



# With Predict, Sword Health Cements Market Leadership in Cost Savings & ROI



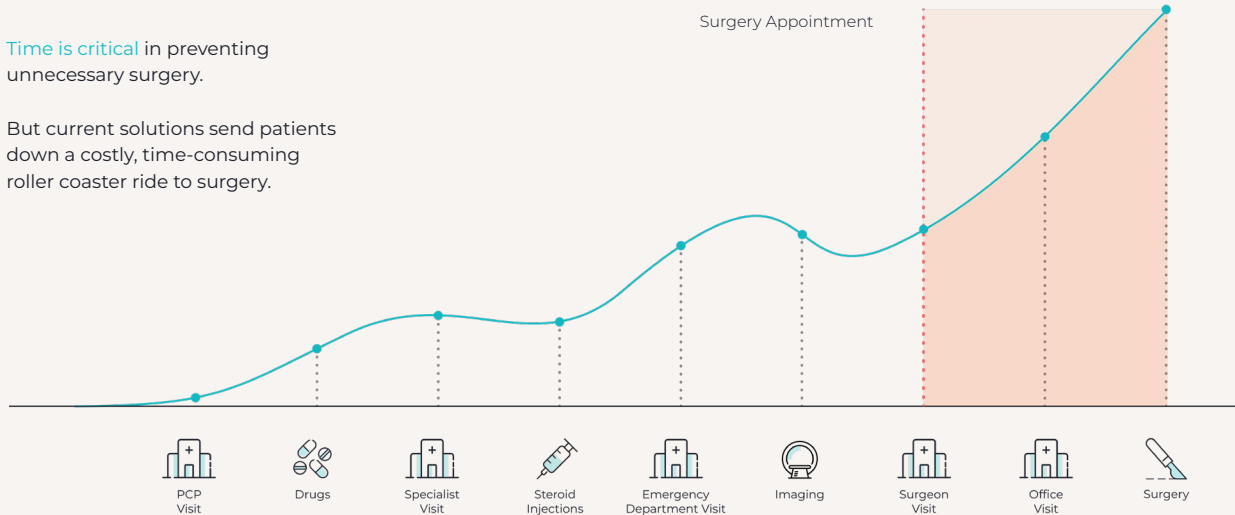
Sword Health already commands the largest validated savings of any digital musculoskeletal (MSK) solution on the market—\$2,472 per member per year, according to an independent analysis done by the Validation Institute.<sup>1</sup>

Now with the introduction of Sword's AI-powered engine to predict and avoid unnecessary surgery, Sword clients could see an additional 50% lift on top of these previously validated savings. As a result, client populations that are enrolled in Predict can expect a 3.7x return on investment—making Sword the clear best value in digital MSK care available today.<sup>2</sup>

Sword's newly launched Predict leverages predictive AI to identify people who are 10-40x more likely to get surgery, up to eight months before their procedure. Predict can save employers and health plans millions of dollars annually by disrupting the usual path to surgery and other high cost services such as CT/MRI scans and injections, for the most at-risk patients.

Time is critical in preventing unnecessary surgery.

But current solutions send patients down a costly, time-consuming roller coaster ride to surgery.



In a matched control study looking at members who were considered high risk at the time of enrollment, a Sword analysis found that Predict is able to generate **savings of \$3,700 per member per year**. This represents a 50% increase over the Validation Institute's \$2,472 PMPY savings number, which comes from a two-year, claims-based study performed by the group's health economists.

In other words, Sword clients who implement Predict in addition to our core [digital physical therapy \(DPT\) program](#) can expect to save an additional \$1,228 per member per year.

The resulting **ROI of 3.7x** is unmatched by any digital MSK solution currently available.

The cost savings from Predict is primarily driven by lower spend on expensive treatments like surgery and invasive procedures, with additional savings on office visits, imaging, injections, and other forms of therapy that are frequently overprescribed.

About half of all adult Americans struggle with back, neck, shoulder, or other musculoskeletal (MSK) pain.<sup>3</sup> These disorders create huge costs. In fact, MSK is the #1 healthcare expense for most large employers—costing 30% more than cancer and diabetes combined.<sup>4</sup>

The majority of this cost is due to surgical care. The problem is that up to **50% of all surgeries are not necessary** and may be more harmful than no surgery at all.

By identifying patients who are most at-risk to become surgical candidates and providing them with high-touch, targeted care, **Predict is able to deter members away from expensive procedures** that may not be even beneficial and toward more effective and affordable treatment such as physical therapy.



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Perfect timing! I have shoulder pain that I went to see the doctor for, but I have not gotten an MRI yet. I would like to start doing PT before using any pain medication or considering surgery.

<sup>1</sup> [Sword Health 2022 Validation Report, Validation Institute](#)

<sup>2</sup> [Sword Predict matched control study \(see sidebar for more details\)](#)

<sup>3</sup> [The Hidden Impact of Musculoskeletal Disorders on Americans, Bone and Joint Initiative](#)

<sup>4</sup> [US Health Care Spending by Payer and Health Condition, 1996-2016](#)

## While surgeries are consistently the biggest driver of MSK spend, they are not the only contributor of costs.

Members who have **chronic pain drive high MSK costs through repeat and frequent healthcare visits**, specialist appointments, and hospitalizations, as well as use (and often, over-use) of MRIs and imaging.

For example, we analyzed healthcare utilization for 1% of our highest-cost MSK members. While many of them did end up undergoing surgical care, a large proportion (29%) did not. Looking at utilization of MSK services among members, Sword analysts found lower utilization in Predict-enrolled members compared to similar members (based on age, gender, past medical spend, and MSK conditions) who did not enroll.

### The most notable reductions include:

**7.4%** lower MSK inpatient utilization

**41.6%** reduction in ancillary services

**10%** fewer MSK-related MRIs

**35%** fewer spine surgeries

Along with driving a substantial reduction in surgery intent (up to 70%), Sword will further reduce MSK spend by realizing these significantly lower utilizations in healthcare services. This is critical because our own analysis at Sword finds that up to 18% of all MSK care is wasteful, **leading to as much as \$90 billion in medical expenditures annually that could have been avoided.**<sup>5</sup>

### How our study was conducted:

The analysis made comparisons between two groups:



#### Intervention Group:

- Members who enrolled in Sword's Digital Physical Therapy (DPT) program, our flagship product
- Members who enrolled in DPT and would have been detected by Predict before the time of enrollment using our existing AI-powered detection model



#### Control Group: Users not enrolled in Sword

We then computed the difference in total spent on medical expenses (amount of healthcare spending covered by insurance) in 1 year before and 1 year after index date for each individual of each group, then compared the difference between groups.

The index date is the date of enrollment for the intervention group, or the date of a physical therapy / chiropractic visit or evaluation for the control group.

### About Predict:

With Predict, Sword leverages a wide range of healthcare and demographic data to identify, engage, and treat members who are most at-risk for surgery with digital physical therapy, which can reduce surgery intent by as much as 70%.

We have built the **first AI engine designed to identify and engage your at-risk MSK populations so we can save you millions.** Not only can we identify the top 1% of members who contribute the most to your healthcare costs, but we proactively engage them using personalized insights and marketing automation technology. Our goal is to find the people who need us most and enroll them in a solution that will free them from pain. No surgery, no excess cost and no time wasted.

<sup>5</sup> [The MSK Money Pit: Wasted Spend on Low-Value MSK Care](#)

*Note: This study employs the Differences in Differences (DiD) method, a statistical technique that compares the changes in outcomes over time between a population enrolled in a program (the intervention group) and a population that is not (the control group). By examining how each group's behavior changes over time and contrasting these changes, DiD helps isolate the true impact of Predict, offering insights into its real-world impact, without having to randomly choose who gets Predict and who doesn't.*