



AMERICAN ACADEMY OF
ORTHOPAEDIC SURGEONS

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April 3, 2015

Andy Slavitt
Acting Administrator
Centers for Medicare and Medicaid Services
Department of Health and Human Services
Room 445-G, Hubert H. Humphrey Building
200 Independence Avenue, SW
Washington, DC 20201
Submitted online at: <http://JIRA.oncprojecttracking.org>

Re: Proposed Electronic Clinical Quality Measures for Functional Status Assessment and Improvement for Patients who received a Total Hip Replacement and Functional Status Assessment and Improvement for Patients who received a Total Knee Replacement.

Dear Acting Administrator Slavitt:

The American Association of Orthopaedic Surgeons (AAOS) appreciates the opportunity to comment on the proposed Electronic Clinical Quality Measures for Functional Status Assessments for Total Hip or Knee Replacements. The AAOS represents over 18,000 board-certified orthopaedic surgeons. We have been pleased to collaborate with the American Association of Hip and Knee Surgeons and the American Joint Replacement Registry in reviewing these measures.

The AAOS is very supportive of the CMS effort to develop patient-reported functional status outcome measures for total hip and knee arthroplasty. When fully specified and risk-adjusted, these measures will be useful in assessing quality and value of care and will permit performance measurement progression beyond process measures, which are often poorly correlated with outcomes that matter to patients and clinicians. We support the options outlined in the proposed measures to use non-proprietary functional assessment scoring systems that measure general health (VR-12 or Patient Reported Outcomes Measurement Information System PROMIS-10) or joint and disease-specific outcomes (Hip Disability and Osteoarthritis Outcome Score {HOOS} and Knee Injury and Osteoarthritis Outcome Score {KOOS}). However, we question the adequacy of permitting the use of a general health tool alone in measuring outcomes of hip and knee arthroplasty. U.S. Total Joint Replacement Registries collect global health status measures as well as joint-specific measures. We recognize that length of the survey is a patient-related barrier to PRO completion (1). Use of two measures would increase the length and possibly complexity of the survey from the patient's perspective, increasing burden. These factors should be considered when selecting survey tools.

The AAOS is very concerned about risk adjustment for patient-reported functional status outcome measures. The Mathematica document clearly states that "the measure development team has not yet been able to develop and test a risk-adjustment model for these measures due to a lack of relevant data in structured fields." We cannot support the use of patient-reported outcomes data that is not reliably risk-adjusted. Risk adjustment will become even more

important if these measures are adopted for the Meaningful Use penalty program or the Value Based Modifier Program and for public reporting. We note that there are no risk-adjusted patient-reported outcome measures available at this time for any condition. Before adopting and implementing these measures for Meaningful Use or any other performance measurement evaluation, it will be essential to assure that the risk adjustment methodology is valid, reproducible, robust, and meaningful to patients and clinicians. Factors that are not known to modify risk or outcome should be excluded from the final risk adjustment model. To further this end, we offer the following suggestions:

- The number of co-morbidities does not accurately predict patient-reported outcomes after total hip arthroplasty (2). The severity of the clinical co-morbidities and their impact on the patient's ability to participate in his own care and rehabilitation are much more powerful predictors of functional status and symptoms after surgery. The study cited here found the Charnley classification was the strongest predictor of post-operative pain and satisfaction. ICD-10-based co-morbidity measures added little predictive value.
- We recommend modifications to the list of potential risk-adjustment variables indicated below. New suggested items are indicated in red. Certain items were deleted from the Mathematica list as being unrelated to outcomes or too general.

Variable	Example
Age	Patient's age at time of surgery
Gender	Gender
Race	Patient's race
Socioeconomic Status	Insurance status (e.g. Medicaid, uninsured) income and education of patient's neighborhood
Workmen's Comp. Status	Is patient on workmen's compensation?
Social functioning	Scores based on pre-operative assessment- PROMIS-10, etc.
Social supports	Availability of an able caregiver
Living conditions	Presence of stairs and other barriers
Co-Morbidities	Including: <ul style="list-style-type: none"> Metastatic cancer Back pain Dementia or other cognitive impairment Obesity (BMI) Anxiety Depression Neuromuscular disease (Parkinsons, multiple sclerosis) Insulin dependent diabetes HbA1c, HB Creatinine Sickle cell anemia Myelodysplasia

	COPD (oxygen dependent)
	CHF with history of prior hospitalization
	Hemiplegia (prior stroke)
	Poor immune status (HIV, immunocompromised)
	Poor nutritional status
	Deep vein thrombosis
	Pulmonary embolism
	Peripheral vascular disease
Chronic pain	Pre-operative opioid dose
Smoking Status	Smoking status (not history)
Pre-operative Function/symptoms	Patient's preoperative pain or function score
ASA physical status classification	Assessment of severity based on ASA grade (1, 2, 3, or 4)
Previous Infection	Arthropathy of the hip or knee associated with infections
Retained hardware	Previously installed hardware at the hip or knee joint
Post-traumatic arthritis	Arthritis at the hip or joint due to physical trauma
Range of motion	Quantified range of motion at the joint before replacement
Inflammatory Arthritis	Rheumatoid arthritis at the hip or knee joint
Previous open Surgery	Prior invasive surgical intervention at the hip or knee joint
Abductor muscle Deficiency	Abductor muscle deficiency for hip replacement patients
Congenital deform.	Developmental dysplasia of hip and childhood Developmental abnormality
Angular deform.	Acquired deformity of the knee Angular, translational, or rotational deformities of the Proximal femur
Extensor mechan. Deficiency	Extensor mechanism for knee replacement patients
Flexion contracture	Flexion contracture at the hip before joint replacement
Metabolic bone disease	Involving the region of the arthroplasty (osteoporosis, osteopetrosis, Paget's Disease)

The AAOS is also concerned about the significant infrastructure and processes that will need to be put in place in the physician's office or outpatient setting to obtain consistent PROs for total hip and knee replacements. The costs of measurement will be an additional "payment adjustment" for physicians. The functional status measures have not been used in clinical practice on a large scale to date. We have serious concerns about the feasibility of wider scale implementation and the reliability of these measures when collected in variable practice sites in the absence of pilot data. To minimize disruption to clinical care, it will be important to fit collection of patient reported measures into the flow of care. It is also necessary to avoid undue burden to patients, which will lower response rates. Some electronic health record systems, such as EPIC, have patient portals (MyChart) that can collect this information. Stand-alone web tools can also be integrated with EHRs. Making the connection between an internet survey system and a commercially available electronic health record is often costly, however, because there is no industry standard for integrating outside data sources into the EHR and it may be a proprietary feature. "Depending on the vendor product and the challenge to program a data transfer interface, this development cost



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may be significant, perhaps as much as \$50,000 of internal costs, when done by the organization's IT programmer staff." (3)

Thank you for your attention to the concerns of America's orthopaedic surgeons. We trust the input of the orthopaedic community will be sought as these measures are refined and tested. If you have questions on our comments, please feel free to contact our Medical Director, William Shaffer, MD, at 202.548.4145 or Shaffer@aaos.org.

Sincerely,

A handwritten signature in cursive script that reads "David Teuscher MD".

David D. Teuscher, MD
President, American Academy of Orthopaedic Surgeons

cc: Karen Hackett, FACHE, CAE, AAOS Chief Executive Officer
William Shaffer, MD, AAOS Medical Director



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Endnotes

1. Patricia D. Franklin, MD, MBA, MPH, David Lewallen, MD, Kevin Bozic, MD, et.al., “Implementation of Patient-Reported Outcome Measures in U.S. Total Joint Replacement Registries: Rationale, Status, and Plans”. J Bone Joint Surg AM, 2014 Dec. 17,96 [Supplement 1]: 04-109.
2. Meredith E. Greene, BA, Ola Rolfson, MD, Ph.D., et.al, “Standard Comorbidity Measures Do Not Predict Patient-reported Outcomes 1 Year After Total Hip Arthroplasty”. Clinical Orthopaedics and Related Research, published online 21 February, 2015.
3. “Using Patient-Reported Information to Improve Health Outcomes and Health Care Value: Case Studies from Dartmouth, Karolinska and Group Health: Peer Reviewed Technical Report Published by The Dartmouth Institute for Health Policy and Clinical Practice, Center for Population Health, Lebanon, NH June 2012.