

Measure Title

AQI56: Use of Neuraxial Techniques and/or Peripheral Nerve Blocks for Total Knee Arthroplasty (TKA)

Measure Description

Percentage of patients, regardless of age, that undergo total knee arthroplasty for whom neuraxial anesthesia and/or a peripheral nerve block is performed.

NQS Domain

Effective Clinical Care

Measure Type

Process

High Priority Status

No

Inverse Measure

No

Instructions

This measure is to be reported each time a patient undergoes total knee arthroplasty. It is anticipated that qualified anesthesia providers and eligible clinicians who provide denominator-eligible services will submit this measure.

Measure Reporting via the Qualified Clinical Data Registry

CPT codes are used to identify patients who are included in the measure denominator. Registry codes are used to report the numerator of the measure.

Denominator

All patients, regardless of age, who undergo total knee arthroplasty

Denominator Criteria (Eligible Cases):

All patients, regardless of age

AND

Patient encounter during the reporting period (CPT):

27447

AND

01402

Denominator Exclusions

- None

Numerator

Patients for whom neuraxial anesthesia and/or a peripheral nerve block is performed.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

10A78

Neuraxial anesthesia and/or a peripheral nerve block was used

OR

Denominator Exception:

11A01

Documentation of patient reason(s) for not using either neuraxial anesthesia or a peripheral nerve block (e.g., patient refusal)

OR

Performance Not Met:

10A79

Neuraxial anesthesia and/or a peripheral nerve block was NOT used

NQF Number: Not Applicable

eCQM: Not Applicable

Rationale

Regional anesthesia is associated with improved patient outcomes and lower postoperative morbidity and mortality compared to general anesthesiaⁱ in patients undergoing TKA. Patients receiving neuraxial anesthesia typically lose less blood during surgery, leading to reduced need for many blood transfusions.ⁱⁱ Additionally, some studies support the notion that spinal anesthesia is associated with lower incidence of surgical site infection when compared to general anesthesia.ⁱⁱⁱ Peripheral nerve blocks (PNBs) can be used as part of a pain management protocol after knee replacement surgery when compared with systemic analgesia, patients receiving PNBs have better pain scores and use less opioids after surgery.^{iv} By requiring fewer opioids after surgery, patients also avoid opioid-related side effect such as sedation, respiratory depression, nausea, vomiting, and constipation. They also have better functional outcomes, and have overall better perioperative experience.^v

Strength of the evidence supporting neuraxial anesthesia and PNB is sometimes questioned as some of the supporting studies are retrospective in nature and mainly derived from analysis of administrative databases. However, evidence from randomized clinical trials either support better outcomes with regional anesthesia or show that there is no difference with the anesthesia technique.^{vi}

Clinical Recommendation Statements

2015 AAOS Evidence-Based Clinical Practice Guideline for Surgical Management of Osteoarthritis of the Knee^{vii}

“Strong evidence supports that peripheral nerve blockade for total knee arthroplasty (TKA) decreases postoperative pain and opioid requirements. Strength of Recommendation: Strong Evidence: 4 stars”

“Moderate evidence supports that neuraxial anesthesia could be used in total knee arthroplasty (TKA) to improve select perioperative outcomes and complication rates compared to general anesthesia. Strength of Recommendation: Moderate, Evidence: 3 stars”

Data Source: Claims/Paper Medical Record, Registry

Measure Steward: American Society of Anesthesiologists (ASA)

Number of Multiple Performance Rates: Not Applicable

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

References:

- ⁱMemtsoudis SG, Xuming S., Ya-Lin Chiu, et al. Perioperative comparative effectiveness of anesthetic technique in orthopedic patients. *Anesthesiology*.2013;118:1046-58.
- ⁱⁱ Hu S, Zhang Z-Y, Hua Y-Q, Li J, Cai Z-D. A comparison of regional and general anesthesia for total replacement of the hip or knee: a metaanalysis. *J Bone Joint Surg*. 2009;91:935-42.
- ⁱⁱⁱ Zorilla-Vaca A, Grant MC, Mathur V, Li J, Wu CL. The impact of neuraxial versus general anesthesia on the incidence of postoperative surgical site infections following knee or hip arthroplasty: a meta-analysis. *Regional Anesthesia & Pain Medicine*. 2016;41(5):555-63.
- ^{iv} Memtsoudis SG, Poeran J, Zubizarreta N, Ozbek U, Mazumdar M. The impact of peripheral nerve blocks on perioperative outcome in hip and knee arthroplasty-a population-based study. *Pain*. 2016;157(10):2341-9.
- ^v Terkawi AS, Mavridis D, Sessler DI, et al. Pain management modalities after total knee arthroplasty: a network meta-analysis of 170 randomized controlled trials. *Anesthesiology*. 2017;126:923-37.
- ^{vi} Johnson RL, Koop SL, Burkle CM, et al. Neuraxial vs general anesthesia for total hip and total knee arthroplasty: a systematic review of comparative-effectiveness research. *Br J Anaesth*. 2016;116(2):163-76.
- ^{vii} Surgical Management of Osteoarthritis of the Knee Evidence-Based Clinical Practice Guideline. Adopted by the American Academy of Orthopaedic Surgeons Board of Directors, 12/4/2015.

Use of Neuraxial Techniques and/or Peripheral Nerve Blocks for Total Knee Arthroplasty (TKA) 2018 QCDR Measure Flow

