



# 2018 QCDR MEASURE SPECIFICATIONS

Anesthesia Quality Institute  
National Anesthesia Clinical Outcomes Registry

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## DISCLAIMER

Participation in the ASA® Quality Service does not guarantee satisfactory participation in CMS Merit-based Incentive Payment System (MIPS). Successful submission to CMS is contingent upon each individual eligible clinician (EC) and/or group meeting the MIPS program requirements and the timeliness, quality, and accuracy of the data they provide for reporting.

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**The following applies to each Measure that contains the (+) symbol within its title:**

**† The efforts and contributions of Anesthesia Business Group, ePREOP and TeamHealth to harmonize this Measure with other similar anesthesia quality measures and to update this Measure on an ongoing basis is acknowledged.**

## Measures Removed from 2018 AQI NACOR QCDR Measure Set

Please note the following measures have been removed or retired from the AQI NACOR registry for QCDR reporting.

Measure ID	Measure Title	Reason for Not Including in 2018 MIPS Reporting
AQI29	Prevention of Post-Operative Vomiting (POV) – Combination Therapy (Pediatrics)	Measure has been approved as a MIPS measure in 2018. Measure specifications are found on the CMS Quality Payment Program website.
AQI31	Postanesthesia Care Unit (PACU) Re-intubation Rate	Rejected by CMS due to high performance rate and lack of variability for improvement.
AQI32	Procedural Safety for Central Line Placement	Rejected by CMS due to high performance rate and lack of variability for improvement.
AQI34	Perioperative Cardiac Arrest – Inverse Measure	Rejected by CMS due to high performance rate and lack of variability for improvement.
AQI35	Perioperative Mortality Rate - Inverse Measure	Rejected by CMS due to high performance rate and lack of variability for improvement.
AQI37	Surgical Safety Checklist – Applicable Safety Checks Completed Before Induction of Anesthesia	Rejected by CMS due to high performance rate and lack of variability for improvement.
AQI52	Treatment of Hyperglycemia with Insulin	Rejected by CMS due to high performance rate and lack of variability for improvement.

## Modifications to 2017 QCDR Measures for 2018 AQI NACOR Measure Set

This table identifies changes that were made to AQI NACOR’s 2017 QCDR measure specifications in preparation for the 2018 performance year. This table only serves as a general reference in support of but not superseding the final measure specifications for each measure within the book. Users will need to refer to the full measure specifications for complete code sets, measure criteria and instructions.

Measure ID	Measure Title	Modifications
AQI18	Coronary Artery Bypass Graft (CABG): Prolonged Intubation – Inverse Measure	<ul style="list-style-type: none"> <li>• Instructions Updated</li> <li>• Denominator Definition Added</li> <li>• Denominator Codes Added: 33517, 33518, 33519, 33521, 33522, 33523</li> </ul>
AQI60 (Previously AQI28)	New Corneal Injury Not Diagnosed Prior to Discharge	<ul style="list-style-type: none"> <li>• <b>REVIEW SPECIFICATION: SIGNIFICANT CHANGES</b></li> <li>• <b>NEW MEASURE ID</b></li> <li>• Title updated</li> <li>• Measure Description Updated <ul style="list-style-type: none"> <li>○ Percentage of patients, aged 18 years or older, who undergo anesthesia care and did not have a new diagnosis of corneal injury prior to facility discharge</li> </ul> </li> <li>• Instructions Updated</li> <li>• Denominator Description Updated <ul style="list-style-type: none"> <li>○ All patients, aged 18 and older, who undergo anesthesia care</li> </ul> </li> <li>• Denominator Codes Added: 00731, 00732, 00811, 00812, 00813, 36620</li> <li>• Denominator Codes Removed: 00740, 00810, 01180, 01190, 01682, 72275</li> <li>• Denominator Exclusions Removed: <ul style="list-style-type: none"> <li>○ Patient is sedated pharmacologically at time of PACU discharge</li> <li>○ Patient bypassed the PACU</li> </ul> </li> <li>• Denominator Exclusion Modified: <ul style="list-style-type: none"> <li>○ Patient has a co-occurring condition that limits ability to communicate at the time of facility discharge (e.g., severe dementia, developmental delay or mechanical ventilation)</li> </ul> </li> <li>• Numerator Description Updated: <ul style="list-style-type: none"> <li>○ Patients who do not have a new diagnosis of corneal injury prior to facility discharge</li> </ul> </li> <li>• Numerator Quality Coding Options Updated <ul style="list-style-type: none"> <li>○ Patient was NOT newly diagnosed with exposure keratitis or corneal abrasion at time of facility discharge 10A50</li> <li>○ Patient was diagnosed with new exposure keratitis or corneal abrasion at time of facility discharge 10A51</li> </ul> </li> </ul>
AQI41	Coronary Artery Bypass Graft (CABG): Stroke – Inverse Measure	<ul style="list-style-type: none"> <li>• Instructions Updated</li> <li>• Denominator Definition Added</li> <li>• Denominator Codes Added: 33517, 33518, 33519, 33521, 33523</li> </ul>

		<ul style="list-style-type: none"> <li>• Denominator Criteria Option Added: 33530, 00562</li> </ul>
AQI42	Coronary Artery Bypass Graft (CABG): Post-Operative Renal Failure – Inverse Measure	<ul style="list-style-type: none"> <li>• Instructions Updated</li> <li>• Denominator Definition Added</li> <li>• Denominator Codes Added: 33517, 33518, 33519, 33521, 33523</li> <li>• Denominator Criteria Option Added: 33530, 00562</li> </ul>
AQI48	Patient-Reported Experience with Anesthesia	<ul style="list-style-type: none"> <li>• <b>REVIEW SPECIFICATION: SIGNIFICANT CHANGES</b></li> <li>• Second performance rate added to measure: <ul style="list-style-type: none"> <li>○ AQI48a: Percentage of patients, aged 18 and older, who were surveyed on their patient experience and satisfaction with anesthesia care</li> <li>○ AQI48b: Percentage of patients, aged 18 and older, who completed a survey on their patient experience and satisfaction with anesthesia care who report a positive experience with anesthesia care. <b>See specification for full details of both performance rates</b></li> </ul> </li> </ul>
AQI49	Adherence to Blood Conservation Guidelines for Cardiac Operations using Cardiopulmonary Bypass (CPB) – Composite	<ul style="list-style-type: none"> <li>• Instructions Updated</li> </ul>
AQI50	Application of Lung-Protective Ventilation during General Anesthesia	<ul style="list-style-type: none"> <li>• Measure Description Updated <ul style="list-style-type: none"> <li>○ Percentage of patients, aged 12 years and older, who undergo general anesthesia care that includes an endotracheal tube who had a median exhaled tidal volume less than 10 mL/kg of ideal body weight during positive pressure ventilation</li> </ul> </li> <li>• Instructions Updated</li> <li>• Denominator Description Updated <ul style="list-style-type: none"> <li>○ Patients, aged 12 years and older, who undergo general anesthesia care that includes an endotracheal tube</li> </ul> </li> <li>• Denominator Codes Removed: 00326, 00561, 00836, 00740, 00810, 01180, 01190, 01682, 01990</li> <li>• Denominator Codes Added: 00731, 00732, 00811, 00812, 00813</li> <li>• Denominator Exclusions Added <ul style="list-style-type: none"> <li>○ ASA Physical Status 5 or 6</li> <li>○ Patient was mechanically ventilated for &lt;45 cumulative minutes</li> <li>○ Single-lung ventilation procedure</li> </ul> </li> <li>• Numerator Description Updated <ul style="list-style-type: none"> <li>○ Patients who had a median exhaled tidal volume less than 10 mL/kg of ideal body weight during positive pressure ventilation (PPV)</li> </ul> </li> <li>• Numerator Quality Coding Options Updated</li> </ul>

		<ul style="list-style-type: none"> <li>○ Patient had a median exhaled tidal volume less than 10 mL/kg of ideal body weight during positive pressure ventilation: 10A18</li> <li>○ Patient did not have a median exhaled tidal volume less than 10 mL/kg of ideal body weight during positive pressure ventilation: 10A19</li> <li>● Rationale Updated</li> </ul>
AQI51	Assessment of Patients for Obstructive Sleep Apnea	<ul style="list-style-type: none"> <li>● Instructions Updated</li> <li>● Denominator Codes Removed: 00326, 00561, 00740, 00810, 00836, 01180, 01190, 01682</li> <li>● Denominator Codes Added: 00731, 00732, 00811, 00812, 00813, 00848, 00851, 00860, 00862, 00864</li> </ul>



## New QCDR Measures for 2018 Reporting

The table below identifies new QCDR measures added to AQI NACOR for reporting in 2018. This table only serves as a general reference in support of but not superseding final measure specifications for each measure within this book.

Measure ID	Measure Title	Measure Description
AQI53	Documentation of Anticoagulant and Antiplatelet Medications when Performing Neuraxial Anesthesia/Analgesia or Interventional Pain Procedures	Percentage of patients, regardless of age, taking anticoagulant and/or antiplatelet medications who undergo an interventional pain procedure or a surgical or therapeutic procedure under neuraxial anesthesia or analgesia where the name and date last taken of anticoagulant and/or antiplatelet medications prior to administration of anesthesia are documented.
AQI54	Use of Pencil-Point Needle for Spinal Anesthesia	Percentage of patients, regardless of age, who undergo an obstetric procedure using spinal anesthesia where a pencil-point needle is used to access the intrathecal space.
AQI55	Team-Based Implementation of a Care-and-Communication Bundle for ICU Patients	Percentage of patients, regardless of age, who are admitted to an intensive care unit (ICU) for $\geq 48$ hours and who received critical care services who have documentation by managing physician of 1) attempted or actual identification of a surrogate decision maker, 2) an advance directive, and 3) the patient's preference for cardiopulmonary resuscitation, within 48 hours of ICU admission.
AQI56	Use of Neuraxial Techniques and/or Peripheral Nerve Blocks for Total Knee Arthroplasty (TKA)	Percentage of patients, regardless of age, that undergo total knee arthroplasty for whom neuraxial anesthesia and/or a peripheral nerve block is performed.
AQI57	Safe Opioid Prescribing Practices	Percentage of patients, aged 18 years and older, prescribed opioid medications for longer than six weeks' duration for whom ALL of the following opioid prescribing best practices are followed: <ol style="list-style-type: none"> <li>1. Chemical dependency screening (includes laboratory testing and/or questionnaire) within the immediate 6 months prior to the encounter</li> <li>2. Co-prescription of naloxone or documented discussion regarding offer of naloxone co-prescription, if prescription is <math>\geq 50</math> MME/day</li> <li>3. Non co-prescription of benzodiazepine medications by prescribing pain physician and documentation of a discussion with patient regarding risks of concomitant use of benzodiazepine and opioid medications</li> </ol>
AQI58	Infection Control Practices for Open Interventional Pain Procedures	Percentage of patients, regardless of age, that undergo an open interventional pain procedure for whom the following infection control best practices are followed by anesthesiologist(s) and scrub technologist(s), in addition to standard sterile technique: <ol style="list-style-type: none"> <li>1. Double gloving (two pairs of sterile gloves are worn)</li> <li>2. Chlorhexidine with alcohol used</li> <li>3. Weight-based preoperative antibiotic dosing and, if indicated by procedure duration, weight-based re-dosing.</li> </ol>

		4. Administration of pre-operative antibiotics within 1 hour, or 2 hours for vancomycin, prior to surgical incision
AQI59	Multimodal Pain Management	Percentage of patients, regardless of age, undergoing selected elective surgical procedures that were managed with multimodal pain medicine.
Quantum31	Central Line Ultrasound Guidance	Percentage of patients, regardless of age, in whom ultrasound guidance is used by the anesthesia clinician when placing a central line for those central lines that are placed in the internal jugular location.

## 2018 MIPS Measures Available for Reporting through AQI NACOR

Clinicians and groups reporting via Qualified Registry or Qualified Clinical Data Registry (QCDR) can report Merit-based Incentive Payment System (MIPS) measures to fulfill requirements for the MIPS Quality component. Download full MIPS measure specifications from CMS (<https://www.cms.gov/Medicare/Quality-Payment-Program/Resource-Library/2018-Resources.html>).

Measure ID	Measure Title	Measure Type
MIPS 39	Screening for Osteoporosis in Women Aged 65-85 Years of Age	Process
MIPS 44*	Coronary Artery Bypass Graft (CABG): Preoperative Beta-Blocker in Patients with Isolated CABG Surgery	Process
MIPS 46	Medication Reconciliation Post-Discharge	Process
MIPS 47	Care Plan	Process
MIPS 76*	Prevention of Central Venous Catheter (CVC) – Related Bloodstream Infections	Process
MIPS 109	Osteoarthritis (OA): Function and Pain Assessment	Process
MIPS 110	Preventive Care and Screening: Influenza Immunization	Process
MIPS 111	Pneumococcal Vaccination Status for Older Adults	Process
MIPS 128	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up Plan	Process
MIPS 130	Documentation of Current Medications in the Medical Record	Process
MIPS 131	Pain Assessment and Follow-Up	Process
MIPS 134	Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan	Process
MIPS 145	Radiology: Exposure Dose or Time Reported for Procedures Using Fluoroscopy	Process
MIPS 154	Falls: Risk Assessment	Process
MIPS 155	Falls: Plan of Care	Process
MIPS 181	Elder Maltreatment Screen and Follow-Up Plan	Process
MIPS 226	Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	Process
MIPS 238	Use of High-Risk Medications in the Elderly	Process
MIPS 276	Sleep Apnea: Assessment of Sleep Symptoms	Process
MIPS 317	Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented	Process
MIPS 342	Pain Brought Under Control Within 48 Hours	Outcome
MIPS 402	Tobacco Use and Help with Quitting Among Adolescents	Process
MIPS 404*	Anesthesiology Smoking Abstinence	Intermediate Outcome
MIPS 408	Opioid Therapy Follow-Up Evaluation	Process
MIPS 412	Documentation of Signed Opioid Treatment Agreement	Process
MIPS 414	Evaluation or Interview for Risk Opioid Misuse	Process
MIPS 424*	Perioperative Temperature Management	Outcome
MIPS 426*	Post-Anesthetic Transfer of Care Measure: Procedure Room to Post Anesthesia Care Unit (PACU)	Process
MIPS 427*	Post-Anesthetic Transfer of Care: Use of Checklist or Protocol for Direct Transfer to Intensive Care Unit (ICU)	Process
MIPS 430*	Prevention of Post-Operative Nausea and Vomiting (PONV) – Combination Therapy	Process
MIPS 435	Quality of Life Assessment for Patients with Primary Headache Disorders	Outcome
MIPS 463*	Prevention of Post-Operative Vomiting (POV) – Combination Therapy (Pediatrics)	Process

\*Measures with an asterisk (\*) are included in the CMS-recommended Anesthesiology Measure Set. Eligible clinicians and groups are not required to report these measures towards the six measures required for the MIPS Quality component but may find them applicable to their practice.

**Measure Title**

AQI18: Coronary Artery Bypass Graft (CABG): Prolonged Intubation – Inverse Measure

**Measure Description**

Percentage of patients aged 18 years and older undergoing isolated CABG surgery who require postoperative intubation > 24 hours

**NQS Domain**

Effective Clinical Care

**Measure Type**

Outcome

**High Priority Status**

No

**Inverse Measure**

Yes

**Instructions**

This measure is to be reported each time an isolated CABG procedure is performed during the reporting period. It is anticipated that qualified anesthesia providers and eligible clinicians who provide services for isolated CABG will submit this measure. This measure is intended to reflect the quality of services provided for isolated CABG or isolated reoperation CABG patients.

**Measure Reporting via the Qualified Clinical Data Registry**

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. The measure must capture both the surgical and related anesthesia code. G-codes are used to report the numerator of the measure.

**Denominator**

All patients, aged 18 years and older, undergoing isolated CABG surgery

Definition: Isolated CABG refers to CABG using arterial and/or venous grafts only.

**Denominator Criteria (Eligible Cases):**

Patient aged 18 years and older on date of encounter

**AND**

Patient encounter during the reporting period (CPT): 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536

**AND**

00566, 00567

**OR**

Patient encounter during the reporting period (CPT): 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33522, 33523, 33533, 33534, 33535, 33536

**AND**

Patient encounter during the reporting period (CPT): 33530

**AND**

00562

## Denominator Exclusions

- Organ donors as designated by ASA Physical Status 6

## Numerator

Patients who require intubation > 24 hours following exit from the operating room

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

#### *Performance Met:*

G8569 Prolonged postoperative intubation (> 24 hrs) required

#### OR

#### *Performance Not Met:*

G8570 Prolonged postoperative intubation (>24 hrs) not required

**NQF Number:** Not applicable

**eCQM:** Not applicable

## Rationale

Prolonged intubation and/or prolonged ventilation following coronary artery bypass graft (CABG) surgery is associated with increased mortality and morbidity.<sup>i</sup> A review of the literature suggests several predictors associated with prolonged ventilation following CABG including increased incidence of pneumonia and pulmonary atelectasis, history of hypertension, COPD, kidney disease and endocarditis among others.<sup>i,ii</sup> Most complications were associated with prolonged length of stay in the ICU and hospital and increased resource use.<sup>i</sup>

Physician anesthesiologists and other qualified anesthesia providers must maintain respiratory function of patients throughout the perioperative period and play a critical role in patients' respiratory care. As physician anesthesiologists and other qualified anesthesia providers control the patient breathing function, their decision-making and care related to airway management can greatly impact outcomes related to prolonged intubation and ventilation. One retrospective study found that physicians in the perioperative period are altering their management of types to reduce adverse respiratory outcomes. For example, research shows aortic aneurysm, combined and valve procedures, and preoperative renal dysfunction and stroke were strong predictors for prolonged ventilation.<sup>iii</sup> Changes to care and procedures to reduce adverse respiratory outcomes require the engagement of physician anesthesiologist and other qualified anesthesia provider expertise and skill to ensure appropriate patient care.

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

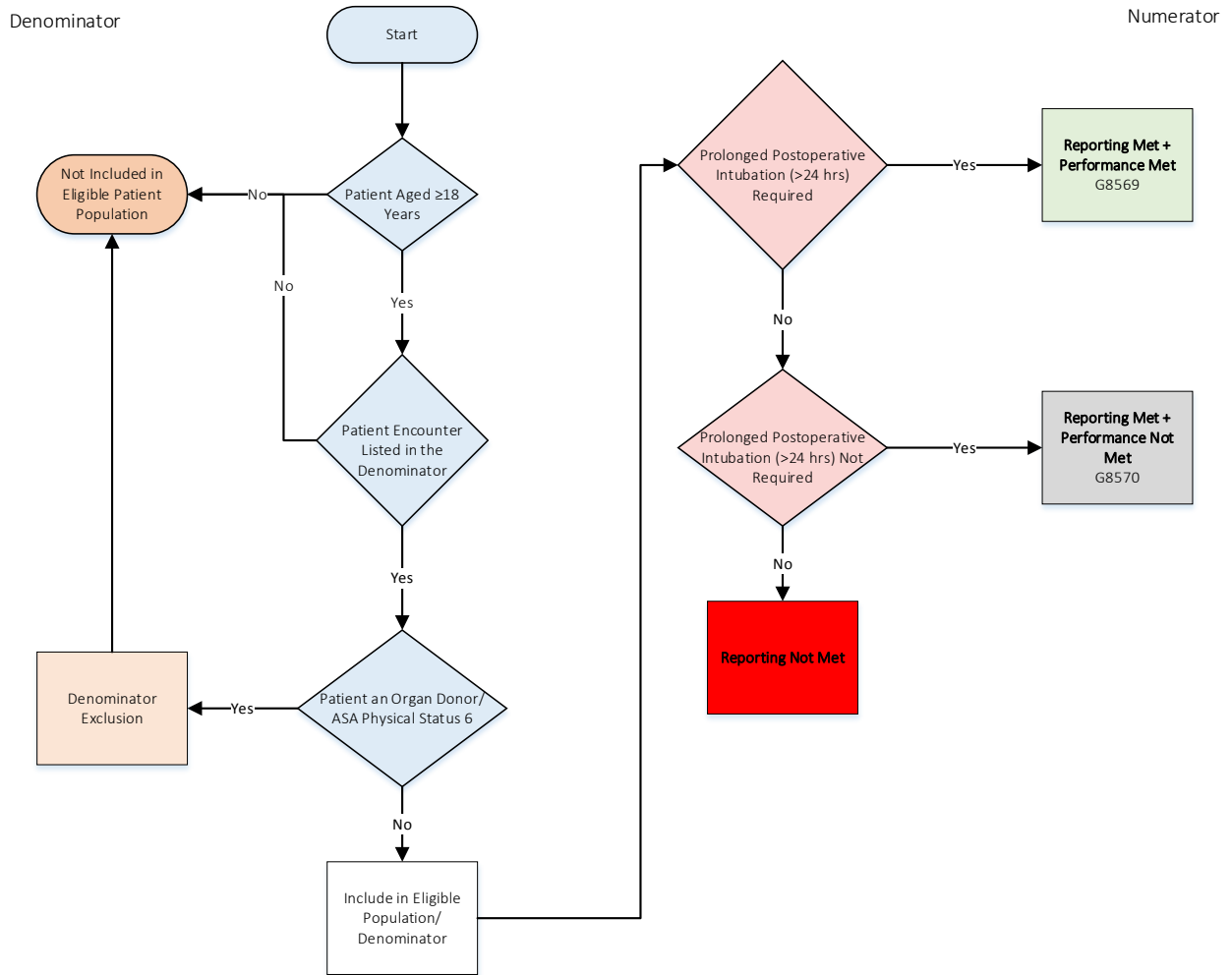
**Risk Adjustment:** No

## References:

<sup>i</sup> Ji, Q., et. al., (2012). "Risk factors for ventilator dependency following coronary artery bypass grafting." *Int J Med Sci* 9(4): 306-310.

<sup>ii</sup> Totonchi Z., et. al., (2014). "Predictors of prolonged mechanical ventilation after open heart surgery." *J Cardiovasc Thorac Res* 6(4): 211-216.

## Coronary Artery Bypass Graft (CABG): Prolonged Intubation 2018 QCDR Measure Flow



**Measure Title**

AQI41: Coronary Artery Bypass Graft (CABG): Stroke – Inverse Measure

**Measure Description**

Percentage of patients aged 18 years and older undergoing isolated CABG surgery who have a *postoperative* stroke that did not resolve within 24 hours

**NQS Domain**

Effective Clinical Care

**Measure Type**

Outcome

**High Priority Status**

No

**Inverse Measure**

Yes

**Instructions**

This measure is to be reported each time an isolated CABG procedure is performed during the reporting period. It is anticipated that qualified anesthesia providers and eligible clinicians who provide services, identified by CPT Codes listed below, for isolated CABG will submit this measure. This measure is intended to reflect the quality of surgical services provided for isolated CABG or isolated reoperation CABG patients. Isolated CABG refers to CABG using arterial and/or venous grafts only.

**Measure Reporting via the Qualified Clinical Data Registry**

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. The measure must capture both the surgical and related anesthesia code. G-codes are used to report the numerator of the measure. Note that a lower calculated performance rate for this measure indicates better clinical care or control.

**Denominator**

All patients, aged 18 years and older, undergoing isolated CABG Surgery

Definition: Isolated CABG refers to CABG using arterial and/or venous grafts only

**Denominator Criteria (Eligible Cases):**

Patient aged 18 years or older on date of encounter

**AND**

**Patient encounter during the reporting period (CPT):** 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33523, 33533, 33534, 33535, 33536

**AND**

00566, 00567

**OR**



Patient encounter during the reporting period (CPT): 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33523, 33533, 33534, 33535, 33536

**AND**

Patient encounter during the reporting period (CPT): 33530

**AND**

00562

#### Denominator Exclusions

- Organ donors as designated by ASA Physical Status 6

#### Numerator

Patients who have a postoperative stroke

Definition: A stroke is the sudden death of neurons in a localized area of brain due to inadequate blood flow that produces motor, sensory, or cognitive dysfunction (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory) that persists for more than 24 hours.

#### Numerator Quality-Data Coding Options for Reporting Satisfactorily

##### *Performance Met:*

**G8573**                      Stroke following isolated CABG surgery

##### OR

##### *Performance Not Met:*

**G8574**                      No stroke following isolated CABG surgery

**NQF Number:**                      Not applicable

**eCQM:**                                      Not applicable

#### Rationale

Stroke is a devastating complication that can occur after coronary bypass surgery. A standardized definition of stroke for physician anesthesiologists and other qualified anesthesia providers will allow for comparing stroke incidence and evaluating management strategies for reducing this devastating complication. The Anesthesia Quality Institute (AQI) defines stroke as the sudden death of neurons in a localized area of brain due to inadequate blood flow that produces motor, sensory, or cognitive dysfunction (e.g., hemiplegia, hemiparesis, aphasia, sensory deficit, impaired memory) that persists for more than 24 hours.<sup>i</sup>

Research demonstrates the incidence of stroke increases with patient age and is often associated with increased length of hospital stay and morbidity and mortality. Outcomes are better when patient age is younger and with beating-heart surgery rather than on-pump surgery.<sup>ii</sup> Research demonstrates varying incidence of stroke following CABG surgery, ranging from 1.1% - 5.7%.<sup>iii</sup> Predictors of post-CABG stroke include, advanced age, prior cardiovascular complications and prolonged intraoperative cardiopulmonary bypass time.<sup>iii</sup> Qualified anesthesia providers assume a unique and critical role during the perioperative period as they can provide safe and appropriate anesthesia care for patients, in relation to the aforementioned predictors of stroke. The expertise and decision-making of qualified anesthesia providers can greatly influence patient outcomes, including stroke.

**Data Source:**                              Claims/Paper Medical Record, Registry

**Measure Steward:**                      American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

<b>Number of Multiple Performance Rates:</b>	Not applicable
<b>Proportion Measure Scoring:</b>	Yes
<b>Continuous Measure Scoring:</b>	No
<b>Risk Adjustment:</b>	No

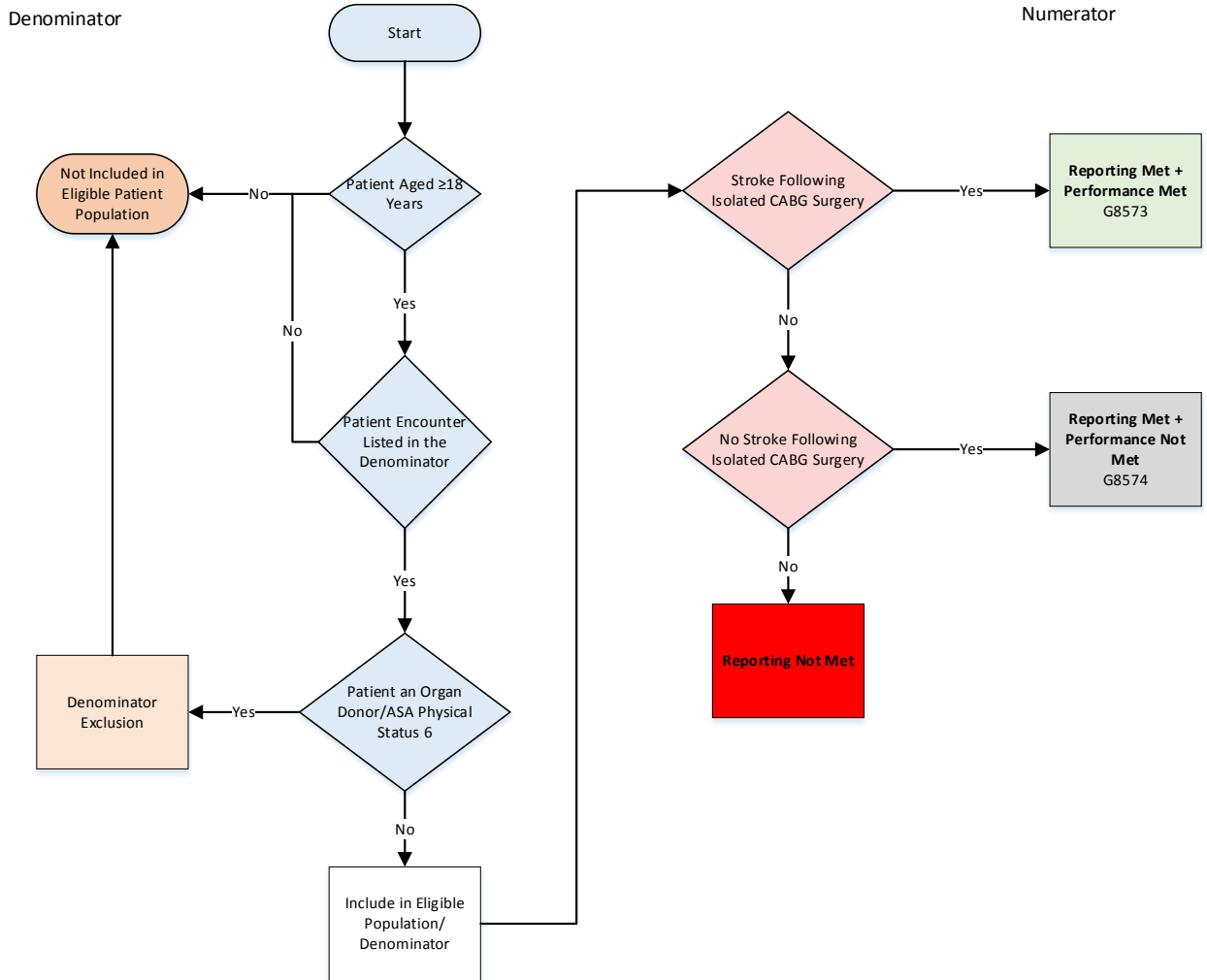
**References:**

<sup>i</sup> ASA Ad Hoc Committee on Data Definitions, 2017, <https://www.aqihq.org/qualitymeasurementtools.aspx>

<sup>ii</sup> Goto, T. & Maekawa, K., (2014). "Cerebral dysfunction after coronary artery bypass surgery." J Anesth. 28: 242-248.

<sup>iii</sup> Mao, et. al., (2015). "Predictors associated with stroke after coronary artery bypass grafting: A systematic review." J Neurol Sci. 357: 1-7.

## Coronary Artery Bypass Graft (CABG): Stroke 2018 QCDR Measure Flow



**Measure Title**

AQI42: Coronary Artery Bypass Graft (CABG): Post-Operative Renal Failure – Inverse Measure

**Measure Description**

Percentage of patients aged 18 years and older undergoing isolated CABG surgery who develop postoperative renal failure or require dialysis

**NQS Domain**

Effective Clinical Care

**Measure Type**

Outcome

**High Priority Status**

No

**Inverse Measure**

Yes

**Instructions**

This measure is to be reported each time an isolated CABG procedure is performed during the reporting period. It is anticipated that qualified anesthesia providers and eligible clinicians who provide services, identified by CPT Codes listed below, for isolated CABG will submit this measure. This measure is intended to reflect the quality of surgical services provided for isolated CABG or isolated reoperation CABG patients.

**Measure Reporting via the Qualified Clinical Data Registry**

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. The measure must capture both the surgical and related anesthesia code. G-codes are used to report the numerator of the measure. Note that a lower calculated performance rate for this measure indicates better clinical care or control.

**Denominator**

All patients, aged 18 years and older, undergoing isolated CABG surgery

Definition: Isolated CABG refers to CABG using arterial and/or venous grafts only

**Denominator Criteria (Eligible Cases):**

Patient aged 18 years or older on date of encounter

**AND**

Patient encounter during the reporting period (CPT): 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33523, 33533, 33534, 33535, 33536

**AND**

00566, 00567

**OR**

Patient encounter during the reporting period (CPT): 33510, 33511, 33512, 33513, 33514, 33516, 33517, 33518, 33519, 33521, 33523, 33533, 33534, 33535, 33536

**AND**

Patient encounter during the reporting period (CPT): 33530

**AND**

**Denominator Exclusions**

- Organ donors as designated by ASA Physical Status 6

**Numerator**

Patients who develop postoperative renal failure or require dialysis.

Definition: Kidney failure is defined as either: (1) a level of GFR to <15 mL/min/1.73 m<sup>2</sup>, which is accompanied in most cases by signs and symptoms of uremia, or (2) a need for initiation of kidney replacement therapy (dialysis or transplantation) for treatment for complications of decreased GFR, which would otherwise increase the risk of mortality and morbidity.<sup>i</sup>

**Numerator Quality-Data Coding Options for Reporting Satisfactorily*****Performance Met:***

**G8575**                      Developed postoperative renal failure or required dialysis

**OR*****Performance Not Met:***

**G8576**                      No postoperative renal failure/dialysis not required

**NQF Number:**                      Not applicable

**eCQM:**                                Not applicable

**Rationale**

Coronary artery bypass graft (CABG) surgeries are among the most frequently performed cardiac surgeries each year.<sup>ii</sup> Literature suggests the development of renal failure following coronary artery bypass graft (CABG) surgery is associated with poor patient outcomes, including a higher risk for mortality.<sup>iii</sup> Incidence of renal failure following CABG surgery ranges from 1.1% to 11%, with the incidence of acute kidney injury which can lead to renal failure is much higher, with reported incidence approximately 20%.<sup>iii, iv</sup> There has been a substantial increase in postoperative morbidity, mortality, and cost associated with this relatively common complication, regardless of whether incidence varies between providers.

Qualified anesthesia providers play an integral role in managing patient organ function during surgery, including kidney function. Changing patient population trends require anesthesiologists, surgeons and other members of the perioperative team to use their unique expertise to adjust care and effectively and appropriately manage patients throughout the perioperative period.<sup>iii</sup> A retrospective study examining elective CABG surgery outcomes found development of renal failure following surgery led to increased mortality and morbidity, as well as increased length of stay and use of resources.<sup>iv</sup> Another study found that minimal increases in creatinine following CABG surgery increased mortality risk significantly.<sup>iv</sup> Analysis of recent trends in patient characteristics reveals the growing complexity of comorbidities an average CABG patient may have including, diabetes and hypertension.

**Data Source:**                      Claims/Paper Medical Record, Registry

**Measure Steward:**                American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:**                      Not applicable

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

**References:**

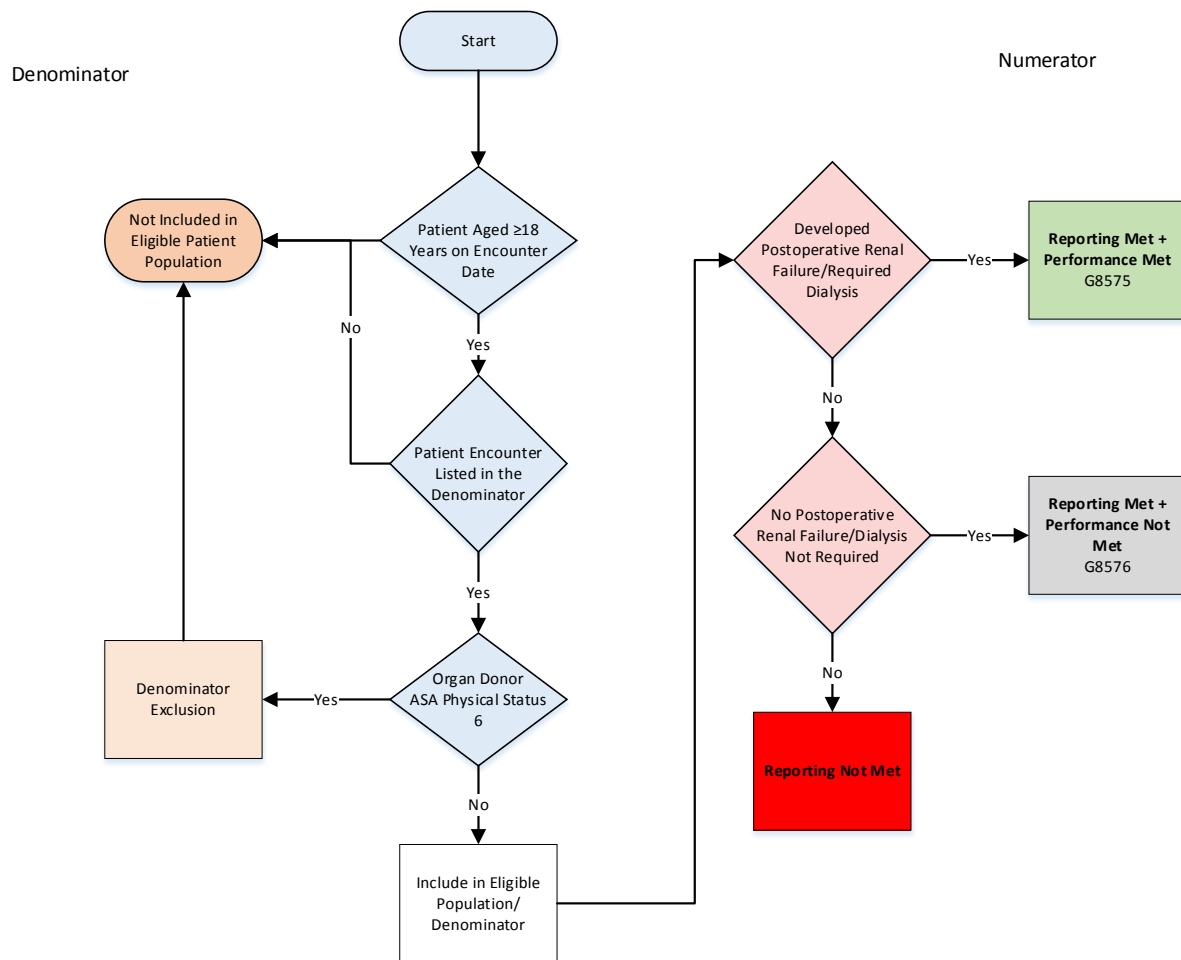
<sup>i</sup> ASA Ad Hoc Committee on Data Definitions, 2017, <https://www.aqihq.org/qualitymeasurementtools.aspx>.

<sup>ii</sup> El Bardissi, A.W., et. al. (2012). "Trends in isolated coronary artery bypass grafting: An analysis of the Society of Thoracic Surgeons adult cardiac surgery database." J Thorac Cardiovasc Surg 143(2): 273-281.

<sup>iii</sup> Li, S-Y., et. al. (2012). "Acute kidney injury network classification predicts in-hospital and long-term mortality in patients undergoing elective coronary artery bypass grafting surgery." Eur J Cardiothorac Surg 39: 323-328.

<sup>iv</sup> Huen, S. C., & Parikh, C.R. (2012). "Predicting Acute Kidney Injury after cardiac surgery: A systematic review." Ann Thorac Surg 93:337-347.

## Coronary Artery Bypass Graft (CABG): Post-Operative Renal Failure 2018 QCDR Measure Flow



## Measure Title

### AQI48: Patient-Reported Experience with Anesthesia†

## Measure Description

Percentage of patients, aged 18 and older, who were surveyed on their patient experience and satisfaction with anesthesia care and who reported a positive experience.

This measure will consist of two performance rates:

**AQI48a:** Percentage of patients, aged 18 and older, who were surveyed on their patient experience and satisfaction with anesthesia care

**AQI48b:** Percentage of patients, aged 18 and older, who completed a survey on their patient experience and satisfaction with anesthesia care who report a positive experience with anesthesia care

***NOTE:** The measure requires that a valid survey, as defined in the numerator, be sent to patients between discharge from the facility and within 30 days of facility discharge. To report AQI 48b, a minimum number of 20 surveys with the mandatory question completed must be reported.*

## NQS Domain

Person and Caregiver-Centered Experience and Outcomes

## Measure Type

Outcome

## High Priority Status

Yes

## Inverse Measure:

No

## Instructions:

This measure, consisting of two performance rates for AQI48a and AQI48b, is to be reported each time a patient underwent a procedure\* with anesthesia during the reporting period. AQI48a should be reported each time a patient undergoes a procedure under anesthesia. To report AQI48b, the provider must report the individual patient scores received by the patient who completed the survey described in AQI48a. A percentage reporting a positive experience will be calculated by the registry on the provider's behalf. 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 and patient demographics are used to identify patients who are included in the measure denominator. Registry codes are used to report the measure numerator.

## Denominator

Patients, aged 18 and older, who undergo a procedure\* under anesthesia (AQI48a) and who complete a survey on their patient experience and satisfaction with anesthesia care (AQI48b)

Definition: \*Any procedure including surgical, therapeutic or diagnostic



*Denominator Note: In order to report AQI48b, the denominator must include a minimum of 20 returned surveys.*

**Denominator Criteria (Eligible Cases):**

Patient aged 18 years or older on date of encounter

**AND**

**AQI 48a: Patient encounter during the reporting period (CPT):**

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00562, 00563, 00566, 00567, 00580, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00754, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00840, 00842, 00844, 00846, 00848, 00851, 00860, 00862, 00864, 00865, 00866, 00868, 00870, 00872, 00873, 00880, 00882, 00902, 00904, 00906, 00908, 00910, 00912, 00914, 00916, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00932, 00934, 00936, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01130, 01140, 01150, 01160, 01170, 01173, 01200, 01202, 01210, 01212, 01214, 01215, 01220, 01230, 01232, 01234, 01250, 01260, 01270, 01272, 01274, 01320, 01340, 01360, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01420, 01430, 01432, 01440, 01442, 01444, 01462, 01464, 01470, 01472, 01474, 01480, 01482, 01484, 01486, 01490, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 01680, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01922, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01953, 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01967, 01968, 01969, 01991, 01992, 20526, 20550, 20551, 20552, 20553, 20600, 20604, 20605, 20606, 20610, 20611, 27096, 36555, 36556, 36570, 36571, 36578, 36580, 36581, 36582, 36583, 36584, 36585, 62263, 62264, 62270, 62272, 62273, 62280, 62281, 62282, 62310, 62311, 62318, 62319, 62350, 62355, 62360, 62361, 62362, 62365, 62370, 63650, 63661, 63662, 63663, 63664, 63685, 63688, 64400, 64402, 64405, 64408, 64410, 64413, 64415, 64416, 64417, 64418, 64420, 64421, 64425, 64430, 64435, 64445, 64446, 64447, 64448, 64449, 64450, 64461, 64462, 64463, 64479, 64480, 64483, 64484, 64486, 64487, 64488, 64489, 64490, 64491, 64492, 64493, 64494, 64495, 64505, 64508, 64510, 64517, 64520, 64530, 64600, 64605, 64610, 64620, 64630, 64633, 64634, 64635, 64636, 64640, 64680, 64681, 72275, 93503, 95990, 95991

**For AQI48b**

**AND**

**Patient completed a survey on their patient experience and satisfaction with anesthesia care 10A72**

**Denominator Exclusions**

- **48a:** Organ Donors as designated with ASA Physical Status 6
- **48a:** Patient died within 30 days of the procedure: **10A11**
- **48b:** Patient did not complete the mandatory anesthesia satisfaction question: **10A69**

**Numerator-AQI48a:**

Patients who received a survey within 30 days of the procedure to assess their experience and satisfaction with anesthesia.

*Numerator Note: The survey should be administered to the patient shortly following discharge from the facility.*

Definition: Practices and eligible clinicians may customize their patient experience and satisfaction with anesthesia surveys to meet local needs but, **at a minimum**, a valid survey must include a core set of questions that address **three of the four** following criteria related to patient experience and satisfaction **and** one mandatory question described below.

1. Pre-operative Education and Preparation
2. Patient and/or Family Communication
3. Care Team Response to Comfort and Well-Being
4. Post-operative pain control and/or management

**Mandatory question** that must be included in each valid survey (practices must also include an option for patient to indicate “Not Applicable”):

1. On a scale of 1 to 5, where 1 indicates the worst anesthesia experience and where 5 indicates the best anesthesia experience, how would you rate your overall anesthesia experience?

*Numerator Note:* Practices and eligible clinicians may wish to supplement these questions by taking into consideration the recommendations of the ASA Committee on Performance and Outcomes Measurement work product entitled “[Patient Satisfaction and Experience with Anesthesia.](#)”

*Numerator Note:* Depending on local practice, practices and eligible clinicians may wish to supplement survey questions by taking into consideration the recommendations developed as part of the Perioperative Surgical Home (PSH) that are structured in five distinct components.

1. Pre-Operative Education and Preparation (Four Indicators)
  - a. Patient comfort with instructions provided about eating better
  - b. Patient comfort with instructions provided about exercise or physical therapy
  - c. Patient comfort with instructions provided about stopping smoking (if applicable)
  - d. Patient comfort with instructions provided about what to do after surgery
2. Check-In and Pre-Procedure Experience
3. Caregiver and Family Communication during Surgery
4. Care Team Response to Comfort and Well-Being
5. Post-Operative Pain Management

For more information on these resources, visit <https://www.asahq.org/psh>.

### **Numerator Quality-Data Coding Options for Reporting Satisfactorily: AQI48a**

***Performance Met:***

**10A12** Patient provided with a survey within 30 days of the procedure to assess their experience and satisfaction with anesthesia

**OR**

***Denominator Exception***

**10A13** Documentation of patient reason(s), process reason(s) or medical reason(s) for not receiving survey (i.e. patients who are non-verbal, who are unable to be surveyed due to a medical or psychiatric reason, who are unable to be surveyed due to a language barrier, have not provided contact information, who are discharged to assisted living, skilled nursing facility or other similar location where direct access to the patient is not available, or who decline to be surveyed)

**OR**

***Performance Not Met:***

**10A14** Patient was not provided with a survey within 30 days of the procedure to assess their

experience and satisfaction with anesthesia

**Numerator- AQI 48b:**

Patients who reported a positive experience with anesthesia care.

Definition: A positive experience is defined as a response of 4 or 5 on the following mandatory patient experience and satisfaction survey question:

On a scale of 1 to 5, where 1 indicates the worst anesthesia experience and where 5 indicates the best anesthesia experience, how would you rate your overall anesthesia experience? (*Practices must include an option for patient to indicate "Not Applicable"*)

**Numerator Quality-Data Coding Options for Reporting Satisfactorily: AQI48b**

Reporting note: To report this measure, the provider must report the individual patient scores. A percentage reporting a positive experience will be calculated on the provider's behalf.

***Performance Met:***

**10A70**

Patient reported a positive anesthesia experience (i.e., a 4 or 5 on the mandatory survey question)

**OR**

***Performance Not Met:***

**10A71**

Patient did NOT report a positive anesthesia experience (i.e., a 1, 2, or 3 on the mandatory survey question)

**Rationale**

Despite the implementation of CAHPS and H-CAHPS, there is a persistent gap in the ability to adequately measure patient experience on the selection of performance measures for performance-based payment programs. To provide high quality, patient-centered care in the future, anesthesiologists and other qualified anesthesia providers should measure and respond to the patients' perception of the degree to which they felt they were treated as individuals and empowered by their anesthesiology practitioners to engage in decision-making for their care. The assessment of patient satisfaction with anesthesia care provides important feedback which enables providers to improve care delivery and quality. At present there is a vast array of tools available for practices and individuals to implement based upon local patient populations and for local quality improvement initiatives.

**Data Source:** Database, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

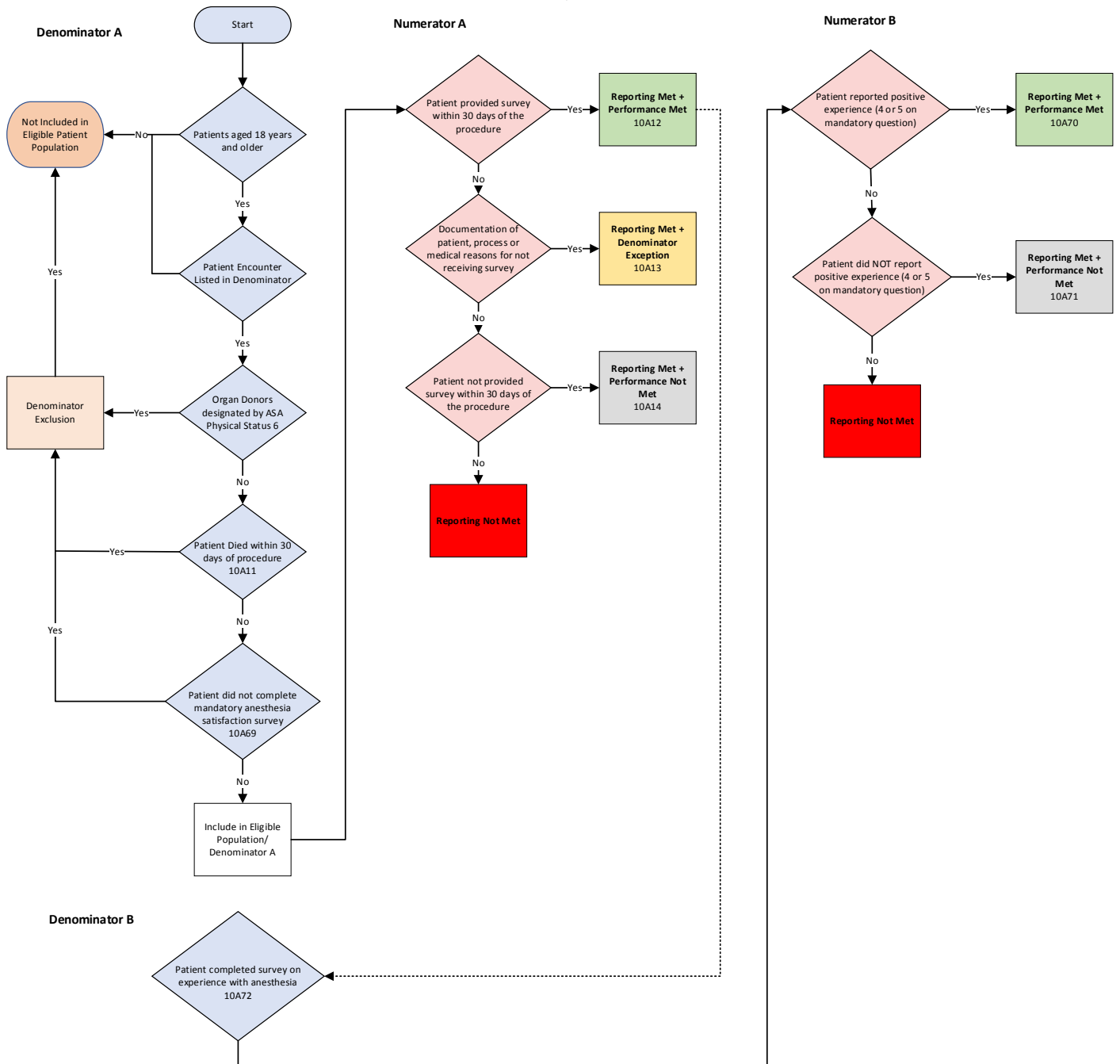
**Number of Multiple Performance Rates:** 2

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjusted:** No

## Patient-Reported Experience with Anesthesia 2018 QCDR Measure Flow



## Measure Title

AQI49: Adherence to Blood Conservation Guidelines for Cardiac Operations using Cardiopulmonary Bypass (CPB) – Composite

## Measure Description

Percentage of patients, aged 18 years and older, who undergo a cardiac operation using cardiopulmonary bypass for whom selected blood conservation strategies were used.

## NQS Domain

Effective Clinical Care

## Measure Type

Composite-Process

## High Priority Status

No

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient undergoes a cardiac operation using cardiopulmonary bypass during the reporting period. This measure has four sub-metrics which are used to calculate the total composite score. All sub-metrics are required to report to indicate performance met or performance not met. 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

Patient demographics, CPT codes and Registry codes are used to identify patients who are included in the measure denominator. CPT Category codes and Registry codes are used to report the numerator.

## Denominator

Patients, aged 18 years and older, who undergo a cardiac operation using cardiopulmonary bypass.

*Denominator Note:* Patients undergoing a re-operation are included in the denominator to the measure

### Denominator Criteria (Eligible Cases):

Patient aged 18 years or older on date of encounter

### AND

Patient encounter during the reporting period (CPT): 00562, 00563, 00567, 00580

## Denominator Exclusions

- Emergent cases

## Numerator

Patients for whom selected blood conservation strategies were used.<sup>i</sup>

**Numerator Scoring:** Each blood conservation strategy of this measure accounts for 25% of the total composite score. Each of the four blood conservation strategies must be reported to be included in the performance

measurement. The total composite score will be calculated by the data source and not the individual practitioner.

### 1. Use of Lysine analogues

*Numerator Note:* As indicated by Intraoperative Antifibrinolytic med: Aminocaproic Acid or Tranexamic Acid.

#### Numerator Quality-Data Coding Options for Reporting Satisfactorily

*Performance Met:*

10A01 Patients for whom lysine analogues were used.

OR

*Performance Not Met:*

10A02 Patients for whom lysine analogues were NOT used.

### 2. Use of mini-circuits or Retrograde Autologous Priming (RAP) or Ultrafiltration (Minimize hemodilution caused by cardiopulmonary bypass pump priming solution)

*Numerator Note:* Record the usage of retrograde autologous priming or a miniaturized circuit volume by the cardiopulmonary perfusion team prior to the onset of cardiopulmonary bypass.

*Numerator Note:* Capture the total volume of ultrafiltrate removed by the cardiopulmonary perfusion team during cardiopulmonary bypass and during modified ultra-hemofiltration post-CPB. Record the data in milliliters.

#### Numerator Quality-Data Coding Options for Reporting Satisfactorily

*Performance Met:*

10A03 Patients for whom mini-circuits or Retrograde Autologous Priming (RAP) or Ultrafiltration were used.

OR

*Performance Not Met:*

10A04 Patients for whom mini-circuits or Retrograde Autologous Priming (RAP) or Ultrafiltration were NOT used.

### 3. Use of red cell salvage using centrifugation

*Numerator Note:* Capture the volume of cell saver collected and given. Do not include autologous, allogeneic, pump-residual, or chest-tube recirculated blood.

#### Numerator Quality-Data Coding Options for Reporting Satisfactorily

*Performance Met:*

10A05 Patients for whom red cell salvage using centrifugation was used.

OR

*Performance Not Met:*

10A06 Patients for whom red cell salvage using centrifugation were NOT used.

#### 4. Use of transfusion algorithm supplemented with point-of-care testing

*Numerator Note:* Transfusion algorithm includes SCA/STS guideline recommendations or an evidence-based algorithm formulated at the local level.

##### Numerator Quality-Data Coding Options for Reporting Satisfactorily

###### *Performance Met:*

**10A07** Patients for whom transfusion algorithm supplemented with point-of-care testing was used.

###### OR

###### *Performance Not Met:*

**10A08** Patients for whom transfusion algorithm supplemented with point-of-care testing was NOT used.

##### Composite Performance Score

*Performance Score Note:* This performance score is calculated by the data source and not the individual practitioner. Eligible clinicians reporting this measure must submit numerator quality codes for each of the four blood conservation strategies identified in this measure. The performance score is the cumulative sum of performance met for each blood conservation strategy listed in the numerator of this measure.

For example, for a single patient encounter, if the eligible clinician reports performance met coding for “Use of mini-circuits or RAP or Ultrafiltration”, “Use of red cell salvage using centrifugation”, and “Use of transfusion algorithm supplemented with point-of-care testing” and performance not met for “Use of lysine analogues”, the cumulative score would be calculated as 3 performance met divided by 4 possibilities of performance met that would equal 75%. This eligible clinician for this particular patient would be assessed as “Performance Not Met” because the eligible clinician had a cumulative score less than 100%.

###### *Performance Met:*

**10A09** Patients for whom a cumulative score of 100% of blood conservation strategies was met

###### OR

###### *Performance Not Met:*

**10A10** Patients for whom a cumulative score of **less than** 100% of blood conservation strategies was met.

NQF Number: Not applicable

eCQM: Not applicable

##### **Rationale**

Efforts to reduce blood product use have the potential to avoid transfusion-related complications and reduce health care costs. Implementation of a blood use initiative significantly improves postoperative morbidity, mortality, and resource utilization. Limiting intraoperative and postoperative blood product transfusion decreases adverse postoperative events and reduces health care costs.<sup>ii</sup> Low-risk patients have between an 8- and 10-fold excess risk of adverse outcomes when they receive a blood transfusion. We speculate that careful preoperative assessment of transfusion risk and intervention based on this assessment could minimize operative morbidity and mortality,

especially because the patients at least risk are more likely to undergo elective operations and provide time for therapeutic interventions to improve transfusion risk profiles.<sup>iii</sup>

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjustment:** No

**References:**

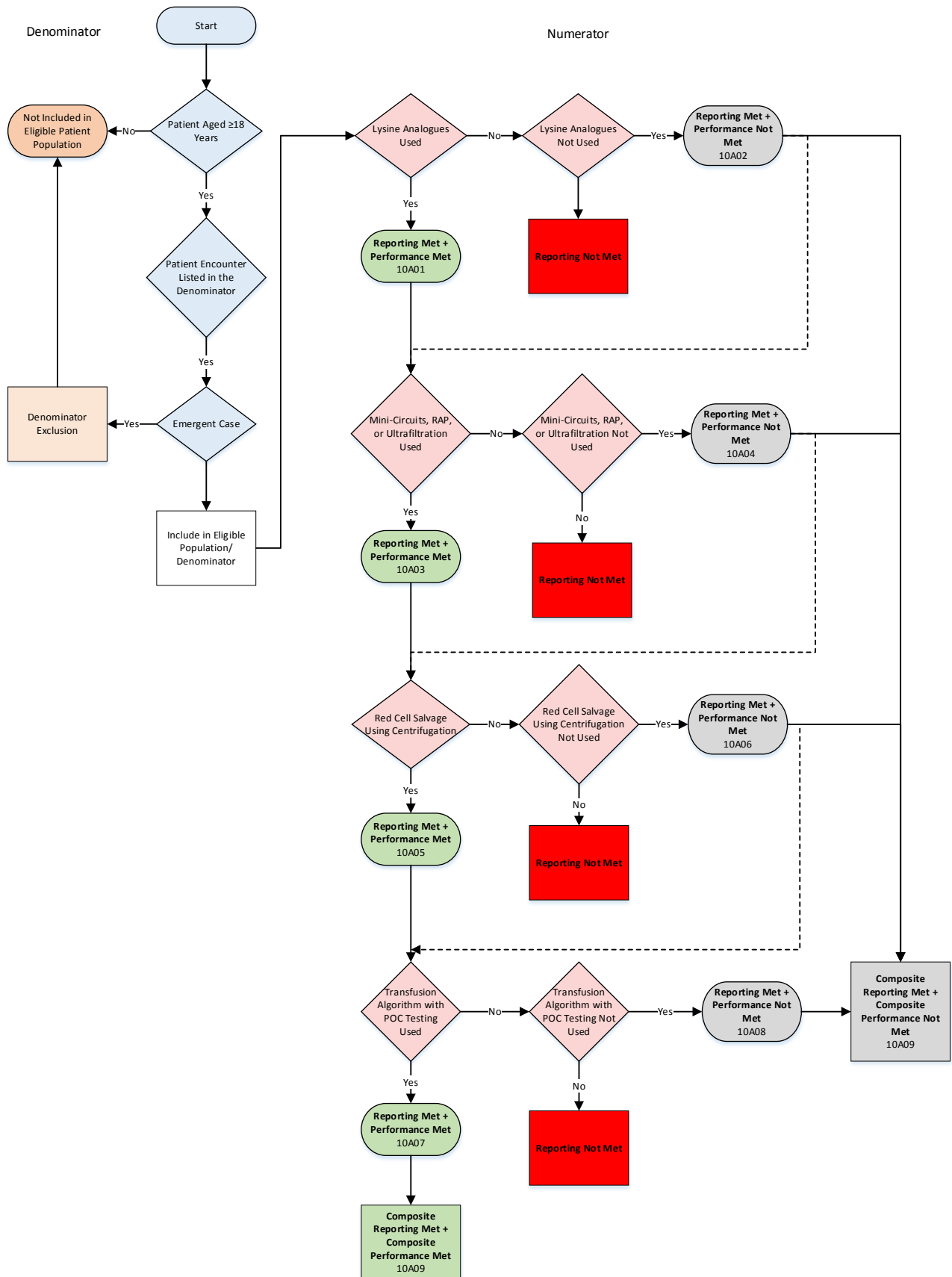
<sup>i</sup> Ferraris V A. et. al. Perioperative blood transfusion and blood conservation in cardiac surgery: the Society of Thoracic Surgeons and The Society of Cardiovascular Anesthesiologists clinical practice guideline. *Ann Thorac Surg.* 2007; 83(5 Suppl) S27-86.

<sup>ii</sup> LaPar, D J, et al. Blood product conservation is associated with improved outcomes and reduced costs after cardiac surgery. *J Thorac Cardiovasc Surg.* 2013; 145(3):796-803; discussion 803-794.

<sup>iii</sup> Ferraris, V A, et al. Blood transfusion and adverse surgical outcomes: The good and the bad. *Surgery.* 2015; 158(3):608-617.



## Adherence to Blood Conservation Guidelines for Cardiac Operations Using Cardiopulmonary Bypass (CBP)-Composite 2018 QCDR Measure Flow



**Measure Title**

**AQI50: Application of Lung-Protective Ventilation during General Anesthesia**

**Measure Description**

Percentage of patients, aged 12 years and older, who undergo general anesthesia care that includes an endotracheal tube who had a median exhaled tidal volume less than 10 mL/kg of ideal body weight during positive pressure ventilation (PPV).

**NQS Domain**

Effective Clinical Care

**Measure Type**

Intermediate Outcome

**High Priority Status**

No

**Inverse Measure**

No

**Instructions**

This measure is to be reported each time a patient receives general anesthesia for a procedure via endotracheal tube during the reporting period. 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**

Patient demographics, CPT codes and CPT Category 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**

Patients, aged 12 years and older, who undergo general anesthesia care that includes an endotracheal tube.

**Denominator Criteria (Eligible Cases):**

Patient aged 12 years or older on date of encounter

**AND**

Patient received general anesthesia care that includes an endotracheal tube: **10A15**

**AND****Patient encounter during the reporting period (CPT):**

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00562, 00563, 00566, 00567, 00580, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00754, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00840, 00842, 00844, 00846, 00848, 00851, 00860, 00862, 00864, 00865, 00866, 00868, 00870, 00872, 00873, 00880, 00882, 00902, 00904, 00906, 00908, 00910, 00912, 00914, 00916, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00932, 00934, 00936, 00938, 00940,

00942, 00944, 00948, 00950, 00952, 01112, 01120, 01130, 01140, 01150, 01160, 01170, 01173, 01200, 01202, 01210, 01212, 01214, 01215, 01220, 01230, 01232, 01234, 01250, 01260, 01270, 01272, 01274, 01320, 01340, 01360, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01420, 01430, 01432, 01440, 01442, 01444, 01462, 01464, 01470, 01472, 01474, 01480, 01482, 01484, 01486, 01490, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 01680, 01682, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01922, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01953, 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01968, 01969, 01991, 01992

### Denominator Exclusions

- ASA Physical Status 5 or 6
- Patients continuously receiving inhaled medications (i.e., inhaled epoprostenol or nitric oxide): **10A16**
- Patients with a diagnosis of pulmonary hypertension: **ICD-10-CM I27.0, I27.2**
- Patients who require hyperventilation for therapeutic reasons (e.g. elevated intracranial pressure, malignant hyperthermia, or thyroid storm): **10A17**
- Patient was mechanically ventilated for <45 cumulative minutes **10A99**
- Single-lung ventilation procedure **11A00**

### Numerator

Patients who had a median exhaled tidal volume less than 10 mL/kg of ideal body weight during positive pressure ventilation (PPV).

*Numerator Note:* Positive pressure ventilation strategies include conservative tidal volume, lower peak airway pressures, positive end-expiratory pressure (PEEP) and lung-recruitment interventions to prevent atelectasis.

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

#### *Performance Met:*

**10A18** Patient had a median exhaled tidal volume less than or equal to 10 mL/kg of predicted-body-weight (PBW) during positive pressure ventilation (PPV)

#### OR

#### *Performance Not Met:*

**10A19** Patient did not have a median exhaled tidal volume less than or equal to 10 mL/kg of predicted-body-weight (PBW) during positive pressure ventilation (PPV)

**NQF Number:** Not applicable

**eCQM:** Not applicable

### Rationale

Anesthesia providers prescribe and implement ventilator settings and monitor tidal volume for patients under general anesthesia. These decisions are aimed at preventing lung injury while maintaining adequate oxygenation and ventilation. Several studies have reported that patients who maintained tidal volumes less than 10 ml per kg of ideal body weight experienced better outcomes than those ventilated with higher volumes. It is thought that higher tidal volumes expose the lungs to the potential for injury either due to over-expansion or pressure. AHRQ NQMC-8459 (Acute respiratory failure: percentage of patients with acute lung injury (ALI)/acute respiratory distress syndrome

receiving lung-protective ventilation) recognizes that mechanical ventilation with tidal volumes (TV) of 6-8 ml/kg is associated with fewer pulmonary complications.

There is growing evidence that intraoperative lung-protective mechanical ventilation prevents postoperative pulmonary complications (PPCs). Such complications are associated with longer lengths of hospital stay, often requiring ICU admission.<sup>i, ii, iii, iv</sup> While half of the risk factors for pulmonary complications are attributable to patient comorbidities, approximately 50% of PPCs are attributable to the surgical procedure and the anesthetic management itself.<sup>v</sup> The number of PPCs is associated with postoperative length of stay and short term and long term mortality.<sup>vi</sup> Approximately 5% of patients undergoing general surgery will develop a PPC and one in five patients who develop a PPC will die within 30 days of surgery.<sup>v</sup> The estimated costs of postoperative pulmonary complications has not been specifically estimated, but likely contributes to significant morbidity, suffering, and economic cost.

Wanderer<sup>vii</sup>, et al. demonstrated a current gap, noting of 295,540 cases analyzed, 43,934 (14.9%) had a median tidal volume of > 10 mL per kg of PBW. This measure is applicable to all adult patients because it is impossible to predict who may develop PPCs and become critically ill. Additionally, by improving ventilation management for all patients, anesthesia providers will improve the likelihood that critically ill patients are managed appropriately when they come to the operating room.

There are times when the established measure threshold may be exceeded appropriately for a brief period of time (<10 minutes) to verify placement of the endotracheal tube or to reduce atelectasis by recruiting alveoli. As a result, short periods of increased ventilation are excluded. Furthermore, it must be recognized that much of the clinical literature that supports the use of lower tidal volumes also incorporated measures to minimize atelectasis, such as the introduction of PEEP and recruitment maneuvers. Anesthesiologists and qualified anesthesia providers should be cautioned against adopting only reduced tidal volumes without also incorporating measures to minimize atelectasis.

The definition of ideal body weight (IBW) is provided by table and calculation. The method for calculating median TV during PPV will vary depending on the specific software employed for the electronic anesthesia record.

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjustment:** No

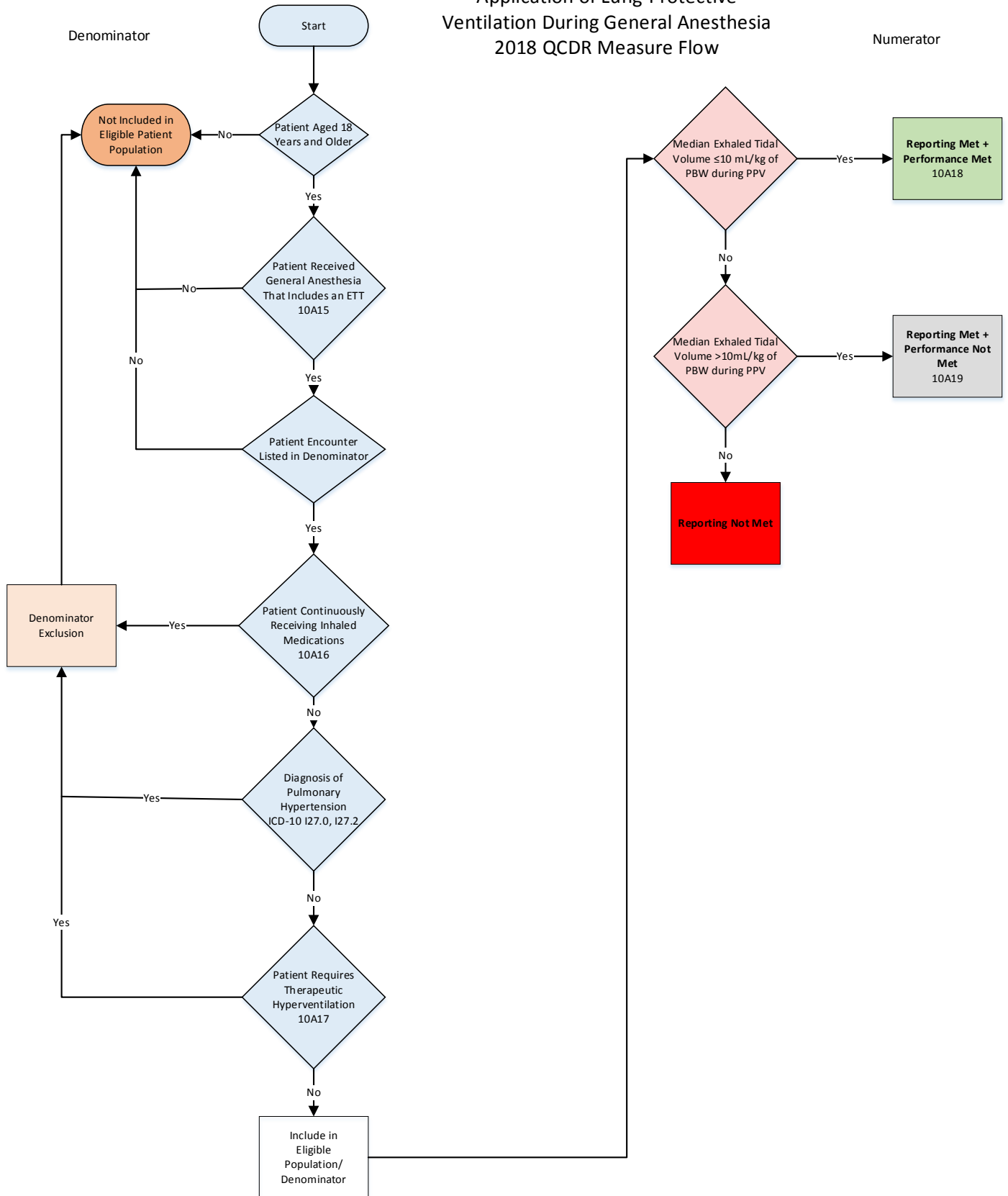
#### References:

<sup>i</sup> Fernandez-Perez, ER, et al. Intraoperative Ventilator Settings and Acute Lung Injury After Elective Surgery: A Nested Case Control Study. *Thorax* 2009; 64:121-127.

<sup>ii</sup> Hemmes SN, et al. Intraoperative ventilatory strategies to prevent postoperative pulmonary complications: a meta-analysis. *Curr Opin Anaesthesiol* 2013; 26:126–133

- <sup>iii</sup> Futier, E, et al. Protective lung ventilation in operating room: A systematic Review. *Minerva Anesthesiol* 2014;80:726–735.
- <sup>iv</sup> Gajic, O, et al. Early Identification of Patients at Risk of Acute Lung Injury. *Am J Respir Crit Care Med* 2011; 183:462-470
- <sup>v</sup> Canet, J, et. al. Prediction of Postoperative Pulmonary Complications in a Population-based Surgical Cohort. *Anesthesiology* 2010;113(6):1338-50.
- <sup>vi</sup> Mazo, V, et al. Prospective External Validation of a Predictive Score for Postoperative Pulmonary Complications. *Anesthesiology* 2014; 121:219-31.
- <sup>vii</sup> Wanderer JP, et al. Temporal trends and current practice patterns for intraoperative ventilation at U.S. academic medical centers: a retrospective study. *BMC Anesthesiology* 2015; 15:40.

## Application of Lung-Protective Ventilation During General Anesthesia 2018 QCDR Measure Flow



## Measure Title

### AQI51: Assessment of Patients for Obstructive Sleep Apnea

## Measure Description

Percentage of patients, aged 18 years and older, who underwent an elective procedure under anesthesia who were screened preoperatively for Obstructive Sleep Apnea (OSA) using a standardized tool prior to the procedure.

## NQS Domain

Patient Safety

## Measure Type

Process

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient undergoes an elective procedure under anesthesia during the reporting period. 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

Patient demographics and CPT codes are used to identify patients who are included in the measure denominator. G-codes and Registry Codes are used to capture the numerator.

## Denominator

Patients, aged 18 years and older, who underwent an elective procedure\* under anesthesia.

Definition: \*Any procedure including surgical, therapeutic or diagnostic

### Denominator Criteria (Eligible Cases):

Patient aged 18 years or older on date of encounter

#### AND

Elective surgery: **G9643**

#### AND

### Patient encounter during the reporting period (CPT):

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00562, 00563, 00566, 00567, 00580, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00754, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00840, 00842, 00844, 00846, 00848, 00851, 00860, 00862, 00864, 00865, 00866, 00868, 00870, 00872, 00873, 00880, 00882, 00902, 00904, 00906, 00908, 00910, 00912, 00914, 00916, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00932, 00934, 00936, 00938, 00940,

00942, 00944, 00948, 00950, 00952, 01112, 01120, 01130, 01140, 01150, 01160, 01170, 01173, 01200, 01202, 01210, 01212, 01214, 01215, 01220, 01230, 01232, 01234, 01250, 01260, 01270, 01272, 01274, 01320, 01340, 01360, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01420, 01430, 01432, 01440, 01442, 01444, 01462, 01464, 01470, 01472, 01474, 01480, 01482, 01484, 01486, 01490, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 01680, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01922, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01953, 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01967, 01968, 01969, 01991, 01992

### Denominator Exclusions

- Patients with previous diagnosis for Obstructive Sleep Apnea (OSA): **G47.33**
- Patients receiving CPAP treatment: **Z99.89**
- Mechanically ventilated patients: **Z99.11**
- Intubated patients: **Z97.8**

### Numerator

Patients who are screened preoperatively for Obstructive Sleep Apnea (OSA) using a standardized tool prior to the surgical procedure.

*Numerator Note:* High-risk is defined by screening tool utilized. Standardized tools for Obstructive Sleep Apnea include STOP-Bang Questionnaire, Berlin Questionnaire, P-SAP Score and the ASA OSA Patient Screening Tool Checklist. Although it is preferable to use one of the standardized tools listed above, at a minimum an assessment tool must assess the following components: snoring, daytime tiredness, breathing obstruction and hypertension.

*Numerator Note:* Obstructive Sleep Apnea assessment can be conducted by a physician anesthesiologist, other qualified anesthesia provider or proxy.

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

#### *Performance Met:*

**10A20** Patient was screened preoperatively for Obstructive Sleep Apnea (OSA) using a standardized tool prior to the procedure.

#### OR

#### *Performance Not Met:*

**10A21** Patient was not screened preoperatively for Obstructive Sleep Apnea (OSA) using a standardized tool prior to the procedure

**NQF Number:** Not applicable

**eCQM:** Not applicable

### Rationale

Quoted Verbatim:

Undiagnosed OSA may pose a variety of problems for anesthesiologists and qualified anesthesia providers. A number of case reports have documented an increase in the incidence of postoperative complications and deaths among patients suspected of having OSA. Untreated OSA patients are known to have a higher incidence of difficult intubation,



postoperative complications, increased intensive care unit admissions, and greater duration of hospital stay. Identifying patients with OSA is the first step in preventing postoperative complications due to OSA.<sup>i</sup>

Moderate-to-severe sleep apnea is independently associated with a large increased risk of all-cause mortality, incident stroke, and cancer incidence and mortality in this community-based sample.<sup>ii</sup>

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

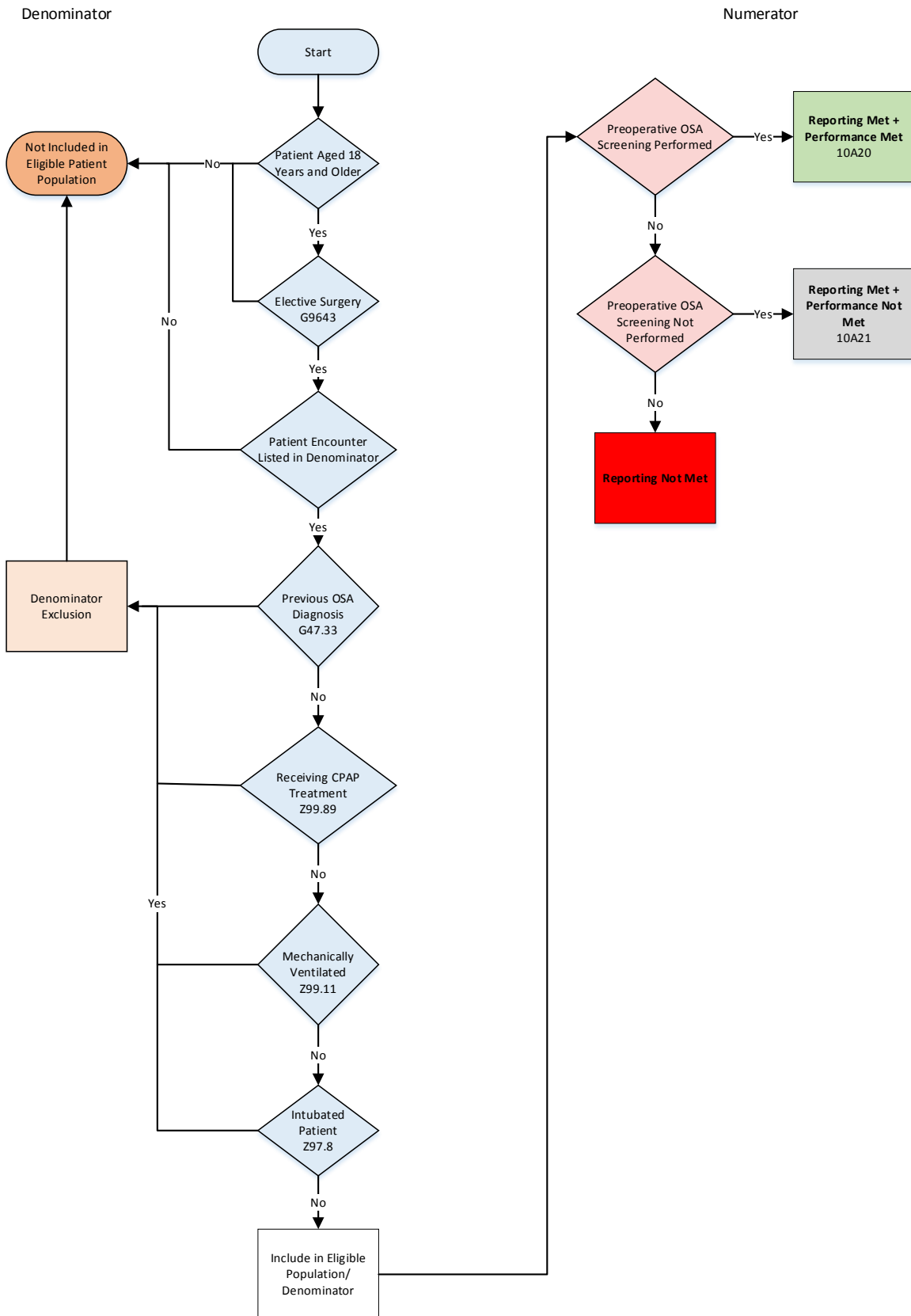
**Risk Adjustment:** No

**References:**

<sup>i</sup> Chung, F. et. al, 2016. "Society of Anesthesia and Sleep Medicine guidelines on preoperative screening and assessment of adult patients with obstructive sleep apnea." *Anesth Analg*, 123 (2): 452-473.

<sup>ii</sup> Marshall, N.S., et. al., 2014. "Sleep apnea and 20-year follow-up for all-cause mortality, stroke, and cancer incidence and mortality in the Busselton Health Study cohort." *J Clin Sleep Med*, 10 (4): 355-362.

## Assessment of Patients for Obstructive Sleep Apnea 2018 QCDR Measure Flow



## Measure Title

### AQI53: Documentation of Anticoagulant and Antiplatelet Medications when Performing Neuraxial Anesthesia/Analgesia or Interventional Pain Procedures

## Measure Description

Percentage of patients, regardless of age, taking anticoagulant and/or antiplatelet medications who undergo an interventional pain procedure or other surgical or therapeutic procedure under neuraxial anesthesia or analgesia where the name, date last taken, and, if applicable, time last taken of anticoagulant and/or antiplatelet medications prior to start of interventional pain procedure or administration of anesthesia are documented.

## NQS Domain

Patient Safety

## Measure Type

Process

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient undergoes an interventional pain procedure, surgical or therapeutic procedure under neuraxial anesthesia or analgesia during the reporting period. 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

ICD-10 codes, CPT codes and registry 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, taking anticoagulant and/or antiplatelet medications who undergo an interventional pain procedure or other surgical or therapeutic procedure under neuraxial anesthesia or analgesia

Denominator Definition: Anticoagulant/antiplatelet medications: For the purposes of this measure, the following anticoagulant/antiplatelet medications warrant inclusion in the denominator:

- Aspirin or other nonsteroidal anti-inflammatory drugs (NSAIDs)
- Heparin (unfractionated (UFH), fractionated, or low molecular weight (LMWH))
- Oral anticoagulants (e.g., warfarin, apixaban)
- Thienopyridine derivatives (e.g., ticlopidine, clopidogrel)
- Platelet GP IIb/IIIa receptor antagonists (e.g., abciximab, eptifibatide, tirofiban)
- Direct thrombin inhibitors
- Phosphodiesterase inhibitors that effect platelet function (e.g., dipyridamole, cilostazol)
- Factor Xa inhibitors (e.g., fondaparinux)

## Denominator Criteria (Eligible Cases):

All patients, regardless of age

### AND

Taking anticoagulant and/or antiplatelet medications: Z79.01, Z79.02, Z79.1, Z79.82, or 10A55

**AND**

**Anesthesia Type: Neuraxial**

**AND**

**Patient encounter during the performance period (CPT):**

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00326, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00561, 00562, 00563, 00566, 00567, 00580, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00754, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00834, 00836, 00840, 00842, 00844, 00846, 00848, 00851, 00860, 00862, 00864, 00865, 00866, 00868, 00870, 00872, 00873, 00880, 00882, 00902, 00904, 00906, 00908, 00910, 00912, 00914, 00916, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00932, 00934, 00936, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01130, 01140, 01150, 01160, 01170, 01173, 01200, 01202, 01210, 01212, 01214, 01215, 01220, 01230, 01232, 01234, 01250, 01260, 01270, 01272, 01274, 01320, 01340, 01360, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01420, 01430, 01432, 01440, 01442, 01444, 01462, 01464, 01470, 01472, 01474, 01480, 01482, 01484, 01486, 01490, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 01680, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01922, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, +01953, 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01967, +01968, +01969, 01991, 01992, 01996, 01999,

**OR**

**Patient encounter during the performance period (CPT):**

20550, 20551, 20552, 20553, 20600, 20604, 20605, 20606, 20610, 20611, 27096, 62263, 62264, 62270, 62272, 62273, 62280, 62281, 62282, 62320, 62321, 62322, 62323, 62324, 62325, 62326, 62327, 62350, 62355, 62360, 62361, 62362, 62365, 62368, 62369, 62370, 63650, 63661, 63662, 63664, 63685, 63688, 64400, 64402, 64405, 64408, 64410, 64413, 64415, 64416, 64417, 64418, 64420, 64421, 64425, 64430, 64435, 64445, 64446, 64447, 64448, 64449, 64450, 64461, +64462, 64463, 64479, +64480, 64483, +64484, 64486, 64487, 64488, 64489, 64490, +64491, +64492, 64493, +64494, +64495, 64505, 64508, 64510, 64517, 64520, 64530, 64600, 64605, 64610, 64620, 64630, 64633, +64634, 64635, +64636, 64640, 64680, 64681, 95990, 95991

**Denominator Exclusions**

- None

**Numerator**

Patients where the name, date last taken, and, if applicable, time last taken of anticoagulant and/or antiplatelet medications prior to start of interventional pain procedure or administration of neuraxial anesthesia or analgesia are documented.

**Numerator Quality-Data Coding Options for Reporting Satisfactorily**

***Performance Met:***

***10A56***

Name, date last taken, and, if applicable, time last taken of anticoagulant and/or antiplatelet medications prior to start of interventional pain procedure or administration of neuraxial anesthesia or analgesia were documented

**OR**

**Performance Not Met:**  
**10A57**

Name, date last taken, and if applicable, time last taken of anticoagulant and/or antiplatelet medications prior to start of interventional pain procedure or administration of neuraxial anesthesia or analgesia are documented were NOT documented

**NQF Number:** Not applicable

**eCQM:** Not applicable

**Rationale**

A thorough and accurate history of the patient’s use of anticoagulant and antiplatelet medications is necessary for physician anesthesiologists and other qualified anesthesia providers to make informed decisions related to pre-anesthesia assessment as well as intra- and post-operative management. In recent years, patients have increasingly been administered antiplatelet and anticoagulant medications for the prevention and treatment of perioperative thromboembolism, recurrent myocardial infarction and associated complications with arterial fibrillation or cardiac valve replacement, among other conditions.<sup>1</sup> Between 1998 and 2004, prescriptions of warfarin alone increased by 45%.<sup>i</sup> A 2010 study examining bleeding complications in patients receiving warfarin for treatment of atrial fibrillation found bleeding complications, although rare, led to increased length of stay and increased hospital costs.<sup>ii</sup>

Physician anesthesiologists and other clinicians are able to manage these risks through patient communication as well as communication with members of the patient’s care team, including but not limited to their primary care physician, neurologists and cardiologist. Care coordination efforts aimed at ascertaining a comprehensive list of medications, specifically for anticoagulants and antiplatelets that may, when appropriate, need to be discontinued prior to surgery, is imperative for patient safety and can reduce postoperative complications and associated healthcare costs.

**Clinical Recommendation Statements**

***2010 ASRA Guideline: Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy***<sup>iii</sup>

“It is critical to determine whether the planned procedure necessitates interruption of antithrombotic/antiplatelet therapy and, if so, whether the patient will need bridging therapy to minimize the risk of thromboembolism during the time the antithrombotic effect is subtherapeutic. In many patients, antithrombotic therapy may be safely interrupted until adequate surgical hemostasis is achieved. In other patients, bridging anticoagulation with unfractionated or LMWH is required until the time of surgery (and reinitiated in the immediate postoperative period). It may also be necessary to postpone elective surgeries in patients where a suitable “bridge” has not been identified and antithrombotic therapy is critical; premature discontinuation of dual antiplatelet therapy in patients with coronary stents has been associated with stent thrombosis, myocardial infarction and death.”

***2015 ASRA/ESRA/AAPM/INS/NANS/WIP Guidelines on Interventional Spine and Pain Procedures in Patients on Antiplatelet and Anticoagulant Medications***<sup>iv</sup>

“As chronic pain frequently coexists with mental stress, characterized by a hypercoagulable state, patients with chronic pain may be placed at an increased risk for coronary or cerebrovascular events after discontinuation of protective antiplatelet and anticoagulant medications. This underscores the importance of coordinating the perioperative handling of these medications with the prescribing cardiologist or neurologist.”

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

<b>Number of Multiple Performance Rates:</b>	Not Applicable
<b>Proportion Measure Scoring:</b>	Yes
<b>Continuous Measure Scoring:</b>	No
<b>Risk Adjustment:</b>	No

**References:**

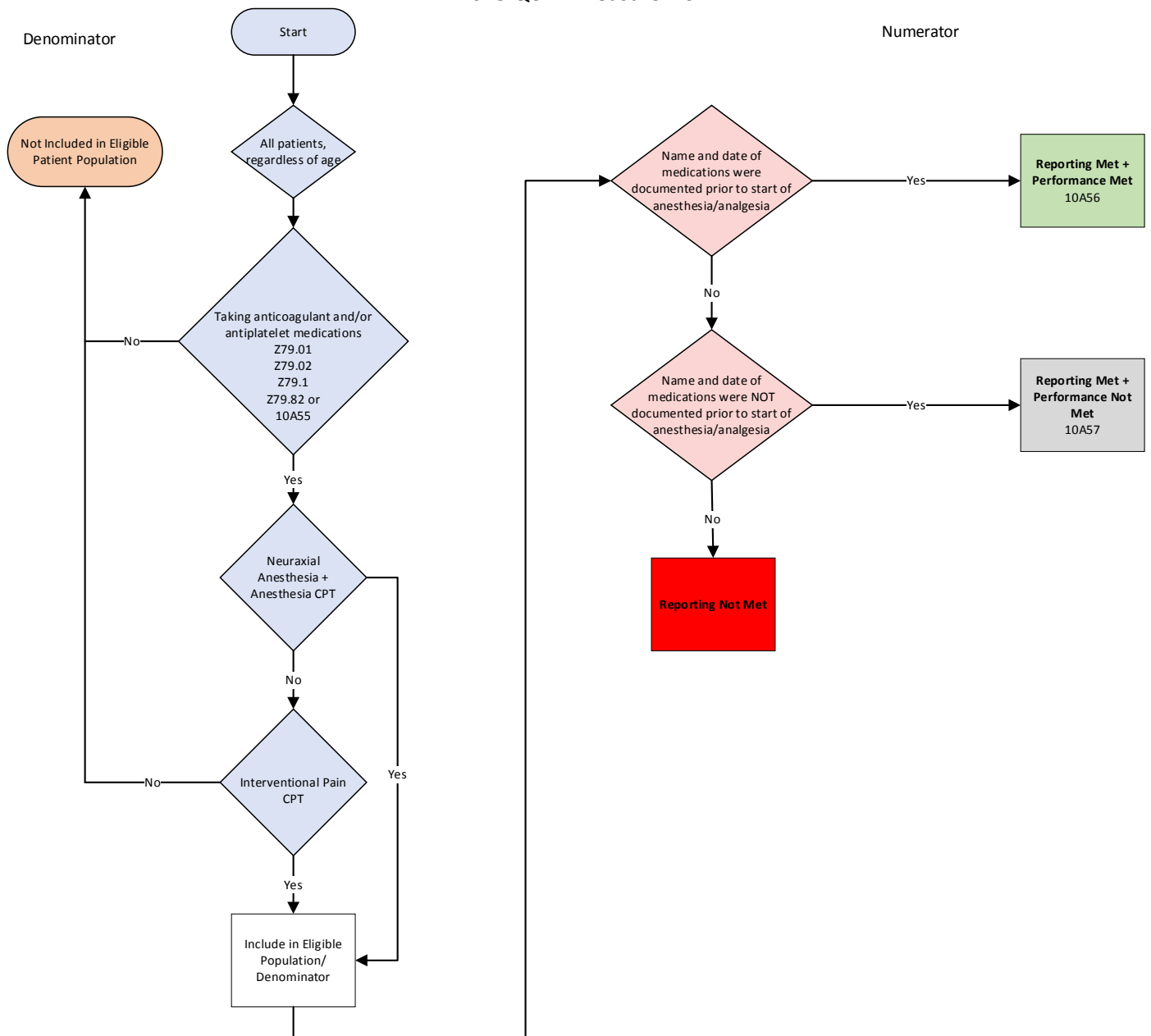
<sup>i</sup> Wysowski DK, Nourjah P, Swartz L. Bleeding Complications With Warfarin Use: A Prevalent Adverse Effect Resulting in Regulatory Action. *Arch Intern Med.* 2007;167(13):1414–1419. doi:10.1001/archinte.167.13.1414

<sup>ii</sup> Ghate SR, Biskupiak J, Ye X, Kwong WJ, Brixner DI. All-Cause and Bleeding-Related Health Care Costs in Warfarin-Treated Patients with Atrial Fibrillation. *J Manag Care Pharm.* 2011;17(9):672-84.

<sup>iii</sup> Horlocker TT, Wedel DJ, Rowlingson JC, et al. Regional Anesthesia in the Patient Receiving Antithrombotic or Thrombolytic Therapy: American Society of Regional Anesthesia and Pain Medicine Evidence-based Guidelines (Third Edition). *Reg Anesth Pain Med.* 2010;35(1):64-101.

<sup>iv</sup> Narouze S, Benzon HT, Provenzano DA, et al. Interventional Spine and Pain Procedures in Patients on Antiplatelet and Anticoagulant Medications. Guidelines from the American Society of Regional Anesthesia and Pain Medicine, the European Society of Regional Anaesthesia and Pain Therapy, the American Academy of Pain Medicine, the International Neuromodulation Society, the North American Neuromodulation Society, and the World Institute of Pain. *Reg Anesth Pain Med.* 2015;40:182-212. Doi:10.1097/AAP.0000000000000223.

**Documentation of Anticoagulant and Antiplatelet Medications  
when Performing Neuraxial Anesthesia/Analgesia or Interventional Pain Procedures  
2018 QCDR Measure Flow**



## Measure Title

### AQI54: Use of Pencil-Point Needle for Spinal Anesthesia

## Measure Description

Percentage of patients, regardless of age, who undergo an obstetric procedure using spinal anesthesia where a pencil-point needle is used to access the intrathecal space.

## 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 an obstetric procedure using spinal anesthesia during the reporting period.

## Measure Reporting via the Qualified Clinical Data Registry

Patient demographics and 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 an obstetric procedure under spinal anesthesia

### Denominator Criteria (Eligible Cases):

All patients, regardless of age

#### AND

Anesthesia Type: Spinal

#### AND

Obstetric Procedure (CPT): 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01967, +01968, +01969

## Denominator Exclusions

- None

## Numerator

Patients where a pencil-point needle is used to access the intrathecal space.

***Numerator Definition:*** For the purposes of this measure, pencil-point needles include the following:

- Whitacre
- Sprotte
- Pencan
- Gertie Marx



## Numerator Quality-Data Coding Options for Reporting Satisfactorily

***Performance Met:***

**10A62**

Pencil-point needle was used to access the intrathecal space

**OR**

***Performance Not Met:***

**10A63**

Pencil-point needle was not used to access the intrathecal space.

**NQF Number:** Not Applicable

**eCQM:** Not Applicable

### **Rationale**

Postdural puncture headache is a significant, painful complication of anesthesia care for patients, that occurs most frequently following spinal anesthesia. For decades, research has suggested that use of pencil-point needles for spinal anesthesia can significantly reduce the likelihood of postdural puncture headache.<sup>i,ii</sup> However, each year, 20,000 to 50,000 obstetric patients experience a postdural puncture headache.<sup>iii</sup> While postdural puncture headache can occur even when best practices are followed, the incidence rate suggests a serious gap in care.

Physician anesthesiologists administer spinal anesthesia and assume the unique role to influence outcomes related to spinal anesthesia through behaviors and technique. Appropriate needle selection is important to reduce the incidence of this painful and often debilitating complication and improve patients' experience with anesthesia care.

Recent meta-analysis of over twenty-five randomized control trials (RCT) examined use of various spinal needles in obstetric patients. Findings from the meta-analysis reaffirmed the use of pencil-point needles to cutting-point needles in reducing the need for epidural blood patch and risk of postdural puncture headache and severe postdural puncture headaches.<sup>ii</sup> While literature and best practices recommend the use of the pencil point needle for spinal anesthesia, current rates of postdural puncture headache suggest a significant opportunity for improvement and reduced adverse events related to spinal anesthesia.

### **Clinical Recommendation Statement**

***2016 ASA/SOAP Practice Guidelines for Obstetric Anesthesia<sup>iv</sup>***

“Use pencil-point spinal needles instead of cutting-bevel spinal needles to minimize the risk of postdural puncture headache.” (Category A1-B evidence)

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not Applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjustment:** No

### **References:**

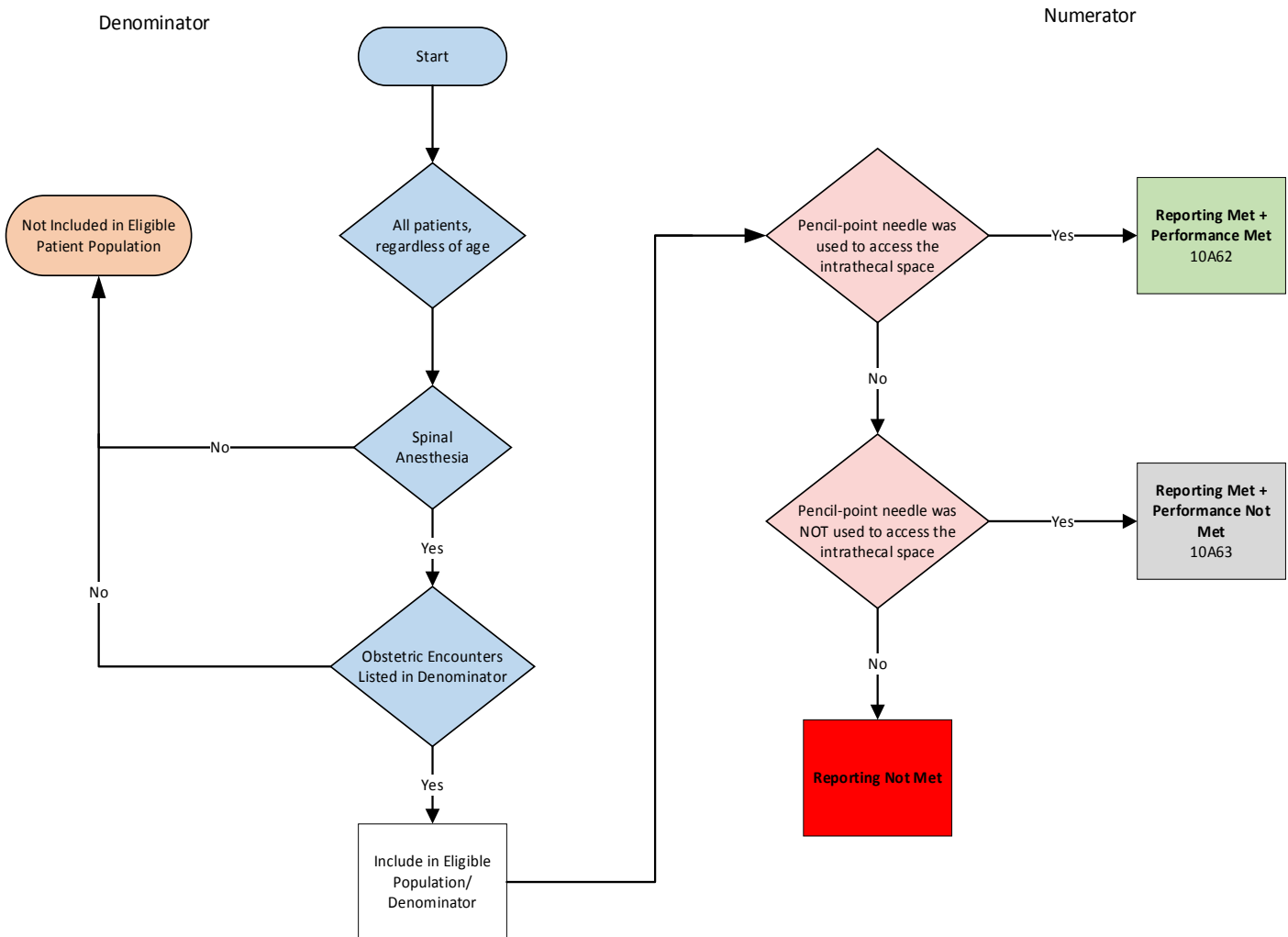
<sup>i</sup> Hart JR, Whitacre RJ. Pencil Point Needle in Prevention of Postspinal Headache. *JAMA*. 1951;147(7):657-658. doi:10.1001/jama.1951.73670240021006k

<sup>ii</sup> Xu H, Liu Y, Song W, ShunLi K, et, al. Comparison of Cutting and Pencil-Point Spinal Needle in Spinal Anesthesia Regarding Postdural Puncture Headache: A Meta-Analysis. *Medicine (Baltimore)*. 2017 Apr; 96(14): e6527

<sup>iii</sup> Sachs A, Smiley R. Post-dural Puncture Headache: The Worst Common Complication in Obstetric Anesthesia. *Seminars in Perinatology*. 2014;38(6): 386-394. <https://doi.org/10.1053/j.semperi.2014.07.007>.

<sup>iv</sup> American Society of Anesthesiologists Committee on Standards and Practice Parameters. Practice guidelines for obstetric anesthesia. An Updated Report by the American Society of Anesthesiologists Task Force on Obstetric Anesthesia and the Society for Obstetric Anesthesia and Perinatology. *Anesthesia*. 2016;124(2):1-31.

## Use of Pencil-Point Needle for Spinal Anesthesia 2018 QCDR Measure Flow



## Measure Title

### AQI55: Team-Based Implementation of a Care-and-Communication Bundle for ICU Patients

## Measure Description

Percentage of patients, regardless of age, who are admitted to an intensive care unit (ICU) for  $\geq 48$  hours and who received critical care services who have documentation by managing physician of 1) attempted or actual identification of a surrogate decision maker, 2) an advance directive, and 3) the patient's preference for cardiopulmonary resuscitation, within 48 hours of ICU admission.

## NQS Domain

Effective Communication and Care Coordination

## Measure Type

Process

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient receives critical care services and is admitted to an intensive care unit for  $\geq 48$  hours during the reporting period. It is expected that the managing physician during the first 48 hours of the patient's intensive care unit stay will report this measure.

## Measure Reporting via the Qualified Clinical Data Registry

Patient demographics, CPT codes, and registry 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 are admitted to an intensive care unit for  $\geq 48$  hours and who received critical care services

### Denominator Criteria (Eligible Cases):

All patients, regardless of age

#### AND

Admitted to an intensive care unit for  $\geq 48$  hours: **10A58**

#### AND

Received critical care services (CPT): 99291, +99292, 99468, 99469, 99471, 99472, 99475, 99476

## Denominator Exclusions

- None

## Numerator

Patients who have documentation by managing physician of 1) attempted or actual identification of a surrogate decision maker, 2) an advance directive, and 3) the patient's preference for cardiopulmonary resuscitation, within the first 48 hours of ICU admission.

**Numerator Note:** To meet this measure, the managing physician must either document the required information or confirm that they have reviewed existing documentation of the information.

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

**Performance Met:**

**10A59**

Patient has documentation by managing physician of 1) attempted or actual identification of a surrogate decision maker, 2) an advance directive, and 3) the patient's preference for cardiopulmonary resuscitation within the first 48 hours of ICU admission

OR

**Denominator Exception:**

**10A60**

Documentation of patient reason(s) for not documenting all three required numerator elements within the first 48 hours of ICU admission (e.g., patient declines, patient unable to participate in discussion, other patient reason(s))

OR

**Performance Not Met:**

**10A61**

Patient does not have documentation by managing physician of 1) attempted or actual identification of a surrogate decision maker, 2) an advance directive, and 3) the patient's preference for cardiopulmonary resuscitation within the first 48 hours of ICU admission

**NQF Number:** Not Applicable

**eCQM:** Not Applicable

### **Rationale**

Patient and family engagement remains an important aspect of healthcare, especially in an ICU where advanced illness and pressing time demands place an especially high emotional burden on patients, families and their caregivers. Effective communication between physicians, patients and families and other intensive care unit clinicians has the potential to prevent errors and complications as well as carry out the wishes of the patients.

Research shows that over time, physician anesthesiologists' attitudes regarding automatically suspending Do-Not-Resuscitate (DNR) orders during the perioperative period have shifted and imply that not only patients, but also more anesthesiologists, value and expect a discussion of advance directives prior to surgery.<sup>i</sup> As important members of the intensive care team, physician anesthesiologists are oftentimes responsible for or provide consultation on critically ill patients' airway management, including intubation and ventilation. Communication and documentation of patient preferences, including surrogate decision maker, advance directives and cardiopulmonary resuscitation is essential for all members of the intensive care team to appropriately deliver care and engage patients and families throughout the perioperative period.

Patient engagement strategies have been shown to be most effective when implemented together in the form of a bundle. This measure is designed to address key components of critical care that are important to patients, families and professionals. This measure is designed to align with the Care and Communication Bundle that was developed by the Society of Critical Care Medicine (SCCM) in collaboration with VHA, Inc., a national network of community-based hospitals.<sup>ii</sup>

### **Clinical Recommendation Statement**

#### ***2014 ASA Guidelines for the Practice of Critical Care by Anesthesiologists*<sup>iii</sup>**

"Due to the complex nature of critical illness, coordination of care is required. Therefore, one individual, either the critical care anesthesiologist or another physician, must assume global responsibilities for the patient to include all aspects of patient care, including communication with the patient, family and other providers."

“The anesthesiologist-intensivist needs to be intimately involved in the ethical dilemmas that commonly develop in the intensive care unit, in appropriately communicating with patients and their families in making decisions regarding the appropriateness of treatment, and in understanding the need to maintain patient autonomy and dignity.”

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not Applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjustment:** No

**References:**

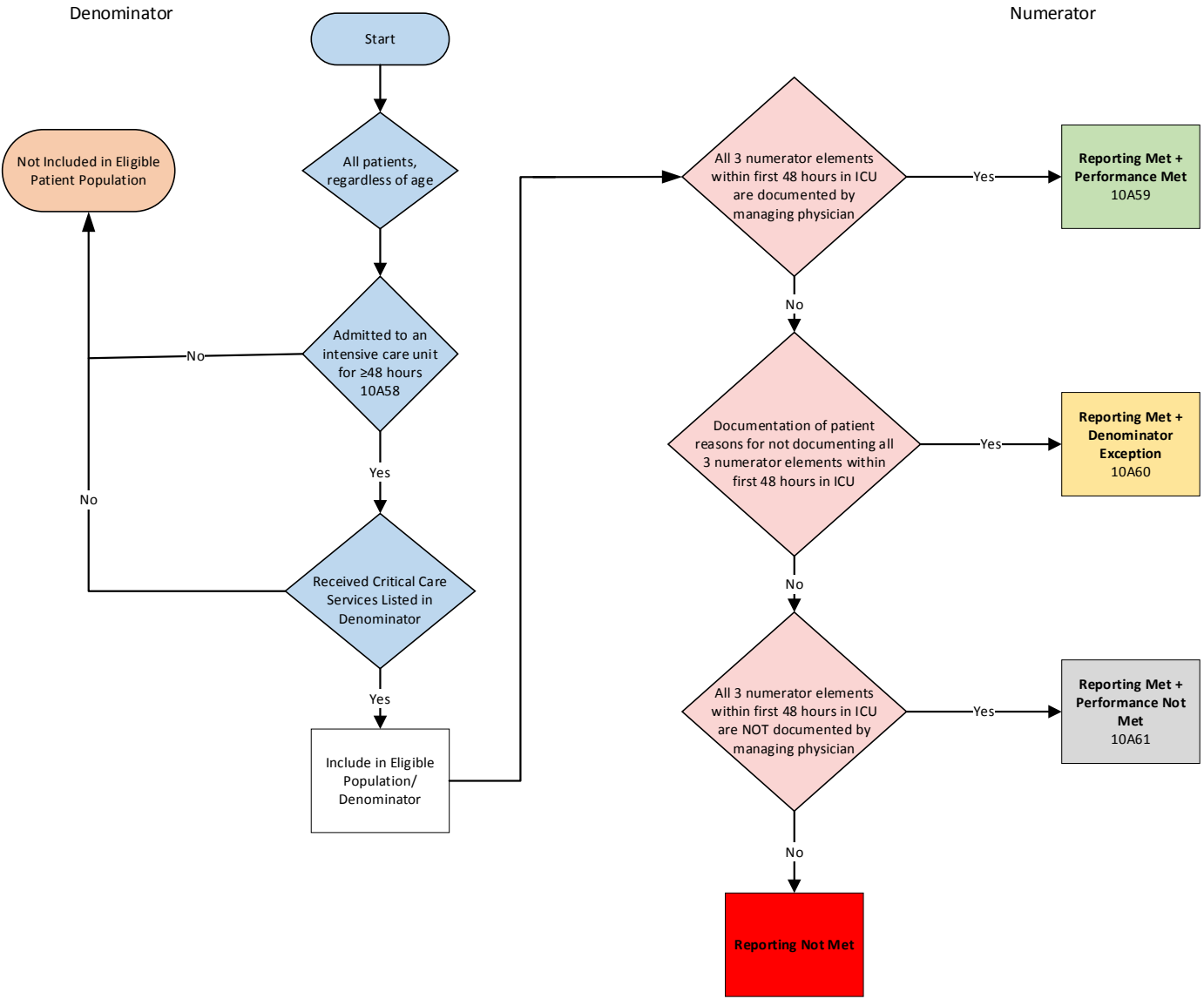
<sup>i</sup> Burkle CM, Swetz KM, Armstrong MH, Keegan MT. Patient and Doctor Attitudes and Beliefs Concerning Perioperative Do Not Resuscitate Orders: Anesthesiologists’ Growing Compliance with Patient Autonomy and Self Determination Guidelines. *BMC Anesthesiology*. 2013. 13:2.

<sup>ii</sup> Society for Critical Care Medicine. Improving Palliative Care – The Care and Communication Bundle. <http://www.sccm.org/Communications/Critical-Connections/Archives/Pages/Improving-Palliative-Care---The-Care-and-Communication-Bundle.aspx>.

<sup>iii</sup> American Society of Anesthesiologists Committee on Critical Care Medicine. Guidelines for the Practice of Critical Care by Anesthesiologists. October 2014. Available at: <http://www.asahq.org/~media/Sites/ASAHQ/Files/Public/Resources/standards-guidelines/guidelines-for-the-practice-of-critical-care-by-anesthesiologists.pdf>

<sup>iv</sup> American Society of Anesthesiologists Committee on Ethics. Ethical Guidelines for the Anesthesia Care of Patients with Do-Not-Resuscitate Orders or Other Directives That Limit Treatment. Available at: <http://www.asahq.org/~media/sites/asahq/files/public/resources/standards-guidelines/ethical-guidelines-for-the-anesthesia-care-of-patients.pdf>

# Team-Based Implementation of a Care-and-Communication Bundle for ICU Communication 2018 QCDR Measure Flow



## 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 anesthesia<sup>i</sup> in patients undergoing TKA. Patients receiving neuraxial anesthesia typically lose less blood during surgery, leading to reduced need for many blood transfusions.<sup>ii</sup> Additionally, some studies support the notion that spinal anesthesia is associated with lower incidence of surgical site infection when compared to general anesthesia.<sup>iii</sup> 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.<sup>iv</sup> 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.<sup>v</sup>

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.<sup>vi</sup>

**Clinical Recommendation Statements**

***2015 AAOS Evidence-Based Clinical Practice Guideline for Surgical Management of Osteoarthritis of the Knee<sup>vii</sup>***

“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

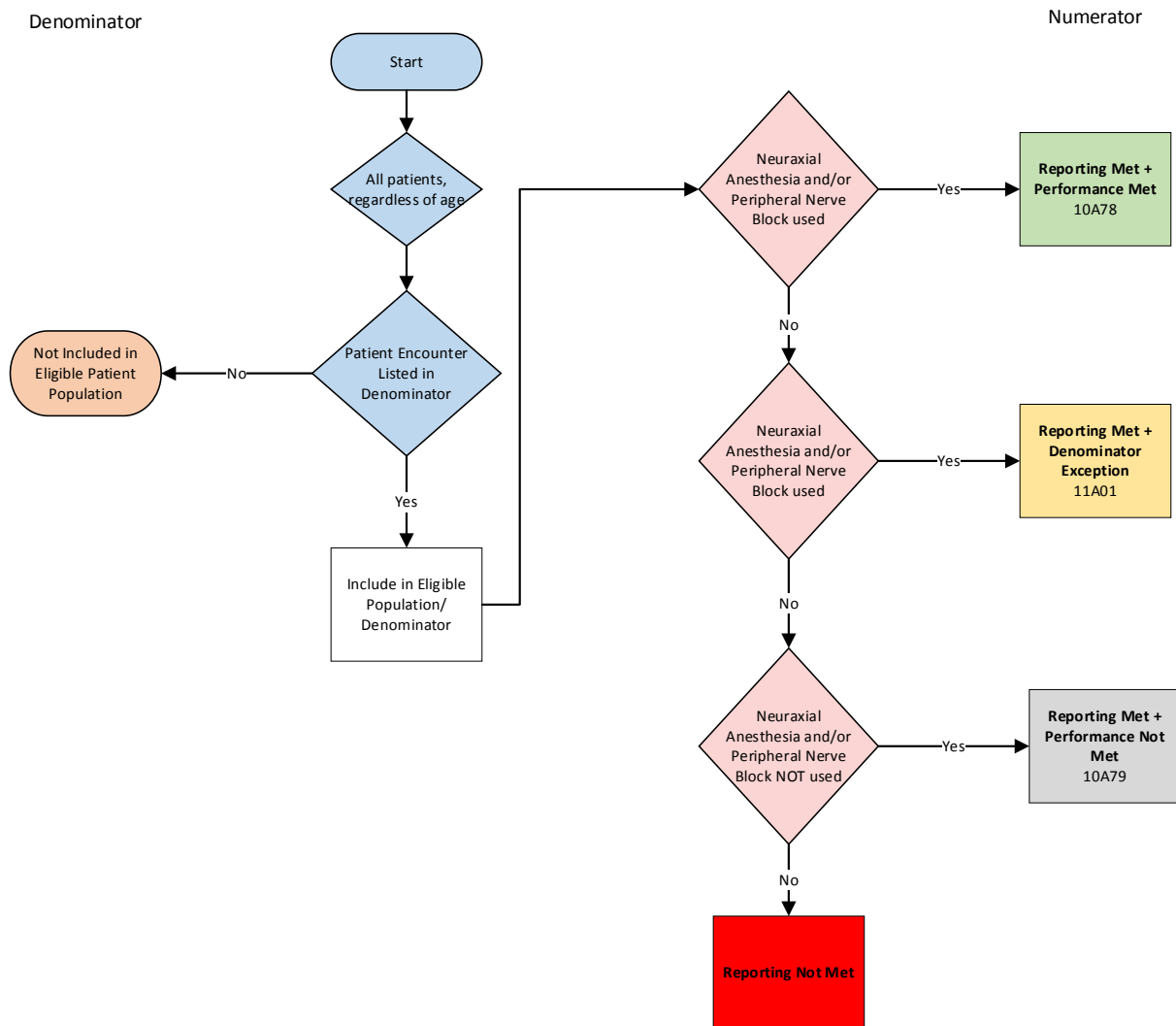
**Continuous Measure Scoring:** No

**Risk Adjustment:** No

**References:**

- <sup>i</sup>Memtsoudis SG, Xuming S., Ya-Lin Chiu, et al. Perioperative comparative effectiveness of anesthetic technique in orthopedic patients. *Anesthesiology*.2013;118:1046-58.
- <sup>ii</sup> 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.
- <sup>iii</sup> 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.
- <sup>iv</sup> 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.
- <sup>v</sup> 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.
- <sup>vi</sup> 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.
- <sup>vii</sup> 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



## Measure Title

### AQI57: Safe Opioid Prescribing Practices

## Measure Description

Percentage of patients, aged 18 years and older, prescribed opioid medications for longer than six weeks' duration for whom ALL of the following opioid prescribing best practices are followed:

1. Chemical dependency screening (includes laboratory testing and/or questionnaire) within the immediate 6 months prior to the encounter
2. Co-prescription of naloxone or documented discussion regarding offer of Naloxone co-prescription, if prescription is  $\geq 50$  MME/day
3. Non co-prescription of benzodiazepine medications by prescribing pain physician and documentation of a discussion with patient regarding risks of concomitant use of benzodiazepine and opioid medications.

## NQS Domain

Patient Safety

## Measure Type

Composite-Process

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient is prescribed opioid medications for longer than six weeks' duration during the reporting period. 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

Patient demographics, G-codes and 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 aged 18 years and older prescribed opioid medications for longer than six weeks' duration

### Denominator Criteria (Eligible Cases):

Patients, aged 18 years and older

#### AND

Patient encounter during the reporting period (CPT): 99201, 99202, 99203, 99204, 99205, 99211, 99212, 99213, 99214, 99215, 99217, 99218, 99219, 99220, 99224, 99225, 99226, 99241, 99242, 99243, 99244, 99245, 99281, 99282, 99283, 99284, 99285

#### AND

Patients prescribed opioids for longer than six weeks' duration: **G9561**

## Denominator Exclusions

- None

## Numerator

Patients for whom ALL of the following opioid prescribing best practices are followed:

1. Chemical dependency screening (includes laboratory testing and/or questionnaire) within the immediate 6 months prior to the encounter
2. Co-prescription of Naloxone, or documented discussion regarding offer of Naloxone co-prescription, if opioid prescription is  $\geq 50$  MME/day
3. Non co-prescription of benzodiazepine medications by prescribing pain physician and documentation of a discussion with patient regarding risks of concomitant use of benzodiazepine and opioid medications.

*Numerator Note: Chemical Dependency Screening: Questionnaires for chemical dependency screening can include the Opioid Risk Tool (ORT), Screener and Opioid Assessment for Patients with Pain (SOAPP), Screener and Opioid Assessment for Patients with Pain-Revised (SOAPP-R), or the Diagnosis, Intractability, Risk, Efficacy (DIRE) tool.*

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

*Measure Scoring Note: In order to receive credit for this measure, ALL three numerator criteria must be reported. This measure utilizes an all-or-none scoring methodology where failure to meet performance for ANY of the three numerator criteria will result in performance not met for the measure.*

#### Criterion 1:

*Performance Met:*

**10A92**

Chemical dependency screening (including laboratory testing and/or questionnaire) was performed within the immediate 6 months prior to the encounter

OR

*Performance Not Met:*

**10A93**

Chemical dependency screening (including laboratory testing and/or questionnaire) was NOT performed within the immediate 6 months prior to the encounter

#### Criterion 2:

*Performance Met:*

**10A94**

Naloxone co-prescribed or documented discussion regarding offer of Naloxone co-prescription for opioid prescription  $\geq 50$  MME/day

OR

**10A95**

Not applicable, opioid prescription  $< 50$  MME/day

OR

*Performance Not Met:*

**10A96**

Naloxone NOT co-prescribed AND discussion NOT documented regarding offer of Naloxone co-prescription for opioid prescription  $\geq 50$  MME/day

#### Criterion 3:

*Performance Met:*

**10A97**

Benzodiazepine medications NOT co-prescribed by prescribing pain physician AND documented discussion regarding risks of concomitant use of benzodiazepine and opioid medications

OR

*Performance Not Met:*

**10A98**

Benzodiazepine medications co-prescribed by prescribing pain physician AND/OR no documented discussion regarding risks of concomitant use of benzodiazepine and opioid medications

**NQF Number:** Not Applicable

**eCQM:** Not Applicable

### Rationale

In 2016, more than 61 million patients had at least one opioid prescription filled or refilled, accounting for more than 214 million individual opioid prescriptions.<sup>1</sup> Use of opioid pain medication is associated with serious risks, including overdose and opioid use disorder. Given these risks, it is essential for providers who prescribe opioid medications to carefully assess the risks and benefits of opioid therapy and to follow safe prescribing practices. Through the completion of dependency screening, the provision of Naloxone, and the avoidance of co-prescription of benzodiazepine medications, providers can help mitigate some of the most serious risks associated with opioid therapy.

### Clinical Recommendation Statements

#### *2016 CDC Guideline for Prescribing Opioids for Chronic Pain-United States<sup>ii</sup>*

“When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs. (Recommendation category: B; evidence type: 4)”

“Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages ( $\geq 50$  MME/d), or concurrent benzodiazepine use, are present. (Recommendation category: A; evidence type: 4)”

“Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible. (Recommendation category: A; evidence type: 3)”

#### *2017 VA/DoD Clinical Practice Guideline for Opioid Therapy for Chronic Pain<sup>iii</sup>*

“We recommend implementing risk mitigation strategies upon initiation of long-term opioid therapy, starting with an informed consent conversation covering the risks and benefits of opioid therapy as well as alternative therapies. The strategies and their frequency should be commensurate with risk factors and include:

- Ongoing, random urine drug testing (including appropriate confirmatory testing)
- Checking state prescription drug monitoring programs
- Monitoring for overdose potential and suicidality
- Providing overdose education
- Prescribing of naloxone rescue and accompanying education

**(Strong for | Reviewed, New-replaced)”**

“We recommend against the concurrent use of benzodiazepines and opioids. **(Strong against | Reviewed, New-added).”**

**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

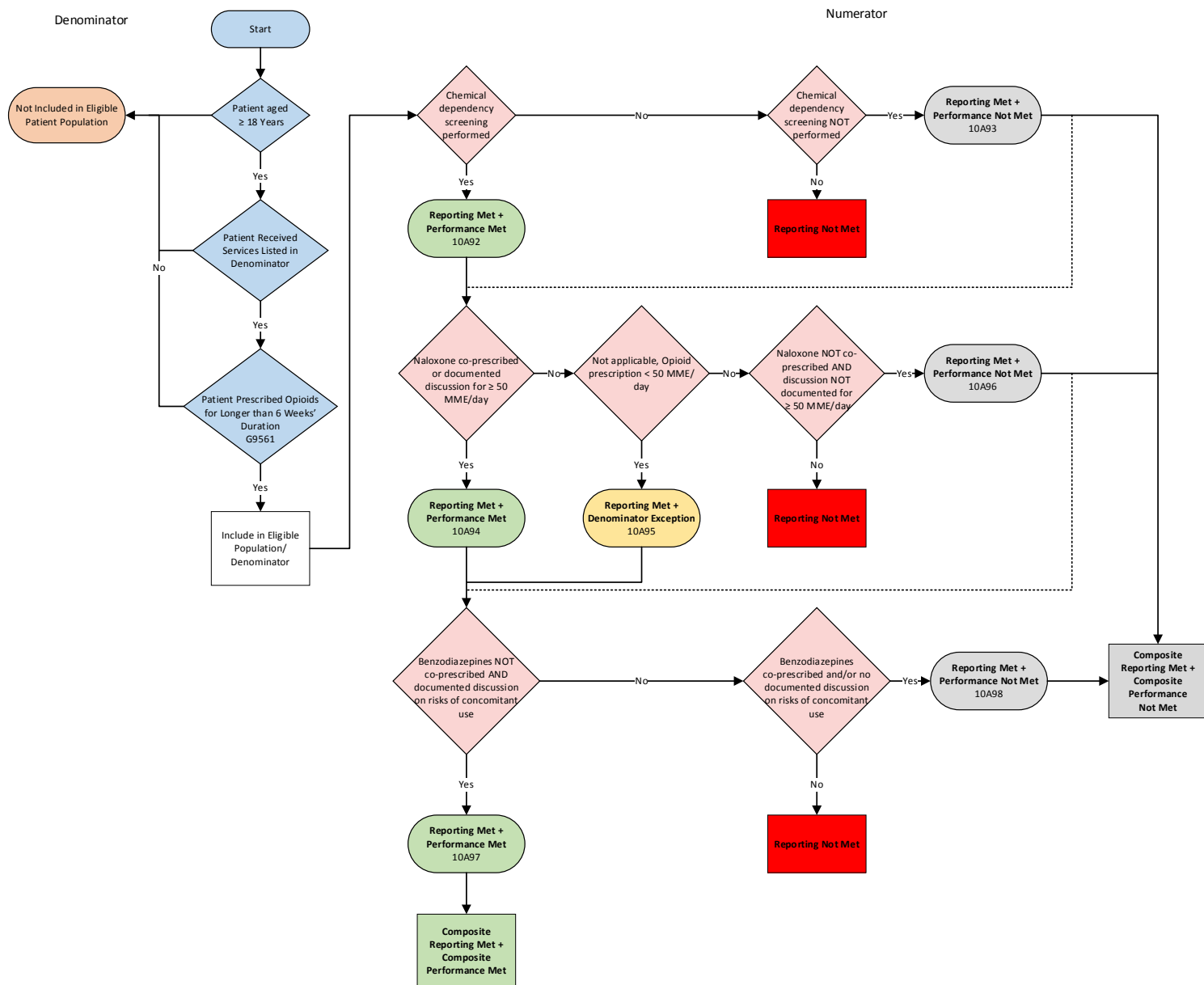
## References:

<sup>i</sup> Centers for Disease Control and Prevention. Annual Surveillance Report of Drug-Related Risks and Outcomes. United States. 2017. <https://www.cdc.gov/drugoverdose/pdf/pubs/2017-cdc-drug-surveillance-report.pdf>.

<sup>ii</sup> Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain-United States, 2016. JAMA. 2016;315(15):1624-1645. Doi: 10.1001/jama.2016.1464

<sup>iii</sup> The Opioid Therapy for Chronic Pain Work Group; Office of Quality, Safety and Value, Veterans Affairs; Office of Evidence Based Practice, U.S. Army Medical Command. VA/DoD clinical practice guideline for opioid therapy for chronic pain. Department of Veterans Affairs, Department of Defense. Version 3.0. 2017. Available at: <https://www.healthquality.va.gov/guidelines/Pain/cot/VADoDOTCPG022717.pdf>. Accessed August 31, 2017.

## Safe Opioid Prescribing Practices 2018 QCDR Measure Flow





## Measure Title

### AQI58: Infection Control Practices for Open Interventional Pain Procedures

## Measure Description

Percentage of patients, regardless of age, that undergo an open interventional pain procedure for whom ALL of the following infection control best practices are followed by anesthesiologist(s) and scrub technologist(s), in addition to standard sterile technique:

1. Double gloving (two pairs of sterile gloves are worn)
2. Chlorhexidine with alcohol used
3. Weight-based preoperative antibiotic dosing and, if indicated by procedure duration, weight-based re-dosing
4. Administration of pre-operative antibiotics within 1 hour, or 2 hours for vancomycin, prior to surgical incision

## NQS Domain

Patient Safety

## Measure Type

Composite - Process

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient undergoes an open interventional pain procedure. 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 an open interventional pain procedure

### Denominator Criteria (Eligible Cases):

All patients, regardless of age

### AND

Patient encounter during the reporting period (CPT): 22510, 22511, +22512, 22513, 22514, +22515, 62350, 62355, 62360, 62361, 62362, 62365, 63650, 63661, 63662, 63663, 63664, 63685, 63688

## Denominator Exclusions

- None

## Numerator

Patients for whom the ALL of the following infection control best practices are followed in addition to standard sterile technique:

1. Double gloving (two pairs of sterile gloves are worn)
2. Chlorhexidine with alcohol used
3. Weight-based preoperative antibiotic dosing and, if indicated by procedure duration, weight-based re-dosing
4. Administration of pre-operative antibiotics within 1 hour, or 2 hours for vancomycin, prior to surgical incision (or start of procedure if no incision is required)

*Numerator Note:*

Weight-based antibiotic dosing and pre-operative antibiotic timing should be performed in accordance with the below Neurostimulation Appropriateness Consensus Committee (NACC) Recommendations:

Table 7. Prophylactic Antibiotic Recommendations.*				
Antibiotic	Standard intravenous dosing	Timing prior to incision	Redosing interval	Indications
Cefazolin**	1 g ≤ 80 kg	Within 30-60 min	3-4 hours (CrCl > 50 mL/min)	First-line
	2 g > 80 kg		8 hours (CrCl 20-50 mL/min)	
	3 g > 120 kg		16 hours (CrCl < 20 mL/min)	
Clindamycin	600 mg ≤ 80 kg	Within 30-60 min	6 hours (CrCl > 50 mL/min)	β-lactam allergy
	900 mg > 80 kg		6 hours (CrCl 20-50 mL/min)	
	1200 mg > 120 kg		6 hours (CrCl < 20 mL/min)	
Vancomycin	1 g ≤ 80 kg	Within 120 min	8 hours (CrCl > 50 mL/min)	β-lactam allergy Known MRSA colonization
	2 g > 80 kg		16 hours (CrCl 20-50 mL/min)	
	3 g > 120 kg		None (CrCl < 20 mL/min)	

\*Modified from Bratzler et al. (89), Alexander et al. (90), and Bratzler et al. (91).  
 \*\*In an effort to simplify cefazolin weight-based dosing, the American Society of Health-System Pharmacists (ASHP) recommends 2 g for individuals weighing < 120 kg and 3 g for individuals weighing ≥ 120 kg. MRSA, methicillin-resistant *S. aureus*; CrCl, creatinine clearance.

Deer TR, Provenzano DA, Hanes M, Pope JE, Thomson SJ, Russo MA, et al. The Neurostimulation Appropriateness Consensus Committee (NACC) Recommendations for Infection Prevention and Management. *Neuromodulation*. 2017;20(1):31-50.

**Numerator Quality-Data Coding Options for Reporting Satisfactorily**

*Measure Scoring Note:* In order to receive credit for this measure, ALL four numerator criteria must be reported. This measure utilizes an all-or-none scoring methodology where failure to meet performance for ANY of the four numerator criteria will result in performance not met for the measure.

**Criterion 1:**

***Performance Met:***

**10A80**

Double gloving (i.e., two pairs of sterile gloves are worn) is performed

**OR**

***Performance Not Met:***

**10A81**

Double gloving (i.e., two pairs of sterile gloves are worn) is NOT performed

**Criterion 2:**

***Performance Met:***

**10A82**

Chlorhexidine with alcohol is used

**OR**

**10A83**

Documented contraindication or allergy to chlorhexidine with alcohol

**OR**

***Performance Not Met:***

**10A84** Chlorhexidine with alcohol is NOT used

**Criterion 3:**

***Performance Met:***

**10A85**

Weight-based preoperative antibiotic dosing and, if procedure >3 hours, weight-based re-dosing is used

**OR**

***Performance Not Met:***

**10A86**

Weight-based preoperative antibiotic dosing and, if procedure >3 hours, weight-based re-dosing is NOT used

**Criterion 4:**

***Performance Met:***

**10A87**

Pre-operative antibiotics administered within 1 hour, or 2 hours for vancomycin, prior to surgical incision (or start of procedure if no incision is required)

**OR**

***Performance Not Met:***

**10A88**

Pre-operative antibiotics NOT administered within 1 hour prior to surgical incision (or start of procedure if no incision is required)

**NQF Number:** Not Applicable

**eCQM:** Not Applicable

**Rationale**

Infections associated with open interventional pain procedures are associated with significant morbidity and healthcare costs. For implantable pain therapies, the reported infection rates range from 1 to 10%.<sup>i</sup> Two large systematic reviews on spinal cord stimulation report infection rates of 3.4 to 4.6%. The infection rates reported for implantable pain therapies are often higher than those associated with other implantable therapies including total joint replacement and cardiac pacemakers. In the field of interventional pain medicine practice deficiencies have been identified. A recent international survey of 506 physicians examining infection control practices for spinal cord stimulation highlighted the need for education. The survey demonstrated a low compliance rate for infection control recommendations that have been recommended by the Centers for Disease Control, the National Institute for Health and Care Excellence (NICE) and a Surgical Care Improvement Project.<sup>ii</sup> Only four of the 15 recommended practices surveyed demonstrated a greater than or equal to 80% compliance rates. Areas of deficiency included weight-based antibiotic dosing, hair removal strategies, double gloving, surgical dressing, skin antiseptic agent selection and inappropriate postoperative continuation of antibiotics. The compliance rates for weight-based dosing of antibiotics (47%; 95% CI: 42.6% – 51.4%), utilization of double gloving (47.8%; 95% CI: 43.4% – 52.2%), and utilization of chlorhexidine gluconate (67.7%; 95% CI: 63.6% – 71.8%) were all less than 70%.

The consequences associated with infections for implantable pain therapies and open interventional pain procedures can be devastating. For implantable pain therapy infections, the implantable device often must be removed. In addition, many patients lose therapy and are not re-implanted. A recent review of 2737 surgical site infections associated implantable pain therapies demonstrated that 77.6% were explanted.<sup>iii</sup> A recent review of claims-based data on spinal cord stimulator implants demonstrated that only 27% of patients were re-implanted and that the cost of a surgical site infection was approximate \$59,000.<sup>iv</sup> Therefore, a surgical site infection with an implantable pain therapies is not only costly but often results in the end of the therapy. A recent analysis of the United States Anesthesia Close Claims project database examining injury and liability associated with implantable pain therapies from 1990 to 2013, demonstrated that infection was the most common damaging event. Infection represented 23% of all claims.<sup>v</sup>

A recent publication on quality improvement for spinal cord stimulation infection demonstrated a significant reduction in surgical site infection rates when evidence based practices were implemented. Infection rates went from 10.4% to 1% following implementation of best practices.<sup>vi</sup>

### Clinical Recommendation Statements

#### ***2016 Neurostimulation Appropriateness Consensus Committee (NACC) Recommendations for Infection Prevention and Management***<sup>vii</sup>

“The NACC recommends maximal sterile barrier precautions as well as double gloving for implantation of implantable pain devices.”

“The NACC recommends the use of chlorhexidine-based products combined with isopropyl alcohol for skin preparation prior to neuromodulation procedures.”

“For antimicrobial therapy to be effective, the serum and tissue levels of the agent must exceed the minimum inhibitory concentrations (MIC) prior to incision and throughout the operation. In order to exceed MIC, customized weight-based dosing is needed for each individual.”

#### ***2016 American College of Surgeons/Surgical Infection Society Surgical Site Infection Guidelines***<sup>viii</sup>

“The use of double gloves is recommended.”

“Alcohol-containing preparation should be used unless contraindication exists (eg fire hazard, surfaces involving mucosa, cornea, or ear).

No clear superior agent (chlorhexidine vs iodine) when combined with alcohol.

If alcohol cannot be included in the preparation, chlorhexidine should be used instead of iodine unless contraindications exist.”

“Prophylactic antibiotic dosing should be weight adjusted.

Prophylactic antibiotic should be administered within 1 hour before incision or within 2 hours for vancomycin or fluoroquinolones.”

#### ***2008 NICE Surgical site infections: prevention and treatment clinical guidelines***<sup>viii</sup>

“Consider wearing two pairs of sterile gloves when there is a high risk of glove perforation and the consequences of contamination may be serious.”

“Prepare the skin at the surgical site immediately before the incision using an antiseptic (aqueous or alcohol-based) preparation: povidone-iodine or chlorhexidine are most suitable.

#### ***2016 WHO Surgical Site Infection Prevention Guidelines***<sup>ix</sup>

“The panel suggests that either sterile, disposable, non-woven or sterile, reusable woven drapes and surgical gowns can be used during surgical operations for the purpose of preventing SSI. (conditional recommendation, moderate to very low quality of evidence).”

**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:**

<sup>i</sup> Deer TR, Provenzano DA, Hanes M, Pope JE, Thomson SJ, Russo MA, et al. The Neurostimulation Appropriateness Consensus Committee (NACC) Recommendations for Infection Prevention and Management. *Neuromodulation*. 2017;20(1):31-50.

<sup>ii</sup> Provenzano DA, Deer T, Luginbuhl Phelps A, Drennen ZC, Thomson S, Hayek SM, et al. An International Survey to Understand Infection Control Practices for Spinal Cord Stimulation. *Neuromodulation*. 2016;19(1):71-84.

<sup>iii</sup> Hoelzer BC, Bendel MA, Deer TR, Eldrige JS, Walega DR, Wang Z, et al. Spinal Cord Stimulator Implant Infection Rates and Risk Factors: A Multicenter Retrospective Study. *Neuromodulation*. 2017.

<sup>iv</sup> Provenzano, DA, Falowski, S., Doth, AH., Xia, Y. Spinal Cord Stimulation Infection Rate and Incremental Annual Expenditures Results from a US Payer Database. Presented at the International Neuromodulation Society Meeting 2017.

<sup>v</sup> Fitzgibbon DR, Stephens LS, Posner KL, et al. Injury and liability associated with implantable devices for chronic pain. *Anesthesiology*. 2016;124(6):1384-93.

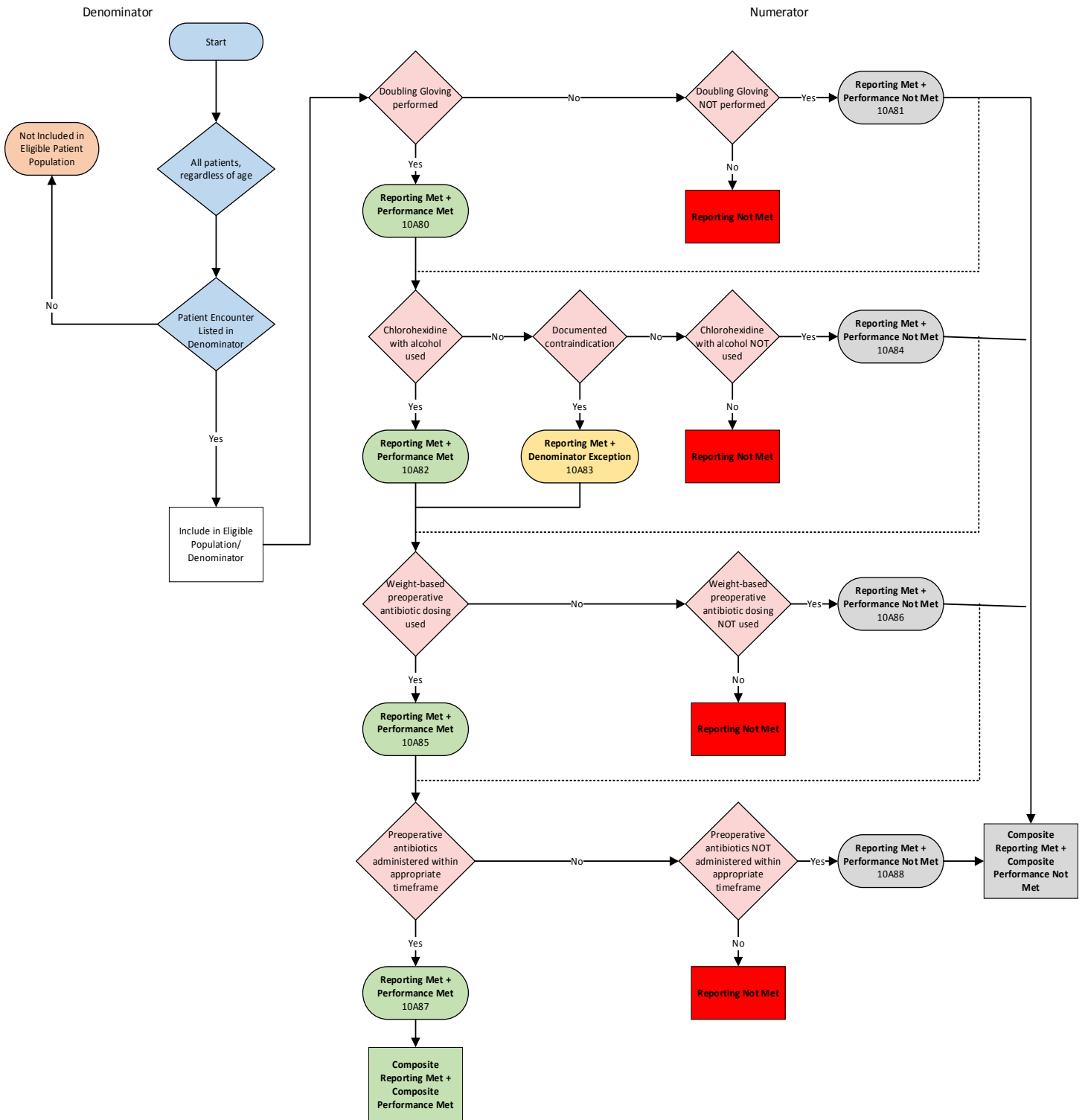
<sup>vi</sup> Yusuf E, Bamps S, Thuer B, Mattheussen J, Ursi JP, Del Biondo E, et al. A Multidisciplinary Infection Control Bundle to Reduce the Number of Spinal Cord Stimulator Infections. *Neuromodulation*. 2017.

<sup>vii</sup> American College of Surgeons and Surgical Infection Society: Surgical Site Infection Guidelines, 2016 Update. *Journal of the American College of Surgeons*. DOI: <http://dx.doi.org/10.1016/j.jamcollsurg.2016.10.029>.

<sup>viii</sup> National Institute for Health and Care Excellence (NICE). Surgical site infections: prevention and treatment. Clinical guideline. Published October 22, 2008. Available at: <https://www.nice.org.uk/guidance/cg74/resources/surgical-site-infections-prevention-and-treatment-pdf-975628422853>. Accessed August 31, 2017.

<sup>ix</sup> Allegranzi B, Zayed B, Bischoff P, et al.; WHO Guidelines Development Group. New WHO recommendations on preoperative measures for surgical site infection prevention: an evidence-based global perspective. *Lancet*. 2016;16(12):e276-e287.

## Infection Control Practices for Open Interventional Pain Procedures 2018 QCDR Measure Flow



## Measure Title

**AQI59: Multimodal Pain Management**

## Measure Description

Percentage of patients, regardless of age, undergoing selected elective surgical procedures that were managed with multimodal pain medicine.

## 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 an elective surgical procedure during the reporting period. 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

G-codes and 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

Patients, regardless of age, who undergo selected elective surgical procedures

*Denominator note: Selected surgical procedures include open and laparoscopic intraabdominal, spinal, pelvic, thoracic, breast, joint, and fracture repair surgeries.*

### Denominator Criteria (Eligible Cases):

All patients, regardless of age

#### **AND**

Elective Surgery: **G9643**

#### **AND**

Patient encounter during the reporting period (CPT):

00402, 00404, 00406, 00500, 00528, 00529, 00539, 00540, 00541, 00542, 00546, 00548, 00600, 00620, 00625, 00626, 00630, 00670, 00752, 00770, 00790, 00792, 00794, 00797, 00830, 00832, 00834, 00836, 00840, 00844, 00846, 00848, 00864, 00865, 00866, 00902, 01214, 01215, 01220, 01230, 01402, 01486, 01630, 01634, 01636, 01638, 01961

## Denominator Exclusions

- None

## Numerator

Patients for whom multimodal pain management is administered in the perioperative period from six hours prior to anesthesia start time until discharged from the postanesthesia care unit.

*Numerator Definition: Multimodal pain management is defined as the use of two or more drugs and/or interventions, NOT including systemic opioids, that act by different mechanisms for providing analgesia. These drugs and/or interventions can be administered via the same route or by different routes. Opioids may be administered for pain relief when indicated but will not count towards this measure.*

*Numerator note: Documentation of qualifying medications or interventions provided from six hours prior to anesthesia start time through PACU discharge count toward meeting the numerator.*

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

***Performance Met:***

***10A89***

Multimodal pain management was used

OR

***Denominator Exception:***

***10A90***

Documented allergy to multiple classes of analgesics

OR

***Performance Not Met:***

***10A91***

Multimodal pain management was not used

**NQF Number:** Not Applicable

**eCQM:** Not Applicable

### **Rationale**

Besides providing anesthesia care in the operating room, anesthesiologists are dedicated to providing the best perioperative pain management in order to improve patients' function and facilitate rehabilitation after surgery. In the past, pain management was limited to the use of opioids (also called narcotics). Opioids provide analgesia primarily through a unitary mechanism, and just adding more opioids does not usually lead to better pain control or improve outcomes. In fact, opioids are responsible for a host of side effects that can be a threat to life, and increasing rates of complications after surgery can be attributed to the overuse and abuse of opioids. In 2012, the American Society of Anesthesiologists (ASA) published its guidelines for acute pain management in the perioperative setting (1), and ASA along with the American Society of Regional Anesthesia and Pain Medicine (ASRA) and American Pain Society collaborated on the 2016 clinical practice guidelines for the management of postoperative pain (2). These documents endorse the routine use of "**multimodal analgesia**" which means employing multiple classes of pain medications or therapies, working with different mechanisms of action, in the treatment of acute pain instead of relying on opioids alone.

While opioids may continue to be important pain medications, they must be combined with other classes of medications known to prevent and help relieve postoperative pain unless contraindicated. The list includes but is not limited to:

- **Non-steroidal anti-inflammatory drugs (NSAIDs):** Examples include ibuprofen, diclofenac, ketorolac, celecoxib, nabumetone. NSAIDs act on the prostaglandin system peripherally and work to decrease inflammation.
- **Ketamine:** When administered in low dose, ketamine acts on the N-methyl-D-aspartate receptors in the central nerve system to decrease acute pain and hyperalgesia.
- **Acetaminophen:** Acetaminophen acts on central prostaglandin synthesis and provides pain relief through multiple mechanisms.
- **Gabapentinoids:** Examples include gabapentin and pregabalin. These medications are membrane stabilizers



that essentially decrease nerve firing.

- **Regional block:** The ASA and ASRA also strongly recommend the use of target-specific local anesthetic applications in the form of regional analgesic techniques as part of the multimodal analgesic protocol whenever indicated.
- **Local anesthetics:** Injection of local anesthetic in or around the surgical site by the surgeon is an example. Systemic lidocaine administered intravenously represents an alternative to regional analgesic techniques.

## Clinical Recommendation Statements

### *2012 ASA Practice Guidelines for Acute Pain Management in the Perioperative Setting<sup>i</sup>*

“Multimodal techniques for pain management include the administration of two or more drugs that act by different mechanisms for providing analgesia. These drugs may be administered *via* the same route or by different routes.”

“Whenever possible, anesthesiologists should use multimodal pain management therapy. Central regional blockade with local anesthetics should be considered. Unless contraindicated, patients should receive an around-the-clock regimen of COXIBs, NSAIDs, or acetaminophen. Dosing regimens should be administered to optimize efficacy while minimizing the risk of adverse events. The choice of medication, dose, route, and duration of therapy should be individualized.”

### *2016 ASRA Guidelines on the Management of Postoperative Pain<sup>ii</sup>*

“The panel recommends that clinicians offer multi-modal analgesia, or the use of a variety of analgesic medications and techniques combined with non-pharmacological interventions, for the treatment of postoperative pain in children and adults (strong recommendation, high-quality evidence)”

**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

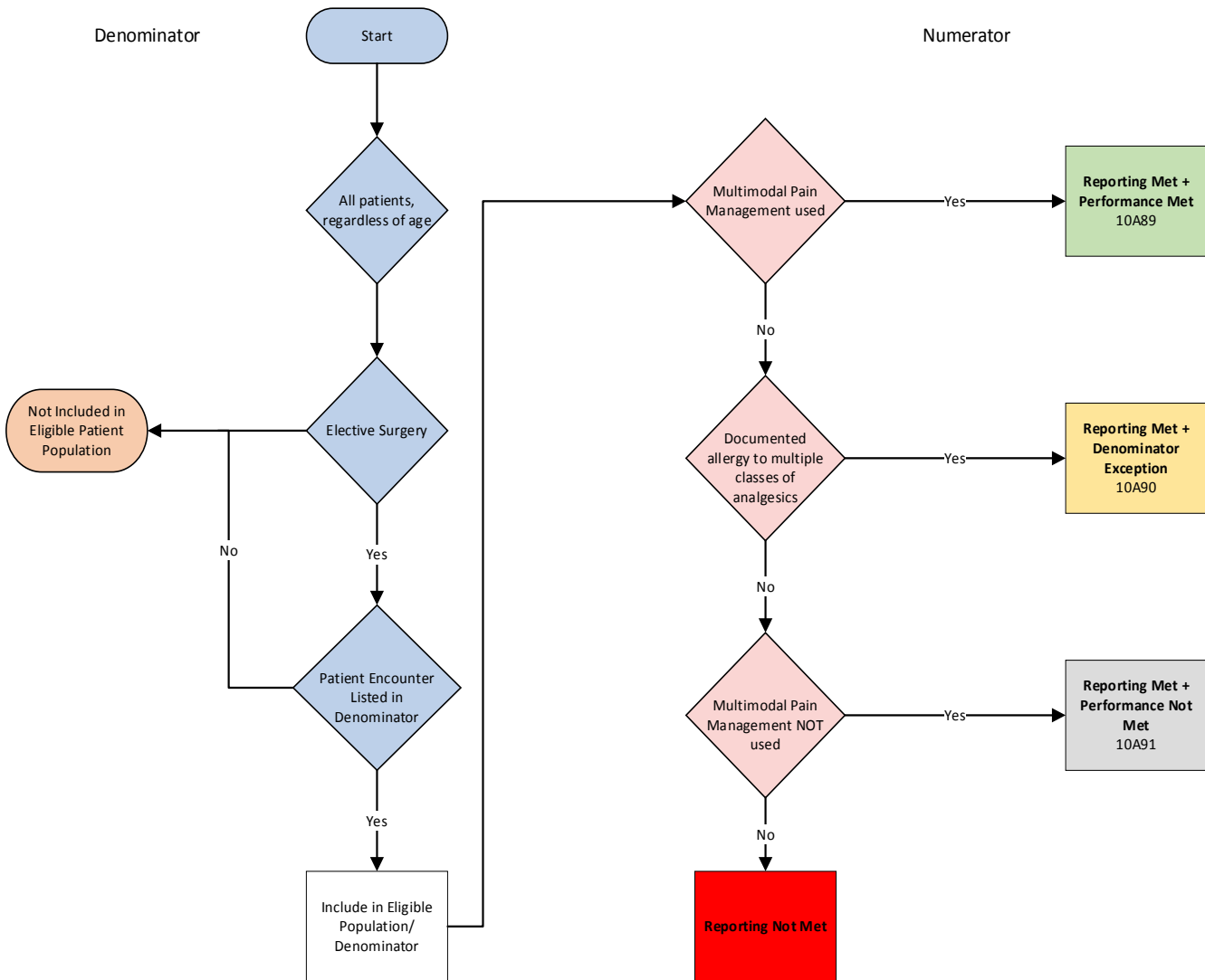
**Risk Adjustment:** No

## References:

<sup>i</sup> American Society of Anesthesiologists Task Force on Acute Pain Management. Practice guidelines for acute pain management in the perioperative setting. An updated report by the American Society of Anesthesiologists Task Force on Acute Pain Management. *Anesthesiology*.2012;116(2):248-273.

<sup>ii</sup> Chou R, Gordon DB, de Leon-Casasola O, et al. Management of postoperative pain: a clinical practice guideline from the American Pain Society, the American Society of Regional Anesthesia and Pain Medicine, and the American Society of Anesthesiologists' Committee on Regional Anesthesia, Executive Committee, and Administrative Council. *J Pain*.2016;17(2):131-157.

## Multimodal Pain Management 2018 QCDR Measure Flow



## Measure Title

AQI60: New Corneal Injury Not Diagnosed Prior to Discharge

## Measure Description

Percentage of patients, aged 18 years or older, who undergo anesthesia care and did not have a new diagnosis of corneal injury prior to facility discharge.

## NQS Domain

Patient Safety

## Measure Type

Outcome

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time a patient underwent a procedure with anesthesia not involving patients with pre-existing eye trauma or those patients undergoing ophthalmologic surgery. 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 and patient demographics are used to identify patients who are included in the measure's denominator. Registry codes are used to report the measure numerator.

## Denominator

All patients, aged 18 and older, who undergo anesthesia care\*

Denominator Definition: \* Anesthesia care includes general, regional and monitored anesthesia care.

*Denominator Note:* Measure not applicable to anesthesia care described by code 00300 when the underlying surgical procedure is described by CPT Codes: 67800, 67801, 67805, 67808, 67810, 67840, 67850, 67875, 67900, or 67938.

### Denominator Criteria (Eligible Cases):

Patient aged 18 years or older on date of encounter

### **AND**

Patient encounter during the reporting period (CPT):

00100, 00102, 00104, 00120, 00124, 00126, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00562, 00563, 00566, 00567, 00580, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00754, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00840, 00842, 00844, 00846, 00848, 00851, 00860, 00862, 00864, 00865, 00866, 00868, 00870, 00872, 00873, 00880, 00882, 00902, 00904, 00906, 00908, 00910, 00912, 00914, 00916, 00918, 00920, 00921, 00922, 00924, 00926,

00928, 00930, 00932, 00934, 00936, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01130, 01140, 01150, 01160, 01170, 01173, 01200, 01202, 01210, 01212, 01214, 01215, 01220, 01230, 01232, 01234, 01250, 01260, 01270, 01272, 01274, 01320, 01340, 01360, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01420, 01430, 01432, 01440, 01442, 01444, 01462, 01464, 01470, 01472, 01474, 01480, 01482, 01484, 01486, 01490, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 01680, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01922, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01953, 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01967, 01968, 01969, 01991, 01992, 20526, 20550, 20551, 20552, 20553, 20600, 20604, 20605, 20606, 20610, 20611, 27096, 36555, 36556, 36570, 36571, 36578, 36580, 36581, 36582, 36583, 36584, 36585, 36620, 62263, 62264, 62270, 62272, 62273, 62280, 62281, 62282, 62320, 62321, 62322, 62323, 62324, 62325, 62326, 62327, 62350, 62355, 62360, 62361, 62362, 62365, 62370, 63650, 63661, 63662, 63663, 63664, 63685, 63688, 64400, 64402, 64405, 64408, 64410, 64413, 64415, 64416, 64417, 64418, 64420, 64421, 64425, 64430, 64435, 64445, 64446, 64447, 64448, 64449, 64450, 64461, 64462, 64463, 64479, 64480, 64483, 64484, 64486, 64487, 64488, 64489, 64490, 64491, 64492, 64493, 64494, 64495, 64505, 64508, 64510, 64517, 64520, 64530, 64600, 64605, 64610, 64620, 64630, 64633, 64634, 64635, 64636, 64640, 64680, 64681, 93503, 95990, 95991

### Denominator Exclusions

- Organ Donors as designated by ASA Physical Status 6
- Patient undergoes ophthalmologic surgery or has a diagnosis of either eye trauma or corneal injury before anesthesia care: **10A22**
- Patient has a co-occurring condition that limits ability to communicate at the time of facility discharge (e.g. severe dementia, developmental delay or mechanical ventilation): **10A49**

*Denominator Note:* Measure not applicable to anesthesia care described by code 00300 when the underlying surgical procedure is described by CPT Codes: 67800, 67801, 67805, 67808, 67810, 67840, 67850, 67875, 67900, or 67938.

### Numerator

Patients who do not have a new diagnosis of corneal injury prior to facility discharge.

Definition: A corneal injury is either a corneal abrasion (a scratch or scrape on the cornea, the clear front window of the eye that transmits and focuses light into the eye) or exposure keratitis (inflammation of the cornea from drying of the corneal tear film). Includes both exposure keratitis and corneal abrasion. For the purposes of this measure, the distinction does not need to be made with fluorescein examination of the cornea under ultraviolet light; however, it can be diagnosed in this manner. Corneal injury also includes any new symptom of eye pain treated with topical antibiotic (e.g., erythromycin) while in the post-anesthesia care unit/recovery area. Other causes of eye pain (e.g. acute angle-closure glaucoma) can be excluded by instilling one drop of local anesthetic (e.g., proparacaine) into the eye. If the pain is immediately and completely relieved, corneal injury is confirmed and acute angle-closure glaucoma is excluded.<sup>i</sup>

*Numerator Note:* Facility refers to the location in which the procedure was performed, including but not limited to inpatient hospital or ambulatory surgical center.

### Numerator Quality-Data Coding Options for Reporting Satisfactorily

#### *Performance Met:*

**10A50**

Patient was NOT newly diagnosed with exposure keratitis or corneal abrasion at

time of facility discharge.

**OR**

**Performance Not Met:**

**10A51**

Patient was diagnosed with new exposure keratitis or corneal abrasion at time of facility discharge.

**NQF Number:** Not applicable

**eCQM Number:** Not applicable

**Rationale**

Corneal abrasion/injury is the most common ophthalmologic complication that occurs during general anesthesia for non-ocular surgery.<sup>ii</sup> These injuries are not only painful for the patient, but can lead to significant microbial keratitis with possibility of permanent scarring. There is no standardized method for protecting the eyes during an anesthetic for non-ocular surgery however, adhesive tape, individual, single, sterile packaged eye covers, small bio- occlusive dressings, used with or without eye ointment are some of the options used Some practitioners may simply observe closed, non-taped eyes.<sup>iii</sup> Methods described in the literature are not entirely effective at preventing corneal injury and some are associated with unwanted side effects. Physician anesthesiologists administering general anesthesia are responsible for maintaining eye health and safety during surgery.

Measuring the incidence of corneal injury will give practices the data they need to assess performance, compare to national benchmarks, and if gaps are identified, encourage anesthesiologists to undertake techniques that can significantly improve eye protection for patients and reduce corneal injuries.

**Data Source:** Claims/Paper Medical Record, Registry

**Measure Steward:** American Society of Anesthesiologists (ASA) / Anesthesia Quality Institute (AQI)

**Number of Multiple Performance Rates:** Not applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjustment:** No

**References:**

<sup>i</sup> ASA Ad Hoc Committee on Data Definitions, 2017, <https://www.aqihq.org/qualitymeasurementtools.aspx>

<sup>ii</sup> Martin DP, Weingarten TN, Gunn PW, Lee, KM, Mahr MA, Schroeder, DR, Sprung J. Performance improvement system and postoperative corneal injuries. *Anesthesiology*. 2009; 111:320-6.

<sup>iii</sup> O'Driscoll A, White E. Care of the eye during anaesthesia and intensive care. *Anaesth Intensive Care*. 2016; 18(1): 47-51.

## New Corneal Injury Not Diagnosed Prior to Discharge 2018 QCDR Measure Flow



## Measure Title

### Quantum31: Central Line Ultrasound Guidance

**\*ASA LICENSED THIS MEASURE FROM MEDNAX\***

## Measure Description

Percentage of patients, regardless of age, in whom ultrasound guidance is used by the anesthesia clinician when placing a central line for those central lines that are placed in the internal jugular location.

## NQS Domain

Patient Safety

## Measure Type

Process

## High Priority Status

Yes

## Inverse Measure

No

## Instructions

This measure is to be reported each time an anesthesia clinician places a central line in the internal jugular location. Performance of this metric requires clinician documentation that ultrasound guidance was performed at the time of central line placement.

## Measure Reporting via the Qualified Clinical Data Registry

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. Registry codes are used to report the numerator of the measure.

## Denominator

All patients, regardless of age, who undergo internal jugular central line placement by the anesthesia clinician.

### Denominator Criteria (Eligible Cases):

All patients, regardless of age

AND

### Patient encounter during the reporting period (CPT):

36555, 36556, 36557, 36558, 36560, 36561, 36563, 36565, 36566, +76937, 93503

AND

Internal jugular site insertion **10A66**

## Denominator Exclusions / Exceptions

- None

## Numerator

Numerator Definition: Use of ultrasound guidance during the central line insertion when central line is placed at the internal jugular site.

## Numerator Quality-Data Coding Options for Reporting Satisfactorily

**Performance Met:**  
**10A67**

Clinician used ultrasound guidance during central line placement when internal jugular site used

**OR**

**Performance Not Met:**  
**10A68**

Clinician did not use ultrasound guidance during central line placement when internal jugular site used

**NQF Number:** Not Applicable

**eCQM:** Not Applicable

**Rationale**

The use of ultrasound to guide central venous cannulation has been shown to decrease adverse events including but not limited to decreased risks of cannulation failure, arterial puncture, hematoma, and hemothorax. Benefits that relate to ultrasound guidance are most appreciable for internal jugular site insertion in contrast to either subclavian or femoral insertion.

**Data Source:** Claims, Medical Record, Registry

**Measure Steward:** MEDNAX Services, Inc.

**Number of Multiple Performance Rates:** Not applicable

**Proportion Measure Scoring:** Yes

**Continuous Measure Scoring:** No

**Risk Adjustment:** No

**References:**

1. Wu, Shao-yong, et al. "Real-time Two-dimensional Ultrasound Guidance for Central Venous Cannulation." *Anesthesiology* 118.2 (2013): 361.
2. Bruzoni, Matias, et al. "A prospective randomized trial of ultrasound-vs landmark-guided central venous access in the pediatric population." *Journal of the American College of Surgeons* 216.5 (2013): 939-943.
3. Bass et al. Ultrasound guidance versus anatomical landmarks for subclavian or femoral vein catheterization. *Cochrane Database Syst Rev.* 2015 Jan 9;1. CD011447
4. Bass et al. Ultrasound guidance versus anatomical landmarks for internal jugular vein catheterization. *Cochrane Database Syst Rev.* 2015 Jan 9;1:CD006962.



# Central Line Ultrasound Guidance 2018 QCDR Measure Flow

Denominator

Numerator

