



ARTICLE

THE "SURGICAL-DELAY PROOF" RECORD: JUSTIFYING CONSERVATIVE MSK MANAGEMENT

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EXECUTIVE SUMMARY: THE ECONOMIC BURDEN OF PREMATURE INTERVENTION

Musculoskeletal (MSK) conditions represent a primary driver of escalating healthcare costs for self-insured employers, often ranking as a top-three spend category alongside cancer and cardiovascular disease. As of 2026, employer health costs are projected to surge by 9.1%, the highest increase in over two decades. A significant portion of this spend is concentrated in surgical procedures – specifically total knee arthroplasty (TKA) and total hip arthroplasty (THA) – that are often performed prematurely or in cases where conservative management would yield equivalent functional results. The "Surgical-Delay Proof" record represents a data-driven strategy to mitigate this "Substitute Spend." By leveraging sensor-based physical therapy, validated patient-reported outcomes (PROMs), and high-fidelity longitudinal records, payers and employers can objectively justify non-operative care pathways, reducing unnecessary surgery rates by up to 58% while ensuring clinical veracity.

THE COST OF HIGH-VALUE FAILURE: THE "DOUBLE TAX" OF SURGERY

For self-insured employers, unnecessary MSK surgery is effectively a "double tax" on the organization's bottom line.

- **Direct and Indirect Costs:** Beyond the immediate \$30,000–\$50,000 price tag of a joint replacement, employers absorb the indirect costs of extended disability, slower return-to-work timelines, and potential surgical complications.
- **The Site-of-Care Paradox:** While migrating procedures to Ambulatory Surgery Centers (ASCs) has moderated the cost per procedure, total MSK spend continues to rise because the volume of procedures remains high.
- **Low-Value Surgeries:** Recent matched-cohort studies indicate that up to 30% of certain MSK procedures may be categorized as "low-value," where the clinical benefit does not significantly outweigh the risks and costs of conservative alternatives.

THE EVIDENCE BASE: CONSERVATIVE VS. SURGICAL OUTCOMES

To justify delaying surgery, clinical leaders must rely on evidence that conservative management is non-inferior in specific patient cohorts.

Knee Osteoarthritis (OA) and the Non-Surgical Program

New systematic reviews current to 2025 demonstrate that for many patients with moderate to severe knee OA, a robust non-surgical program (education, exercise, weight management) can provide pain reduction and functional improvements comparable to surgery at the one-year mark.

- **Structural vs. Functional Recovery:** Research into ACL and meniscal tears suggests that while surgery may "repair" the structure, it does not always prevent long-term radiographic osteoarthritis more effectively than rehabilitation alone.
- **The "Wait and See" Advantage:** Patients who engage in supervised rehabilitation before opting for "optional delayed" surgery often report similar physical function and activity levels to those who receive early surgical intervention.

DIGITAL MSK PROGRAMS: THE MECHANISM FOR DELAY

The emergence of technology-enabled, remote digital rehabilitation has provided a scalable alternative to traditional in-person physical therapy (PT), which often suffers from adherence barriers.

Sensor-Based Biofeedback

The "ground truth" of a non-operative pathway is established through wearable sensors that provide real-time visual and clinical feedback.

- **Retraining the Brain:** Sensors help patients perform exercises correctly, retraining the brain and neuromuscular systems to improve balance and gait—measures that are often too subjective for traditional assessment.

- **Objective Adherence:** Digital tools allow clinicians to monitor exercise frequency and accuracy 24/7, creating a high-fidelity record of patient effort that justifies continued non-operative management to the payer.

Quantifiable Success: The 58% Reduction

Real-world data from 2025 indicates that participation in a structured digital MSK program is associated with a 58% lower relative risk of surgery at 12 months compared to in-person PT. For surgeries categorized as "low-value," the reduction is even more stark at 82%.

JUSTIFYING THE PATH: USING PROMS AS THE "VERACITY MANDATE"

In the 2026 CMS ACCESS model and commercial value-based contracts, payment is tied to results, not activities. This requires a standardized method to prove that conservative care is working.

- **Standardized PROMs (KOOS Jr / HOOS Jr):** These tools capture the patient's voice on their own functional status. Under ACCESS, success is defined by reaching a "Minimal Clinically Important Difference" (MCID) relative to the patient's baseline.
- **The "Binary" Standard:** By maintaining a "Surgical-Delay Proof" record—comprising baseline PROMs, sensor-based adherence data, and follow-up outcome scores — providers can prove to payers that the patient has achieved functional recovery without the need for an invasive procedure.
- **Mitigating "Substitute Spend":** Payers penalize providers when patients seek uncoordinated services (like premature surgery) elsewhere. A high-veracity record serves as a financial defense, proving the managed conservative pathway was effective and that any subsequent surgery may be "substitute spend" leakage.

STRATEGIC IMPLICATIONS FOR SELF-INSURED EMPLOYERS

Executive leaders can leverage this data to redesign their MSK benefits strategy:

- **Mandate a "Conservative-First" Period:** Require a 12-week verified digital or sensor-based PT trial before authorizing elective joint replacements, supported by evidence of functional improvement.
- **Incentivize Centers of Excellence (COEs):** Steer members toward COEs that have high "Outcome Attainment Rates" for non-operative tracks, not just those with the lowest surgical bundle price.
- **Adopt the "Outcome-Aligned" Language:** Align commercial contracts with the CMS ACCESS 50% withhold structure. Pay providers for the *prevention* of surgery through functional restoration.
- **Capture the Productivity Gain:** Digital MSK programs have been shown to reduce work productivity impairment, with projected annual savings per participant exceeding \$2,900 in indirect costs.

CONCLUSION

The 2026 healthcare economy no longer rewards the volume of structural repairs. The most successful MSK strategies will be those that use high-veracity data to justify the "surgical delay". By embracing sensor-based rehabilitation and validated outcome tracking, payers and employers can provide their members with safer, less invasive care while simultaneously protecting their financial margins from the "double tax" of premature intervention.

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