



Virtual Musculoskeletal Solutions

HEALTH TECHNOLOGY ASSESSMENT | AUGUST 2024

In June 2024, the Peterson Health Technology Institute (PHTI) released an assessment of virtual musculoskeletal solutions (MSK), including those that use remote therapeutic monitoring (RTM) to augment in-person physical therapy (PT). The evaluation found limited but promising clinical evidence suggesting that solutions that combine in-person PT with RTM may deliver superior results in pain and functional improvement compared with in-person PT alone.

As part of the evaluation, PHTI created a budget model that assumed that providers using RTM solutions bill close to the maximum permitted amount under the Medicare RTM billing guidelines. At this cost, the digital solutions were estimated to increase net healthcare spending, since the savings from improved adherence did not offset the added cost.

Based on feedback after the release of the report, this supplement includes four additional budget scenarios. The results show that RTM-augmented PT solutions have the potential to result in reduced overall healthcare spending for this category, depending on two factors: (1) how providers bill the RTM codes and (2) whether the use of between-visit RTM reduces the frequency or total number of in-person PT visits. As experience with RTM codes expands, additional data about average billing amounts, changes in in-person PT frequency, and clinical outcomes will inform these assumptions.

Original Budget Model

RTM-augmented PT solutions are different from the other types of virtual MSK solutions because they seek to augment in-person PT by allowing patients to conduct virtual PT sessions between in-person visits. RTM-augmented PT solutions are largely purchased by in-person physical therapy providers who then bill payers on a fee-for-services basis using RTM codes.

In the baseline model, estimated spending for in-person PT among people with MSK conditions is \$1,665 in commercial insurance, \$915 in Medicare, and \$641 in Medicaid per episode of care. These estimates assume patients receive a PT evaluation and an average of eight in-person visits.¹ In Medicare, the estimated RTM reimbursement for initial set-up and three months of monitoring is \$314 to \$433,^a depending on the amount of time spent. The original budget model assumed the low end of this charge — estimating \$314 per patient in Medicare and \$571 in commercial coverage.^b Assuming 25% adoption, RTM-augmented PT solutions could increase spending over two years by \$1.7M per million commercial members and \$2.8M per million Medicare beneficiaries.

^a Assuming the maximum allowed amount of three months of management and initial set-up fee in first month (98975); Device (98977) and 20 minutes of interactive communication (98980) assumed for low end; Device (98977), 20 minutes of interactive communication (98980) and additional 20 minutes of management (98981) assumed for high end. Results for the scenario analyses assume the low end for RTM billing.

^b Due to limited coverage for RTM under Medicaid, results from the scenario analyses are limited to Medicare and commercial spending. American Medical Association, "Future of Health Commercial Payer Coverage for Digital Medicine Codes" (2023). <https://www.ama-assn.org/system/files/issue-brief-commercial-payer-coverage-digital-care.pdf>.

Medicare RTM Codes and Reimbursement Rates

- **98975 (\$19.97)** – RTM initial setup and patient education on use of equipment
- **98977 (\$47.27)** – RTM device(s) supply with scheduled (e.g., daily) recording(s) and/or programmed alert(s) transmission to monitor MSK system; every 30 days
- **98980 (\$50.60)** – RTM management services, physician/other qualified healthcare professional time requiring at least one interactive communication with the patient/caregiver during the calendar month; first 20 minutes
- **98981 (\$39.95)** – RTM management services, physician/other qualified healthcare professional time requiring at least one interactive communication with the patient/caregiver during the calendar month; additional 20 minutes

RTM Scenarios

SCENARIO 1

PTA-Administered RTM

In 2020, the Centers for Medicare and Medicaid Services (CMS) established the CQ modifier to indicate services furnished in whole or in part by a physical therapist assistant (PTA) under a PT plan of care.² This scenario analysis assumes that **PTAs administer** the RTM services and are paid at 85% of the Medicare physician fee schedule amount.

SCENARIO 2

Two Months RTM Billing

Recognizing that providers may not bill to the maximum amount allowed for three months of PT episodes for low back pain, this scenario estimates RTM reimbursement for initial set-up and **two months** of monitoring.

SCENARIO 3

Reduced In-Person PT Frequency

Building off the previous scenario, patients receiving a shorter duration of two months of RTM-augmented PT could also reduce the number of in-person sessions from eight to four. This scenario assumes a reduced average of **four in-person PT visits**.

SCENARIO 4

Combined

To account for all adjustments to in-person PT spending and RTM billing from the previous scenarios, this scenario assumes the inclusion of the PTA modifier, reduced RTM billing duration to two months, and reduced average number of in-person PT visits to four.

Exhibit 1

SPENDING FOR IN-PERSON PT AND RTM BILLING BY SCENARIO

	COMMERCIAL		MEDICARE	
	In-Person PT	RTM Billing	In-Person PT	RTM Billing
SCENARIO 1 PTA-Administered RTM	\$1,665	\$524	\$915	\$288
SCENARIO 2 Two Months RTM Billing	\$1,665	\$393	\$915	\$216
SCENARIO 3 Reduced In-Person PT Frequency	\$925	\$393	\$508	\$216
SCENARIO 4 Combined	\$925	\$359	\$508	\$198

Budget Impact by Scenario

As shown in Exhibit 2, alternate RTM billing scenarios have the potential to reduce the net spending impact of these solutions. In fact, scenarios 3 and 4 each result in lower overall healthcare spending, with the savings from improved clinical outcomes under RTM-augmented PT more than offsetting the increased spending. Taken together, these scenarios show the potential for RTM-augmented PT to support patients' clinical outcomes while reducing overall healthcare spending.

Additional evidence is needed to verify the reductions in healthcare spending for people using RTM-augmented PT solutions and how variations in the duration and intensity of RTM billing may impact those outcomes. Furthermore, payers and policymakers should monitor how providers are typically using the RTM codes, including average per-patient billing and corresponding changes in the average number of in-person visits. With more data, payers could adjust the reimbursement rates, limit the maximum duration of billing, or set a total cap on RTM billing.

Exhibit 2

ESTIMATED CHANGE IN HEALTHCARE SPENDING BY SCENARIO

	YEAR 1 BUDGET IMPACT		TWO-YEAR CUMULATIVE BUDGET IMPACT	
	Commercial	Medicare	Commercial	Medicare
ORIGINAL MODEL				
Total Per 1M Members	+\$2.3M	+\$3.7M	+\$1.7M	+\$2.8M
Per User Per Year	+\$462	+\$253	+\$176	+\$97
Per Member Per Month	+\$0.19	+\$0.31	+\$0.07	+\$0.12
SCENARIO 1				
PTA-ADMINISTERED RTM (3 MO., PTA BILLING, 8 IN-PERSON SESSIONS)				
Total Per 1M Members	+\$2.0M	+\$3.3M	+\$1.5M	+\$2.5M
Per User Per Year	+\$414	+\$228	+\$152	+\$84
Per Member Per Month	+\$0.17	+\$0.28	+\$0.06	+\$0.10
SCENARIO 2				
TWO MONTHS RTM BILLING (2 MO., PT BILLING, 8 IN-PERSON SESSIONS)				
Total Per 1M Members	+\$1.4M	+\$2.3M	+\$0.9M	+\$1.4M
Per User Per Year	+\$283	+\$155	+\$87	+\$48
Per Member Per Month	+\$0.12	+\$0.19	+\$0.04	+\$0.06
SCENARIO 3				
REDUCED IN-PERSON PT FREQUENCY (2 MO., PT BILLING, 4 IN-PERSON SESSIONS)				
Total Per 1M Members	-\$2.3M	-\$3.7M	-\$2.8M	-\$4.6M
Per User Per Year	-\$457	-\$251	-\$283	-\$156
Per Member Per Month	-\$0.19	-\$0.31	-\$0.12	-\$0.19
SCENARIO 4				
COMBINED (2 MO., PTA BILLING, 4 IN-PERSON SESSIONS)				
Total Per 1M Members	-\$2.4M	-\$4.0M	-\$3.0M	-\$4.8M
Per User Per Year	-\$490	-\$269	-\$300	-\$165
Per Member Per Month	-\$0.20	-\$0.33	-\$0.12	-\$0.20

Note. Assumes 25% of in-person PT users shift to virtual MSK platforms and 90% of patients adhere to care. Positive numbers represent increased healthcare spending. Negative numbers represent healthcare savings.

References

- ¹Chen, Fang, Cynthia Veronica Siego, Carolyn Jasik, et al., “The Value of Virtual Physical Therapy, for Musculoskeletal Care,” *American Journal of Managed Care* 29, no. 6 (June 2023): e169–e175. <https://doi.org/10.37765/ajmc.2023.89375>.
- ²Centers for Medicare & Medicaid Services, “Billing Examples Using CQ/CO Modifiers for Services Furnished In Whole or In Part by PTAs and OTAs” (September 2023). <https://www.cms.gov/medicare/therapy-services/billing-examples-using-cq/co-modifiers-services-furnished-whole-or-part-ptas-and-otas>.

About the Peterson Health Technology Institute

The Peterson Health Technology Institute (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 was founded in 2023 by the Peterson Center on Healthcare.

Accessing PHTI’s Full Report

You can access the full report [here](#).

