MN Community MEASUREMENT

TOTAL KNEE REPLACEMENT MEASURES – Summary of Redesign Recommendations

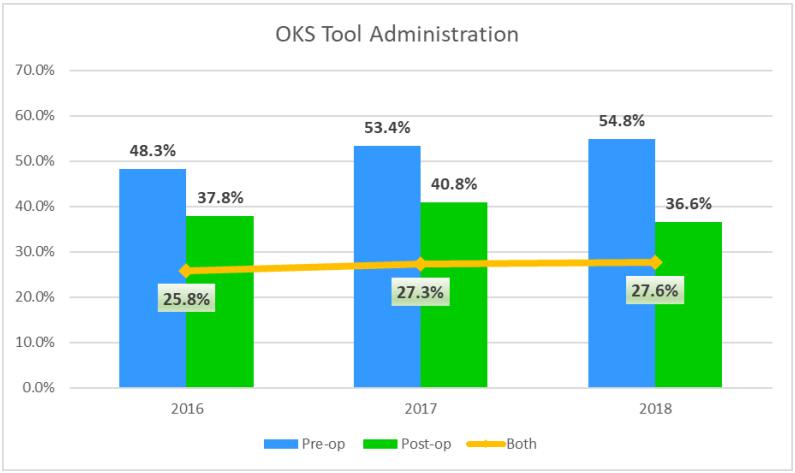
BACKGROUND

In 2016, the Average Change in Functional Status Following Total Knee Replacement Surgery measure was submitted to the Center for Medicare and Medicaid Services' (CMS) Call for Measures, accepted for consideration and subsequently included in the Quality Payment Program (QPP) for 2019 along with six additional orthopedic patient-reported outcome (PRO) measures. Currently, MN Community Measurement has seven orthopedic measures in the program:

- QPP# 459 Average Change in Back Pain Following Lumbar Discectomy/ Laminotomy
- QPP# 460 Average Change in Back Pain Following Lumbar Fusion
- QPP# 461 Average Change in Leg Pain Following Lumbar Discectomy/ Laminotomy
- QPP# 469 Average Change in Functional Status Following Lumbar Fusion Surgery
- QPP# 470 Average Change in Functional Status Following Total Knee Replacement Surgery
- QPP# 471 Average Change in Functional Status Following Lumbar Discectomy/ Laminotomy Surgery
- QPP# 473 Average Change in Leg Pain Following Lumbar Fusion Surgery

Over the course of discussion with CMS during the consideration for inclusion, CMS provided MNCM with some feedback about the measures. While CMS liked these patient-reported outcome measures and the direction they were heading, they expressed some concerns about the measure construct and the ability to benchmark results of an average change measure. CMS shared that it is difficult to set benchmarks for a continuous variable and that there is no literature for benchmarking this type of change beyond minimally clinical important difference (MCID), which is not a patient-centric outcome.

Additionally, when the measure development workgroup first created the measures, they indicated they saw approximately 70 percent of their patients for a one-year post-op visit. While it is not realistic to capture every single patient postoperatively, we had anticipated goal of a 70 percent capture rate. Despite public reporting of the rate of Oxford Knee Score (OKS) tool administration, these rates have not only made little-to-no improvement, they have also remained considerably below the intended goal.



Another potential flaw of the current construct is that a measure of average change following a procedure requires both a pre-operative and a post-operative PRO assessment. That is, patients who are missing one of the assessments cannot have their change calculated and are therefore removed from the denominator. CMS shared that they do not allow denominator self-selection: "If the patient is not doing well, simply don't administer the tool and the patient isn't counted". While we would not expect providers to behave in this way, the measure construct does not protect from "cherry-picking" which patients to assess.

CMS appreciated our willingness to discuss the measures and consider redesign to facilitate benchmarks.

SCOPE OF WORK

Re-convening of a multi-stakeholder workgroup for four specific redesign topics for consideration. Task #4 is more exploratory in nature.

1. Consider redesign of the measure construct to a target-based measure using the OKS tool
    - Consider inclusion of KOOS JR tool in the measure

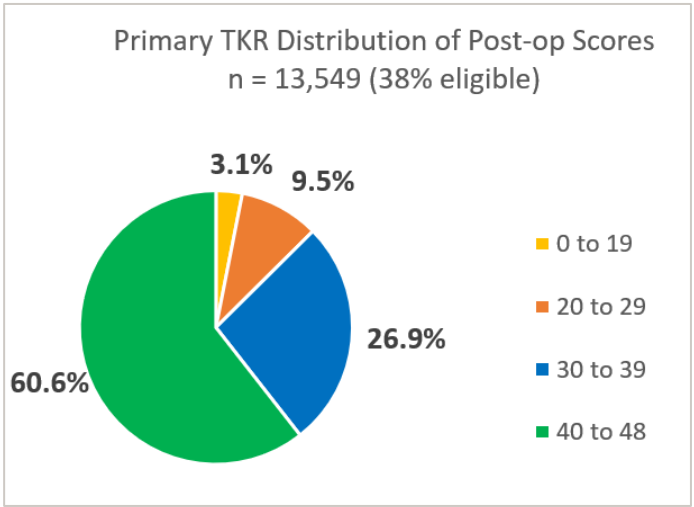
2. Consider discontinuing the collection of three-month post-operative measures
    - Original intent of the workgroup was to use these measures to understand differences between treatment/therapy
    - Most practice view collection as optional
    - Not publicly reported or adopted by MDH
    - Reduce data collection burden
3. Consider discontinuing the collection of revision total knee replacement procedures
    - Low volume over three years
    - CMS QPP collects primary knee surgeries only
    - Not publicly reported
    - Reduce data collection burden
4. Discuss usability/ value of quality of life measures with PROMIS Global-10

Measure development and specifications were completed in 2011. Due to attrition, retirement and the passing of time, recruitment for additional workgroup members was required. The workgroup was chaired by Paul Johnson, an orthopedic surgeon from Park Nicollet, and redesign recommendations were completed after two 1.5 to 2-hour meetings and through email consensus.

TASK 1: CONSIDER CHANGING MEASURE CONSTRUCT TO TARGET-BASED

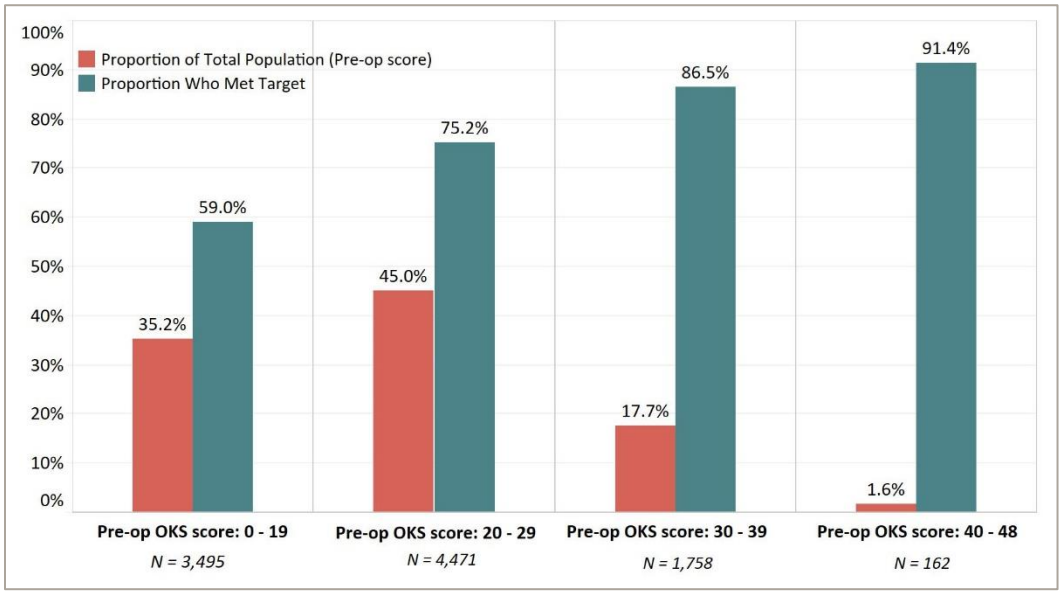
The original measures had good intentions of demonstrating improved outcomes after surgery, expressed as a practice's average rate of change in functional status for their patients. Because of the nature of an average change measure, the original measure construct required a patient to have both a pre- and post-operative OKS assessment. During measure development, workgroup members estimated that approximately 70 percent of patients were receiving a one-year post-op OKS tool. However, using three years of data, MNCM staff calculated that approximately 37 percent of patients actually received a one-year post-operative OKS assessment, which resulted in losing approximately 74 percent of the denominator. As demonstrated by the significant loss of denominator, the average change measure construct does not provide incentive among medical groups to implement PRO-based assessments into clinical workflows. Additionally, as expressed by CMS, the average change measure construct does not protect against potential denominator self-selection.

To determine an appropriate outcome OKS target, a literature review was conducted by MNCM staff. A 2014 article studied a Patient Acceptable Symptom State (PASS) threshold for OKS. PASS is defined as the highest level of symptom beyond which patients consider themselves well. The results of the study showed a PASS threshold OKS score of greater than or equal to 37. The receiver operator characteristic (ROC) curves for an OKS score of greater than or equal to 37 illustrated a sensitivity of 76.3% and a specificity of 76.5%. Additionally, patients with an OKS score of greater than or equal to 37 had a higher numeric rating scale (NRS) for satisfaction. Previous cut points published by the tool developer show an OKS score of 40 to 48 is associated with satisfactory knee function. [1]



Using the information found in the literature review, an analysis was completed using three years of data submitted to MNCM (2016 – 2018) to evaluate the distribution of one-year post-operative OKS scores. Among patients with valid post-operative OKS scores (n = 13, 549), approximately 60.6 percent had an OKS score between 40 and 48 (satisfactory knee function). The

1 Keurentjes, JC et al. (2014). Patient acceptable symptom states after total hip or knee replacement at mid-term follow-up. *Bone Joint Res*, 3(1), 7-13.



workgroup requested additional analysis be completed to determine the success rate of meeting the proposed target for patients who start with a lower (worse) pre-operative OKS score. Of patients who had a severe or moderate-severe pre-operative OKS score (n = 7,966), 59.0 percent and 75.2 percent met the OKS target of greater than or equal to 37, respectively. Additionally, while the target-based construct does not require both a pre- and post-operative assessment, collection of pre-operative assessment is strongly encouraged as the pre-operative scores are used in MNCM's risk adjustment model for the measure.

In addition to finding an appropriate OKS target score, the workgroup was tasked with also exploring inclusion of additional PRO tools in the measure. After review of several PRO tools, the KOOS JR was found to be a possible candidate for inclusion. The KOOS JR is a short, seven-item joint replacement adaptation of the 42-item KOOS tool. Developed by the Hospital for Special Surgery, the KOOS JR tool was validated in 2016 and copyrighted in 2017. Currently, the KOOS JR is included in the American Joint Replacement Registry (AJRR), the Joint Commission's Advanced Certification for Total Hip and Total Knee Replacement and Medicare's primary total joint replacement bundled payment program. Unfortunately. because the tool is relatively new, the literature is limited to validation studies only. To determine an appropriate outcome score for the KOOS JR tool, MNCM staff consulted with the tool developer contact, Stephen Lyman, PhD. Dr. Lyman generously provided an unpublished crosswalk between OKS scores and the corresponding KOOS JR scores. While not yet published, the crosswalk illustrated that an OKS score of 37 corresponds with a KOOS JR score of 71.

After thoughtful and thorough discussion over two meetings, the Workgroup Chair discerned that consensus on the proposed measure construct had be achieved. However, concerns were raised surrounding the understanding of the denominator definition after the second meeting. To ensure clarity of the proposed measure construct among workgroup members, a formal vote was taken. Of ten voting members, the majority (80%) voted in favor of the proposed construct.

RECOMMENDATIONS FOR CHANGING THE MEASURE CONSTRUCT:

$$\frac{\text{\# of eligible patients who had: Post-op OKS score} \geq 37 \text{ OR Post-op KOOS JR score} \geq 71}{\text{\# of eligible procedures}} = \text{Rate}$$

Benefits of Recommendation:

- Measure becomes a target (met or not met)
- All eligible patients remain in the denominator
- Provides incentive to increase tool administration
- Allows benchmarks to be set
- Includes two different tools: OKS and KOOS JR
  - KOOS JR aligns with AJRR and Joint Commission
- Only requires post-operative assessment
  - Pre-operative assessment is strongly encouraged as it is used for risk adjustment

New Measure Title	New Measure Description
Functional Status After Total Knee Replacement	Functional status is an Oxford Knee Score (OKS) greater than or equal to 37 **OR** a KOOS JR score greater than or equal to 71 at one-year post-operatively (9 to 15 months).

TASK 2: DISCONTINUE COLLECTION OF THE THREE-MONTH MEASURES

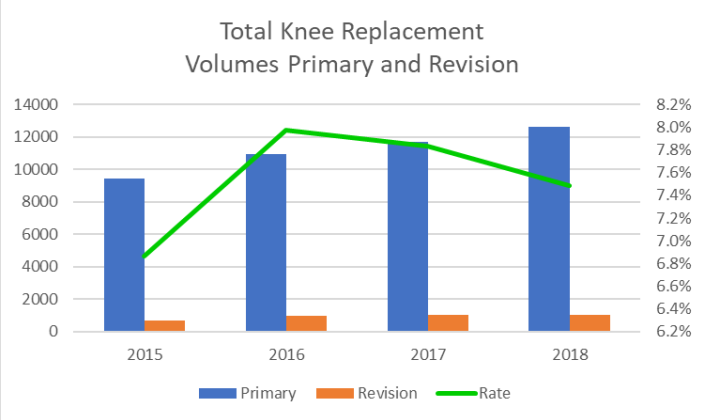
During measure development, the workgroup recognized that a three-month timeframe (nine to 20 weeks) was too soon after surgery to assess function. However, workgroup members felt that collection of the three-month measures was important in order to understand the differences between treatment/therapy. These measures have not been adopted by the Minnesota Department of Health (MDH) for the Statewide Quality Reporting Measures (SQRMS) system and the measures have not been publicly reported. Additionally, MCNM staff have received feedback from medical groups in which groups felt that these measures are considered "optional" for submission.

As part of this redesign effort, staff recommended that collection of the three-month measures be discontinued. In addition to the reasons provided above, a primary benefit of discontinuing collection of these measures is reducing data collection burden for medical groups.

The MNCM workgroup reached consensus to discontinue collection of the three-month measures.

TASK 3: DISCONTINUE COLLECTION OF TOTAL KNEE REPLACEMENT REVISION PROCEDURES

Since the start of data collection for TKR revision procedures in 2016, there has been a relatively low volume of revision procedures submitted – approximately eight percent. Additionally, the revision procedure data is not currently publicly reported and is not included in the QPP – only primary procedures are specified in the QPP measure specifications.



As part of this redesign effort, MNCM staff recommended that collection of TKR revision procedures be discontinued. In addition to the reasons provided above, a primary benefit of discontinuing collection of these procedures is reducing data collection burden for medical groups.

The TKR workgroup reached consensus to discontinue collection of revision TKR procedures.

TASK 4: DISCUSS USABILITY/VALUE OF QUALITY OF LIFE MEASURES WITH PROMIS GLOBAL-10

Both the spine and TKR workgroups were originally tasked with developing measures of functional status for patients undergoing orthopedic surgery; however, the workgroups expressed a desire to also include measures of health-related quality of life. Both the TKR and Spine workgroups selected the EQ5D, which was replaced with PROMIS Global-10 in 2015 due to increasing restrictions on the electronic administration and ownership of the data. Although PROMIS Global-10 is sponsored by the NIH and is gaining traction as a tool that is used, many entities that are administering the tool are having difficulty analyzing, using and reporting these measures. Currently, the results of the tool are to be converted using t-scores.

A survey was conducted via email among workgroup members to gain a sense of the usability and value of these measures. A majority of the members felt that the PROMIS Global-10 tool was useful in everyday practice as well as in research. The workgroup chair shared that the American Joint Replacement Registry (AJRR) uses this tool and felt that medical groups should also collect in this information. Several workgroup members also felt that the use of t-scores for measuring change is useful. A literature review revealed only validation studies, with no reported outcome use in spine surgery or total knee

replacement; however, one study of cancer patients defined poor quality of life as one standard deviation below the population mean t-score.

There currently is not enough published data about the use of this tool in the target populations and not enough experience with deriving target based PRO-PMs with these subscales. These QoL measures are not currently endorsed or included in federal programs, but workgroup members feel that it is still important to capture this information. MNCM will continue to explore the reporting of outcomes using this tool.

SUMMARY OF RECOMMENDATIONS

1. **Modify measure construct to reflect new target-based measure for 2020 report year (DOS 1/1/2018 – 12/31/2018)**
   Recalculation of existing data and inclusion of KOOS JR in data elements collected
   a. One-year post-operative OKS score of greater than or equal to 37 OR one-year post-operative KOOS JR score of greater than or equal to 71
   b. Denominator includes all eligible procedures. Patients not assessed remain in the denominator and do not meet the target.
2. **Discontinue collection of three-month measures (for 2020 report year)**: Many medical groups consider these measures optional and are not submitting this information. Discontinuing collection will reduce data collection burden.
3. **Discontinue collection of TKR revision procedures (for 2020 report year):** Low volume over three years. Discontinuing will reduce data collection burden.
4. **Continue to explore meaningful reporting of quality of life measures** (currently with an average change construct): Potential for future target-based measure with more literature and experience with tool score.

2018 TKR MEASURE DEVELOPMENT WORKGROUP

Name	Member Type	Organization
Paul Johnson, MD	Orthopedic Surg; Chair	Park Nicollet
Marc Swiontkowski, MD	Orthopedic Surgeon	TRIA Orthopedics
Andrew Schmidt, MD	Orthopedic Surgeon	HFA & HCMC Clinics
Tad Mabry, MD	Orthopedic Surgeon	Mayo Clinic
Jacob Ziegler, MD	Orthopedic Surgeon	Mayo Clinic Health System
Gary Wyard, MD	Orthopedic Surgeon	Twin Cities Orthopedics
Angela Miller	Joint Care Coordinator	Heartland Orthopedic Specialists
Heidi Richards, PT MHA	Clinic Administrator	Fairview MSK Service Line
Lisa Aker	Data Analyst	HealthPartners
Megan Reams	Quality Improvement	TRIA Orthopedics
Mary Ellen Wells	Consumer/Patient/MNCM Board	Consumer
Howard Epstein, MD	Health Plan/ MARC/MNCM Board	Preferred One
Leif Solberg, MD	Health Plan/ Research	HealthPartners Foundation
Collette Pitzen	Facilitator/Measure Development	MN Community Measurement
Jess Amo	Facilitator/Measure Development	MN Community Measurement