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Overcoming Overuse Part 2: Defining and Quantifying Health Care Overuse for Musculoskeletal Conditions

Health care overuse, commonly referred to as *overuse*, is a health service (clinic visit, test, or treatment) that provides no net benefit or causes harm to a patient or the wider population.^{4,10} Overuse is typically considered a problem within medicine, and less so within ancillary health services. Between 10% and 30% of health care might be overuse. All treatments have the potential to cause harm in terms of physical, psychological, social, financial, and treatment burden.⁴ Many physical therapists will understand the traditional definition of overuse. But what does overuse look like in practice? In part 2 of the Overcoming Overuse series, we (1) define overuse on a continuum from overuse to appropriate care, (2) consider how the definition of overuse depends on the perspective of the physical therapist, society, and the patient, and (3) discuss ways health care overuse can be measured.

A Continuum From Overuse to Appropriate Care

Clinical practice is complex, and quantifying health care as either overuse or ap-

propriate in physical therapy is, as with other professions, not black and white. Appropriate care occurs along a continuum (FIGURE).⁴ At one end of the continuum is overuse: care that is ineffective, inefficient (cost-effectiveness relative to alternatives), and misaligned with the patient's values and preferences.¹¹ At the other end is appropriate care: clearly effective (beneficial based on best available evidence), efficient, and aligned with the patient's values and preferences. Between the two extremes of overuse and appropriate care lies the "gray zone," the area in which most real-world practice is located, with all its subtleties and nuances. The

"gray zone" includes tests or treatments that offer only small benefits; have incomplete or inconclusive evidence for benefits, harms, and cost-effectiveness; where the evidence is not generalizable to the patient; or where the patient's preferences don't align with best evidence. It is in the "gray zone" where defining, identifying, and measuring overuse are challenging.

Defining overuse depends on the perspective of the person viewing the problem.¹¹ Consumers, clinicians, health care institutions/organizations, policy makers, industry, and government likely all have different criteria when defining overuse and appropriate health care. In accordance with the framework proposed by Verkerk et al,¹¹ we consider overuse of musculoskeletal health care in terms of care that is ineffective, inefficient, and misaligned.¹¹ For each section, we include physical therapy-specific examples and encourage readers to reflect on their own practice (TABLE 1).

● **SUMMARY:** In this series on "Overcoming Overuse," we explore the issue of health care overuse and how it may be identified in musculoskeletal physical therapy. In part 2, we frame health care overuse as a continuum from overuse to appropriate care, and consider how to measure overuse. We describe how overuse can be defined within a framework of care that is ineffective, inefficient, and misaligned, depending on the perspective

of the person delivering or receiving care—the clinician, society, or patient. To ensure that musculoskeletal health care is of high value and sustainable, we encourage physical therapists to reflect on their practice. *J Orthop Sports Phys Ther* 2020;50(11):588-591. doi:10.2519/jospt.2020.0109

● **KEY WORDS:** appropriate care, health care, musculoskeletal, physical therapy, provider, services

Health Care Overuse: Ineffective, Inefficient, and Misaligned Care

Ineffective care considers overuse from the physical therapist's perspective and focuses on evidence-based practice. Ineffective care includes any test or treatment that, based on high-quality evidence, provides

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little to no beneficial effect, is not cost-effective compared to available alternatives, or for which the risk of harm outweighs the probable benefit.¹¹ Examples include prolonged bed rest, electrotherapy, back supports, imaging, or injections for low back pain,⁷ and arthroscopic surgery for degenerative knee disorders (eg, osteoarthritis) or rotator cuff-related shoulder pain.³ Strategies aimed at reducing ineffective care target clinicians and include de-implementation initiatives (eg, the Choosing Wisely do-not-do recommendations, available at <https://www.choosingwisely.org>), audit and feedback, and multicomponent implementation strategies (eg, guidelines dissemination, peer comparison, and education).

Inefficient care can be summarized by the phrase “less is more.” Inefficient care considers overuse from a societal perspective. It includes care that is de-

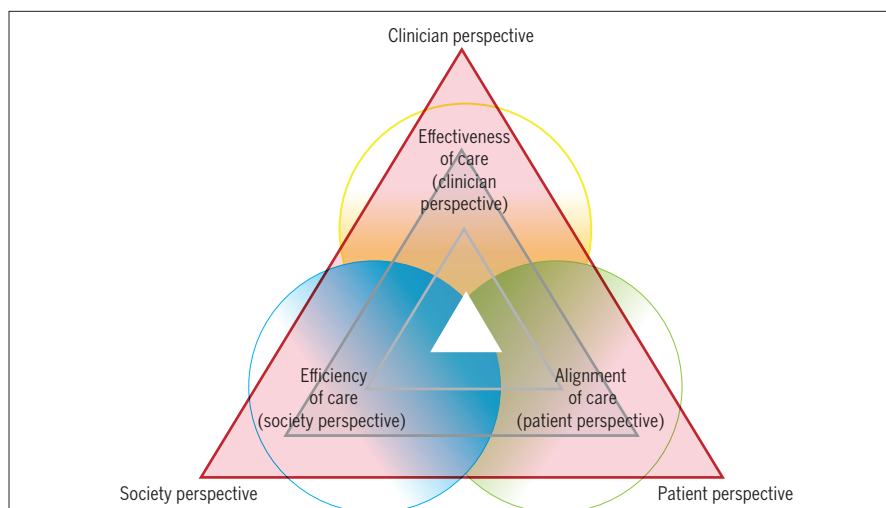


FIGURE. The continuum from overuse to appropriate care and the 3 perspectives to understand health care overuse (effectiveness, efficiency, and alignment of care). The small white triangle denotes appropriate care, gray shading denotes the “gray zone,” and red shading denotes overuse. Dark yellow shading denotes effective care and light yellow shading denotes ineffective care, dark blue shading denotes efficient care and light blue shading denotes inefficient care, and dark green shading denotes aligned care and light green shading denotes misaligned care with the patient’s values and preferences.

TABLE 1

APPROPRIATE CARE AND PERCEPTIONS OF OVERUSE FROM THE PERSPECTIVES OF THE PATIENT, PHYSICAL THERAPIST, AND SOCIETY

	Description
Case 1	A 58-year-old patient presents to a local physical therapist with a 3-week history of acute low back pain
Patient preferences	Electrotherapy and massage (based on advice from a friend)
Treatment delivered by physical therapist	Reassurance and advice to remain active
Treatment outcome	Pain resolved within 2 weeks of seeing the physical therapist
Clinician perspective	The physical therapist considers overuse to be care that best evidence suggests provides no benefit, or for which the risk of harms outweighs the probable benefit. The physical therapist provides care that is concordant with guidelines for acute low back pain (eg, advice to remain active and reassurance) but also uses spinal manipulative therapy, a treatment that falls within the “gray zone.” Spinal manipulative therapy, when used judiciously over a short period and supported by strong clinical reasoning, may be considered appropriate care. The physical therapist avoids overuse by not providing the treatments requested by the patient and offering evidence-based alternatives
Society perspective	Insurance companies or policy makers consider overuse to be care that is not cost-effective. The insurance company weighs the costs and benefits of the treatment and considers whether alternatives are more cost-effective. For example, are there interventions that require fewer visits to health professionals, shorter interventions, or interventions that can be performed at home without supervision from a health professional?
Patient perspective	The patient considers overuse to be care that does not align with his or her values and preferences. The patient requests electrotherapy and massage, which he or she does not consider to be overuse, but instead is provided with reassurance, advice to remain active, and spinal manipulative therapy. From the patient’s perspective, he or she has not received care that aligns with his or her values and preferences
Case 2	A 45-year-old patient presents to a physical therapist with an 8-year history of progressive knee pain and activity limitation due to osteoarthritis
Patient preferences	Advice on activity modifications and supervised exercise
Treatment delivered by physical therapist	Advice on activity modifications and 10 sessions of supervised exercise therapy plus provision of a home exercise program over 8 weeks
Treatment outcome	No difference in pain and disability at 8 weeks
Clinician perspective	The physical therapist provides care that is effective, according to randomized trials, and concordant with guidelines for knee osteoarthritis (ie, education and exercise therapy). Even though the patient did not respond to treatment, the physical therapist avoids overuse, from both a clinician and patient perspective
Society perspective	Physical therapy (inclusive of exercise and education) is cost-effective compared to enhanced physical therapy interventions (individually tailored and supervised exercise) and costs less than surgery. It is likely that the patient would be an appropriate candidate for surgery due to the ongoing symptoms and nonresponse to physical therapy. In this case, the care was not overuse from a society perspective
Patient perspective	The patient received care that aligned with his or her values and preferences, but his or her condition did not improve. The patient would probably consider the care to be appropriate, even though he or she experienced no benefit

livered in a way that increases costs without improving the patient's outcomes, particularly when compared to alternatives that involve lower treatment volume (ie, frequency/duration), are less complex/invasive, or can be delivered in less costly settings (TABLE 2).^{10,11} Inefficient care may occur where care provision is not contingent on outcomes and is poorly coordinated between health care providers. Strategies aimed at reducing inefficient care target policy and include removing coverage for low-value care, reorganizing care pathways, and improving communication between health care providers.^{10,11}

Misaligned care considers overuse from the patient's perspective and is care that does not align with the patient's values and preferences.¹¹ That is, a mismatch exists between care that is recommended in clinical practice guidelines and care that aligns with the patient's perspec-

tive.⁵ This mismatch highlights the need to listen and understand the patient's perspective for 2 reasons: (1) the patient's values and preferences can act as a driver of overuse (TABLE 1) and will be explored further in part 3 of the series, and (2) misaligned care provides the opportunity to engage the patient as an active collaborator—especially in scenarios where care includes treatments that fall within the “gray zone” (FIGURE).⁵ Shared decision making (further explored in part 5 of the series) is a strategy to engage the patient in a discussion about treatment decisions and, in turn, to overcome overuse.

Quantifying Health Care Overuse

Currently, measuring overuse is limited by a lack of systematic collection of detailed patient-level data.¹⁰ Many systems lack data related to clinical decision making (ie, why a specific treatment was delivered) and patient preferences.¹⁰ This

level of detail is necessary to determine the appropriateness of care.

Approaches to measuring overuse are classified as direct or indirect.^{4,10} Direct measurement includes use of medical registries or patient records to determine the specific care provided and patient outcomes. For example, audits of clinical records of people with acute low back pain show that approximately 70% of physical therapists provide appropriate care, including advice to keep active, and that 16% may overuse ineffective electrotherapy modalities.¹² In the absence of direct measures, indirect measures can identify potential areas of overuse, such as variations in health care delivery within and between countries or regions that are not attributable to differences in the populations or health systems.⁴ Indirect measurement includes the use of quality indicators from primary care and hospitals (eg, administrative data or sur-

TABLE 2

EXAMPLES OF INEFFICIENT CARE IN PHYSICAL THERAPY, DESCRIBED IN TERMS OF VOLUME, COST, COMPLEXITY, AND CARE SETTING

Inefficiency/Condition	Study Design, Sample	Highly Inefficient Option	Efficient Alternative Option	Outcomes
Volume (intensity, duration)				
Chronic whiplash ⁶	RCT n = 172	20 × 1-h individually tailored and supervised exercise sessions over 12 wk	1 × 30-min advice session and option of telephone support	No significant between-group difference for pain, disability, and range of motion at 14 wk, 6 mo, and 12 mo
Cost				
Early rehabilitation after lumbar disc surgery ⁸	RCT n = 169	1-2 × 30-min individual, physical therapist-led exercise therapy sessions over 6-8 wk	No treatment	Cost utility (societal perspective): no significant between-group difference for any clinical outcome, quality-adjusted life-years, or societal costs at 26 wk
Complex/invasive				
Uncomplicated boxer's fracture (neck of fifth metacarpal) ⁹	RCT n = 97	Plaster cast immobilization	Buddy taping of the ring and little fingers	No significant between-group difference for hand function, pain, satisfaction, return to sport, or health-related quality of life at 12 wk. Patients in the buddy taping group had a shorter length of stay in the emergency department and returned to work faster
Degenerative knee disorders (eg, degenerative meniscal tears) ³	SR n = 13 RCTs	Arthroscopic knee surgery (including debridement and/or partial meniscectomy)	Nonsurgical management (exercise therapy, injections, medication)	Moderate- to high-quality evidence that arthroscopic knee surgery has a very small short-term (3 mo) benefit on pain, function, and quality of life compared to conservative management. In the long term (2 y), no significant between-group difference was found for pain or function
Care setting				
Rehabilitation following knee arthroplasty ¹	SR n = 6 RCTs	Outpatient physical therapy (eg, 2 × 1-h sessions per week for 2-12 wk)	Physical therapy provided in the home (including home exercise, telerehabilitation, home visits)	Moderate- to high-quality evidence of no significant difference in pain and function between outpatient physical therapy and home-based exercise

Abbreviations: RCT, randomized controlled trial; SR, systematic review.

veys of patients/clinicians to identify the type and amount of care delivered).¹² The Australian Atlas of Healthcare Variation uses indirect measures to demonstrate regional variations in the use of surgery for musculoskeletal conditions (eg, knee replacements, spinal decompression, and fusion).² Improving our ability to identify and measure overuse is critical to progress.¹⁰

Am I Contributing to or Reducing Health Care Overuse?

We encourage readers to reflect on their practice from the 3 perspectives of health care overuse (clinician, society, and patient) and consider to what degree their practice is helping to overcome this problem. As physical therapists, if we are aware of factors that may contribute to overuse, reflect on our practice, and aim to deliver treatments considered appropriate from multiple perspectives (**FIGURE**), we are heading toward overcoming overuse. Delivering care that is effective, efficient, and aligns with the patient's values and preferences will ensure that physical therapists remain leaders in managing musculoskeletal conditions. ●

STUDY DETAILS

AUTHOR CONTRIBUTIONS: All authors conceived the idea. Dr Michaleff wrote the

first draft. All authors contributed intellectual content, assisted with revisions, and approved the final version of this manuscript.

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