

Advancing Value-Based Care in Saudi Arabia Through Patient-Reported Outcomes: Insights from the ICHOM Low Back Pain Standard Set

As health systems globally accelerate their shift toward value-based care (VBC), the ability to systematically capture patient outcomes and link them to cost remains a critical success factor. A new real-world study from Saudi Arabia provides compelling evidence that ICHOM's Low Back Pain (LBP) Standard Set can be feasibly implemented at scale within an insured population, generating actionable insights for clinicians, payers, and policymakers alike.

Study Context and Rationale

Low back pain is among the most prevalent and costly musculoskeletal conditions worldwide, often associated with wide variation in treatment approaches, outcomes, and costs. In Saudi Arabia, the need for standardized, patient-centered outcome measurement is increasingly important as the healthcare system advances toward Vision 2030 goals and value-based payment models.

This study leverages the ICHOM LBP Standard Set to assess whether patient-reported outcome measures (PROMs) can be reliably collected over time and used to evaluate both clinical improvement and economic efficiency within a real-world insurance setting.

Methods and Data

The study involved a retrospective secondary analysis of 97 insured patients treated for low back pain between August 2023 and March 2025. PROMs and cost data were collected at baseline and followed longitudinally at 1-, 3-, and 6-month intervals.

Outcomes assessed included:

- Functional disability using the Oswestry Disability Index (ODI)
- Pain intensity using the Numeric Pain Rating Scale (NPRS) for back and leg pain
 - Health-related quality of life using EQ-5D-3L
- Cost per episode of care, enabling bundled payment benchmarking

Robust statistical methods, including repeated measures ANOVA and ANCOVA, were applied to evaluate outcome trajectories and identify factors influencing variation in results.

Key Findings

The results demonstrate clear, clinically meaningful improvements across all outcome domains:

- Functional recovery: A marked shift from severe functional disability at baseline toward moderate and minimal disability was observed over six months.
- Pain reduction: Back and leg pain scores dropped dramatically—from severe levels at baseline to near-minimal levels by month six.
- Quality-of-life improvement: EQ-5D-3L domains showed statistically significant gains in mobility, self-care, usual activities, pain/discomfort, and anxiety/depression.
- Cost insights: The median bundled treatment cost was SAR 53,170, with some episodes exceeding SAR 112,000—highlighting meaningful cost variation and the need for refined benchmarking.

Importantly, the study also identified risk-adjustment signals:

- Body Mass Index (BMI), education level, gender, and comorbidity status were significantly associated with pain, disability, and quality-of-life outcomes.
- Quality-of-life improvements continued beyond the one-month follow-up, emphasizing the value of longitudinal PROMs collection rather than single timepoint assessments.

Why This Matters for Value-Based Care

This work reinforces several critical principles of value-based healthcare:

- PROMs are operationally feasible, even in complex, real-world insurance environments.
- Standardized outcome sets enable transparency, allowing meaningful comparisons across time, patient subgroups, and care pathways.
- Linking outcomes to cost creates leverage for smarter bundled payment design and outcomes-based contracting.

By applying the ICHOM LBP Standard Set at payer level, the study demonstrates how outcome measurement can move beyond academic use and directly inform contracting, pathway optimization, and system-level decision-making.

Implementation Lessons and Next Steps

While feasibility was clearly demonstrated, the study also highlights areas for further refinement:

- Improved structured data capture for comorbidities
- Clearer, standardized definitions for return-to-work outcomes
- Enhanced user interface design to reduce data entry variability
- Larger datasets to define clinically meaningful cut-off points and strengthen cost benchmarking

Addressing these gaps will be essential to scaling PROMs-driven models and ensuring that bundled payments truly reflect value delivered to patients.

Conclusion

This study provides early but strong evidence that ICHOM Standard Sets can serve as a practical backbone for value-based care implementation in Saudi Arabia. By aligning patient outcomes with cost data, it offers a replicable blueprint for how payers and providers can collaborate around what matters most—measurable improvements in patients' lives.