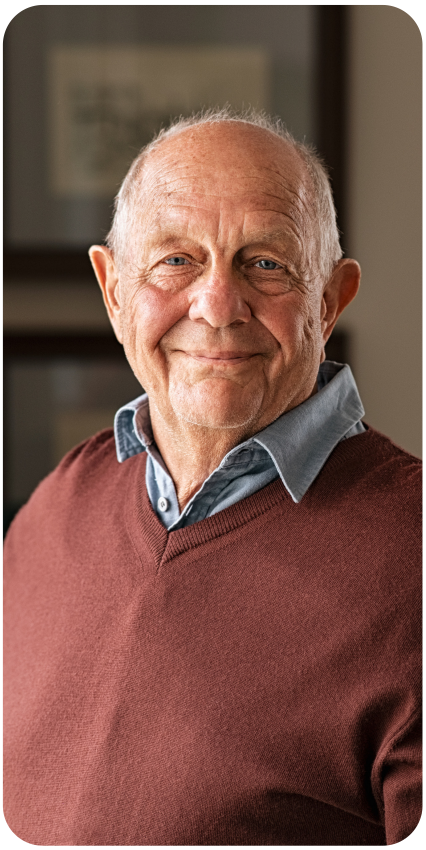
Research Report

2025 Protera Health Medicare Advantage Cost Savings Study



ProteraHealth

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Executive Summary

Many health plans and Medicare Advantage programs struggle to contain the rising costs of musculoskeletal (MSK) conditions, which can affect one in two adults. Treatment for these conditions is not only costly but over-utilized, leading to billions of dollars of excess spending each year.

The most effective strategy in lowering unnecessary costs is improving access to multidisciplinary, preventative treatment, which results in lower risk of unnecessary (and costly) surgeries and emergency room hospitalizations. Recently, digital solutions have emerged with the hopes of scaling this early treatment access across populations. However, these solutions have focused on technology-driven exercise programs, as opposed to meaningful clinical interventions, and have failed to demonstrate meaningful clinical and cost improvements.

This study highlights the clinical and cost savings efficacy of the Protera Health solution - a digital, multidisciplinary, physician-led program - in the Medicare Advantage population. As opposed to conventional digital solutions, the Protera Health program is differentiated by its robust clinical model and rigorous quality monitoring through patient reported outcome measures (PROMs), driving between $8,000-$14,000 of annual savings per health plan member.

For health plan and value-based care leaders seeking to improve MSK outcomes and lower costs, Protera Health offers a scalable, clinical-grade, in-network solution that delivers best-in-class savings—without any PMPM or administrative fees required.

Protera Health Cost Savings

	vs. Standard MSK Care	vs. Standard PT Care
Gross Savings | ROI	**$10,153 | 6.8x**	**$15,716 | 10.5x**
Net Savings | ROI	**$8,653 | 5.8x**	**$14,216 | 9.5x**

Introduction

Musculoskeletal (MSK) conditions are consistently one of the most costly conditions for health plans and risk-bearing organizations. These conditions pose a major - and growing - financial challenge for Medicare Advantage (MA) plans, driven by unsustainable over-utilization of costly healthcare services[1].

Digital solutions offer potential opportunities to curb costs through improved access to exercse programs and education.[2] [3]. However, most digital MSK programs have been designed for younger, commercially-insured populations and rely on “light-touch” models (e.g., app plus coaching).[4] [5] [6] [7] Therefore, they lack to clinical robustness to make meaningful health improvements in older, complex Medicare populations.

Protera Health was launched to address this treatment gap through a virtual integrated practice unit (V-IPU) model, which delivers physician-led, multidisciplinary, and individualized MSK treatment. This analysis evaluates the cost-savings of such a program on a Medicare Advantage population.

About Protera Health

Many health plans struggle with the rising costs of MSK conditions. Protera Health solves this with a virtual, multidisciplinary solution that delivers physician-led care. This not only improves health outcomes, but significantly lowers costs of care as well.

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Methods

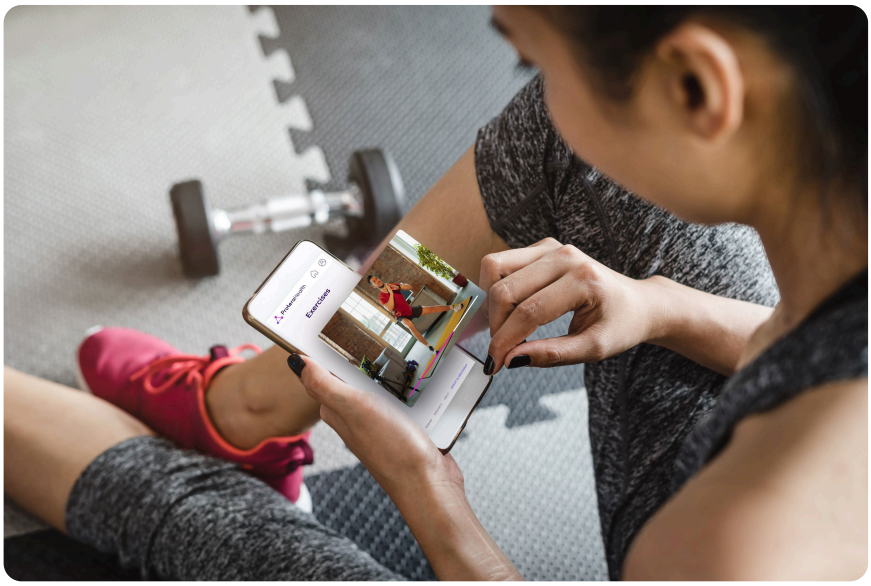
Study Design and Oversight

This retrospective, longitudinal study was approved by the Institutional Review Board (IRB). The analysis evaluated the clinical and economic impact of a Virtual Integrated Practice Unit (V-IPU) for musculoskeletal (MSK) care among members of a Medicare Advantage plan (Health Alliance Plan, Troy, MI).

Participant Identification and Enrollment

Eligible members were identified through plan claims data. Individuals were included if they had at least one medical claim in the prior 12 months containing a diagnosis code from a predefined list of MSK-related ICD codes. Diagnoses could appear as either primary or secondary codes.

Members meeting these criteria were contacted for participation. Those who consented were enrolled into the V-IPU (Protera Health, Troy, MI). Upon enrollment, members received a welcome kit containing resistance exercise bands and a mobile phone holder to facilitate virtual sessions.



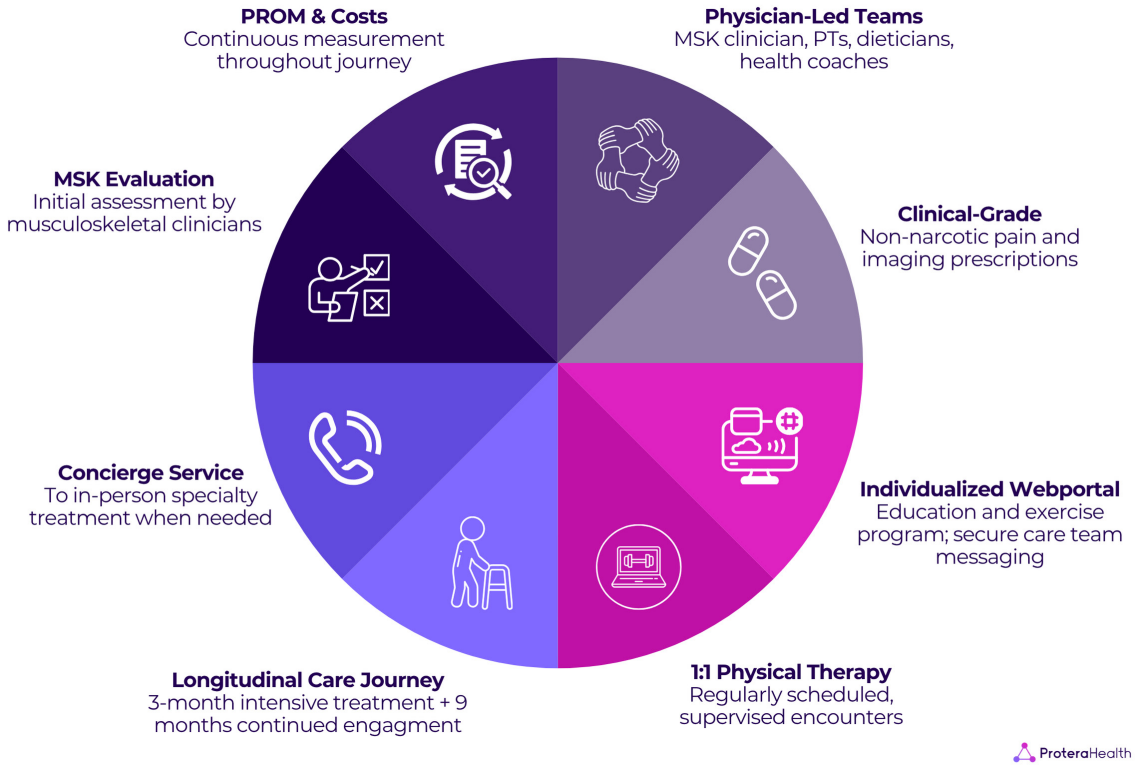
Program Description - The Protera Health Virtual IPU

The Virtual Integrated Practice Unit (V-IPU) operated as a 3-month multidisciplinary program. Each participant began with a telehealth evaluation by an orthopedic surgeon or primary care sports medicine physician. Based on this assessment, an individualized care plan was developed that included one-on-one, supervised digital physical therapy sessions scheduled regularly throughout the program.

Participants also received weekly condition-specific educational videos and maintained ongoing digital communication with their care team for guidance and support. When further evaluation was needed—for example, to assess candidacy for in-person physical therapy or surgical consultation—a medical director from the IPU conducted a telehealth review and arranged concierge navigation to appropriate specialty care.

V-IPU clinicians could also prescribe non-narcotic medications and order diagnostic imaging when clinically indicated, ensuring that each participant received coordinated, evidence-based management within a virtual framework.

Protera Health Virtual IPU Model



Outcomes Measures

Costs were derived from health plan claims data, including all services with a musculoskeletal (MSK) diagnosis listed as primary or secondary. Analyses were performed by an **independent actuarial firm** (Accorded, New York, NY). Twelve months of claims were assessed for both V-IPU participants and control groups.

Two control cohorts were used:

1. **MSK specialty care** – members who received traditional in-person treatment from orthopedic surgeons, pain physicians, or rheumatologists, identified through provider taxonomy codes.
2. **Outpatient physical therapy** – members who had a physical therapy evaluation identified by billing codes.

For the V-IPU group, MSK costs (including program fees billed through medical claims) were compared between the six months before enrollment and the six months after program completion. For the control groups, cost comparisons were made between the six months preceding and following the initial specialty or physical therapy visit.

To minimize confounding, V-IPU participants were excluded if they had in-person MSK specialty care within six months prior to enrollment. Claims related to trauma, tumor, or infection were excluded in all cohorts to isolate modifiable MSK conditions.

Cost savings were calculated by comparing pre- and post-intervention MSK costs and annualizing the differences.

Clinical outcomes were collected from V-IPU participants at baseline and 12 weeks post-enrollment using validated patient-reported outcome measures (PROMs):

- **NIH PROMIS Global-10** (Physical and Mental Health subscales) for overall health
- **NIH PROMIS Pain Interference** (Short Form 4a) for pain-related quality of life impact
- **GAD-2 and PHQ-2** for anxiety and depression screening

Results

Participant Characteristics

A total of 137 Medicare Advantage members participated in the V-IPU program. The average age was 70.8 years, and 74% were female. Among the 107 participants who reported race, 71% identified as White and 24% as Black/African American. The most common primary conditions treated were back (40%), knee (17%), and shoulder (14%) pain.

Control Cohorts

There were two control cohorts, including those that underwent traditional specialty care with an MSK provider ("MSK Control") and those that received treatment through traditional physical therapy ("PT Control").

Cost Analysis and Cohort Matching

To be included in the analysis, participant and control cohort members must have had a continuous of 12 months or greater of claims history with the health plan, with at least 6 months occurring before the intervention (Protera Health enrollment or specialty/PT care) and at least 6 months afterwards.

All costs measured were those with a primary or secondary diagnosis related to MSK conditions of back, neck, hip, knee, or shoulder focus. To determine the control cohort representation and minimize bias of "regression to the mean," we controlled for pre-intervention costs.

In the Protera Health cohort (n=137), the per-member per-month (PMPM) MSK costs prior to enrollment i were $347.12, which decreased to $149.40 during the follow-up period (decrease of $197.72 PMPM). In the MSK Control group, costs increased by $648.35 (from $346.96 to $995.30). In the PT Control group, the costs increased by $1,111.93 (from $347.04 to $1,458.97).

Annualized cost savings of Protera Health V-IPU:

- Compared to Standard MSK Care: **Gross savings $10,152.69; Net savings $8,652.69 (ROI 5.8x)**
- Compared to PT Care: **Gross savings $15,715.74; Net savings $14,215.74 (ROI 9.5x)**

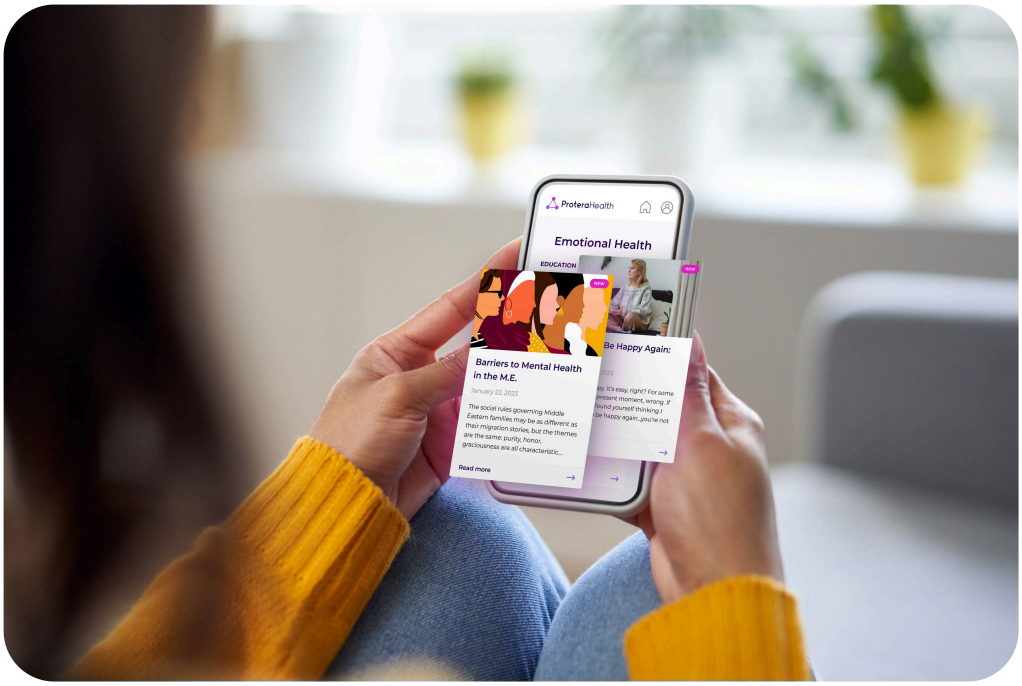
Metric	MSK Control *n = 134*	PT Control *n = 113*	Protera *n=137*	Notes
6-months Pre PMPM	$346.96	$347.04	$347.12	Baseline period
6-months Post PMPM	$995.30	$1,458.97	$149.40	Following period
Δ 6-mo PMPM (Post – Pre)	$648.35	$1,111.93	-$197.72	Increase or Decrease in PMPM
Cost Excess vs. Protera Health	$846.06	$1,309.65		Control Δ - Protera Δ
Annualized Cost Excess vs. Protera	$10,152.69	$15,715.74		PMPMx12
Net Savings due to Protera	**$8,652.69**	**$14,215.74**		Annualized per member
Net ROI of Protera vs. Control	**5.77x**	**9.48x**		Net Savings/Protera Program Cost

Clinical Outcomes

Among V-IPU participants, substantial clinical improvements were observed:
For PROMIS, 2.5 points improvement correlates to meaningful clinical benefit

- **PROMIS Physical Health:** improved from 42.4 → 47.3 (4.9 point improvement)
- **PROMIS Pain Interference:** improved from 59.1 → 54.2 (4.9 point improvement)
- **PROMIS Mental Health:** improved from 48.9 → 51.5 (2.6 point improvement)
- **VAS pain:** improved by 27.4%
- **PHQ-2 Depression:** improved by 35.2%
- **GAD-2 Anxiety:** improved by 22.8%

Overall, 85% of participants achieved a minimum clinically important difference (MCID) in pain or function (≥2.5-point improvement).



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Discussion

This study demonstrates that a clinically rigorous Virtual Integrated Practice Unit (V-IPU) can meaningfully reduce musculoskeletal (MSK) costs while improving outcomes among Medicare Advantage members. Compared with traditional fee-for-service specialty and physical therapy care, participation in the V-IPU led to annual ***net savings*** exceeding $8,000–$14,000 per member and a 6x-9x return on investment (ROI). These results highlight the potential of a physician-led, multidisciplinary digital model to help curb the growing financial burden of MSK conditions in older adult populations.

Context and Implications

Rising healthcare expenditures related to MSK conditions pose a major challenge for Medicare Advantage plans. Traditional fee-for-service models often incentivize procedures and imaging rather than preventive or coordinated care, driving up costs without corresponding gains in quality. Studies have long documented geographic and payer-type variation in surgical decision-making—suggesting that utilization patterns are influenced more by practice norms and incentives than by patient need.[8,9] This misalignment underscores the need for alternative care models that prioritize outcomes and value.

Payers have attempted to rein in MSK costs through utilization management and prior authorization, yet these mechanisms often introduce administrative friction, delayed care, and dissatisfaction among both patients and providers. Evidence shows that such policies increase wait times for procedures, add to clinician burnout, and erode the patient experience.[10–12] Thus, while these approaches may slow spending, they do so at the expense of access and provider engagement.

Evolution of Digital MSK Care

Digital MSK tools have emerged as a potential solution, offering early access to exercise-based therapy and the ability to reach members remotely. However, first-generation platforms—typically app-based programs with limited clinical oversight—have shown mixed evidence for cost impact. Independent assessments, such as that by the Peterson Health Technology Institute (PHTI), found functional improvements but little verified claims-based evidence of cost savings. Many of these studies relied on self-reported or modeled estimates rather than payer-verified data.

The V-IPU model tested in this study addresses these limitations by integrating physician leadership, one-on-one supervised tele-physical therapy, and structured education within a coordinated, multidisciplinary framework. This design brings together the accessibility of digital care with the clinical rigor of traditional IPUs, which have previously demonstrated substantial cost and outcome benefits in musculoskeletal populations.[13,14]

Discussion (cont.)

Interpretation of Findings

The program produced substantial claims-verified cost savings—net reductions of $8,653 and $14,216 per member per year relative to specialty and physical therapy controls, respectively—alongside marked clinical improvements in pain, function, and mental health domains. Over 85% of participants achieved clinically meaningful improvement in pain or function, supporting the effectiveness of physician-led virtual multidisciplinary care.

Compared with earlier, app-based digital programs focused on younger, commercially insured populations, this model's higher clinician involvement and individualized supervision likely contributed to greater cost savings and adherence, demonstrating feasibility and value within an older, more complex Medicare population.

Limitations

Study limitations should be acknowledged.

- All participants were enrolled through a single Midwestern Medicare Advantage plan, which may limit generalizability.
- Diagnostic matching between study and control groups was not possible due to differences in coding behavior and care delivery patterns. However, cost matching was performed to minimize risk of regression-to-the-mean bias.
- Participants were identified through prior MSK claims, introducing potential selection bias.
- Some overlap existed between the two control cohorts, which may influence comparative cost outcomes.

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Conclusion

A virtual integrated practice unit offers a scalable, clinically robust approach to MSK management in Medicare Advantage members—reducing costs by more than $8,000-$14,000 per member annually while improving pain, function, and mental health. By replacing fragmented fee-for-service treatment with coordinated, physician-led virtual care, this model presents a promising path forward for value-based MSK care and sustainable cost control in aging populations.

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