotherapists’ perspectives.

High value care: Care that delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. Within high value care there are four contributing domains: high-quality care; patient values; cost effectiveness; reducing waste (see Table 2 for further explanation of domains).

High quality care: Evidence-based, effective, and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems (connected) (see Table 3 for details).

Low value care: Care that is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.

The process also produced a conceptual model in Figure 2 that links the definitions with the context of care and 15 statements related to application of the domains and themes in practice (Figure 3).

Table 2: Explanation of the domains of high value care.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Explanation from physiotherapists’ perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High quality care</strong></td>
<td>High quality care consists of nine themes (safe, connected, consistent, patient-centred, evidence-based, equitable, timely, effective and accountable). High quality care ensures care has potential for maximum clinical benefit and involves the consideration of all nine themes (safe, connected, consistent, patient-centred, evidence-based, equitable, timely, accountable, and effective).</td>
</tr>
<tr>
<td><strong>Patient values</strong></td>
<td>Providing high value care involves appreciating the patient’s values. Values are deep-seeded motivations that can drive behaviour. Patient expectations can reflect patient values, but often values are harder to discern without skilled communication. Applying high value care involves more than simply asking what the patient’s expectations are and matching care to these expectations.</td>
</tr>
</tbody>
</table>
Cost effectiveness

The general concept of cost-effectiveness in healthcare is the ratio of estimates for costs of treatment and its effectiveness from a specific perspective: patient, clinician, healthcare system. From a clinician’s perspective, a cost-effective service must take into account the revenue they gain from their service minus the associated costs the clinician incurs to provide it.* Clinicians must also consider what patients may be willing to pay for service provision.

Reducing waste

On an individual clinician level, reducing waste means decreasing the use of low value care options. Clinicians should remove unnecessary activities in the cycle of care, such as unnecessary tests, treatments, procedures, and referrals.

* Our study sample predominantly consists of Australian physiotherapists working in a private practice.

Table 3: Explanation of themes of high-quality care

<table>
<thead>
<tr>
<th>Themes found in literature</th>
<th>Definition from physiotherapists’ perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe</td>
<td>Care that does not harm the patient. The clinician should aim to minimize harms and adverse events in care. Safe care should be well supported by policies and procedures and a clear reporting procedure.</td>
</tr>
<tr>
<td>Connected</td>
<td>Care that allows patients to move easily between and across sectors of healthcare (for example, between primary and tertiary care). Clinicians should prioritise efficient interprofessional communication and empower patients to maintain continuity over their own care.</td>
</tr>
<tr>
<td>Consistent</td>
<td>All care should be individualised in partnership with patients; however, clinicians should strive to reduce inappropriate variability in care. Reducing unwanted variability in care is important across episodes of care, but also across sectors and other practitioners. Clinicians can use guidelines to reduce care variability.</td>
</tr>
<tr>
<td>Patient-centred</td>
<td>Care that is respectful of and respective to individual patient preference, needs and values. This theme is similar to patient values, however patient values refer to understanding and operationalising what is valuable to the patient. Patient centredness ensures the patient is empowered to take an active role in their care. Specific clinical skills to enhance patient-centredness can include, but are not limited to, adapting communication and assessments according to patient’s needs, and partnering with patients to develop management plans.</td>
</tr>
<tr>
<td>Evidence-based</td>
<td>Care that is guided by up-to-date evidence. Practiced as evidence-based practice, which is as described by Sackett, “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.”</td>
</tr>
<tr>
<td>Equitable</td>
<td>Care that is of equal quality for all cultural backgrounds, age, gender, religion, sexual orientation, disability status, region, socioeconomic status</td>
</tr>
</tbody>
</table>
or insurance coverage. For patients to take an active role in their care, they must first feel safe to be themselves and confident that they will be understood. Clinicians must ensure care is not just ‘one size fits all’ and work to have a full understanding of the patient’s identity, context, and cultural background. Clinicians should adapt their practice to meet varying cultural needs.

**Timely** Care provided without extensive delay. It isn’t clear what the ‘right time’ might be for each individual patient. However, waiting for care leads to poor patient outcomes. Delayed care also leads to downstream costs for the healthcare system. Clinicians should strive to provide care without unnecessary delay.

**Themes added through consensus**

**Accountable** Care that is provided with the explicit understanding of being benchmarked against standards and open to critical appraisal by peers.

**Effective** Care that achieves its intended outcome. Effective care and evidence-based care are subtly different. Effective care should be evidence based, but just being evidence-based is not sufficient for effective care. Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values.

[Insert Figure 2, and Figure 3]

**Areas of disagreement**

Appendix 3 lists areas of disagreement. Six statements did not reach consensus. Of these, three statements were included as accompanying explanatory text to domains and themes. The other three were not included in our definitions or model. Other areas of disagreement are discussed under research implications.

**Discussion**

Our study adds clinicians’ perspectives to previous definitions of high value musculoskeletal care. For physiotherapists, high value care is care that is high quality, incorporates patient values, is cost-effective, and reduces waste in the care cycle. High quality care is safe, connected, consistent, patient-centred, evidence-based, timely, equitable, effective, and accountable. We provide statements from the clinical perspective to assist with the application of high value care.

**Strengths and limitations**

This study used RAND/UCLA methodology to reach consensus and established protocols a priori (30 - 32). All stages of this study (from conception to manuscript writing) were co-produced with a research network of physiotherapists, who predominantly work in private practice, which improves the credibility of our findings. The perspectives included in this study are unlikely to be representative of all physiotherapists; our study involved members of a research network who likely share similar views and biases regarding care value and a
minority of participants were female (61). In step three, voting was not anonymous, and participant’s votes may have been influenced by other members. Four participants left the consensus meeting before statement 15 (on *Equitable care*), because they had other commitments to attend, however none of the members who left provided any disagreement with the statement on the report following the workshop.

**Relation to previous literature**

Our study suggests there is more to value for practising clinicians than previously documented. While there is alignment with many domains and themes described in existing literature, participants in our highlighted the importance of additional themes for Effective and Accountable care in defining high value care. Previous definitions of value have focussed on the economic implications of care and encompass a ratio of the cost relative to care outcomes (16, 50). Previous definitions also state that value can only be determined when the outcome of care is known (16, 50). While the importance of care outcomes is obvious, our study highlights that clinicians think value may be achieved through the consideration of multiple domains, themes, and stakeholder perspectives. This suggests that, in the eyes of clinicians, care value is a continuum that can be shaped by the process of care.

**Clinical implications**

**Application of high value care: general information**

Participants perceived high value musculoskeletal care to be a process, existing on a continuum, involving as many domains and themes as possible. Participants felt that being aware of different stakeholders’ perspectives is integral to high value care. Our study suggests that high value care must balance these potentially conflicting perspectives and anchor care decisions on achieving the optimal outcome from the patient’s perspective.

**Domains of high value care**

Funding structures may incentivise care options that lead to low value care (Figure 3). Most participants in our study work in the Australian private sector (62). In this setting, a clinician can either see more patients per hour or reduce the costs to deliver care to maximise their income and ensure cost-effective delivery of care (63-65). Both options typically mean the clinician spends less time with the patient, which makes high value care less likely. To apply high value care, clinicians should be aware of the levers that might lead to low value care (63-66).

Removing unnecessary and wasteful care is a key contributor to high value care provision (12,13). Research on reducing waste commonly focuses on removing unnecessary tests, and procedures from practice in discrete care episodes (12, 13). Participants in our study expressed that a wider focus is important and reported additional wasteful elements like unnecessary referrals to other professionals should be reduced. Participants also reported a focus on clinical reasoning as a potential source of waste may be important.

In reducing waste from care, it is also important to define low value care because clinicians can understand what to avoid and remove from practice. The idea of avoiding low value care within musculoskeletal practice has traction within the literature (67,68). Low value care has been defined as care that provides little to no benefit to patients or where the risk of harm exceeds the probably benefit (69). The perspective gained in our study may assist in making
the attempts at reducing waste more clinically applicable. A key component of low value care is a misalignment with both patient's preferences and their goals (see statement five).

A key goal of high value care is aligning care outcomes to the patient's values and experience of health (16, 25, 50). Patient values have been described as, "moral beliefs to which people appealed for the ultimate rationales of action" (70, pp 3) and reflect deep-seeded motivations for behaviour and life choices (70). Values can dictate what a patient will find valuable about the care process and care outcomes (71). There are tools that clinicians can employ to better align care with the patient's values (72, 73). For example, patient-reported outcome measures, patient-reported experience measures and shared decision-making tools (72, 73). These tools, however, may not allow an in-depth understanding of patient's values. Skilled communication is a key mechanism to uncover a patient's values (60). Communication should involve a two-way information exchange between patient and clinician so that both parties can learn from each other's perspective and knowledge (60). An in-depth information exchange may contribute positive effects to care (74) but may also create value for the patient by improving their ability to make decisions about their health (75).

Applying themes of high-quality care

A requirement for high-quality care is Safe care (care that does not cause patient harm) (46). Evidence on harms from treatment has focused on biomedical harms like side-effects caused by medications (76). While important, evidence suggests that a traditional biomedical view on harms may not capture other sources of potential harm in care provision (77-82). For example, the language used when communicating a diagnosis or imaging findings alter treatment intentions and initiate a low value treatment cascade leading to harm (79, 80). In our study, participants agreed that they should look beyond commonly considered harms like medication side-effects (Statement 12).

Participants in our study reported clinicians should strive to deliver care that is accountable. Peer review and auditing of clinical practice has promise to improve care standards (83-86). Clinicians in our study agreed that they should be open to having their practice and clinical reasoning reviewed by peers (statement 11). Discussing thought processes that lead to care decisions amongst peers may uncover flaws in reasoning and lead to improvements in care (83-86). There is evidence demonstrating that clinicians may be reluctant to expose their practice to auditing (87-89), which indicates that some aspects of practice auditing may take effort. However, critical appraisal of clinical reasoning and care decisions is low hanging fruit that individual clinicians can implement without significant change to practice.

Research implications

A key direction for future research is to incorporate other stakeholder perspectives. The patient's perspective is central to high value care; we recommend the immediate next step for future research is to involve the patient's voice to understand their perspective on receiving high value care. Other musculoskeletal clinicians and care stakeholders should be involved to understand their perspectives. Our definitions, themes, and model can function as a framework to assist in establishing a common language to discuss the concept of high value care. Following this next step, we recommend future research aims to understand the barriers and facilitators to applying our domains and themes to support better high value care application.
Our results suggest that clinicians perceive there to be a conceptual difference between the methods a clinician can successfully use to deliver evidence-based care and the traditional description of evidence-based care (90). However, dissenting opinion around the accompanying statements for effective care may allude to the group’s uncertainty about Effective care’s specific content and application. Consensus was also low for statement 14 about evidence-based care (Figure 3). Future research should determine whether other populations describe something like Effective care (the skills and process of applying Evidence-based care). Currently, we cannot rule out a persistent misunderstanding of the concept of Sackett’s original outline of evidence-based practice, which has been described elsewhere (89-92).

Future research on equity in primary care and physiotherapy is needed. Participants in our study described that access to private practice physiotherapy is not equitable when patients cannot cover the difference between the clinician’s fee for service and government funding options. Evidence suggests inequitable access to physiotherapy is a concern both in Australia and internationally (93, 94). However, access to care is only one aspect of equity. Equity is a very broad concept and poorly defined in the literature (95). Dissenting opinion on statement 15 about Equitable care (Figure 3) may point to a lack of common language and confusion about what equity means (95). Researchers should first provide a common language about equity, so clinicians can consider it in their practice more often (96).

**Policy implications**

Clinicians’ input is important for policy makers because they experience first-hand the judgements and resources that contribute to successful patient outcomes. Policy makers have placed importance on clinician-led efforts to generate consensus on what constitutes low value care (97-99). Our study data provides a framework through which to establish specific recommendations about high value care. Policy makers should work with clinician and consumers to collaboratively establish targets to incentivise high value care, which would supplement the disincentives for low value care.

Policy makers can also learn from the clinical perspective to understand systemic factors that make high value care difficult. Clinicians in our study felt that economic drivers in primary care can lead to low value care. Policy makers could trial different funding mechanisms in collaboration with care providers to determine the effects on care provision. Clinicians in our study viewed that economic factors may also impact equitable access of physiotherapy. Policy makers could consider alternate mechanisms to improve access to care.

**Conclusion**

This work highlights a clinical perspective on high value care for musculoskeletal conditions. Providing high value care was viewed by physiotherapists as a comprehensive construct, that involves more than providing evidence-based care. High value care includes high quality care (safe, connected, consistent, patient centred, evidence-based, timely, equitable, and accountable care), incorporates patient values, is cost-effectiveness, and reduces waste.

**Figure captions**

**Figure 1:** Study stages and objectives.
**Figure 2**: High value care conceptual model. [Legend below figure: Blue themes were added through network feedback. Care should be taken not to interpret this model with any hierarchy of domains, themes, or stakeholders.]

**Figure 3**: Consensus generated statements to assist the clinical application of high value care for musculoskeletal conditions.

**Ethics approval**
This study was registered as low or negligible risk by the Hunter New England Research Ethics Committee (Approval No AU202202-09).

**Author contribution**

**Conceptualization**: This study was conceptualised by the Research In Practice Network. CG led the methodology and project administration.

**Data collection**: CG led data collection throughout the project. Stage one (rapid review): BD, CG, CW performed searches and screened sources. Stage two (network feedback): CG and KK collected data, CG and NB transcribed interviews. Stage three (consensus meeting): CG collected data.

**Analysis**: CG led data analysis throughout the project. Stage one (rapid review): BD, CG, CW, DR, KD, PDS, SD analysed data. Stage two (network feedback): CG and RG coded surveys and interviews. CG, KD, KK, MC, NB, NM, RG, SZ developed and finalised categories and themes. Stage three (consensus meeting): CG analysed results and field notes and NM, MC, NB, BD, ML, AD, CB, DR, CB, LC, TM, JD, SH, AM, JW, KK, NM, RG, SZ, TW, SD, PDS all provided feedback on the results of stage three.

**Writing**: CG led the initial draft. All co-authors provided significant feedback on the initial draft through a live online document.

Review & editing: Final drafting of the manuscript was completed by CG with assistance from CW and SK.

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**Competing interests**
Authors declare no competing interests.

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**Data sharing**
Deidentified participant data are available from corresponding author upon reasonable request. All protocols are available from [https://osf.io/hdufv/](https://osf.io/hdufv/).

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Study stages and objectives.

417x234mm (38 x 38 DPI)
High value care conceptual model. Blue themes were added through network feedback. Care should be taken not to interpret this model with any hierarchy of domains, themes, or stakeholders.

170x108mm (96 x 96 DPI)
Consensus generated statements to assist the clinical application of high value care for musculoskeletal conditions.

**General statements:**

1. Different stakeholders may have different perspectives on what high value care is (16/16 (100%) agreement).
2. Different stakeholder perspectives should be considered when delivering high value care (16/16 (93.75%) agreement).
3. High value care is not an absolute threshold, rather it is a process of care delivery relative to the situation and context of care (16/16 (100%) agreement).
4. High value care can mean not providing care (16/16 (100%) agreement).
5. Low value care does not have to include all characteristics listed in our definition to be labelled low value care. For example, care can be low value when it is aligned with the patient’s goals but not delivered in a way specific to the patient’s preferences (15/15 (100%) agreement).

**Patient values:**

6. When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts about what care is best for the patient and what the patient expects to receive (15/16 (100%) agreement).
7. A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient-centred care (15/16 (100%) agreement).
8. Meeting patient expectations may be necessary for high value care provision, but this alone does not constitute high value care (15/16 (100%) agreement).
9. To optimise the value of care, communication should involve a two-way exchange where patients learn from clinicians and clinicians learn from patients (13/15 (86.67%) agreement).

**Cost-effective:**

10. Funding structure may incentivise care options that maximise clinic income relative to clinician’s time, and lead to low value care provision (15/16 (100%) agreement).

**Accountable:**

11. Physiotherapists should be open to having their clinical reasoning, decision making, and care provision peer reviewed (14/15 (93%) agreement).

**Safe:**

12. The concept of harm in musculoskeletal conditions should be expanded to include how clinicians communicate with patients (13/15 (86.67%) agreement).

**Connected:**

13. Connected care should promote the connection of ideas and knowledge, not just the movement of patients across sectors and services (15/15 (100%) agreement).

**Evidence-based:**

14. All care providers, patients, and stakeholders should be critical of using low quality evidence to justify treatment (12/15 (80%) agreement).

**Equitable:**

15. Private practice physiotherapy is inequitable for those who cannot afford the fee for service (10/12 (83.33%) agreement)
### Appendix 1: Survey and interview questions

#### A) High value care consensus survey questions

1. Is there anything missing from our definitions and themes?
2. What is your perception or opinion on high value care?
3. As a practising clinician, what do you prioritise out of the themes outlined above for high value and high-quality care?
4. Do you want to discuss these themes and definition further in a short 15-minute interview with us?

#### B) High value care consensus interview questions exploring knowledge gaps identified in our evidence review

**Interview Guide Questions:**

1. Is there anything you would like to expand on in reference to your answers to the survey?

2. **Value(S)**
   - How do you know or measure how much the patient actually values a particular outcome?
     - Do you ever get a patient to rank particular outcomes?

3. **Cost effectiveness**
   - In your view, how well do current concepts in high value care definitions capture what it is like to provide cost-effective care in private practice physiotherapy?
     - Are there other things that come into providing cost-effective care for YOU? For example, treatment that can be performed in the allotted time with patient.
     - What do you think about the cost the patient is willing to pay for treatment? Does this impact what ‘cost-effective’ care is?

4. **Reducing waste**
   Most ways to reduce overuse revolve around improved patient understanding and shared decision making. But these often revolve around specific, discrete aspects of care, like one-off decisions about treatment modalities/types.
   - Are there aspects of shared decision making that may help reduce overuse?
     - For example, how do you decide where/what practitioner you will refer a patient?

5. **Effective care**
   - In your view, how is effective care related to evidence based care?
     - Can you expand on how this plays out in practice?
     - Would you prefer the RIPN statement to include evidence-based care or effective care as a core component to high quality care? Why?

6. **Measuring care**
   There are currently no overarching standards or mechanisms to ensure care from physiotherapists is high quality (effective/evidence-based, safe, consistent).
   - How would you measure care quality?
Is this different for the different constructs of quality as we found in our rapid review?
- Safety?
- Consistency?
- Do you think we need to include something about this in our RIPN statement?

7. Equitable care
From our rapid review, we’ve found that equitable care can be roughly defined as care that allows all people, from all walks of life, to shape, or be actively involved, in their care.
- How do you ensure equitable care in practice?
  - How can we do this better as a group (RIPN)?
Appendix 2: Qualitative data that led to theme development

<table>
<thead>
<tr>
<th>Area</th>
<th>Item</th>
<th>Supporting qualitative data</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value care:</td>
<td>Additions or changes to our model of high value care</td>
<td>“I don’t think it’s a dichotomy [low value care and the absence of high value care]. I think these are separate constructs that we’re talking about. That are related, but I think they’re separate I think.” (Participant 08)</td>
</tr>
<tr>
<td></td>
<td>1. Adding a definition for low value care:</td>
<td>“So, if we know that things don’t work then I think that it’s pretty clear to have no value…. So, it might be evidence-based and effective, then if they’re not engaged with it, then it’s probably low value…. So if you can’t ensure that intervening would have a greater effect than not intervening than not intervening.” (Participant 01)</td>
</tr>
<tr>
<td>Reducing waste domain</td>
<td>Low value care is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.</td>
<td></td>
</tr>
<tr>
<td>High value care:</td>
<td>2. Add the following text:</td>
<td>“And if you’re going to send for an MRI, that’s fine. You know, because I know that there is often a clinical justification, you still have to check the spinal cord or you know, rule out red flags, that’s fine. But then the conversation needs to be had with the patient about what that disc bulge means. And the language you frame around that because, you know, that’s where you’re then burdening the health system with waste. Because that person goes on this six month merry go round of shopping surgeons and having laminectomies for a nonspecific episode of back pain that, all in all might have resolved without such aggressive early intervention.” (Participant 04)</td>
</tr>
<tr>
<td>Patient values</td>
<td>3. Add the following text under clinician:</td>
<td>“So maybe sometimes our cleverness in our clinical reasoning can lead us to decision making, be it diagnostic, prognostic, or prescriptive, in terms of treatment decision-making, that still may not necessarily reflect perhaps high value care. And in fact, may sometimes give rise to low value care perhaps in some instances.” (Participant 06)</td>
</tr>
<tr>
<td>High value care:</td>
<td>4. Change the domain name:</td>
<td>“Prior to this RIPN project I was not aware of the difference between high value and high quality care. Having read the rapid review I agree with the proposed relationships and definitions, although perhaps a change in the wording of the model could improve its clarity, ie re-phrasing of ‘value’ from the patient centred circle and the cost effectiveness circle?” (Participant 07)</td>
</tr>
<tr>
<td>Cost effectiveness</td>
<td>5. Change the domain name:</td>
<td></td>
</tr>
</tbody>
</table>

From Patient Centred (ValueS) to Patient values.

From Value/cost-effective to Cost effectiveness.
6. Make Effective and Evidence-based two separate themes

“Evidence-based care, or the process of evidence-based practice, leads you to understanding what is effective healthcare.” (Participant 01)

“Effective care is how we deliver care. Do we have the skills to deliver care in an effective way.” (Participant 02)

“Our practice needs to be evidenced informed so that our own biases within clinical practice are being challenged. But it needs to be delivered in an effective manner and made compelling enough for the consumer to choose.” (Participant 02)

“So, something might be effective but it could be harmful. You know, probably answers the question, you look at the evidence... So I think evidence-base is crucial and it has a crucial role in what we do, but I don’t think it’s the whole puzzle.” (Participant 05)

7. Add the following explanatory text for Effective theme:

Care that achieves its intended outcome. Effective care and evidence-based care are subtly different.

Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27]

“Effectively, we are saying we are producing an effect.” (Participant 06)

“I could be really evidence based in my care but that does not mean I deliver it in an effective manner.” (Participant 02)

“Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]

“Effective care is how we deliver care. Do we have the skills to deliver care in an effective way. … Our practice needs to be evidenced informed so that our own biases within clinical practice are being challenged. But it needs to be delivered in an effective manner and made compelling enough for the consumer to choose.” (Participant 02)

“So, something might be effective but it could be harmful. You know, probably answers the question, you look at the evidence... So I think evidence-base is crucial and it has a crucial role in what we do, but I don’t think it’s the whole puzzle.” (Participant 05)

8. Add a theme:

Accountable

“I could be really evidence based in my care but that does not mean I deliver it in an effective manner.” (Participant 02)

“Effective care is how we deliver care. Do we have the skills to deliver care in an effective way. … Our practice needs to be evidenced informed so that our own biases within clinical practice are being challenged. But it needs to be delivered in an effective manner and made compelling enough for the consumer to choose.” (Participant 02)

“So, something might be effective but it could be harmful. You know, probably answers the question, you look at the evidence... So I think evidence-base is crucial and it has a crucial role in what we do, but I don’t think it’s the whole puzzle.” (Participant 05)
So I would suggest some level of accountability. Again, I don’t know what that would look like, in the weeds of it, but yeah. The medical field do it and do it effectively. So, it’s not completely unchartered territory.” (Participant 05)

“I guess, when we say unwarranted variations, I guess in some ways we’re saying there are variations that exist that are impacting patient outcomes or system outcomes. That can’t be just meaningfully justified… Are we actually doing stuff that we don’t need to be doing because we’re allowing too much flexibility in some of our systems?”(Participant 05)

“Perhaps something that could be put in there is the capacity to have a senior person or a peer review of your decision making process or some sort of thing like that? Um, an escalation process?” (Participant 08)

<table>
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<tr>
<th>Accompanying statements to high value</th>
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1. Different stakeholders may have different perspectives on what high value care is. Versus maybe, this is maybe from a lens perspective, but from a third-party payer having to pay for a service and having to weigh up what’s in the best interest for the community with limited resources, what, where do we put the highest value. So you know, that concept of a relative term.”(Participant 06)

2. Different stakeholder perspectives should be considered when delivering high value care. “You know, it makes it tricky. Having a common understanding that you can be high quality and yet still not be necessarily a priority or considered as high quality as other parts of the service, then yeah that allows and permits that type of reasoning.” (Participant 05)

3. High value care is not an absolute threshold, rather it is a process of care delivery relative to the situation and context of care. “And then that is the idea of relativity, in terms of, is this in fact high as in an absolute definition or is it a relative definition. Can we have, this is high value care, but this is in fact, higher again.”(Participant 06)

4. High value care can mean not providing care. “But high value care doesn’t always necessarily mean that there is an intervention. It could be the absence of an intervention.” (Participant 08)

5. Low value care does not have to include all characteristics listed in our definition to be labelled low value. For example, care can be low value when it is aligned with the

For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml
patient’s goals but not delivered in a way specific to the patient’s preferences.

6. When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts and beliefs about what care is best for the patient and what the patient expects to receive.

“I think being aware of the tension is the first part.” (Participant 05)

“And just just ask them. I mean, they also show it on their face or in their body language, if what we’re doing is incongruent. Because sometimes what I want to be doing what I think is the right outcome measure for us to be pushing towards is different what the patient wants to be doing.” (Participant 05)

7. A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient care.

“I guess like my role is to pull down the layers of what they say that they might not intentionally be saying. You know and categorize that into, okay they want this function or they’re wanting that range, or wanting that pain or they’re wanting this conditioning.” (Participant 04)

8. Meeting patient expectations may be necessary for high value care provision, but this alone does not constitute high value care.

“If we only offer the patient what WE see as high value care, even if it is objectively the best available option, and it doesn’t meet the expectations of our patients we potentially lose the perception of high value in their eyes. This doesn’t mean pandering to their notions of high value care, but at least considering their expectations and opening a dialogue around why we might be able to offer them a solution that is better.” (Participant 20)

9. To optimise the value of care, communication should involve a two-way exchange where patients learn from clinicians and clinicians learn from patients.

“This is why I think the community involvement is really important because we can have our heads so far up our own assess that much, but it may not matter that much to the recipient of healthcare. That I’ll have people coming quite regularly who think that they need something or they want something and I’ll think that they probably don’t. And then that’s a conversation.” (Participant 01)

10. Funding structure may incentivise care options that maximise clinic income relative to clinician’s time, and lead to low value care provision.

“It’s more cost-effective to deliver what I could consider low-value care. Because it’s lower effort. It’s faster. It’s much less effort. And is much more generic in its nature. So it’s much easier to fill time with more repeatable exposures or appointment billings schedules than it is to try and deliver more comprehensive and individualised rehab plans.” (Participant 01)

11. Physiotherapists should be open to

“And it’s not necessarily a fault with clinical reasoning per se, but clinical reasoning used in the
care:

Accountable having their clinical reasoning, decision making, and care provision peer reviewed. wrong way can lead to that type of decision making.” (Participant 06)

High quality care: Safe 12. The concept of harm in musculoskeletal conditions should be expanded to include how clinicians communicate with patients. “I could easily say the way that we communicate with people that can be unsafe. In regard to feeding into their catastrophisation or fear avoidance.” (Participant 03)

“I would like to work in a community where a patient with wry neck could attend any primary health care practitioner - physio, GP, chiro, osteo etc. and have their story listened to - rule out sinister pathology and create differential list, thorough assessment to confirm/refute diagnoses, provide education and reassurance and stay clear of harmful language.” (Participant 14)

High quality care: Connected 13. Connected care should promote the connection of ideas and knowledge, not just the movement of patients across sectors and services. “To address your concerns, ask the questions that you need and come to an agreed, you know, a collaborative resolution with someone that has the knowledge that you don’t have, and I think in one of these points I’m not sure which one it was. You had connected, I think, is what it was?” (Participant 08)

High quality care: Evidence-based 14. All care providers, patients, and stakeholders should be critical of using low quality evidence to justify treatment. “Evidence-based care gets twisted into whatever framework the person is speaking about and wants to justify. So evidence-based care has been used to describe the use of manual therapy and the non-use of manual therapy, and they’re both evidence-based care.” (Participant 01)

High quality care: Equitable 15. Private practice physiotherapy is inequitable for those who cannot afford the fee for service. “Well, I mean, my clinic is not equitable. You have to be able to afford it.” (Participant 01)

“Well I guess, equitable care. I feel very hamstrung to what I can provide as equitable care. You know, I'll be honest and I'm very bound by financial model.” (Participant 04)

“So I think a lower SES cohort or people with poor health education, probably aren’t aware of, and don’t get the same quality of care as their counterpart. You know, higher SES people, people with higher health education and we don't have a funding model that really supports that in private practice because at best they're going to get like I said a EPC program which will cover only half the physiotherapy sessions and only then for five of them.” (Participant 05)

Yep. I think private practice exists because the public system isn’t enough. Theoretically if the public system was able to provide high quality, effective care that was timely and able to access you wouldn’t have a need for the private setting. So, inherently there is inequity in being able to access care.” (Participant 23)

High value 16. A clinician’s own belief system and care: having their clinical reasoning, decision making, and care provision peer reviewed. wrong way can lead to that type of decision making.” (Participant 06)
values may contribute to a perceived tension between what the patient wants and what the clinician thinks is best for their health outcomes.

17. Reducing waste in musculoskeletal care should account for other aspects of the care cycle, such as unnecessary referrals.

"And if you're going to send for an MRI, that's fine. You know, because I know that there is often a clinical justification, you still have to check the spinal cord or, you know, rule out red flags, that's fine. But then the conversation needs to be had with the patient about what that disc bulge means. And the language you frame around that because, you know, that's where you're then burdening the health system with waste. Because that person goes on this six month merry go round of shopping surgeons and having laminectomies for a nonspecific episode of back pain that, all in all might have resolved without such aggressive early intervention." (Participant 04)

18. Clinical reasoning that may not reflect high value care, or give rise to low value care, is a form of waste.

"You know, we've got very clever clinicians out there that can make very clever arguments for why they want to do something, but that still doesn't necessarily mean that it's high quality. And it's not necessarily a fault with clinical reasoning per se, but clinical reasoning used in the wrong way can lead to that type of decision making." (Participant 06)

19. More consistent use of high value care requires a commitment to a benchmarked standard of care.

"I guess, to ensure that we are confident that we are delivering what we think we should. We probably have some reference point, be it outcome measures or patient goals or something, that tethers what we're doing to a process as opposed to doing it until someone decides that we're not doing it anymore. I guess benchmarking what we're doing against some external - well maybe not external - but against some measure." (Participant 04)

20. Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27]

"I could be really evidence based in my care but that does not mean I deliver it in an effective manner." (Participant 02)

21. Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]

"Effective care is how we deliver care. Do we have the skills to deliver care in an effective way. This includes communication skills, patient therapeutic alliance building, manual therapy skills." (Participant 07)
Appendix 3: Results of consensus meeting.

Additions or changes to our model of high value care

<table>
<thead>
<tr>
<th>Area</th>
<th>Item</th>
<th>Agreement</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value care: Reducing waste domain</td>
<td>1. Adding a definition for low value care: Low value care is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.</td>
<td>13/16 (81.25%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>2. Add the following text: Waste is defined as a cycle of care issues such as unnecessary tests, treatments, procedures, and referrals.</td>
<td>16/16 (100%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>3. Add the following text under clinician: And processes that contribute to care (like clinical reasoning that lead to care decisions).</td>
<td>15/16 (93.75%)</td>
<td>Add to model</td>
</tr>
<tr>
<td>High value care: Patient values</td>
<td>4. Change the domain name: From Patient Centred (ValueS) to Patient values.</td>
<td>16/16 (100%)</td>
<td>Change wording</td>
</tr>
<tr>
<td>High value care: Cost effectiveness</td>
<td>5. Change the domain name: From Value/cost-effective to Cost effectiveness</td>
<td>16/16 (100%)</td>
<td>Change wording</td>
</tr>
<tr>
<td></td>
<td>6. Make Effective and Evidence-based two separate themes</td>
<td>16/16 (100%)</td>
<td>Make two separate themes. Effective modified to include statement 20 and 21.</td>
</tr>
<tr>
<td>High value care: Effective</td>
<td>7. Add the following explanatory text for Effective theme: Care that achieves its intended outcome. Effective care and evidence-based care are subtly different. Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27] Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]</td>
<td>16/16 (100%)</td>
<td>Add to model</td>
</tr>
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</table>
### Accompanying statements to high value

**Agreed statements**

<table>
<thead>
<tr>
<th>Area</th>
<th>Statement</th>
<th>Agreement?</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value care</td>
<td>1. Different stakeholders may have different perspectives on what high value care is.</td>
<td>16/16 (100%)</td>
<td>Agreed as standalone statement</td>
</tr>
<tr>
<td></td>
<td>2. Different stakeholder perspectives should be considered when delivering high value care.</td>
<td>15/16 (93.75%)</td>
<td>Agreed as standalone statement</td>
</tr>
<tr>
<td></td>
<td>3. High value care is not an absolute threshold, rather it is a process of care delivery relative to the situation and context of care.</td>
<td>16/16 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. High value care can mean not providing care.</td>
<td>16/16 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Low value care does not have to include all characteristics listed in our definition to be labelled low value. For example, care can be low value when it is aligned with the patient’s goals but not delivered in a way specific to the patient’s preferences.</td>
<td>15/15* (93.75%)</td>
<td>Modified to include [and belief] from statement 16</td>
</tr>
<tr>
<td>High value care: Patient values</td>
<td>6. When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts and beliefs about what care is best for the patient and what the patient expects to receive.</td>
<td>15/15 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient care.</td>
<td>15/15 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Meeting patient expectations may be necessary for high value care provision, but this</td>
<td>15/15 (100%)</td>
<td></td>
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</table>
alone does not constitute high value care.

9. To optimise the value of care, communication should involve a two-way exchange where patients learn from clinicians and clinicians learn from patients. 13/15 (86.67%)

High value care: Cost effective

10. Funding structure may incentivise care options that maximise clinic income relative to clinician’s time, and lead to low value care provision. 15/15 (100%)

High quality care: Accountable

11. Physiotherapists should be open to having their clinical reasoning, decision making, and care provision peer reviewed. 14/15 (93%)

High quality care: Safe

12. The concept of harm in musculoskeletal conditions should be expanded to include how clinicians communicate with patients. 13/15 (86.67%)

High quality care: Connected

13. Connected care should promote the connection of ideas and knowledge, not just the movement of patients across sectors and services. 15/15 (100%)

High quality care: Evidence-based

14. All care providers, patients, and stakeholders should be critical of using low quality evidence to justify treatment. 12/15 (80%)

High quality care: Equitable

15. Private practice physiotherapy is inequitable for those who cannot afford the fee for service. 10/12** (83.33%)

Not agreed statements

High value care: Patient values

16. A clinician’s own belief system and values may contribute to a perceived tension between what the patient wants and what the clinician thinks is best for their health outcomes. 2/15 (13.33%)

High value care: Reducing waste

17. Reducing waste in musculoskeletal care should account for other aspects of the care cycle, such as unnecessary referrals. 0/15 (0%)

Modified to remove clause about public health service options**

Re-voted to include as part of statement 6 (Agreement 12/15 (80%))

Do not include
<table>
<thead>
<tr>
<th>Statement</th>
<th>Text</th>
<th>Agreement</th>
<th>Note</th>
</tr>
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<tbody>
<tr>
<td>18.</td>
<td>Clinical reasoning that may not reflect high value care, or give rise to low value care, is a form of waste.</td>
<td>0/16 (0%)</td>
<td>Do not include</td>
</tr>
<tr>
<td>19.</td>
<td>More consistent use of high value care requires a commitment to a benchmarked standard of care.</td>
<td>2/15 (13.33%)</td>
<td>Do not include</td>
</tr>
<tr>
<td>20.</td>
<td>Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27]</td>
<td>6/15 (40%)</td>
<td>Include as explanatory text for Effective theme (Agreement 13/15 (86.67%))</td>
</tr>
<tr>
<td>21.</td>
<td>Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]</td>
<td>0/15 (0%)</td>
<td>Include as explanatory text for Effective theme (Agreement 13/15 (86.67%))</td>
</tr>
</tbody>
</table>

*One participant left the consensus meeting after accompanying statement 4. **Three more participants left the consensus meeting before we finalised the voting on statement on accompanying statement 15. Statement 15 was originally worded, “Private practice physiotherapy is not equitable because those who cannot afford the fee for service may not be able to access private practice physiotherapy, and public funding options may not completely ameliorate the difficulty these patients experience in accessing care.” Participants felt that they were too uncertain about how publicly funded health service options (e.g., hospital outpatient departments) impact care access and decided to remove this statement.
What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists in New South Wales, Australia

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<th>BMJ Open</th>
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<td>Original research</td>
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<tr>
<td>Date Submitted by the Author:</td>
<td>23-May-2023</td>
</tr>
<tr>
<td>Complete List of Authors:</td>
<td>Gleadhill, Connor; The University of Newcastle, School of Medicine and Public Health; New South Wales Regional Health Partners Dooley, Katherine; Charles Sturt University, School of Health Sciences Kamper, Steven; University of Sydney School of Public Health, Musculoskeletal Health Sydney; Centre for Pain, Health and Lifestyle, Manvell, Nicole; NUmoves Physiotherapy Corrigan, Michael; Atune Health Centres Cashin, Aidan; University of New South Wales Faculty of Medicine, Prince of Wales Clinical School; Neuroscience Research Australia, Birchill, Noah; Hunter New England Local Health District Donald, Bruce; Hunter New England Local Health District, John Hunter Hospital Physiotherapy Leyland, Murray; Thornton Physiotherapy Delbridge, Andrew; Regent Street Physiotherapy, Barnett, Chris; ORS Group Rennfrew, David; Newcastle Performance Physiotherapy Lamond, Steven; Newcastle Knights Boettcher, Craig; The University of Sydney, Faculty of Medicine Chambers, Lucia; The University of Newcastle, School of Medicine and Public Health Maude, Travis; Advanced Physiotherapy Davis, Jon; PhysioStudio Hodgson, Stephanie; Hunter New England Local Health District Makaroff, Andrew; Employers Mutual Limited Wallace, James; PhysioStudio Kotrick, Kelly; Newcastle Performance Physiotherapy Mullen, Nicholas; Ethos Health Gallagher, Ryan; Honeysuckle Health Zelinski, Samuel; NUmoves Physiotherapy Watson, Toby; The Good Physio Davidson, Simon; The University of Newcastle, School of Medicine and Public Health; Hunter New England Local Health District, Population Health Viana Da Silva, Priscilla; The University of Newcastle, School of Medicine and Public Health; Hunter New England Local Health District, Population Health Mahon, Benjamin; Unified Health Delore, Caitlin; Regent Street Physiotherapy</td>
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<td>Name</td>
<td>Institution</td>
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<tr>
<td>Manvell, Joshua</td>
<td>Hunter New England Local Health District</td>
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<tr>
<td>Bolsewicz, Katarzyna</td>
<td>The University of Newcastle, School of Medicine and Public Health</td>
</tr>
<tr>
<td>Williams, Christopher</td>
<td>The University of Newcastle; The University of Sydney, School of Health Sciences</td>
</tr>
</tbody>
</table>

**Primary Subject Heading:** Public health

**Secondary Subject Heading:** Health policy

**Keywords:** Musculoskeletal disorders < ORTHOPAEDIC & TRAUMA SURGERY, Quality in health care < HEALTH SERVICES ADMINISTRATION & MANAGEMENT, PRIMARY CARE, ORTHOPAEDIC & TRAUMA SURGERY
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What does high value care for musculoskeletal conditions mean and how do you apply it in practice? A consensus statement from a research network of physiotherapists in New South Wales, Australia

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11 - Hunter New England Local Health District, Australia
12 - Thornton Physiotherapy, Australia
13 - Regent Street Physiotherapy, Australia
14 - ORS Group, Australia
15 - Newcastle Performance Physiotherapy
16 - Newcastle Knights, Australia
17 - Newcastle Aquatic Physiotherapy, Australia
18 - Advanced Physiotherapy, Australia
19 - PhysioStudio, Australia
20 - Employers Mutual Limited, Australia
21 - Ethos Health, Australia
22 - Honeysuckle Health, Australia
23 - The Good Physio, Australia
24 - Unified Health, Australia
25 - APM Workcare, New Zealand
26 - Terrace Physio Plus, Australia
27 - Kinetic Sports Physiotherapy, Australia
28 - Recovery Partners, Australia
29 - National Centre for Immunisation Research and Surveillance, Kids Research, Sydney Children’s Hospitals Network, Australia
30 - School of Health Sciences and University Centre for Rural Health, University of Sydney, Lismore, Australia
31 - Mid North Coast Local Health District, Port Macquarie, Australia

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Abstract:

Objectives: To develop a physiotherapist-led consensus statement on the definition and provision of high-value care for people with musculoskeletal conditions.

Design: We performed a three-stage study using RAND/UCLA methodology. We reviewed evidence about current definitions through a rapid literature review and then performed a survey and interviews with network members to gather consensus. Consensus was finalised in a face-to-face meeting.

Setting: Australian primary care.

Participants: Registered physiotherapists who are members of a practice-based research network (n=31).

Results: The rapid review revealed two definitions, four domains of high value care and seven themes of high-quality care. Online survey responses (n=26) and interviews (n=9) generated two additional high-quality care themes, a definition of low-value care, and 21 statements on the application of high value care. Consensus was reached for three working definitions (high value, high quality, and low value care), a final model of four high value care domains (high-quality care; patient values; cost effectiveness; reducing waste), nine high quality care themes and 15 statements on application.

Conclusion: High value care for musculoskeletal conditions delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. High quality care is evidence-based, effective, and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems.
**Strengths and limitations of this study:**

- This study used RAND/UCLA methodology to reach consensus and established protocols a priori.
- All stages of the study (from conception to manuscript writing) were co-produced with a research network of physiotherapists, who predominantly work in private practice.
- The perspectives included in this study may not be representative of all physiotherapists; a minority of participants were female and members of a research network likely share similar views about care value.
- Voting was not anonymous; participant's votes may have been influenced by other members.
- Four participants left the meeting before finalising all statements, because they had other commitments to attend, however they were asked to provide feedback following the workshop.

**Key points:**

**What is already known:**
- Physiotherapists should deliver high value care, however applying high value care is difficult due to ambiguity about what it is and how to deliver it.
- There is no consensus on the definition of high value care for musculoskeletal conditions.

**What this study adds:**
- We provide a definition of high value care for musculoskeletal conditions informed by the clinician’s perspective.
- We provide accompanying statements to assist clinician’s application of high value care.

**Clinical takeaways:**
- Applying high value care involves considering four domains that contribute to value (high-quality care, patient values, cost effectiveness, and reducing waste). High quality care comprises nine themes; safe, connected, consistent, patient centred, evidence-based, timely, equitable, effective, and accountable.

**Research takeaways:**
- Future research should involve patients’ and other stakeholders’ perspectives on the definition of high value care for musculoskeletal conditions.

**Policy takeaways:**
- Our study data provides a framework through which policy makers can collaborate with clinicians to establish relevant benchmarks that incentivise high value care.
Introduction

Musculoskeletal conditions are prevalent and are the leading cause of years lost to disability worldwide (1, 2). Due to population growth and ageing, the global musculoskeletal burden is predicted to increase (1-5). Healthcare spending associated with musculoskeletal care typically outstrips spending on other health conditions (6-10). To address the growing musculoskeletal burden, there are increasing calls to provide high value care (11-15). High value care aims to provide cost-effective care that optimises patient outcomes (16). All health care professionals, including physiotherapists, should aim to deliver high value care (17-19).

Definitions of high value care have lacked input from a number of perspectives, including the people who are tasked with delivering it. There is a great deal of literature that attempts to define care that is value-based (11, 14-16, 20-24). However, these definitions typically provide broad overarching frameworks with few tangible actions that individual clinicians take to improve the value of their care (11, 14-16, 20-24). Most definitions of high value care are not specific to musculoskeletal conditions or physiotherapy care (20-22, 25, 26). There is no consensus on the definition of high value musculoskeletal care for physiotherapists. Where literature is specific to physiotherapy, terms like high quality care, or evidence-based care are often conflated or used synonymously with high value care (13, 17, 18, 27-29). Without input from clinicians about high value care and how it applies to practice, definitions may lack clinically applicable information and any intended impact on care delivery is unlikely to be realised.

Objectives:

We aimed to develop a physiotherapist-led consensus definition for, and statements about the provision of, high value care for musculoskeletal conditions. This study comprised three stages.

For stage one, we aimed to:
1. Synthesise the definitions currently used for a) high value care and b) high quality care in physiotherapy for musculoskeletal conditions.
2. Identify themes that are common across the definitions.
3. Develop draft definitions of high value care, and high-quality care for musculoskeletal conditions.

For stage two, we aimed to:
1. Gather feedback from physiotherapists in practice about our results from stage one.
2. Generate draft statements about how physiotherapists provide high value care in practice.

For stage three, we aimed to:
1. Agree upon final definitions and application statements among the participating physiotherapists via a consensus process.

Methods

We performed a three-stage study, which used adapted methods of the Research And Development/University of California Los Angeles Appropriateness Method (RAND) (30). The RAND method was most appropriate for this study because it allows an expert panel to
discuss the results of each round through survey and a face-to-face meeting (30, 31). Our full study protocol is available on Open Science Framework at https://osf.io/hdufv/ (32).

**Participant characteristics**

We recruited participants from a practice-based research network of physiotherapists in the Hunter Region of New South Wales, Australia (Table 1). We included participants if they were:

1) a network member
2) a registered physiotherapist
3) providing care for people with musculoskeletal conditions.

We excluded network members who were not registered physiotherapists. Some study participants were also involved as working group members who assisted in data interpretation and contextualisation.

<table>
<thead>
<tr>
<th>Table 1: Participant characteristics</th>
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<tbody>
<tr>
<td><strong>Network members who were eligible for stage two and three</strong></td>
<td>N = 31</td>
</tr>
<tr>
<td>Sex, female</td>
<td>7 (23%)</td>
</tr>
<tr>
<td>Clinical experience level, years, median (min, max)</td>
<td>12 (1, 34)</td>
</tr>
<tr>
<td>Works in private practice</td>
<td>25 (81%)</td>
</tr>
<tr>
<td><strong>Stage two: Network feedback</strong></td>
<td>N = 26</td>
</tr>
<tr>
<td>Sex, female</td>
<td>5 (25%)</td>
</tr>
<tr>
<td>Clinical experience level, years, median (min, max)</td>
<td>10 (1, 34)</td>
</tr>
<tr>
<td>Works in private practice</td>
<td>25 (81%)</td>
</tr>
<tr>
<td><strong>Stage three: Consensus meeting</strong></td>
<td>N = 16*</td>
</tr>
<tr>
<td>Sex, female</td>
<td>4</td>
</tr>
<tr>
<td>Clinical experience level, years, median (min, max)</td>
<td>18 (4, 34)</td>
</tr>
<tr>
<td>Works in private practice</td>
<td>13 (81%)</td>
</tr>
</tbody>
</table>

*One participant left after accompanying statement 4, and two more participants after accompanying statement 14.

**Stage one: Evidence review**

We undertook a rapid review of the literature to assess existing definitions of high value and high-quality care.

We searched three databases (Medline, Embase and Cinahl) using terms for value, quality, and other synonyms, along with musculoskeletal and physiotherapy (33, 34). We used article reference lists, and internet search engines to pursue other sources and grey literature (34). Authors (CG, BD, CW) independently screened articles in duplicate. We thematically analysed data to establish common themes and develop draft definitions (35).

We refined definitions, themes, and developed a conceptual model by discussing the relationship between themes.

**Use of results**

We provided an interim report of our review results to all participants (found at https://osf.io/hdufv/ (32)) who provided their feedback in stage two.
Stage two: Network feedback

Participants provided their feedback on the definitions, themes, and conceptual model from stage one through online surveys and individual semi-structured interviews.

Recruitment and data collection

We emailed all eligible participants (n=31, Table 1) the interim report, which included an invitation to complete a survey and volunteer for an interview. In the survey, participants provided data through Google Forms (Google, Alphabet Inc). Survey questions included: whether participants thought any changes needed to be made; participants’ general perspectives on high value care; and what themes they would prioritise in clinical practice (Appendix 1).

We held and recorded online interviews through Zoom (36). In the interviews, we asked participants about the application of high value care from their clinical experience using the domains and themes from stage one as a discussion guide (Appendix 1) (37).

Data analysis

We cleaned and transcribed interviews onto Google documents (Google, Alphabet Inc). Two authors coded survey data (CG and RG) (38), and CG coded all interview transcripts. Where participants answered the survey and took part in an interview, these data were coded as one case (38). We brought similar codes together to form categories and themes (39), using the original high value care model as a conceptual framework for theme development (40, 41). We aimed to generate themes in the form of a) additions or changes to the original high value care model, and b) statements about application of high value care from the clinician’s perspective. CG proposed preliminary themes, which were then refined and finalised themes through discussion among a group of authors. We considered data saturation by assessing whether sequential interviews led to new themes; once no new themes were identified, we determined that the data were sufficiently saturated (42, 43). All authors involved in developing themes are physiotherapists with lived experience of providing care to people with musculoskeletal conditions and members of the same research network. Therefore, theme development is likely a shared endeavour where authors who analysed data shaped theme development through their own experience, and a clear delineation between participant data and the research team’s perspective cannot be made (44).

Use of results

Themes were summarised and incorporated into a new report and provided to all participants prior to the consensus meeting (found here: https://osf.io/hdufv/).

Stage three: Consensus meeting

We invited all eligible participants (n=31, Table 1) to the face-to-face consensus meeting through email. In reminder emails, we highlighted items that had been added during Stage two and asked participants to prepare their thoughts for these items in advance.

The consensus meeting was four hours in length. Participants voted to agree or disagree on each addition or change to the original model and each application statement. CG and SK facilitated the meeting. CG analysed the agenda items along with field notes and provided a summary report to participants. Following the meeting, we provided a final online document for comment and encouraged participants to comment on key areas of controversy.
Criteria for consensus
Our procedure for gaining consensus during stage three was prespecified as:

- All participants present voted on whether they agreed or disagreed to include changes and additions from step two in the final definitions and themes.
- Consensus was reached if 80% or more participants agreed.
- If no consensus was reached initially, we facilitated a discussion about the concept. We first heard from participants who did not agree to inclusion, then from participants who agreed to include the item.
- If there was agreement on the general concept, we proposed items again with different wording and voted again.
- If still no consensus reached, items were not included (we did not force consensus).

To set the level of agreement necessary for consensus, senior investigators first considered the normal limits of other consensus studies (45). Senior investigators also considered that participant’s similar professional backgrounds would lead to high levels of agreement. However, it would likely have taken more than the available time to reach 100% agreement on all items. So, for pragmatic reasons, 100% agreement was not sought.

Patients and public involvement
We did not aim to involve patients and the public in this study, because we want to involve them in the next parts of our larger study which seeks to develop a more comprehensive model for high value care from the patient’s lens.

Results
Stage one: Evidence review
Thirty-nine sources were included in data extraction and synthesis (for full results, including PRISMA flow diagram, see https://osf.io/hdufv/) (32, 46). Twenty-five sources were academic journal articles (64%) and 14 (36%) were grey literature (government, international health body or professional organisation reports). Most (62%) sources provided high level conceptual guidance on high value care for health systems (11-16, 20-25, 47-57). Only seven sources (18%) provided recommendations for individual clinicians to assist in high value care application (19, 28, 29, 53, 58-61). Only one source (3%) involved care providers in developing clinical recommendations for osteoarthritis consultations (60).

We found that high value care typically consists of four domains (patient values, cost effectiveness, reducing waste, and high-quality care) (Table 2), in which high-quality care consists of seven themes (safe, connected, consistent, patient-centred, evidence-based, equitable) (Table 3). We summarised the contributory domains and themes to provide definitions for high value and high-quality care. We produced a conceptual model to illustrate the relationship between domains and themes, alongside the key stakeholders in care provision found in the literature (Figure 1).

Stage two: Network feedback
We received 26/31 (84%) survey responses and conducted nine interviews. We determined that data was sufficiently saturated after the ninth interview. We received eight responses that suggested changes to the model.
Quotes from interviews and surveys can be found in Appendix 2. Participants’ feedback led to two additional high quality care themes (Effective and Accountable). The top three themes were noted by participants when asked what domains or themes were most important in clinical practice: patient-centred (23/26 (88%)), evidence-based (15/26 (57%)), reducing waste (12/26 (46%)). We generated an additional definition for low value care, and 21 statements on application (Appendix 2) (32).

Stage three: Consensus meeting
16/31 (52%) of participants attended the consensus meeting. Appendix 3 lists full results of the consensus meeting. Two additional themes for high quality care reached consensus (Effective and Accountable care, Table 3), which were incorporated into our definitions and conceptual model. Consensus was reached on the additional definition of low value care. Fifteen application statements reached consensus. No disagreements were raised when we provided meeting participants with an opportunity to provide written feedback on the summary report.

Final output
The process resulted in the following definitions from physiotherapists’ perspectives.

High value care: Care that delivers most value for the patient, and the clinical benefits outweigh the costs to the individual or system providing the care. Within high value care there are four contributing domains: high-quality care; patient values; cost effectiveness; reducing waste (see Table 2 for further explanation of domains).

High quality care: Evidence-based, effective, and safe care that is patient-centred, consistent, accountable, timely, equitable and allows easy interaction with healthcare providers and healthcare systems (connected) (see Table 3 for details).

Low value care: Care that is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.

The process also produced a conceptual model in Figure 1 that links the definitions with the context of care and 15 statements related to application of the domains and themes in practice (Figure 2).

Table 2: Explanation of the domains of high value care.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Explanation from physiotherapists’ perspectives</th>
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</thead>
<tbody>
<tr>
<td>High quality care</td>
<td>High quality care consists of nine themes (safe, connected, consistent, patient-centred, evidence-based, equitable, timely, effective and accountable). High quality care ensures care has potential for maximum clinical benefit and involves the consideration of all nine themes (safe, connected, consistent, patient-centred, evidence-based, equitable, timely, accountable, and effective).</td>
</tr>
</tbody>
</table>
Patient values

Providing high value care involves appreciating the patient’s values. Values are deep-seeded motivations that can drive behaviour. Patient expectations can reflect patient values, but often values are harder to discern without skilled communication. Applying high value care involves more than simply asking what the patient’s expectations are and matching care to these expectations.

Cost effectiveness

The general concept of cost-effectiveness in healthcare is the ratio of estimates for costs of treatment and its effectiveness from a specific perspective; patient, clinician, healthcare system. From a clinician’s perspective, a cost-effective service must take into account the revenue they gain from their service minus the associated costs the clinician incurs to provide it.* Clinicians must also consider what patients may be willing to pay for service provision.

Reducing waste

On an individual clinician level, reducing waste means decreasing the use of low value care options. Clinicians should remove unnecessary activities in the cycle of care, such as unnecessary tests, treatments, procedures, and referrals.

* Our study sample predominantly consists of Australian physiotherapists working in a private practice.

Table 3: Explanation of themes of high-quality care

<table>
<thead>
<tr>
<th>Themes found in literature</th>
<th>Definition from physiotherapists’ perspectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe</td>
<td>Care that does not harm the patient. The clinician should aim to minimize harms and adverse events in care. Safe care should be well supported by policies and procedures and a clear reporting procedure.</td>
</tr>
<tr>
<td>Connected</td>
<td>Care that allows patients to move easily between and across sectors of healthcare (for example, between primary and tertiary care). Clinicians should prioritise efficient interprofessional communication and empower patients to maintain continuity over their own care.</td>
</tr>
<tr>
<td>Consistent</td>
<td>All care should be individualised in partnership with patients; however, clinicians should strive to reduce inappropriate variability in care. Reducing unwanted variability in care is important across episodes of care, but also across sectors and other practitioners. Clinicians can use guidelines to reduce care variability.</td>
</tr>
<tr>
<td>Patient-centred</td>
<td>Care that is respectful of and respective to individual patient preference, needs and values. This theme is similar to patient values, however patient values refer to understanding and operationalising what is valuable to the patient. Patient centredness ensures the patient is empowered to take an active role in their care. Specific clinical skills to enhance patient-centredness can include, but are not limited to, adapting communication and assessments according to patient’s needs, and partnering with patients to develop management plans.</td>
</tr>
</tbody>
</table>
Evidence-based Care that is guided by up-to-date evidence. Practiced as evidence-based practice, which is as described by Sackett, “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.”

Equitable Care that is of equal quality for all cultural backgrounds, age, gender, religion, sexual orientation, disability status, region, socioeconomic status or insurance coverage. For patients to take an active role in their care, they must first feel safe to be themselves and confident that they will be understood. Clinicians must ensure care is not just ‘one size fits all’ and work to have a full understanding of the patient’s identity, context, and cultural background. Clinicians should adapt their practice to meet varying cultural needs.

Timely Care provided without extensive delay. It isn’t clear what the ‘right time’ might be for each individual patient. However, waiting for care leads to poor patient outcomes. Delayed care also leads to downstream costs for the healthcare system. Clinicians should strive to provide care without unnecessary delay.

Themes added through consensus

Accountable Care that is provided with the explicit understanding of being benchmarked against standards and open to critical appraisal by peers.

Effective Care that achieves its intended outcome. Effective care and evidence-based care are subtly different. Effective care should be evidence based, but just being evidence-based is not sufficient for effective care. Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values.

Areas of disagreement
Appendix 3 lists areas of disagreement. Six statements did not reach consensus. Of these, three statements were included as accompanying explanatory text to domains and themes. The other three were not included in our definitions or model. Other areas of disagreement are discussed under research implications.

Discussion Our study adds clinicians’ perspectives to previous definitions of high value musculoskeletal care. For physiotherapists, high value care is care that is high quality, incorporates patient values, is cost-effective, and reduces waste in the care cycle. High quality care is safe, connected, consistent, patient-centred, evidence-based, timely, equitable, effective, and accountable. We provide statements from the clinical perspective to assist with the application of high value care.
**Strengths and limitations**

This study used RAND/UCLA methodology to reach consensus and established protocols a priori (30 - 32). All stages of this study (from conception to manuscript writing) were co-produced with a research network of physiotherapists, who predominantly work in private practice, which improves the credibility of our findings. The perspectives included in this study are unlikely be representative of all physiotherapists; our study involved members of a research network who likely share similar views and biases regarding care value and a minority of participants were female (62). In step three, voting was not anonymous, and participant's votes may have been influenced by other members. Four participants left the consensus meeting before statement 15 (on Equitable care), because they had other commitments to attend, however none of the members who left provided any disagreement with the statement on the report following the workshop.

**Relation to previous literature**

Our study suggests there is more to value for practising clinicians than previously documented. While there is alignment with many domains and themes described in existing literature, participants in our study highlighted the importance of additional themes for Effective and Accountable care in defining high value care. Previous definitions of value have focussed on the economic implications of care and encompass a ratio of the cost relative to care outcomes (16, 51). Previous definitions also state that value can only be determined when the outcome of care is known (16, 51). While the importance of care outcomes is obvious, our study highlights that clinicians think value may be achieved through the consideration of multiple domains, themes, and stakeholder perspectives. This suggests that, in the eyes of clinicians, care value is a continuum that can be shaped by the process of care.

**Clinical implications**

*Application of high value care: general information*

Participants perceived high value musculoskeletal care to be a process, existing on a continuum, involving as many domains and themes as possible. Participants felt that being aware of different stakeholders’ perspectives is integral to high value care. Our study suggests that high value care must balance these potentially conflicting perspectives and anchor care decisions on achieving the optimal outcome from the patient’s perspective.

*Domains of high value care*

Funding structures may incentivise care options that lead to low value care (Figure 2). Most participants in our study work in the Australian private sector (63). In this setting, a clinician can either see more patients per hour or reduce the costs to deliver care to maximise their income and ensure cost-effective delivery of care (64-66). Both options typically mean the clinician spends less time with the patient, which makes high value care less likely. To apply high value care, clinicians should be aware of the levers that might lead to low value care (64-67).

Removing unnecessary and wasteful care is a key contributor to high value care provision (12,13). Research on reducing waste commonly focuses on removing unnecessary tests, and procedures from practice in discrete care episodes (12, 13). Participants in our study expressed that a wider focus is important and reported additional wasteful elements like
unnecessary referrals to other professionals should be reduced. Participants also reported a focus on clinical reasoning as a potential source of waste may be important.

In reducing waste from care, it is also important to define low value care because clinicians can understand what to avoid and remove from practice. The idea of avoiding low value care within musculoskeletal practice has traction within the literature (68,69). Low value care has been defined as care that provides little to no benefit to patients or where the risk of harm exceeds the probably benefit (70). The perspective gained in our study may assist in making the attempts at reducing waste more clinically applicable. A key component of low value care is a misalignment with both patient’s preferences and their goals (see statement five).

A key goal of high value care is aligning care outcomes to the patient’s values and experience of health (16, 25, 51). Patient values have been described as, “moral beliefs to which people appealed for the ultimate rationales of action” (71, pp 3) and reflect deep-seeded motivations for behaviour and life choices (71). Values can dictate what a patient will find valuable about the care process and care outcomes (72). There are tools that clinicians can employ to better align care with the patient’s values (73, 74). For example, patient-reported outcome measures, patient-reported experience measures and shared decision-making tools (73, 74). These tools, however, may not allow an in-depth understanding of patient’s values. Skilled communication is a key mechanism to uncover a patient’s values (61). Communication should involve a two-way information exchange between patient and clinician so that both parties can learn from each other’s perspective and knowledge (61). An in-depth information exchange may contribute positive effects to care (75) but may also create value for the patient by improving their ability to make decisions about their health (76).

**Applying themes of high-quality care**

A requirement for high-quality care is Safe care (care that does not cause patient harm) (47). Evidence on harms from treatment has focused on biomedical harms like side-effects caused by medications (77). While important, evidence suggests that a traditional biomedical view on harms may not capture other sources of potential harm in care provision (78-83).

For example, the language used when communicating a diagnosis or imaging findings alter treatment intentions and initiate a low value treatment cascade leading to harm (80, 81). In our study, participants agreed that they should look beyond commonly considered harms like medication side-effects (Statement 12).

Participants in our study reported clinicians should strive to deliver care that is accountable. Peer review and auditing of clinical practice has promise to improve care standards (84-87).

Clinicians in our study agreed that they should be open to having their practice and clinical reasoning reviewed by peers (statement 11). Discussing thought processes that lead to care decisions amongst peers may uncover flaws in reasoning and lead to improvements in care (84-87). There is evidence demonstrating that clinicians may be reluctant to expose their practice to auditing (88-90), which indicates that some aspects of practice auditing may take effort. However, critical appraisal of clinical reasoning and care decisions is low hanging fruit that individual clinicians can implement without significant change to practice.
**Research implications**

A key direction for future research is to incorporate other stakeholder perspectives. The patient’s perspective is central to high value care; we recommend the immediate next step for future research is to involve the patient’s voice to understand their perspective on receiving high value care. Other musculoskeletal clinicians and care stakeholders should be involved to understand their perspectives. Our definitions, themes, and model can function as a framework to assist in establishing a common language to discuss the concept of high value care. Following this next step, we recommend future research aims to understand the barriers and facilitators to applying our domains and themes to support better high value care application.

Our results suggest that clinicians perceive there to be a conceptual difference between the methods a clinician can successfully use to deliver evidence-based care and the traditional description of evidence-based care (91). However, dissenting opinion around the accompanying statements for effective care may allude to the group's uncertainty about Effective care’s specific content and application. Consensus was also low for statement 14 about evidence-based care (Figure 2). Future research should determine whether other populations describe something like Effective care (the skills and process of applying Evidence-based care). Currently, we cannot rule out a persistent misunderstanding of the concept of Sackett’s original outline of evidence-based practice, which has been described elsewhere (90-93).

Future research on equity in primary care and physiotherapy is needed. Participants in our study described that access to private practice physiotherapy is not equitable when patients cannot cover the difference between the clinician’s fee for service and government funding options. Evidence suggests inequitable access to physiotherapy is a concern both in Australia and internationally (94, 95). However, access to care is only one aspect of equity. Equity is a very broad concept and poorly defined in the literature (96). Dissenting opinion on statement 15 about Equitable care (Figure 2) may point to a lack of common language and confusion about what equity means (96). Researchers should first provide a common language about equity, so clinicians can consider it in their practice more often (97).

**Policy implications**

Clinicians’ input is important for policy makers because they experience first-hand the judgements and resources that contribute to successful patient outcomes. Policy makers have placed importance on clinician-led efforts to generate consensus on what constitutes low value care (98-100). Our study data provides a framework through which to establish specific recommendations about high value care. Policy makers should work with clinician and consumers to collaboratively establish targets to incentivise high value care, which would supplement the disincentives for low value care.

Policy makers can also learn from the clinical perspective to understand systemic factors that make high value care difficult. Clinicians in our study felt that economic drivers in primary care can lead to low value care. Policy makers could trial different funding mechanisms in collaboration with care providers to determine the effects on care provision. Clinicians in our study viewed that economic factors may also impact equitable access of physiotherapy. Policy makers could consider alternate mechanisms to improve access to care.
Conclusion

This work highlights a clinical perspective on high value care for musculoskeletal conditions. Providing high value care was viewed by physiotherapists as a comprehensive construct, that involves more than providing evidence-based care. High value care includes high quality care (safe, connected, consistent, patient centred, evidence-based, timely, equitable, and accountable care), incorporates patient values, is cost-effectiveness, and reduces waste.

Figure captions

Figure 1: High value care conceptual model. [Legend below figure: Blue themes were added through network feedback. Care should be taken not to interpret this model with any hierarchy of domains, themes, or stakeholders.]

Figure 2: Consensus generated statements to assist the clinical application of high value care for musculoskeletal conditions.

Ethics approval

This study was registered as low or negligible risk by the Hunter New England Research Ethics Committee (Approval No AU202220-09).

Author contribution

Conceptualization: This study was conceptualised by the Research In Practice Network (KD, NMa, MC, NB, BD, ML, AD, CBa, DR, SL, CBo, LC, TM, JD, SH, AM, JW, KK, NMu, RG, SZ, TW, BM, CD, JM, BG, CH, CS, EM, MB, TS, CW are all authors are members of the network).

Methodology: CG led methodology and administration for all project stages. Stage one (rapid review) protocol was co-developed by CG, MB, PDS, SD, BD, KD, DR, CW. Stage two (network feedback) protocol was co-developed by CG, KD, NMa, BD, AD, DR, SL, CD, CW, and KB. Stage three (consensus meeting) protocol was co-developed by CG, AC, SK, CW, KB, with assistance from KD, KK, MC, SZ, NB, NMa.

Data collection: CG led data collection throughout the project. Stage one (rapid review): BD, CG, CW, MB, KD performed searches and screened sources. Stage two (network feedback): CG and KK collected data, CG and NB transcribed interviews. Stage three (consensus meeting): CG collected data.

Analysis: CG led data analysis throughout the project. Stage one (rapid review): BD, CG, MB, CW, DR, KD, PDS, SD analysed data. Stage two (network feedback): CG and RG coded surveys and interviews. CG, KD, KK, MC, NB, NMu, RG, SZ developed and finalised categories and themes. Stage three (consensus meeting): CG analysed results and field notes and NMa, MC, NB, BD, ML, AD, CBa, DR, CB, LC, TM, JD, SH, AM, JW, KK, NMu, RG, SZ, TW, SD, PDS all provided feedback on the results of stage three.

Writing: CG led the initial draft. KD, SK, NMa, MC, AG, NB, BD, ML, AD, CBa, DR, SL, CBo, LC, TM, JD, SH, AM, JW, KK, NM, RG, SZ, TW, SD, PDS, BM, CD, JM, BG, CH, CS, EM, MB, TS, KB, CW provided significant feedback on the initial draft through a live online document.

Review & editing: Final drafting of the manuscript was completed by CG with assistance from CW and SK. All co-authors approved the final manuscript for submission.

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**Competing interests**

Authors declare no competing interests.

**Funding**

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Data sharing**

Deidentified participant data are available from corresponding author upon reasonable request. All protocols are available from [https://osf.io/hdufv/](https://osf.io/hdufv/).

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High value care conceptual model. Blue themes were added through network feedback. Care should be taken not to interpret this model with any hierarchy of domains, themes, or stakeholders.

170x108mm (96 x 96 DPI)
Consensus generated statements to assist the clinical application of high value care for musculoskeletal conditions.

164x199mm (96 x 96 DPI)
### Appendix 1: Survey and interview questions

**A) High value care consensus survey questions**

1. Is there anything missing from our definitions and themes?
2. What is your perception or opinion on high value care?
3. As a practising clinician, what do you prioritise out of the themes outlined above for high value and high-quality care?
4. Do you want to discuss these themes and definition further in a short 15-minute interview with us?

**B) High value care consensus interview questions exploring knowledge gaps identified in our evidence review**

**Interview Guide Questions:**

1. Is there anything you would like to expand on in reference to your answers to the survey?

2. **Value(S)**
   - How do you know or measure how much the patient actually values a particular outcome?
     - Do you ever get a patient to rank particular outcomes?

3. **Cost effectiveness**
   - In your view, how well do current concepts in high value care definitions capture what it is like to provide cost-effective care in private practice physiotherapy?
     - Are there other things that come into providing cost-effective care for YOU? For example, treatment that can be performed in the allotted time with patient.
     - What do you think about the cost the patient is willing to pay for treatment? Does this impact what ‘cost-effective’ care is?

4. **Reducing waste**
   Most ways to reduce overuse revolve around improved patient understanding and shared decision making. But these often revolve around specific, discrete aspects of care, like one-off decisions about treatment modalities/types.
   - Are there aspects of shared decision making that may help reduce overuse?
     - For example, how do you decide where/what practitioner you will refer a patient?

5. **Effective care**
   - In your view, how is effective care related to evidence based care?
     - Can you expand on how this plays out in practice?
     - Would you prefer the RIPN statement to include evidence-based care or effective care as a core component to high quality care? Why?

6. **Measuring care**
   There are currently no overarching standards or mechanisms to ensure care from physiotherapists is high quality (effective/evidence-based, safe, consistent).
   - How would you measure care quality?
7. Equitable care
From our rapid review, we've found that equitable care can be roughly defined as care that allows all people, from all walks of life, to shape, or be actively involved, in their care.

- How do you ensure equitable care in practice?
  - How can we do this better as a group (RIPN)?

- Is this different for the different constructs of quality as we found in our rapid review?
  - Safety?
  - Consistency?

- Do you think we need to include something about this in our RIPN statement?
## Appendix 2: Qualitative data that led to theme development

### Additions or changes to our model of high value care

<table>
<thead>
<tr>
<th>Area</th>
<th>Item</th>
<th>Supporting qualitative data</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Additions or changes to our model of high value care</strong></td>
</tr>
</tbody>
</table>
|      |      | 1. Adding a definition for low value care:  
Low value care is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.  
“I don’t think it’s a dichotomy [low value care and the absence of high value care]. I think these are separate constructs that we’re talking about. That are related, but I think they’re separate I think.” (Participant 08)  
“So, if we know that things don’t work then I think that it’s pretty clear to have no value…. So, it might be evidence-based and effective, then if they’re not engaged with it, then it’s probably low value….  
So if you can’t ensure that intervening would have a greater effect than not intervening than not intervening.” (Participant 01) |
| High value care: Reducing waste domain | 2. Add the following text:  
Waste is defined as a cycle of care issues such as unnecessary tests, treatments, procedures, and referrals.  
“And if you’re going to send for an MRI, that’s fine. You know, because I know that there is often a clinical justification, you still have to check the spinal cord or you know, rule out red flags, that’s fine. But then the conversation needs to be had with the patient about what that disc bulge means. And the language you frame around that because, you know, that’s where you’re then burdening the health system with waste. Because that person goes on this six month merry go round of shopping surgeons and having laminectomies for a nonspecific episode of back pain that, all in all might have resolved without such aggressive early intervention.” (Participant 04) |
|      | 3. Add the following text under clinician:  
And processes that contribute to care (like clinical reasoning that lead to care decisions).  
“So maybe sometimes our cleverness in our clinical reasoning can lead us to decision making, be it diagnostic, prognostic, or prescriptive, in terms of treatment decision-making, that still may not necessarily reflect perhaps high value care. And in fact, may sometimes give rise to low value care perhaps in some instances.” (Participant 06) |
| High value care: Patient values | 4. Change the domain name:  
From Patient Centred (ValueS) to Patient values.  
“Prior to this RIPN project I was not aware of the difference between high value and high quality care. Having read the rapid review I agree with the proposed relationships and definitions, although perhaps a change in the wording of the model could improve its clarity, i.e re-phrasing of ‘value’ from the patient centred circle and the cost effectiveness circle?” (Participant 07) |
| High value care: Cost effectiveness | 5. Change the domain name:  
From Value/cost-effective to Cost effectiveness |
6. Make Effective and Evidence-based two separate themes

“Evidence-based care, or the process of evidence-based practice, leads you to understanding what is effective healthcare.” (Participant 01)

“Effective care is how we deliver care. Do we have the skills to deliver care in an effective way….”

“Our practice needs to be evidenced informed so that our own biases within clinical practice are being challenged. But it needs to be delivered in an effective manner and made compelling enough for the consumer to choose.” (Participant 02)

“So, something might be effective but it could be harmful. You know, probably answers the question, you look at the evidence… So I think evidence-base is crucial and it has a crucial role in what we do, but I don’t think it’s the whole puzzle.” (Participant 05)

7. Add the following explanatory text for Effective theme:

Care that achieves its intended outcome. Effective care and evidence-based care are subtly different.

Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27]

“Effectively, we are saying we are producing an effect.” (Participant 06)

“I could be really evidence based in my care but that does not mean I deliver it in an effective manner.” (Participant 02)

Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]

“So, you know, it’s up to you to do your assessments and see what sort of, you know, see if that person is responding to that and if they’re not responding. That something that might not be evidence based, you know, that’s out there in the research. That the research said isn’t more effective than other care. But for that person it might be heaps more effective because it speaks to that belief patterns.” (Participant 04)

8. Add a theme:

Accountable

“In response to ‘Is there anything missing from our definitions and themes?’ “Section in high quality care to consider therapy being measurable and accountable.” (Participant 14)

“Rather than just, ‘here’s some things to look at (outcomes):’ It’s like, this is gunna happen and we’re gunna do this. This is how we’re gunna know. So I think it has a bit more of an impact on
For peer review only - http://bmjopen.bmj.com/site/about/guidelines.xhtml
When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts and beliefs about what care is best for the patient and what the patient expects to receive.

“I think being aware of the tension is the first part.” (Participant 05)

“And just just ask them. I mean, they also show it on their face or in their body language, if what we’re doing is incongruent. Because sometimes what I want to be doing what I think is the right outcome measure for us to be pushing towards is different what the patient wants to be doing.” (Participant 05)

A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient care.

“I guess like my role is to pull down the layers of what they say that they might not intentionally be saying. You know and categorize that into, okay they want this function or they’re wanting that range, or wanting that pain or they’re wanting this conditioning.” (Participant 04)

Meeting patient expectations may be necessary for high value care provision, but this alone does not constitute high value care.

“If we only offer the patient what WE see as high value care, even if it is objectively the best available option, and it doesn’t meet the expectations of our patients we potentially lose the perception of high value in their eyes. This doesn’t mean pandering to their notions of high value care, but at least considering their expectations and opening a dialogue around why we might be able to offer them a solution that is better.” (Participant 20)

To optimise the value of care, communication should involve a two-way exchange where patients learn from clinicians and clinicians learn from patients.

“This is why I think the community involvement is really important because we can have our heads so far up our own assess that much, but it may not matter that much to the recipient of healthcare. That I’ll have people coming quite regularly who think that they need something or they want something and I’ll think that they probably don’t. And then that’s a conversation.” (Participant 01)

Funding structure may incentivise care options that maximise clinic income relative to clinician’s time, and lead to low value care provision.

“It’s more cost-effective to deliver what I could consider low-value care. Because it’s lower effort. It’s faster. It’s much less effort. And is much more generic in its nature. So it’s much easier to fill time with more repeatable exposures or appointment billings schedules than it is to try and deliver more comprehensive and individualised rehab plans.” (Participant 01)

Physiotherapists should be open to clinical reasoning per se, but clinical reasoning used in the
<table>
<thead>
<tr>
<th>High quality care: Accountable</th>
<th>having their clinical reasoning, decision making, and care provision peer reviewed.</th>
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<tbody>
<tr>
<td>High quality care: Safe</td>
<td>&quot;I could easily say the way that we communicate with people that can be unsafe. In regard to feeding into their catastrophisation or fear avoidance.&quot; (Participant 03)</td>
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<td>&quot;I would like to work in a community where a patient with wry neck could attend any primary health care practitioner - physio, GP, chiro, osteo etc. and have their story listened to - rule out sinister pathology and create differential list, thorough assessment to confirm/refute diagnoses, provide education and reassurance and stay clear of harmful language.&quot; (Participant 14)</td>
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<tr>
<td>High quality care: Connected</td>
<td>&quot;To address your concerns, ask the questions that you need and come to an agreed, you know, a collaborative resolution with someone that has the knowledge that you don’t have, and I think in one of these points I’m not sure which one it was. You had connected, I think, is what it was?&quot; (Participant 08)</td>
</tr>
<tr>
<td>High quality care: Evidence-based</td>
<td>&quot;Evidence-based care gets twisted into whatever framework the person is speaking about and wants to justify. So evidence-based care has been used to describe the use of manual therapy and the non-use of manual therapy, and they’re both evidence-based care.&quot; (Participant 01)</td>
</tr>
<tr>
<td>High quality care: Equitable</td>
<td>&quot;Well, I mean, my clinic is not equitable. You have to be able to afford it.&quot; (Participant 01)</td>
</tr>
<tr>
<td></td>
<td>&quot;Well I guess, equitable care. I feel very hamstring to what I can provide as equitable care. You know, I'll be honest and I'm very bound by financial model.&quot; (Participant 04)</td>
</tr>
<tr>
<td></td>
<td>&quot;So I think a lower SES cohort or people with poor health education, probably aren’t aware of, and don’t get the same quality of care as their counterpart. You know, higher SES people, people with higher health education and we don’t have a funding model that really supports that in private practice because at best they’re going to get like I said a EPC program which will cover only half the physiotherapy sessions and only then for five of them.&quot; (Participant 05)</td>
</tr>
<tr>
<td></td>
<td>&quot;Yep. I think private practice exists because the public system isn’t enough. Theoretically if the public system was able to provide high quality, effective care that was timely and able to access you wouldn’t have a need for the private setting. So, inherently there is inequity in being able to access care. .&quot; (Participant 23)</td>
</tr>
<tr>
<td>High value</td>
<td>&quot;And if you’re talking about values, then it taps into belief systems and identity and all this other thing&quot;</td>
</tr>
</tbody>
</table>
values may contribute to a perceived tension between what the patient wants and what the clinician thinks is best for their health outcomes.

[expletive] that people bring to the table.” (Participant 03)

Reducing waste in musculoskeletal care should account for other aspects of the care cycle, such as unnecessary referrals.

“And if you’re going to send for an MRI, that’s fine. You know because I know that there is often a clinical justification, you still have to check the spinal cord or, you know, rule out red flags, that’s fine. But then the conversation needs to be had with the patient about what that disc bulge means. And the language you frame around that because, you know, that’s where you’re then burdening the health system with waste. Because that person goes on this six month merry go round of shopping surgeons and having laminectomies for a nonspecific episode of back pain that, all in all might have resolved without such aggressive early intervention.” (Participant 04)

Clinical reasoning that may not reflect high value care, or give rise to low value care, is a form of waste.

“You know, we’ve got very clever clinicians out there that can make very clever arguments for why they want to do something, but that still doesn’t necessarily mean that it’s high quality. And it’s not necessarily a fault with clinical reasoning per se, but clinical reasoning used in the wrong way can lead to that type of decision making.” (Participant 06)

More consistent use of high value care requires a commitment to a benchmarked standard of care.

“I guess, to ensure that we are confident that we are delivering what we think we should. We probably have some reference point, be it outcome measures or patient goals or something, that tethers what we’re doing to a process as opposed to doing it until someone decides that we’re not doing it anymore. I guess benchmarking what we’re doing against some external - well maybe not external - but against some measure.” (Participant 04)

Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27]

“I could be really evidence based in my care but that does not mean I deliver it in an effective manner.” (Participant 02)

Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]

“Effective care is how we deliver care. Do we have the skills to deliver care in an effective way. This includes communication skills, patient therapeutic alliance building, manual therapy skills.” (Participant 07)
Appendix 3: Results of consensus meeting.

Additions or changes to our model of high value care

<table>
<thead>
<tr>
<th>Area</th>
<th>Item</th>
<th>Agreement</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value care: Reducing waste domain</td>
<td>1. Adding a definition for low value care: Low value care is not patient-centred, or aligned with the patient’s goals, and is ineffective and/or unnecessary.</td>
<td>13/16 (81.25%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>2. Add the following text: Waste is defined as a cycle of care issues such as unnecessary tests, treatments, procedures, and referrals.</td>
<td>16/16 (100%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td>3. Add the following text under clinician: And processes that contribute to care (like clinical reasoning that lead to care decisions).</td>
<td>15/16 (93.75%)</td>
<td>Add to model</td>
</tr>
<tr>
<td>High value care: Patient values</td>
<td>4. Change the domain name: From Patient Centred (ValueS) to Patient values.</td>
<td>16/16 (100%)</td>
<td>Change wording</td>
</tr>
<tr>
<td>High value care: Cost effectiveness</td>
<td>5. Change the domain name: From Value/cost-effective to Cost effectiveness</td>
<td>16/16 (100%)</td>
<td>Change wording</td>
</tr>
<tr>
<td>High value care: Effective</td>
<td>6. Make Effective and Evidence-based two separate themes</td>
<td>16/16 (100%)</td>
<td>Make two separate themes. Effective modified to include statement 20 and 21.</td>
</tr>
<tr>
<td></td>
<td>7. Add the following explanatory text for Effective theme: Care that achieves its intended outcome. Effective care and evidence-based care are subtly different. Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care. [Agenda item 27] Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values. [Agenda item 28]</td>
<td>16/16 (100%)</td>
<td>Add to model</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13/16* (86.67%)</td>
<td>Not agreed as a standalone statement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12/15* (80%)</td>
<td>Not agreed as a standalone statement</td>
</tr>
</tbody>
</table>
8. Add a theme:
   **Accountable**

9. Add the following explanatory text for Accountable:
   Care that is provided with the explicit understanding of being benchmarked against
   standards and open to critical appraisal by peers.

**Accompanying statements to high value**

**Agreed statements**

<table>
<thead>
<tr>
<th>Area</th>
<th>Statement</th>
<th>Agreement?</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>High value care</td>
<td>Different stakeholders may have different perspectives on what high value care is.</td>
<td>16/16 (100%)</td>
<td>Agreed as standalone statement</td>
</tr>
<tr>
<td></td>
<td>Different stakeholder perspectives should be considered when delivering high value care.</td>
<td>15/16 (93.75%)</td>
<td>Agreed as standalone statement</td>
</tr>
<tr>
<td></td>
<td>High value care is not an absolute threshold, rather it is a process of care delivery relative to the situation and context of care.</td>
<td>16/16 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High value care can mean not providing care.</td>
<td>16/16 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low value care does not have to include all characteristics listed in our definition to be labelled low value. For example, care can be low value when it is aligned with the patient’s goals but not delivered in a way specific to the patient’s preferences.</td>
<td>15/15* (90%)</td>
<td></td>
</tr>
<tr>
<td>High value care: Patient values</td>
<td>When attempting to understand what a patient values, a clinician may perceive a tension between their own thoughts and beliefs about what care is best for the patient and what the patient expects to receive.</td>
<td>15/15 (100%)</td>
<td>Modified to include [and belief] from statement 16</td>
</tr>
<tr>
<td></td>
<td>A perception of tension between the clinician’s own thoughts about what care is best for the patient and what the patient expects to receive can be resolved through communication, which involves interpreting the patient’s needs and translating them into clinical outcomes amenable to patient care.</td>
<td>15/15 (100%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meeting patient expectations may be necessary for high value care provision, but this</td>
<td>15/15 (100%)</td>
<td></td>
</tr>
</tbody>
</table>
## High value care: Patient values

16. A clinician’s own belief system and values may contribute to a perceived tension between what the patient wants and what the clinician thinks is best for their health outcomes.

**Not agreed statements**

| High value care: Patient values | 2/15 (13.33%) | Re-voted to include as part of statement 6 (Agreement 12/15 (80%)) |

| High value care: Reducing waste | 0/15 (0%) | Do not include |

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*modified to remove clause about public health service options*
18. Clinical reasoning that may not reflect high value care, or give rise to low value care, is a form of waste.

19. More consistent use of high value care requires a commitment to a benchmarked standard of care.

20. **Effective care should be evidence-based, but just being evidence-based is not sufficient for effective care.** [Agenda item 27]

21. **Effective care is determined by the process of care, which is underpinned by skilled communication and understanding patient beliefs and values.** [Agenda item 28]

*One participant left the consensus meeting after accompanying statement 4.

**Three more participants left the consensus meeting before we finalised the voting on statement on accompanying statement 15. Statement 15 was originally worded, “Private practice physiotherapy is not equitable because those who cannot afford the fee for service may not be able to access private practice physiotherapy, and public funding options may not completely ameliorate the difficulty these patients experience in accessing care.” Participants felt that they were too uncertain about how publicly funded health service options (e.g., hospital outpatient departments) impact care access and decided to remove this statement.