



Peterson Health Technology Institute (PHTI): Assessment Area Brief **Virtually-Enabled Musculoskeletal Care**

Summary

The Peterson Health Technology Institute (PHTI) is conducting an assessment of virtually-enabled musculoskeletal (MSK) care, with or without an artificial intelligence component, for patients living with musculoskeletal conditions, with a specific focus on low back, knee, hip, shoulder, and neck pain.

PHTI Overview

PHTI provides independent evaluations of innovative healthcare technologies to improve health and lower costs. Through its rigorous, evidence-based research, PHTI analyzes the clinical benefits and economic impact of digital health solutions, as well as their effects on health equity, privacy, and security. These evaluations inform decisions for providers, patients, payers, and investors, accelerating the adoption of high-value technology in healthcare.

PHTI Assessment Process and Topic Selection

PHTI will evaluate evidence about the clinical and economic impact of these technologies using its [assessment framework](#) that was custom designed for digital health tools. PHTI's goal is to provide information to guide healthcare purchasers' decision making about coverage and payment of these innovative products. The assessment report will be released publicly and freely available online early next year.

PHTI solely determines its selection of assessment areas. PHTI focuses on health technologies designed to replace or augment traditional care delivery, including digital therapeutics, chronic care management apps, and remote patient monitoring.

PHTI identifies topic areas by evaluating four key areas:

- Burden of disease to the healthcare system
- Investment and innovation in digital health technology
- Body of evidence
- Stakeholder interest (purchasers, providers, and patients)

Why Assess Virtual MSK Care?

Virtually-enabled MSK care includes a range of digital health solutions that aim to deliver many of the same benefits of in-person physical therapy through enhanced access to a virtual platform with the convenience of participating at home on patients' own schedules. These technologies may include live physical therapists, artificial intelligence-enabled chat bots, or wearable sensors to help ensure the user is performing exercises correctly.

PHTI will assess virtually-enabled musculoskeletal physical therapies with or without an artificial intelligence component for patients living with musculoskeletal conditions, with a specific focus on low back, knee, hip, shoulder, and neck pain.

Burden of Disease

Musculoskeletal disorders are highly prevalent and are associated with significant disease burden and cost.^{1,2,3} The National Health Interview Survey (NHIS) estimates that one in two adults in the United States is affected by a musculoskeletal condition.⁴ In 2016, musculoskeletal disorders, and in particular chronic low-back pain, were among the main causes of years lived with disability.⁵ Annual costs are estimated at almost \$400 billion in the United States alone, with low back and neck pain accounting for more than one fourth of the healthcare spending.⁶

Investment and Innovation in Digital Health Technology

There are a number of digital health technology companies offering MSK-related treatment or management, with over 15 companies having at least \$10 million in funding.⁷ A sub-set of identified companies have a range of integrated product offerings that meet the goals of the PHTI evaluation criteria. According to Grand View Research, the global digital MSK market size was valued at \$2.98 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 27.4% from 2021 to 2028.

Body of Evidence

Digital technology companies in the MSK space aim to deliver clinical improvements to users and associated financial savings as an alternative to usual MSK care. There is a very large body of evidence examining the performance of these digital and virtual solutions, which can be challenging for payers and providers to assess when making coverage and treatment decisions. More information about the systematic literature review for this assessment area can be found [here](#).

Stakeholder Interest

Given that 1 in 2 adults in the U.S. live with a musculoskeletal condition⁸ and the virtual MSK market is maturing, payers, providers and patients are eager to find best in class solutions.

Next Steps

Over the next few months, PHTI will be engaging with subject matter experts, developers, health economists, and other partners to complete assessments for release in Q1 2024.

¹World Health Organization. Musculoskeletal health. Accessed September 14, 2023. <https://www.who.int/news-room/fact-sheets/detail/musculoskeletal-conditions>.

² Bailey JF, Agarwal V, Zheng P, et al. Digital Care for Chronic Musculoskeletal Pain: 10,000 Participant Longitudinal Cohort Study. *J Med Internet Res*. May 11 2020;22(5):e18250.

³ National Academies of Sciences E, Medicine, Health, Medicine D, Board on Health Care S, Committee on Identifying Disabling Medical Conditions Likely to Improve with T. *Selected Health Conditions and Likelihood of Improvement with Treatment*. National Academies Press (US) Copyright 2020 by the National Academy of Sciences. All rights reserved.; 2020:chap 5, Musculoskeletal Disorders.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ Dieleman JL, Cao J, Chapin A, et al. US Health Care Spending by Payer and Health Condition, 1996-2016. *Jama*. Mar 3 2020;323(9):863-884.

⁷ Rock Health Digital Health Funding Database.

⁸ Crawford J, Berkovic D, Erwin J, et al. Musculoskeletal health in the workplace. *Best Practice in Research and Clinical Rheumatology*. <https://www.sciencedirect.com/science/article/abs/pii/S1521694220300759>