CORR Insights

**CORR Insights®: Validation of the HOOS, JR:
A Short-form Hip Replacement Survey**

Richard Iorio MD

Where Are We Now?

The Centers for Medicare & Medicaid Services (CMS) recently introduced voluntary patient-reported outcome measures

This CORR Insights® is a commentary on the article “Validation of the HOOS, JR: A Short-form Hip Replacement Survey” by Lyman and colleagues available at: DOI: [10.1007/s11999-016-4718-2](https://doi.org/10.1007/s11999-016-4718-2).

The author certifies that he, or any member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research®* editors and board members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of *CORR®* or the Association of Bone and Joint Surgeons®.

This *CORR Insights®* comment refers to the article available at DOI: [10.1007/s11999-016-4718-2](https://doi.org/10.1007/s11999-016-4718-2).

R. Iorio MD (✉)

New York University Langone Medical Center, 301 East 17th Street, New York, NY 10003, USA

e-mail: Richard.Iorio@nyumc.org

(PROMs) reporting within the Comprehensive Care for Joint Replacement (CJR) model. The goals of the CJR model include offering more efficient care for Medicare beneficiaries with hip and knee replacements and creating a mandatory lower-extremity joint replacement program for hospitals in 67 metropolitan areas. A program of that size will likely affect approximately 120,000 CMS patients per year. The reporting begins on April 1, 2016, and will last through the end of 2020.

The program reflects the intent of CMS to test and evaluate the impact of bundled payments for total joint replacement on cost and quality. There is an expectation that new payment models will require the commitment of an even broader set of providers than have previously participated in alternative payment methods.

The purpose of the PROM data collection initiative is to offer an incentive for hospitals participating in CJR to provide outcome data from the patient perspective that is not available from other data sources. These data are sought in conjunction with CMS's work in developing

patient-reported outcome performance measures for the purposes of assessing improvement in patient-reported outcomes following THA/TKA procedures. Because these are common and costly procedures specifically intended to improve function and reduce pain, CMS is stating that patient-reported outcomes are the most meaningful outcome metric and will incentivize hospitals to voluntarily submit PROMs in CJR.

CMS will incorporate the successful submission of THA/TKA voluntary patient-reported outcome data into the CJR composite quality score, awarding quality points to participant hospitals who successfully submit these data. In the first year of this program, hospitals would be required to submit data for 50% of eligible procedures or a total of 50 eligible procedures during the data collection period. This number continues to increase until 2019 (submission of data required for either 80% or 200 eligible procedures). The other components of the quality composite score are the hospital-level risk-standardized complication rate and the Hospital Consumer Assessment of Healthcare Providers and Systems Survey.

CORR Insights

Where Do We Need To Go?

CMS recommends using a disease-specific instrument as part of the proposed PROMs for CJR. Although a number of measures, like surveys, were built to study hip and knee osteoarthritis, many of these surveys are long, disruptive to clinic flow, and result in incomplete data capture and/or low followup rates. Initially committed to using the full Hip disability and Osteoarthritis Outcome Score (HOOS) or Knee injury and Osteoarthritis Outcome Score (KOOS) surveys within CJR, CMS noted that it received consistent comments that the HOOS/KOOS instruments for voluntary PROM data submission proposals were too burdensome. A CMS Technical Expert Panel, convened by the Yale Group and the leadership of American Association of Hip and Knee Surgeons, determined that the HOOS (42 questions) and KOOS (42 questions) instruments are a considerable burden to patients, orthopaedic surgeons, and their staff due to the overall length of time required to complete the instruments.

As this controversy was being discussed, Stephen Lyman PhD and his coauthors validated the HOOS, Joint Replacement (JR) (six items) [4] and KOOS, JR (seven items) [3] as short-form hip and knee replacement outcomes surveys. These instruments note the characteristics of pain, symptom

severity and activities of daily living including movements that are a challenge for patients with advanced hip and knee osteoarthritis. These symptoms are then combined into a single score. The development and validation of these instruments from the full HOOS and KOOS surveys lends itself to wider, more pragmatic use in clinical settings where outcomes assessment was previously considered impractical. The use of these shorter instruments introduces the use of PROMs to more representative groups of surgeons and patients, and is considered more reflective of everyday practice patterns and outcomes. The introduction of easily obtained PROM data, combined with the power of the data collection promise of the American Joint Replacement Registry, is an exciting development for the future of orthopaedic adult reconstruction research and quality improvement processes.

How Do We Get There?

The American Association of Hip and Knee Surgeons and the Technical Expert Panel recommended to CMS that the KOOS, JR. instrument be used for patients with TKA and the HOOS, JR. instrument be used for patients with THA within the CJR model. They also recommended that a quality of life

measure be collected as well (either the VR-12, or the PROMIS Global) [1]. CMS explicitly noted the input of the joint recommendations from the American Association of Hip and Knee Surgeons and Technical Expert Panel Summit held in August 2015, which shared new data from Lyman et al. concerning validated shortened versions of the HOOS and KOOS instruments in THA/TKA patients. Based on this input, CMS replaced the previously proposed collection of the full HOOS or KOOS instruments with the HOOS, JR and KOOS, JR [1, 2, 5].

The HOOS, JR and the KOOS, JR are effective alternatives to traditional hip and knee PROMs. Some research projects may require the full HOOS or KOOS or other long-form PROMS. However, having only six or seven questions for patients to complete may help make data capturing more efficient and better suited for the fast-paced clinical environment of a busy practice and help fulfill the increasing demand for comparative outcomes data. As payers move toward linking pay-for-performance to outcomes data, the HOOS, JR and KOOS, JR and other such effective, accurate PROMs will become increasingly important in assuring a more global participation in outcomes data gathering. Expansion of the CJR outcomes data initiative could be combined with the efforts of American Joint Replacement Registry

CORR Insights

to provide the most robust and powerful total joint replacement data repository in the world.

References

1. Epstein Becker & Green, P.C. Comprehensive care for joint replacement: Final rule summary. Available at: <http://www.aahks.org/wp-content/uploads/2015/11/cjr-final-rule-summary-11.pdf>. Accessed March 11, 2016.
2. Lieberman JR, Teuscher D, Berry DJ, Vail TP. Re: Comprehensive care for joint replacement payment model for acute care hospitals furnishing lower extremity joint replacement services. September 8, 2015. Available at: <http://www.aahks.org/wp-content/uploads/2014/07/comment-letter-pro-summit-09082015.pdf>. Accessed March 11, 2016.
3. Lyman S, Lee YY, Franklin PD, Li W, Cross MB, Padgett DE. Validation of the KOOS, JR: A short-form knee arthroplasty outcomes survey. *Clin Orthop Relat Res*. [Published online ahead of print February 29, 2016]. DOI: [10.1007/s11999-016-4719-1](https://doi.org/10.1007/s11999-016-4719-1).
4. Lyman S, Lee YY, Franklin PD, Li W, Mayman DJ, Padgett DE. Validation of the HOOS, JR: A short-form hip replacement survey. *Clin Orthop Relat Res*. [Published online ahead of print February 29, 2016]. DOI: [10.1007/s11999-016-4718-2](https://doi.org/10.1007/s11999-016-4718-2).
5. Orlowski JM. Re: Comprehensive care for joint replacement payment model proposed rule, file code CMS-5516-P. September 4, 2015. Available at: <https://www.aamc.org/download/442290/data/aamccommentson-theccjrproposedrule.pdf>. Accessed March 11, 2016.