2024 QCDR Measure Specifications

Anesthesia Quality Institute
National Anesthesia Clinical Outcomes Registry

NACOR®
Anesthesia **Quality Institute**®

TABLE OF CONTENTS

DISCLAIMER 3

Copyright Statement (ASA/AQI Measures) 4

Measures Removed from 2024 AQI NACOR QCDR Measure Set 5

Modifications to 2023 QCDR Measures for 2024 AQI NACOR Measure Set 6

2024 MIPS Measures Available for Reporting through AQI NACOR 7

AQI18: Coronary Artery Bypass Graft (CABG): Prolonged Intubation – Inverse Measure 8

AQI48: Patient-Reported Experience with Anesthesia† 11

AQI49: Adherence to Blood Conservation Guidelines for Cardiac Operations using Cardiopulmonary Bypass (CPB) – Composite 18

AQI65: Avoidance of Cerebral Hyperthermia for Procedures Involving Cardiopulmonary Bypass 27

AQI67: Consultation for Frail Patients 30

AQI71: Ambulatory Glucose Management 34

AQI72: Perioperative Anemia Management 49

ABG44: Low Flow Inhalational General Anesthesia 52

ePreop31: Intraoperative Hypotension among Non-Emergent Noncardiac Surgical Cases 56

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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.

The information provided is not to be construed as practice management or legal advice. Every reasonable effort has been made to ensure the accuracy of the information presented at the time of posting, but AQI and ASA do not warrant or guarantee that the information presented is exhaustive or error-free. AQI and ASA further disclaim all liability for loss or damage incurred by third parties arising from the use of the information. Please consult your legal advisor or other qualified professional for guidance and information specific to your situation.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Copyright Statement (ASA/AQI Measures)

These performance measures (Measures) are not clinical guidelines, do not establish a standard of medical care, and have not been tested for all potential applicants. The American Society of Anesthesiologists (ASA), and its related organization, the Anesthesia Quality Institute (AQI), shall not be responsible for any use of the Measures.

The Measures, while copyrighted, can be reproduced and distributed, without modification, for non-commercial purposes, e.g., use by health care providers in connection with their practices.

Commercial use is defined as the sale, license, or distribution of the Measures for commercial gain, or incorporation of the Measures into a product or service that is sold, licensed or distributed for commercial gain.

ASA and AQI encourage use of the Measures by other health care professionals, where appropriate.

Please contact the Anesthesia Quality Institute at **askaqi@asahq.org** before using information contained in this document to ensure proper permissions are obtained.

Limited proprietary coding is contained in the Measure specifications for convenience. Users of the proprietary code sets should obtain all necessary licenses from the owners of these code sets. ASA and AQI disclaim all liability for use or accuracy of any Current Procedural Terminology (CPT®) or other coding contained in the specifications.

THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.

©2023 American Society of Anesthesiologists. All Rights Reserved.

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.

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

†† The efforts and contributions of the American Society of Regional Anesthesia and Pain Medicine to develop and maintain this measure with the American Society of Anesthesiologists on an ongoing basis is acknowledged.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measures Removed from 2024 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 Removal
AQI56	Use of Neuraxial Techniques and/or Peripheral Nerve Blocks for Total Knee Arthroplasty (TKA)	CMS rejected this measure due to being considered topped-out.
AQI68	Obstructive Sleep Apnea: Mitigation Strategies	CMS rejected this measure due to being considered topped-out.
AQI69	Intraoperative Antibiotic Redosing	CMS rejected this measure due to being a process-based measure and doesn't focus on a quality action or outcome.
AQI73	Prevention of Arterial Line-Related Bloodstream Infections	CMS rejected this measure due to being considered topped-out.
ABG41	Upper Extremity Nerve Blockade in Shoulder Surgery	CMS rejected this measure due to being considered topped-out.
ABG43	Use of Capnography for Non-Operating Room Anesthesia Measure	CMS rejected this measure due to being considered topped-out.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Modifications to 2023 QCDR Measures for 2024 AQI NACOR Measure Set

This table identifies changes that were made to AQI NACOR's QCDR measure specifications in preparation for the 2024 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 must refer to the full measure specifications for complete code sets, measure criteria and instructions.***

Measure ID	Measure Title	Modifications
AQI48	Patient-Reported Experience with Anesthesia	Added 60-day timeframe to return patient survey.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 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.** The naming convention for MIPS measures is "Quality ID XXX" or "QID XXX."

Measure ID	Measure Title	Measure Type
QID 047	Advance Care Plan	Process – High Priority
QID 130	Documentation of Current Medications in the Medical Record	Process – High Priority
QID 155	Falls: Plan of Care	Process – High Priority
QID 182	Functional Outcome Assessment	Process – High Priority
QID 226	Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	Process
QID 317	Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented	Process
QID 404*	Anesthesiology Smoking Abstinence	Intermediate Outcome – High Priority
QID 424*	Perioperative Temperature Management	Outcome – High Priority
QID 430*	Prevention of Post-Operative Nausea and Vomiting (PONV) – Combination Therapy	Process – High Priority
QID 463*	Prevention of Post-Operative Vomiting (POV) – Combination Therapy (Pediatrics)	Process – High Priority
QID 468	Continuity of Pharmacotherapy for Opioid Use Disorder (OUD)	Process – High Priority
QID 477*	Multimodal Pain Management	Outcome – High Priority
QID487	Screening for Social Drivers of Health	Process – High Priority

*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. QID 424, 430, 463, and 477 are also high priority measures.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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/Meaningful Measures Area
Effective Clinical Care/Preventable Healthcare Harm

Measure Type
Outcome

High Priority Status
Yes

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

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Denominator Exclusions

- Organ donors as designated by ASA Physical Status 6
- Procedure reduced or discontinued prior to initiation of CPB as indicated on the claim by Modifier 52 or Modifier 53

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.[1] 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.[2] Most complications were associated with prolonged length of stay in the ICU and hospital and increased resource use.

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. 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 Performance Rates: 1

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

Care Setting: Hospital Inpatient

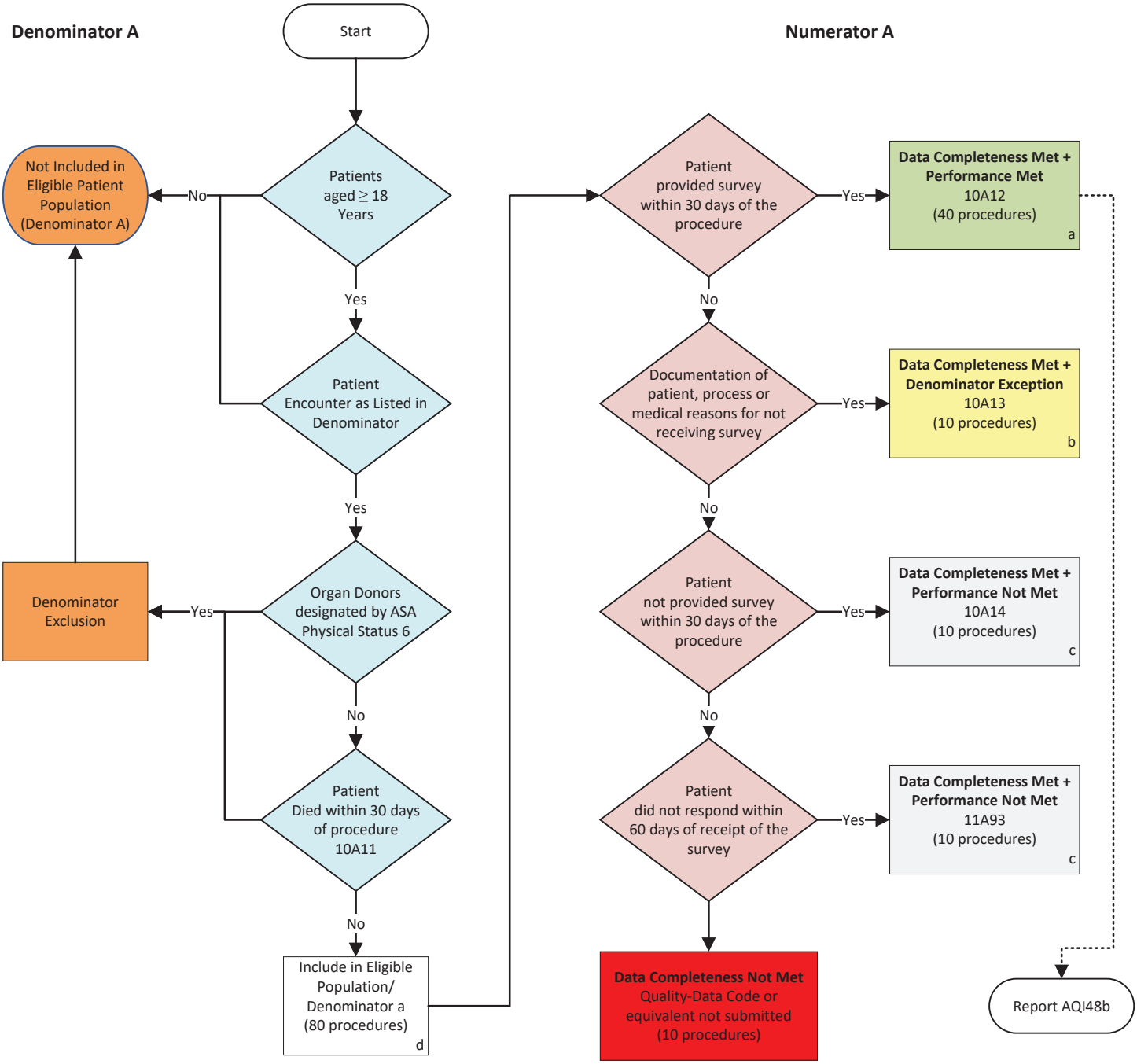
Telehealth Reporting Option: No

---

[1] Ji Q, Duan Q, Wang X, et al. Risk factors for ventilator dependency following coronary artery bypass grafting. Int J Med Sci. 2012;9(4):306-310. doi:10.7150/ijms.4340.
[2] Totonchi Z, Baazm F, Chitsazan M, Seifi S, Chitsazan M. Predictors of prolonged mechanical ventilation after open heart surgery. J Cardiovasc Thorac Res. 2014;6(4):211-216. doi:10.15171/jcvtr.2014.014.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #48a: Patient-Reported Experience with Anesthesia



SAMPLE CALCULATIONS:

Data Completeness =
Performance Met (a=40 procedures) + Denominator Exception (b=10 procedures) + Performance Not Met (c=20 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (d=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=40 procedures) = 40 procedures = 66.67%
Data Completeness Numerator (70 procedures) – Denominator Exception (b=10 procedures) = 60 procedures

Version 3.0
December 2023

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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 and who report a positive experience with anesthesia care within 60 days of receipt of the survey.

NOTE: *The measure requires that a valid survey, as defined in the numerator of AQI48a, be sent to patients between discharge from the facility and within 30 days of facility discharge. To report AQI48b, a minimum number of 20 surveys, as described in the numerator of AQI48a, with the mandatory question completed must be reported.* ***In order to be scored on this measure, clinicians must report BOTH AQI48a AND AQI48b.***

NQS Domain/Meaningful Measures Area
Person and Caregiver-Centered Experience and Outcomes/Patient's Experience of Care

Measure Type
Patient-Reported Outcome

High Priority Status
Yes

Inverse Measure:
No

Instructions:
This measure consists of two performance rates: AQI48a and AQI48b. AQI48a should be reported each time a patient undergoes a procedure under anesthesia. AQI48b should be reported every time a completed survey is returned by the patient within 60 days of receipt. To be scored on AQI48b, the provider must collect the individual scores received on the survey as described in AQI48a. 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.

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.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Data Source:	Database, Registry
Measure Steward:	American Society of Anesthesiologists (ASA)/Anesthesia Quality Institute (AQI)
Number of Performance Rates:	2
Overall Performance Rate for Scoring:	AQI48b
Proportion Measure Scoring:	Yes
Continuous Measure Scoring:	No
Risk Adjusted:	No
Care Setting:	Ambulatory Care: Clinician Office; Ambulatory Care: Hospital; Hospital; Hospital Inpatient; Outpatient Services
Telehealth Reporting Option:	No

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

AQI48a

Description-AQI48a

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

Denominator-AQI48a

Patients aged 18 and older, who undergo a procedure* under anesthesia

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

Denominator Criteria (Eligible Cases):

Patient aged 18 years or older on date of encounter

AND

AQI48a: 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, 01937, 01938, 01939, 01940, 01941, 01942, 01951, 01952, 01958, 01960, 01961, 01962, 01963, 01965, 01966, 01967, 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, 62320, 62321, 62322, 62323, 62324, 62325, 62326, 62327, 62328, 62329, 62350, 62355, 62360, 62361, 62362, 62365, 62370, 63650, 63661, 63662, 63663, 63664, 63685, 63688, 64400, 64405, 64408, 64415, 64416, 64417, 64418, 64420, 64425, 64430, 64435, 64445, 64446, 64447, 64448, 64449, 64450, 64451, 64454, 64461, 64463, 64479, 64483, 64486, 64487, 64488, 64489, 64490, 64493, 64505, 64510, 64517, 64520, 64530, 64600, 64605, 64610, 64620, 64624, 64625, 64630, 64633, 64635, 64640, 64680, 64681, 93503, 95990, 95991

Denominator Exclusions-AQI48a

- Organ Donors as designated with ASA Physical Status 6
- Patient died within 30 days of the procedure: **10A11**

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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. Preoperative Education and Preparation
2. Patient and/or Family Communication
3. Care Team Response to Comfort and Well-Being
4. Postoperative 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 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 with Anesthesia White Paper."

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. Preoperative 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. Postoperative 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
	OR
11A93	The patient did not respond within 60 days of receipt of the survey.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

AQI48b

Description-AQI48b

Percentage of patients who complete the survey from AQI48a on their patient experience and satisfaction with anesthesia care and report a positive experience within 60 days of the receipt of the survey.

Denominator-AQI48b

All patients from the numerator of AQI48a who complete a survey on their patient experience and satisfaction with anesthesia care within 60 days of the receipt of the survey.

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

Denominator Criteria (Eligible Cases):

Patient completed a survey on their patient experience and satisfaction with anesthesia care within 60 days of receipt of the survey: **11A94**

Denominator Exclusions-AQI48b

- Patient did not complete the mandatory anesthesia satisfaction question within 60 days of receipt of the survey: **11A95**

Numerator – AQI48b:

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 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)

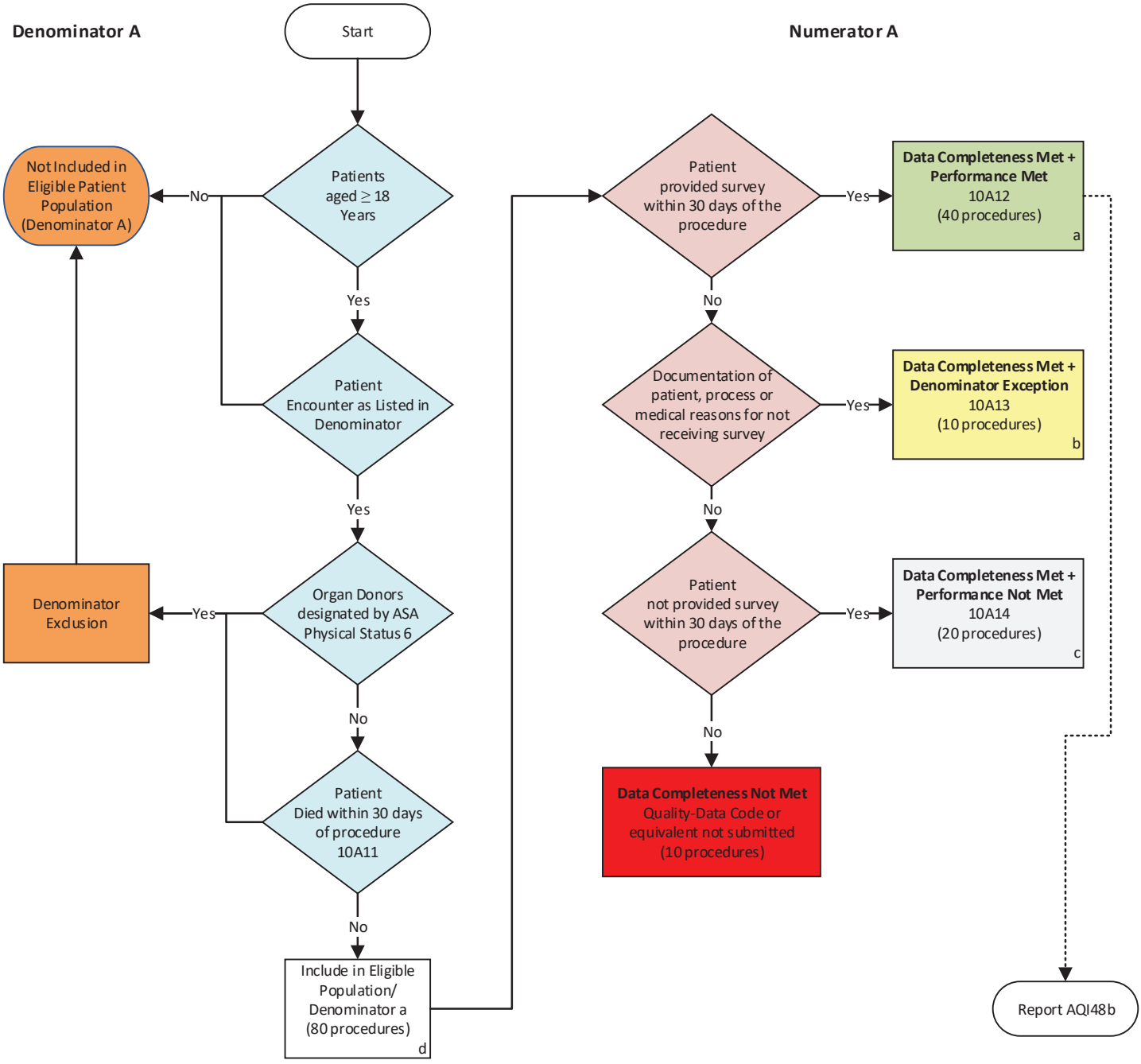
OR

Performance Not Met:

10A71 Patient did NOT report a positive anesthesia experience (i.e., a 1, 2, or 3 on the mandatory survey question)

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #48a: Patient-Reported Experience with Anesthesia



SAMPLE CALCULATIONS:

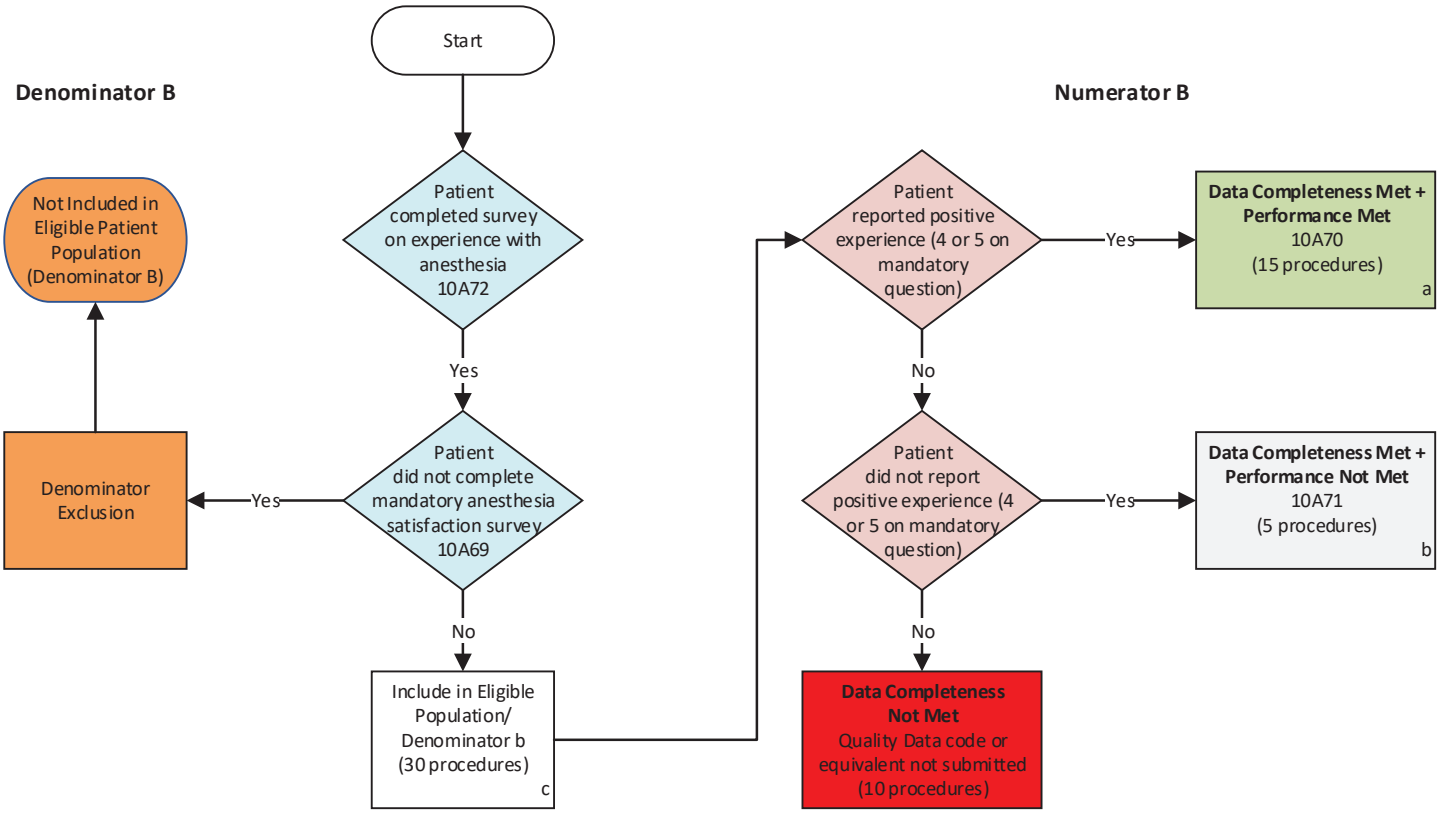
Data Completeness =
Performance Met (a=40 procedures) + Denominator Exception (b=10 procedures) + Performance Not Met (c=20 procedures) / Eligible Population / Denominator (d=80 procedures) = 70 procedures / 80 procedures = 87.50%

Performance Rate =
Performance Met (a=40 procedures) / Data Completeness Numerator (70 procedures) – Denominator Exception (b=10 procedures) = 40 procedures / 60 procedures = 66.67%

Version 2.0
November 2020

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #48b: Patient-Reported Experience with Anesthesia



SAMPLE CALCULATIONS:

Data Completeness =
Performance Met (a=15 procedures) + Performance Not Met (b=5 procedures) = 20 procedures = 66.67%
Eligible Population / Denominator (d=80 procedures) = 30 procedures

Performance Rate =
Performance Met (a=15 procedures) = 15 procedures = 75.00%
Data Completeness Numerator (20 procedures) = 20 procedures

Version 2.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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/Meaningful Measures Area

Effective Clinical Care/Preventable Healthcare Harm

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
- Lung transplants not using cardiopulmonary bypass: **11A80**
- Procedure reduced or discontinued prior to initiation of CPB as indicated on the claim by Modifier 52 or Modifier 53.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Numerator

Patients for whom selected blood conservation strategies were used[3,4]

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.

---

[3] Society of Thoracic Surgeons Blood Conservation Guideline Task Force, Ferraris VA, Ferraris SP, 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-S86. doi:10.1016/j.athoracsur.2007.02.099

[4] Tibi P, McClure RS, Huang J, Baker RA, Fitzgerald D, Mazer CD, Stone M, Chu D, Stammers AH, Dickinson T, Shore-Lesserson L, Ferraris V, Firestone S, Kissoon K, Moffatt-Bruce S. STS/SCA/AmSECT/SABM Update to the Clinical Practice Guidelines on Patient Blood Management. J Extra Corpor Technol. 2021 Jun;53(2):97-124. doi: 10.1182/ject-2100053. PMID: 34194077; PMCID: PMC8220901.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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.[5] 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.[6]

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Clinical Recommendation Statements

Perioperative Blood Transfusion and Blood Conservation in Cardiac Surgery: The Society of Thoracic Surgeons and The Society of Cardiovascular Anesthesiologists Clinical Practice Guideline[xi]

"Lysine analogues—epsilon-aminocaproic acid (Amicar) and tranexamic acid (Cyklokapron)—reduce total blood loss and decrease the number of patients who require blood transfusion during cardiac procedures and are indicated for blood conservation. (Level of evidence A)"

"Retrograde autologous priming of the CPB circuit may be considered for blood conservation. (Level of evidence B)"

"Routine use of red cell salvage using centrifugation is helpful for blood conservation in cardiac operations using CPB. (Level of evidence A)"

"A multidisciplinary approach involving multiple stakeholders, institutional support, enforceable transfusion algorithms supplemented with point-of-care testing, and all of the already mentioned efficacious blood conservation interventions limits blood transfusion and provides optimal blood conservation for cardiac operations. (Level of evidence A)"

Update to the Clinical Practice Guidelines on Patient Blood Management

"Direct reinfusion of shed mediastinal blood from postoperative chest tube drainage is not recommended as a means of blood conservation and may cause harm. (Class III: Harm, Level B-NR)"

Data Source: Claims/Paper Medical Record, Registry

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

Number of Performance Rates: 1

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

Care Setting: Hospital Inpatient

Telehealth Reporting Option: No

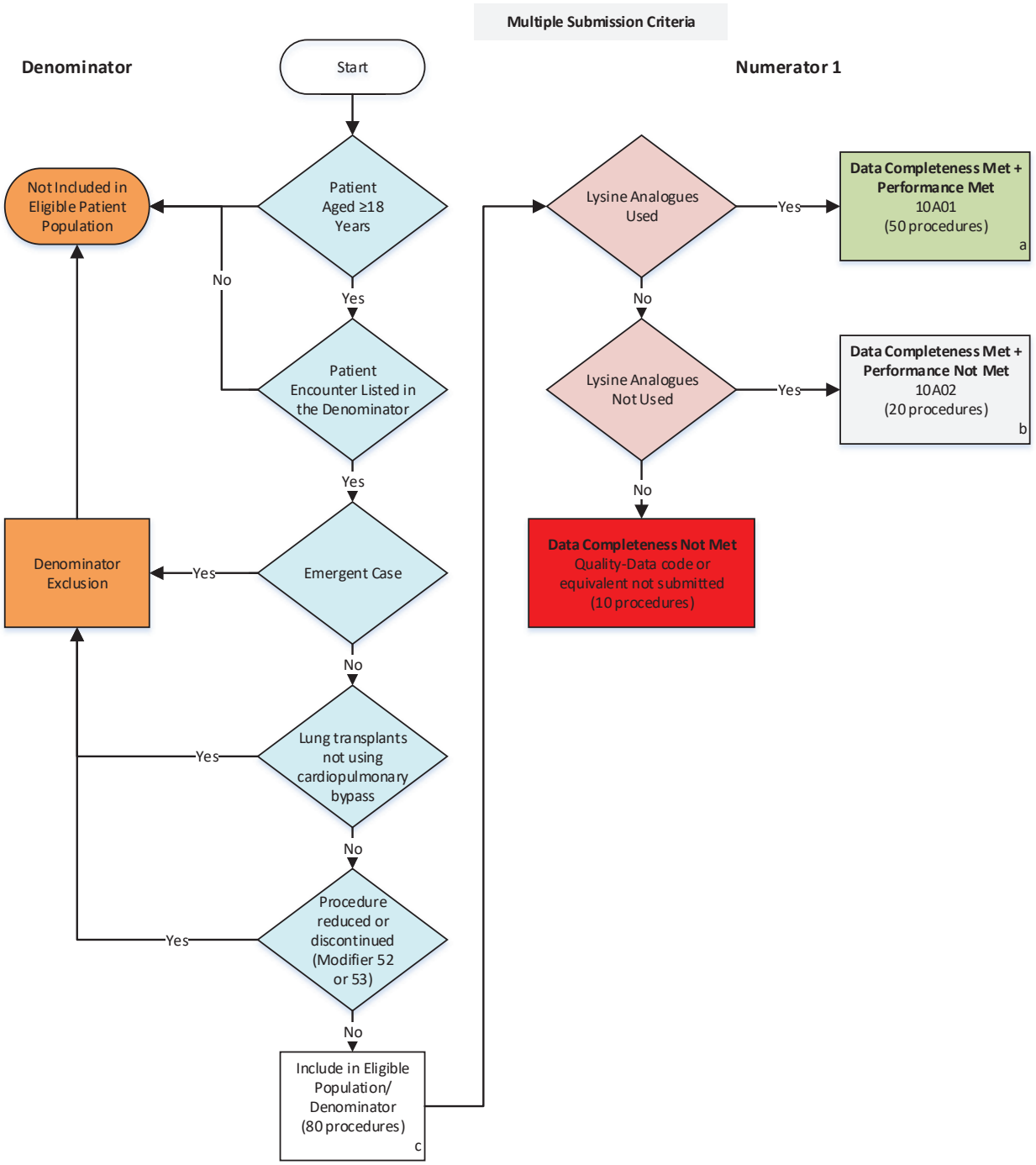
---

[5] LaPar DJ, Crosby IK, Ailawadi G, et al. Blood product conservation is associated with improved outcomes and reduced costs after cardiac surgery. J Thorac Cardiovasc Surg. 2013;145(3):796-804. doi:10.1016/j.jtcvs.2012.12.041.

[6] Ferraris VA, Hochstetler M, Martin JT, Mahan A, Saha SP. Blood transfusion and adverse surgical outcomes: The good and the bad. Surgery. 2015;158(3):608-617. doi:10.1016/j.surg.2015.02.027.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #49: Adherence to Blood Conservation Guidelines for Cardiac Operations Using Cardiopulmonary Bypass (CBP): Use of Lysine Analogues



SAMPLE CALCULATIONS:

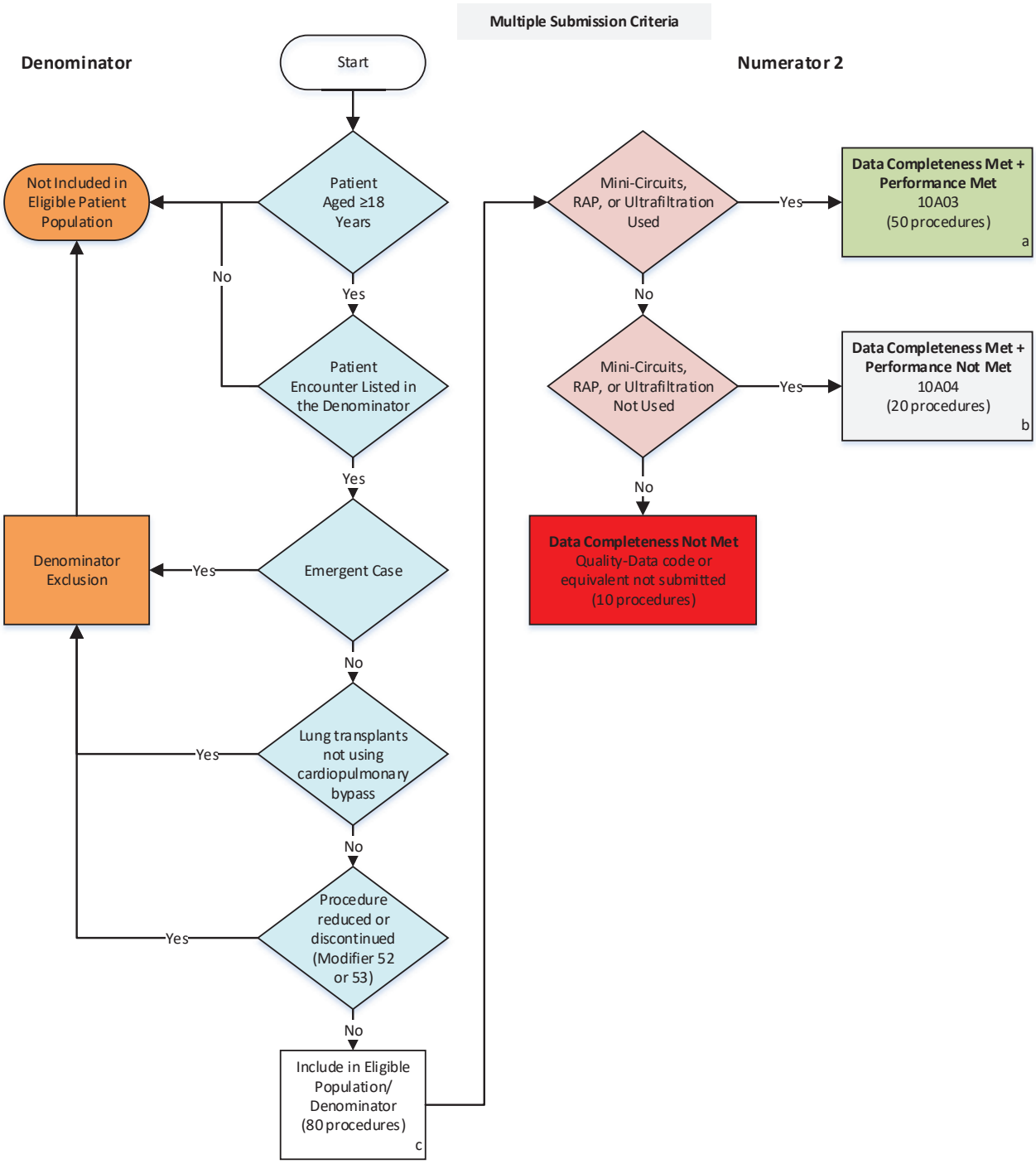
Data Completeness =
Performance Met (a=50 procedures) + Performance Not Met (b=20 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=50 procedures) = 50 procedures = 71.43%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 3.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #49: Adherence to Blood Conservation Guidelines for Cardiac Operations Using Cardiopulmonary Bypass (CBP): Use of Mini-Circuits or Retrograde Autologous Priming (RAP) or Ultrafiltration



SAMPLE CALCULATIONS:

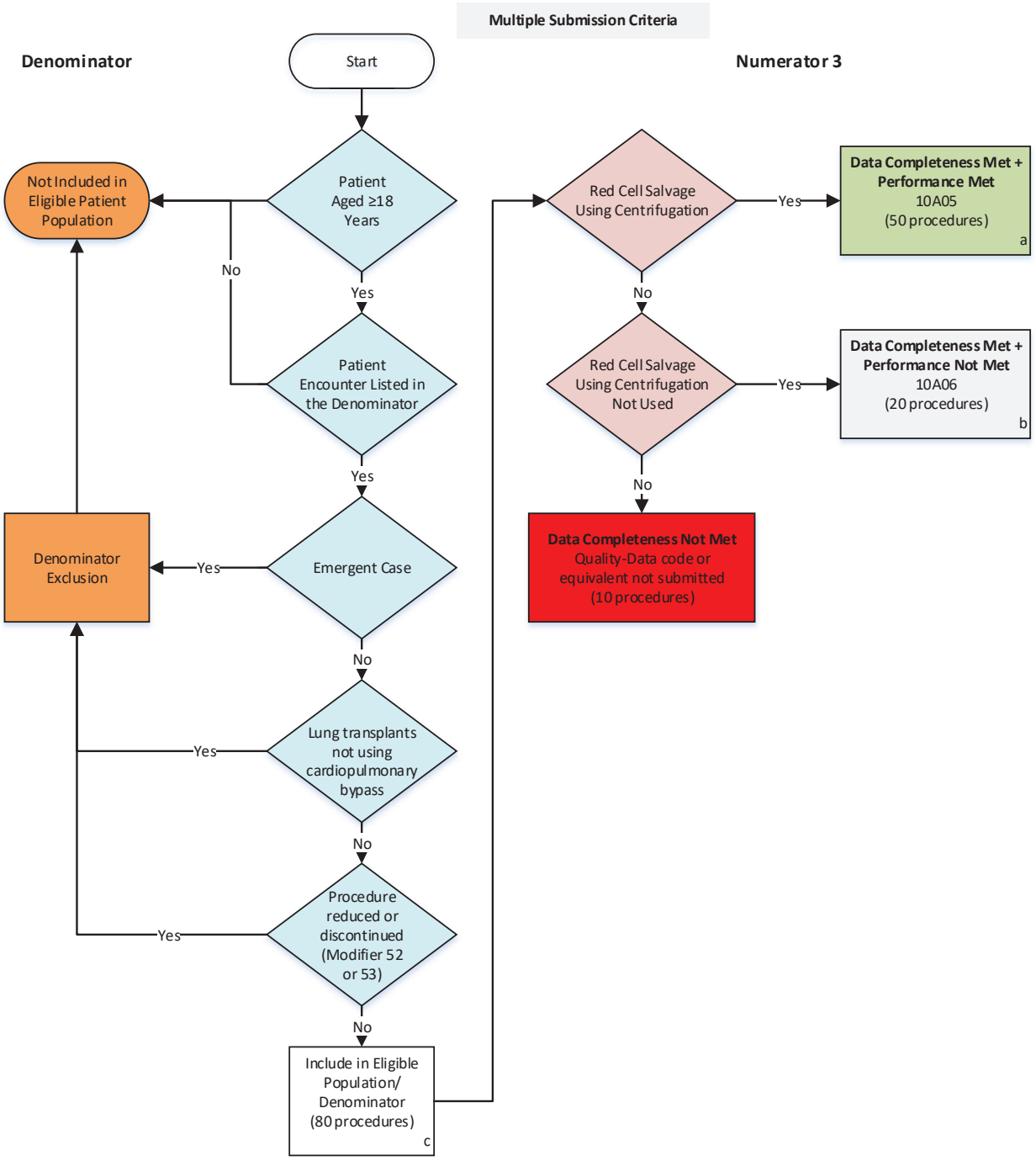
Data Completeness =
Performance Met (a=50 procedures) + Performance Not Met (b=20 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=50 procedures) = 50 procedures = 71.43%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 3.0
January 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #49: Adherence to Blood Conservation Guidelines for Cardiac Operations Using Cardiopulmonary Bypass (CBP): Use of Red Cell Salvage Using Centrifugation



SAMPLE CALCULATIONS:

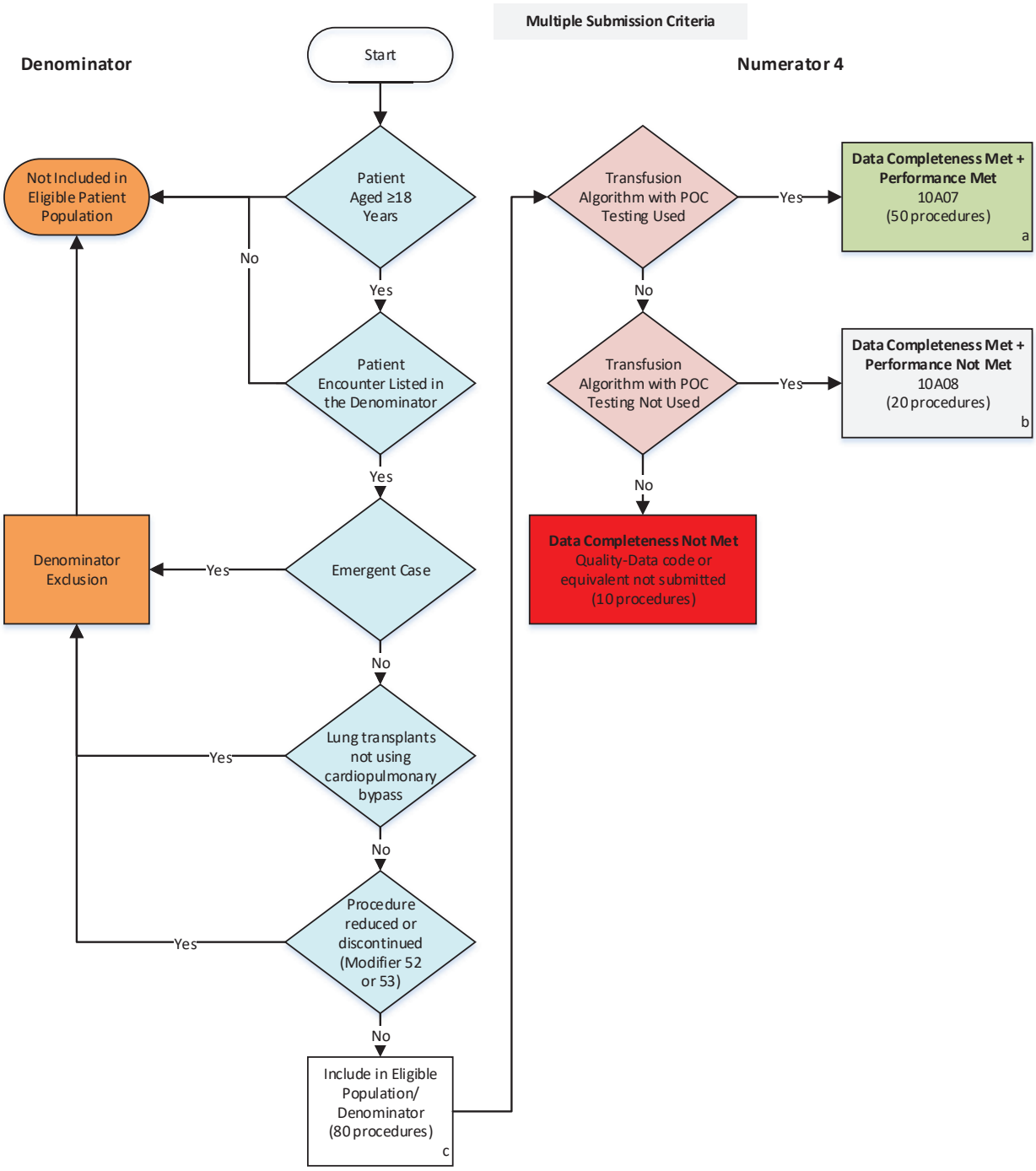
Data Completeness =
Performance Met (a=50 procedures) + Performance Not Met (b=20 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=50 procedures) = 50 procedures = 71.43%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 3.0
January 2020

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #49: Adherence to Blood Conservation Guidelines for Cardiac Operations Using Cardiopulmonary Bypass (CBP): Use of Transfusion Algorithm Supplemented with Point-of-Care Testing



SAMPLE CALCULATIONS:

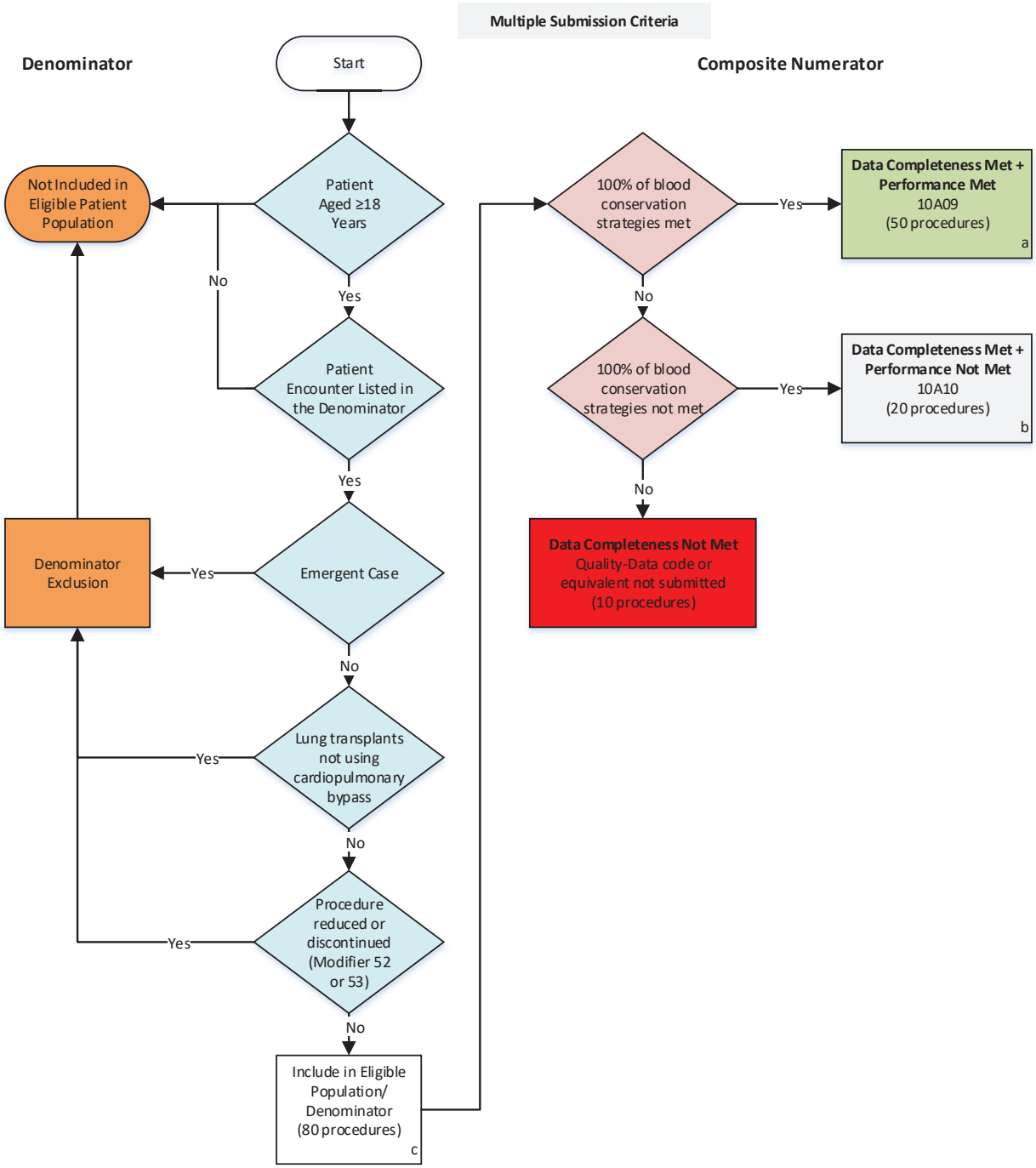
Data Completeness =
Performance Met (a=50 procedures) + Performance Not Met (b=20 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=50 procedures) = 50 procedures = 71.43%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 3.0
January 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #49: Adherence to Blood Conservation Guidelines for Cardiac Operations Using Cardiopulmonary Bypass (CBP): Composite Performance Score



SAMPLE CALCULATIONS:

Data Completeness =
Performance Met (a=50 procedures) + Performance Not Met (b=20 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=50 procedures) = 50 procedures = 71.43%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 3.0
January 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measure Title

AQI65: Avoidance of Cerebral Hyperthermia for Procedures Involving Cardiopulmonary Bypass

Measure Description: Percentage of patients, aged 18 years and older, undergoing a procedure using cardiopulmonary bypass who did not have a documented intraoperative pulmonary artery, oropharyngeal, or nasopharyngeal temperature ≥37.0 degrees Celsius during the period of cardiopulmonary bypass.

NQS Domain/Meaningful Measures Area
Patient Safety/Preventable Healthcare Harm

Measure Type
Outcome

High Priority Status
Yes

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. 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 numerator.

Denominator
All patients aged 18 years or older, who undergo a procedure using cardiopulmonary bypass

Denominator Criteria (Eligible Cases):
Patient aged 18 years and older
AND
Patient encounter during the reporting period (CPT): 00562, 00563, 00567, 00580

Denominator Exclusions

- Procedure reduced or discontinued prior to initiation of CPB as indicated on the claim by Modifier 52 or Modifier 53.

Numerator: Patients who did not have an intraoperative pulmonary artery, oropharyngeal, or nasopharyngeal temperature ≥37.0 degrees Celsius during cardiopulmonary bypass

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

11A11	All intraoperative pulmonary artery, oropharyngeal, or nasopharyngeal temperatures <37.0 degrees Celsius during cardiopulmonary bypass

OR

Performance Not Met:

11A12	At least one intraoperative pulmonary artery, oropharyngeal, or nasopharyngeal temperature ≥37.0 degrees Celsius

OR

11A13	No documented pulmonary artery, oropharyngeal, or nasopharyngeal temperatures during cardiopulmonary bypass

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

NQF Number: Not applicable

eCQM: Not applicable

Rationale

Appropriate temperature management in the setting of cardiopulmonary bypass (CPB) is important to avoid cerebral hyperthermia and associated cerebral injury. Studies have associated cerebral hyperthermia with complications such as cognitive dysfunction, mediastinitis, and acute kidney injury. Through careful monitoring, good communication with perfusionists, and the assurance of appropriate rewarming strategies, anesthesiologists can prevent cerebral hyperthermia.

Clinical Recommendation Statements:

2015 STS/SCA/ASECT Guidelines on Temperature Management During Cardiopulmonary Bypass[14]

"Surgical teams should limit arterial outlet blood temperature to <37°C to avoid cerebral hyperthermia. (Class I, Level C)"

"Pulmonary artery or NP temperature recording is reasonable for core temperature measurement. (Class IIa, Level C)"

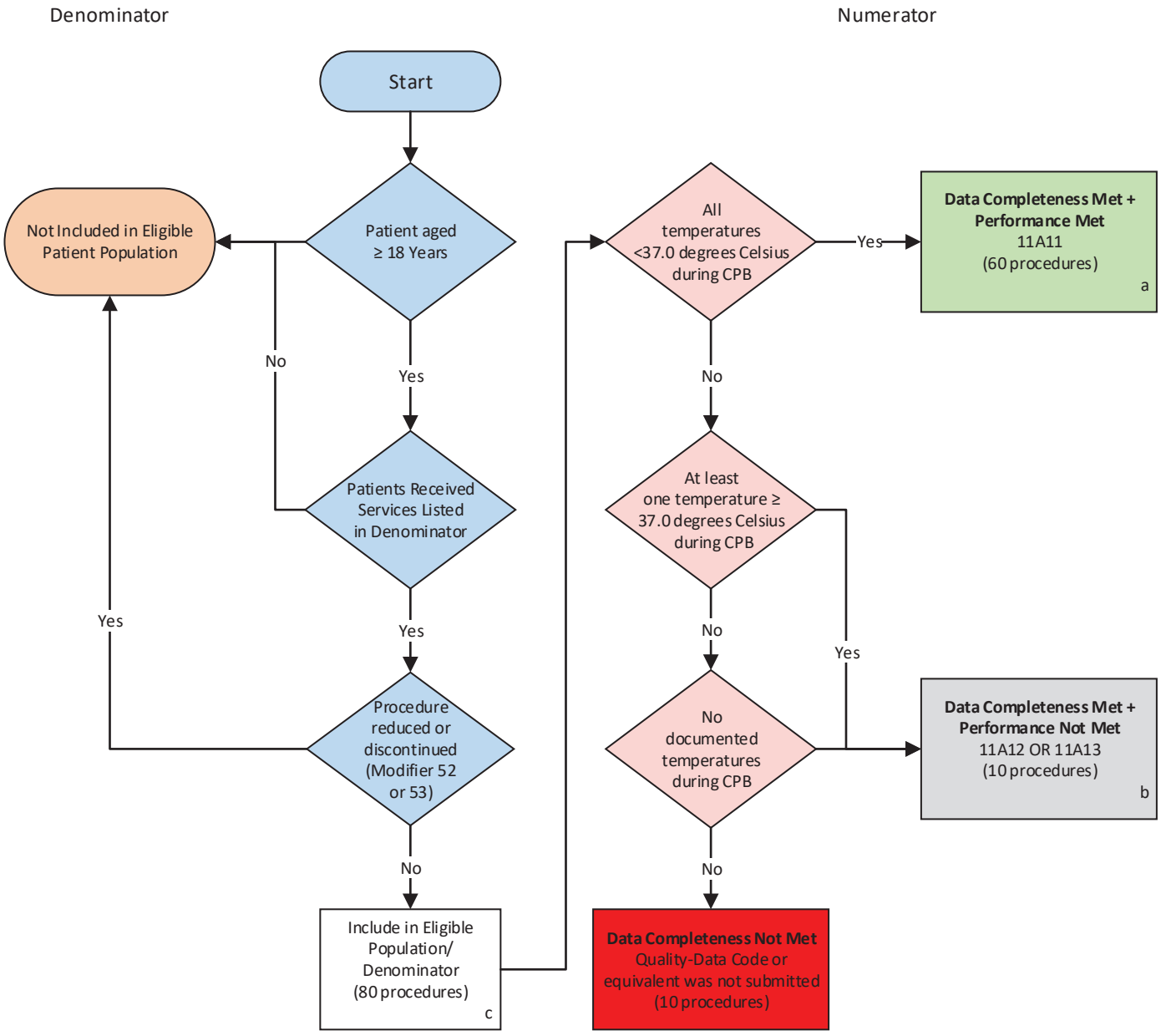
Data Source:	Claims/Paper Medical Record, Registry
Measure Steward:	American Society of Anesthesiologists (ASA)/ Anesthesia Quality Institute (AQI)
Number of Performance Rates:	1
Proportion Measure Scoring:	Yes
Continuous Measure Scoring:	No
Risk Adjustment:	No
Care Setting:	Hospital Inpatient
Telehealth Reporting Option:	No

Care Setting:	Hospital Inpatient
Telehealth Reporting Option:	No

[14] Engelman R, Baker RA, Likosky DS, et al. The Society of Thoracic Surgeons, The Society of Cardiovascular Anesthesiologists, and The American Society of ExtraCorporeal Technology: Clinical Practice Guidelines for Cardiopulmonary Bypass--Temperature Management during Cardiopulmonary Bypass. J Extra Corpor Technol. 2015;47(3):145-154.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #65: Avoidance of Cerebral Hyperthermia for Procedures Involving Cardiopulmonary Bypass (CPB)



SAMPLE CALCULATIONS

Data Completeness =
Performance Met (a=60 procedures) + Performance Not Met (b=10 procedure) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=60 procedures) = 60 procedures = 85.71%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 3.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measure Title

AQI67: Consultation for Frail Patients

Measure Description: Percentage of patients aged 70 years or older, who undergo an inpatient procedure requiring anesthesia services and have a positive frailty screening result who receive a multidisciplinary consult or care during the hospital encounter.

NQS Domain/Meaningful Measures Area
Communication and Care Coordination/Management of Chronic Conditions

Measure Type
Process

High Priority Status
Yes

Inverse Measure
No

Instructions
This measure is to be reported each time a frail patient undergoes an inpatient 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
Patient demographics, Place of Service 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.

Denominator: All patients aged 70 years or older, who undergo an inpatient procedure requiring anesthesia services and have a positive frailty screening result

Denominator Definition: Frailty can be screened using an established tool including but not limited to following tools:

- Fried Frailty Phenotype Criteria
- Modified Frailty Index
- The Vulnerable Elders Survey
- Initial Clinical Impression ("First Minute Impression")

Denominator Criteria (Eligible Cases):
All patients aged 70 years and older
AND
Place of Service Code: **21**
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,

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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, 01937, 01938, 01939, 01940, 01941, 01942, 01951, 01952, 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, 62320, 62321, 62322, 62323, 62324, 62325, 62326, 62327, 62328, 62329, 62350, 62355, 62360, 62361, 62362, 62365, 62370, 63650, 63661, 63662, 63663, 63664, 63685, 63688, 64400, 64405, 64408, 64415, 64416, 64417, 64418, 64420, 64425, 64430, 64435, 64445, 64446, 64447, 64448, 64449, 64450, 64451 64454, 64461, 64463, 64479, 64483, 64486, 64487, 64488, 64489, 64490, 64493, 64505, 64510, 64517, 64520, 64530, 64600, 64605, 64610, 64620, 64624, 64625, 64630, 64633, 64635, 64640, 64680, 64681, 93503, 95990, 95991

AND

Positive Frailty Screening Result: **11A14**

Denominator Exclusions

- Emergent cases

Numerator: Patients who receive a multidisciplinary consult and/or multidisciplinary care during the hospital encounter

Numerator Definition: A multidisciplinary consult should include documentation of a discussion of the frailty screening result and can include consultation initiated by the anesthesiologist or other qualified anesthesia provider with surgery, geriatrics, hospital medicine, palliative care, or other appropriate specialty to help manage the perioperative care of a frail patient.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

11A15 Patient received multidisciplinary consult and/or multidisciplinary care

OR

Performance Not Met:

11A16 Patient did not receive multidisciplinary consult or multidisciplinary car

NQF Number: Not applicable

eCQM: Not applicable

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Rationale

Frailty is a health state that makes a patient particularly vulnerable to stressors, such as surgery. Among elderly surgical patients, frailty has been well-associated with post-operative complications and mortality. While evidence is still evolving regarding appropriate interventions to best manage frailty in the perioperative setting and to optimize patient outcomes, there is agreement that preoperative assessment and identification of frailty is an important first step to ensure coordinated and patient-centric care for the frail patient throughout their perioperative course. Preoperative identification of frailty and appropriate multi-disciplinary consultation allows for the care team to provide appropriate counseling regarding the anticipated outcomes of surgery, better anticipate post-operative complications, and better prepare patients and families for their postoperative course. Multi-disciplinary consultation for frail patients can also allow for the implementation of appropriate team-based care pathways to manage complications such as postoperative delirium, as well as help patients and families define their care goals and expectations.[15,16]

Clinical Recommendation Statements:

2016 ACS NSQIP/AGS Guidelines on Perioperative Management of the Geriatric Patient[17]

"In the immediate preoperative period the patient's goals and treatment preferences should be confirmed and documented. Also, during this time, fasting recommendations should be followed, appropriate prophylactic medications should be given, and medications lists should be reviewed for nonessential and inappropriate medications.

The healthcare team can also take this opportunity to begin proactive, postoperative planning, especially with regard to analgesia strategies and minimization of opioids, prevention of functional decline and delirium, early multispecialty consultation where indicated, early involvement of allied health staff such as physical or occupational therapy and anticipating home health needs at discharge."

2018 Preoperative Frailty Management Recommendations from the Society for Perioperative Assessment and Quality Improvement (SPAQI)

"A positive frailty screen is best followed up with a diagnostic assessment of frailty and when feasible a comprehensive geriatric assessment with a tailored intervention, ideally by a geriatric specialist."

"The degree of frailty will help select the target population for highly-specialized geriatric co-management programs (involving anesthesiology, surgery, and geriatric medicine) that have already been demonstrated to improve the outcomes of elderly patients in non-elective surgeries."

Data Source: Claims/Paper Medical Record, Registry

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

Number of Performance Rates: 1

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

Care Setting: Hospital Inpatient

Telehealth Reporting Option: No

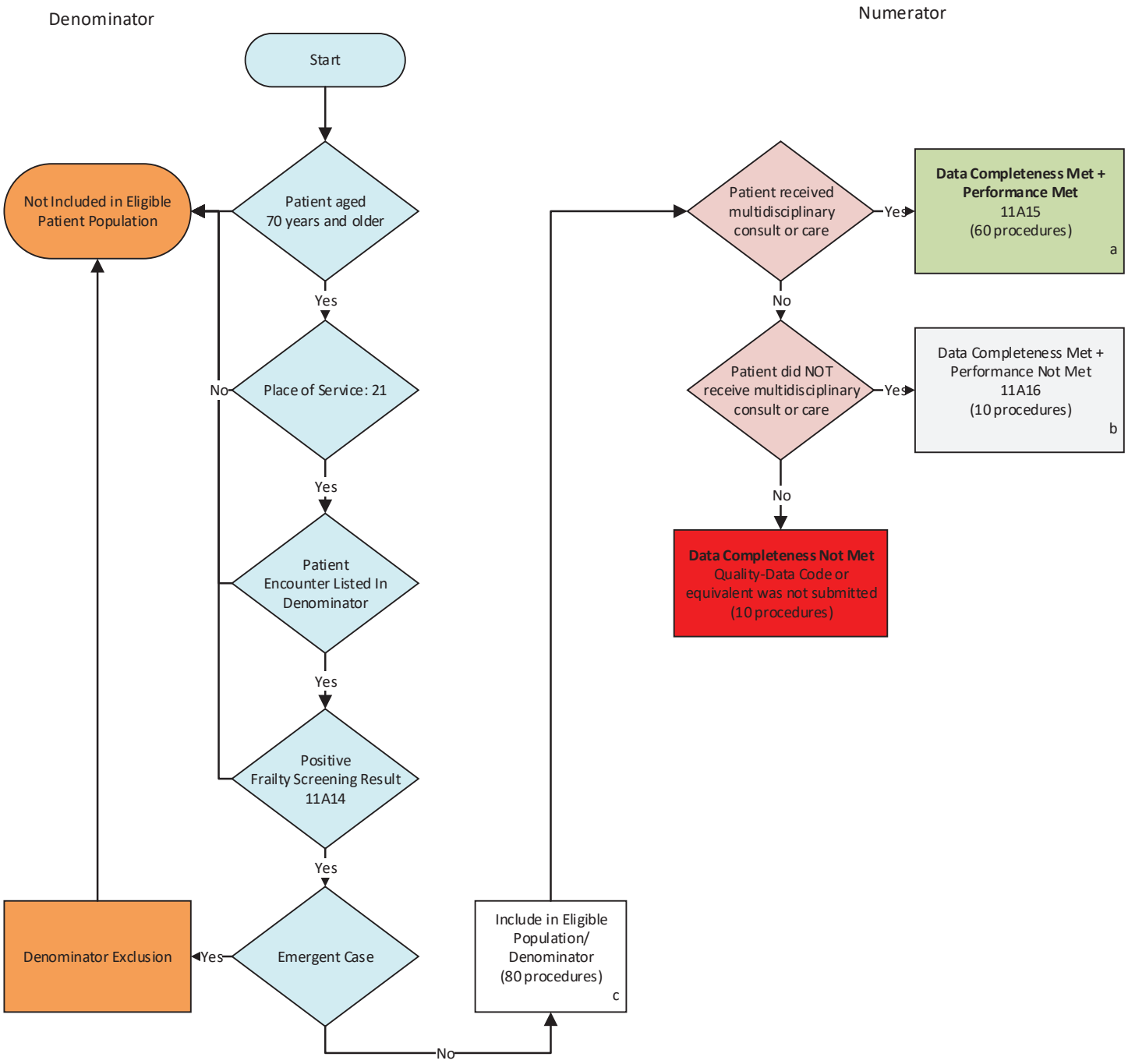
---

[15] A George EL, Hall DE, Youk A, et al. Association Between Patient Frailty and Postoperative Mortality Across Multiple Noncardiac Surgical Specialties. JAMA Surg. 2021;156(1):e205152. doi:10.1001/jamasurg.2020.5152

[16] Shinall MC, Arya S, Youk A, et al. Association of Preoperative Patient Frailty and Operative Stress with Postoperative Mortality. JAMA Surg. 2020;155(1):e194620. doi:10.1001/jamasurg.2019.4620

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #67: Consultation for Frail Patients



SAMPLE CALCULATIONS

Data Completeness =
Performance Met (a=60 procedures) + Performance Not Met (b=10 procedure) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=60 procedures) = 60 procedures = 85.71%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 2.0
November 2020

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measure Title

AQI71: Ambulatory Glucose Management

Measure Description

Percentage of diabetic patients, aged 18 years and older, who receive an office-based or ambulatory surgery whose blood glucose level is appropriately managed throughout the perioperative period.

This measure will consist of four performance rates:

AQI71a: Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery whose blood glucose level is tested prior to the start of anesthesia.

AQI71b: Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who experienced a blood glucose level ≥180 mg/dL (10.0 mmol/L) who received insulin prior to anesthesia end time.

AQI71c: Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who received insulin perioperatively and who received a follow-up blood glucose level check following the administration of insulin and prior to discharge.

AQI71d: Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who experienced a blood glucose level ≥180 mg/dL (10.0 mmol/L) who received education on managing their glucose in the postoperative period prior to discharge.

NOTE: The overall measure score will be calculated as an average of the performance rates of parts A, B, C and D. In order to be scored on this measure, clinicians must have at least one eligible case reported for each sub-metric: AQI71a, AQI71b, AQI71c, and AQI71d.

NQS Domain/Meaningful Measures Area

Effective Clinical Care/Healthcare Associated Infections

Measure Type

Process

High Priority Status

No

Inverse Measure

No

Instructions

This measure will consist of four performance rates: AQI71a, AQI71b, AQI71c, and AQI71d. Each measure should be reported, as appropriate, for each time a patient undergoes a procedure in an office-based or ambulatory setting during the reporting period. This measure has four sub-metrics which are used to calculate the total composite score. All submetrics are required to be reported during the performance period. In order to be scored on this measure, clinicians must have at least one eligible case reported for AQI71a, AQI71b, AQI71c, and AQI71d. 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 numerator of the measure.

NQF Number: Not Applicable

eCQM: Not Applicable

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Rationale

Diabetes mellitus has been shown to be an important risk factor for surgical site infection and other surgical complications. With increasingly complex procedures being performed in an ambulatory setting, perioperative glucose management is an important aspect of ambulatory anesthesia care. For diabetic patients, preoperative testing of blood glucose levels can provide an important indicator for their intraoperative insulin and care management needs. Despite the importance of glucose testing, evidence shows that it is not consistently performed in the ambulatory setting. Improved preoperative glucose testing can help anesthesia providers better anticipate and manage the needs of their diabetic patients throughout the perioperative period.

CLINICAL RECOMMENDATION STATEMENTS:

2010 SAMBA Consensus Statement on Perioperative Blood Glucose Management in Diabetic Patients Undergoing Ambulatory Surgery[29]

"Ambulatory surgical facilities taking care of diabetic patients must have glucose monitoring capabilities such as point-of-care monitors. Adequate monitoring of blood glucose levels is critical in maintaining patient safety and should facilitate insulin titration to achieve optimal blood glucose levels as well as allow for early detection of hypoglycemia. It has been suggested that blood glucose levels should be checked on the patient's arrival to the facility before surgery and before discharge home (LoE category 2A)."

Perioperative administration of Insulin to patients with hyperglycemia, has been shown to improve clinical outcomes by decreasing the incidence of surgical site infections and hyperglycemia in the post-anesthesia care unit.[30] Blood glucose values of 180mg/dL (10 mmol/L) or higher are treated with insulin. Target range for the perioperative period is 140-180 mg/dL (7.7-10 mmol/L).[31]

TThe Society for Ambulatory Anesthesia (SAMBA) recommends intraoperative blood glucose levels <180 mg/dL (10 mmol/l). The American Association of Clinical Endocrinologists (AACE) Task Force and the American Diabetes Association (ADA) recommend target glucose levels between 140 and 180 mg/dL (7.7-10 mmol/l) in critically ill patients.[32]

The Society of Critical Care Medicine (SCCM) advises treatment be triggered at blood glucose levels ≥ 150 mg/dl (8.3 mmol/l0 with a goal to maintain blood glucose below that level, and absolutely <180 mg/dL (10 mmol/l). The Society of Thoracic Surgeons (STS) Practice Guidelines recommend maintaining serum glucose levels ≤ 180mg/dL (10 mmol/l) for at least 24 hours after cardiac surgery. The Endocrine Society and SAMBA recommend that intraoperative blood glucose levels be maintained <180 mg/dL.[33]

Data Source: Claims/Paper Medical Record, Registry

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

Number of Performance Rates: 5

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

Care Setting: Ambulatory Care: Hospital

Telehealth Reporting Option: No

---

[29] Joshi, GP, et al. "Society for Ambulatory Anesthesia Consensus Statement on Perioperative Blood Glucose Management in Diabetic Patients Undergoing Ambulatory Surgery." Anesthesia & Analgesia. December 2010; Vol 111:6. P. 1378-1387.

[30] Ehrenfeld JM1, Wanderer JP, Terekhov M, Rothman BS, Sandberg WS. A Perioperative Systems Design to Improve Intraoperative Glucose Monitoring Is Associated with a Reduction in Surgical Site Infections in a Diabetic Patient Population. Anesthesiology. 2017 Mar;126(3):431-440.

[31] Duggan, E.W., Carloson, K., & Umpierrez, G.E. (2017). Perioperative hyperglycemia management: An update. Anesthesiology. 126(3):547-560.

[32] American Diabetes Association Professional Practice Committee; 16. Diabetes Care in the Hospital: Standards of Medical Care in Diabetes—2022. Diabetes Care 1 January 2022; 45 (Supplement_1): S244–S253. https://doi.org/10.2337/dc22-S016

[33] Duggan, E.W., Carloson, K., & Umpierrez, G.E. (2017). Perioperative hyperglycemia management: An update. Anesthesiology. 126(3):547-560.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

AQI71a: Ambulatory Point-of-Care Glucose Testing

Description

Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery whose blood glucose level is tested prior to the start of anesthesia.

Denominator:

All patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery

Denominator Definition: Office-based and ambulatory surgery is defined as a therapeutic or diagnostic procedure performed in a healthcare facility that does not require an overnight stay (less than 24 hours of care)

Denominator Criteria (eligible cases):

All patients, aged 18 years and older

AND

Diagnosis of diabetes mellitus: **11A41**

OR

ICD-10CM code: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.3211, E10.3212, E10.3213, E10.3219, E10.3291, E10.3292, E10.3293, E10.3299, E10.3311, E10.3312, E10.3313, E10.3319, E10.3391, E10.3392, E10.3393, E10.3399, E10.3411, E10.3412, E10.3413, E10.3419, E10.3491, E10.3492, E10.3493, E10.3499, E10.3511, E10.3512, E10.3513, E10.3519, E10.3521, E10.3522, E10.3523, E10.3529, E10.3531, E10.3532, E10.3533, E10.3539, E10.3541, E10.3542, E10.3543, E10.3549, E10.3551, E10.3552, E10.3553, E10.3559, E10.3591, E10.3592, E10.3593, E10.3599, E10.36, E10.37X1, E10.37X2, E10.37X3, E10.37X9, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.10, E11.11, E11.21, E11.22, E11.29, E11.311, E11.319, E11.3211, E11.3212, E11.3213, E11.3219, E11.3291, E11.3292, E11.3293, E11.3299, E11.3311, E11.3312, E11.3313, E11.3319, E11.3391, E11.3392, E11.3393, E11.3399, E11.3411, E11.3412, E11.3413, E11.3419, E11.3491, E11.3492, E11.3493, E11.3499, E11.3511, E11.3512, E11.3513, E11.3519, E11.3521, E11.3522, E11.3523, E11.3529, E11.3531, E11.3532, E11.3533, E11.3539, E11.3541, E11.3542, E11.3543, E11.3549, E11.3551, E11.3552, E11.3553, E11.3559, E11.3591, E11.3592, E11.3593, E11.3599, E11.36, E11.37X1, E11.37X2, E11.37X3, E11.37X9, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.3211, E13.3212, E13.3213, E13.3219, E13.3291, E13.3292, E13.3293, E13.3299, E13.3311, E13.3312, E13.3313, E13.3319, E13.3391, E13.3392, E13.3393, E13.3399, E13.3411, E13.3412, E13.3413, E13.3419, E13.3491, E13.3492, E13.3493, E13.3499, E13.3511, E13.3512, E13.3513, E13.3519, E13.3521, E13.3522, E13.3523, E13.3529, E13.3531, E13.3532, E13.3533, E13.3539, E13.3541, E13.3542, E13.3543, E13.3549, E13.3551, E13.3552, E13.3553, E13.3559, E13.3591, E13.3592, E13.3593, E13.3599, E13.36, E13.37X1, E13.37X2, E13.37X3, E13.37X9, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9

AND

Off Campus-Outpatient Hospital, On Campus – Outpatient Hospital, Ambulatory Surgical Center, and Office-Based Setting: Place of Service **Codes 11, 19, 22 or 24**

AND

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Patient encounter during the reporting period (CPT):

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00164, 00170, 00172, 00174, 00176, 00300, 00320, 00322, 00400, 00402, 00404, 00410, 00450, 00454, 00520, 00522, 00524, 00530, 00532, 00534, 00537, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00790, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00851, 00870, 00872, 00873, 00902, 00906, 00910, 00912, 00914, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01202, 01250, 01260, 01320, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01464, 01470, 01472, 01474, 01480, 01520, 01610, 01620, 01622, 01630, 01634, 01638, 01670, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01758, 01760, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01930, 01937, 01938, 01939, 01940, 01941, 01942, 01965, 01966, 01991, 01992

Denominator Exclusions:

- Procedure <30 minutes duration: 11A45

Numerator:

Patients who received a blood glucose test prior to the start of anesthesia

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

11A51 Patient received a blood glucose test prior to start of anesthesia

OR

Performance Not Met:

11A52 Patient did NOT receive a glucose test prior to start of anesthesia

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

AQI71b: Ambulatory Hyperglycemia Control

Description

Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who experienced a blood glucose level >180 mg/dL (10.0 mmol/L) who received insulin prior to anesthesia end time.

Denominator:

All patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who experienced a blood glucose level >180 mg/dL (10.0 mmol/L)

Denominator Definition: Office-based and ambulatory surgery is defined as a therapeutic or diagnostic procedure performed in a healthcare facility that does not require an overnight stay (less than 24 hours of care)

Denominator Criteria (Eligible Cases):

All patients, aged 18 years and older

AND

Diagnosis of diabetes mellitus: **11A41**

OR

ICD-10CM code: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.3211, E10.3212, E10.3213, E10.3219, E10.3291, E10.3292, E10.3293, E10.3299, E10.3311, E10.3312, E10.3313, E10.3319, E10.3391, E10.3392, E10.3393, E10.3399, E10.3411, E10.3412, E10.3413, E10.3419, E10.3491, E10.3492, E10.3493, E10.3499, E10.3511, E10.3512, E10.3513, E10.3519, E10.3521, E10.3522, E10.3523, E10.3529, E10.3531, E10.3532, E10.3533, E10.3539, E10.3541, E10.3542, E10.3543, E10.3549, E10.3551, E10.3552, E10.3553, E10.3559, E10.3591, E10.3592, E10.3593, E10.3599, E10.36, E10.37X1, E10.37X2, E10.37X3, E10.37X9, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.10, E11.11, E11.21, E11.22, E11.29, E11.311, E11.319, E11.3211, E11.3212, E11.3213, E11.3219, E11.3291, E11.3292, E11.3293, E11.3299, E11.3311, E11.3312, E11.3313, E11.3319, E11.3391, E11.3392, E11.3393, E11.3399, E11.3411, E11.3412, E11.3413, E11.3419, E11.3491, E11.3492, E11.3493, E11.3499, E11.3511, E11.3512, E11.3513, E11.3519, E11.3521, E11.3522, E11.3523, E11.3529, E11.3531, E11.3532, E11.3533, E11.3539, E11.3541, E11.3542, E11.3543, E11.3549, E11.3551, E11.3552, E11.3553, E11.3559, E11.3591, E11.3592, E11.3593, E11.3599, E11.36, E11.37X1, E11.37X2, E11.37X3, E11.37X9, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.3211, E13.3212, E13.3213, E13.3219, E13.3291, E13.3292, E13.3293, E13.3299, E13.3311, E13.3312, E13.3313, E13.3319, E13.3391, E13.3392, E13.3393, E13.3399, E13.3411, E13.3412, E13.3413, E13.3419, E13.3491, E13.3492, E13.3493, E13.3499, E13.3511, E13.3512, E13.3513, E13.3519, E13.3521, E13.3522, E13.3523, E13.3529, E13.3531, E13.3532, E13.3533, E13.3539, E13.3541, E13.3542, E13.3543, E13.3549, E13.3551, E13.3552, E13.3553, E13.3559, E13.3591, E13.3592, E13.3593, E13.3599, E13.36, E13.37X1, E13.37X2, E13.37X3, E13.37X9, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9

AND

Off Campus-Outpatient Hospital, On Campus – Outpatient Hospital, Ambulatory Surgical Center, and Office-Based Setting: Place of Service **Codes 11, 19, 22 or 24**

AND

Experienced a blood glucose level >180 mg/dL (10.0 mmol/L) prior to anesthesia end time: **11A44**

AND

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Patient encounter during the reporting period (CPT):

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00164, 00170, 00172, 00174, 00176, 00300, 00320, 00322, 00400, 00402, 00404, 00410, 00450, 00454, 00520, 00522, 00524, 00530, 00532, 00534, 00537, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00790, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00851, 00870, 00872, 00873, 00902, 00906, 00910, 00912, 00914, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01202, 01250, 01260, 01320, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01464, 01470, 01472, 01474, 01480, 01520, 01610, 01620, 01622, 01630, 01634, 01638, 01670, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01758, 01760, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01930, 01937, 01938, 01939, 01940, 01941, 01942, 01965, 01966, 01991, 01992

Denominator Exclusions:

- Procedure <30 minutes duration: **11A45**

Numerator:

Patients who received insulin prior to anesthesia end time.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

11A53	Patient received insulin prior to anesthesia end time.

OR

Denominator Exception:

11A82	Documentation that insulin was not given because patient had severe comorbidities and glucose concentrations between 180 mg/dL and 250 mg/dL (10-13.9 mmol/L).[33]

OR

Performance Not Met:

11A54	Patient did NOT receive insulin prior to anesthesia end time.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

AQI71c: Follow-Up Glucose Check for Patients Receiving Insulin

Description

Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who received insulin perioperatively and who received a follow-up blood glucose level check following the administration of insulin and prior to discharge.

Denominator:

All patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who received insulin perioperatively

Denominator Definition: Office-based and ambulatory surgery is defined as a therapeutic or diagnostic procedure performed in a healthcare facility that does not require an overnight stay (less than 24 hours of care)

Denominator Criteria (Eligible Cases):

All patients, aged 18 years and older

AND

Diagnosis of diabetes mellitus: **11A41**

OR

ICD-10CM code: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.3211, E10.3212, E10.3213, E10.3219, E10.3291, E10.3292, E10.3293, E10.3299, E10.3311, E10.3312, E10.3313, E10.3319, E10.3391, E10.3392, E10.3393, E10.3399, E10.3411, E10.3412, E10.3413, E10.3419, E10.3491, E10.3492, E10.3493, E10.3499, E10.3511, E10.3512, E10.3513, E10.3519, E10.3521, E10.3522, E10.3523, E10.3529, E10.3531, E10.3532, E10.3533, E10.3539, E10.3541, E10.3542, E10.3543, E10.3549, E10.3551, E10.3552, E10.3553, E10.3559, E10.3591, E10.3592, E10.3593, E10.3599, E10.36, E10.37X1, E10.37X2, E10.37X3, E10.37X9, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.10, E11.11, E11.21, E11.22, E11.29, E11.311, E11.319, E11.3211, E11.3212, E11.3213, E11.3219, E11.3291, E11.3292, E11.3293, E11.3299, E11.3311, E11.3312, E11.3313, E11.3319, E11.3391, E11.3392, E11.3393, E11.3399, E11.3411, E11.3412, E11.3413, E11.3419, E11.3491, E11.3492, E11.3493, E11.3499, E11.3511, E11.3512, E11.3513, E11.3519, E11.3521, E11.3522, E11.3523, E11.3529, E11.3531, E11.3532, E11.3533, E11.3539, E11.3541, E11.3542, E11.3543, E11.3549, E11.3551, E11.3552, E11.3553, E11.3559, E11.3591, E11.3592, E11.3593, E11.3599, E11.36, E11.37X1, E11.37X2, E11.37X3, E11.37X9, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.3211, E13.3212, E13.3213, E13.3219, E13.3291, E13.3292, E13.3293, E13.3299, E13.3311, E13.3312, E13.3313, E13.3319, E13.3391, E13.3392, E13.3393, E13.3399, E13.3411, E13.3412, E13.3413, E13.3419, E13.3491, E13.3492, E13.3493, E13.3499, E13.3511, E13.3512, E13.3513, E13.3519, E13.3521, E13.3522, E13.3523, E13.3529, E13.3531, E13.3532, E13.3533, E13.3539, E13.3541, E13.3542, E13.3543, E13.3549, E13.3551, E13.3552, E13.3553, E13.3559, E13.3591, E13.3592, E13.3593, E13.3599, E13.36, E13.37X1, E13.37X2, E13.37X3, E13.37X9, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9

AND

Off Campus-Outpatient Hospital, On Campus – Outpatient Hospital, Ambulatory Surgical Center, and Office-Based Setting: Place of Service **Codes 11, 19, 22 or 24**

AND

Patient received insulin perioperatively: **11A55**

AND

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Patient encounter during the reporting period (CPT):

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00164, 00170, 00172, 00174, 00176, 00300, 00320, 00322, 00400, 00402, 00404, 00410, 00450, 00454, 00520, 00522, 00524, 00530, 00532, 00534, 00537, 00700, 00702, 00730, 00731, 00732, 00750, 00752, 00790, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00851, 00870, 00872, 00873, 00902, 00906, 00910, 00912, 00914, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01202, 01250, 01260, 01320, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01464, 01470, 01472, 01474, 01480, 01520, 01610, 01620, 01622, 01630, 01634, 01638, 01670, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01758, 01760, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01930, 01937, 01938, 01939, 01940, 01941, 01942, 01965, 01966, 01991, 01992

Denominator Exclusions:

- Procedure <30 minutes duration: **11A45**

Numerator:

Patients who received a follow-up blood glucose level check following the administration of insulin and prior to discharge.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

11A56 Patient received a follow-up blood glucose level check following the administration of insulin and prior to discharge.

OR

Performance Not Met:

11A57 Patient did NOT receive a follow-up blood glucose level check following the administration of insulin and prior to discharge.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

AQI71d: Hyperglycemia Management Patient Education

Description

Percentage of patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who experienced a blood glucose level >180 mg/dL (10.0 mmol/L) who received education on managing their glucose in the postoperative period prior to discharge.

Denominator:

All patients, aged 18 years and older, with a current diagnosis of diabetes mellitus receiving anesthesia services for office-based or ambulatory surgery who experienced a blood glucose level >180 mg/dL (10.0 mmol/L).

Denominator Definition: Office-based or ambulatory surgery is defined as a therapeutic or diagnostic procedure performed in a healthcare facility that does not require an overnight stay (less than 24 hours of care).

Denominator Criteria (Eligible Cases):

All patients, aged 18 years and older

AND

Diagnosis of diabetes mellitus: **11A41**

OR

ICD-10CM code: E10.10, E10.11, E10.21, E10.22, E10.29, E10.311, E10.319, E10.3211, E10.3212, E10.3213, E10.3219, E10.3291, E10.3292, E10.3293, E10.3299, E10.3311, E10.3312, E10.3313, E10.3319, E10.3391, E10.3392, E10.3393, E10.3399, E10.3411, E10.3412, E10.3413, E10.3419, E10.3491, E10.3492, E10.3493, E10.3499, E10.3511, E10.3512, E10.3513, E10.3519, E10.3521, E10.3522, E10.3523, E10.3529, E10.3531, E10.3532, E10.3533, E10.3539, E10.3541, E10.3542, E10.3543, E10.3549, E10.3551, E10.3552, E10.3553, E10.3559, E10.3591, E10.3592, E10.3593, E10.3599, E10.36, E10.37X1, E10.37X2, E10.37X3, E10.37X9, E10.39, E10.40, E10.41, E10.42, E10.43, E10.44, E10.49, E10.51, E10.52, E10.59, E10.610, E10.618, E10.620, E10.621, E10.622, E10.628, E10.630, E10.638, E10.641, E10.649, E10.65, E10.69, E10.8, E10.9, E11.00, E11.01, E11.10, E11.11, E11.21, E11.22, E11.29, E11.311, E11.319, E11.3211, E11.3212, E11.3213, E11.3219, E11.3291, E11.3292, E11.3293, E11.3299, E11.3311, E11.3312, E11.3313, E11.3319, E11.3391, E11.3392, E11.3393, E11.3399, E11.3411, E11.3412, E11.3413, E11.3419, E11.3491, E11.3492, E11.3493, E11.3499, E11.3511, E11.3512, E11.3513, E11.3519, E11.3521, E11.3522, E11.3523, E11.3529, E11.3531, E11.3532, E11.3533, E11.3539, E11.3541, E11.3542, E11.3543, E11.3549, E11.3551, E11.3552, E11.3553, E11.3559, E11.3591, E11.3592, E11.3593, E11.3599, E11.36, E11.37X1, E11.37X2, E11.37X3, E11.37X9, E11.39, E11.40, E11.41, E11.42, E11.43, E11.44, E11.49, E11.51, E11.52, E11.59, E11.610, E11.618, E11.620, E11.621, E11.622, E11.628, E11.630, E11.638, E11.641, E11.649, E11.65, E11.69, E11.8, E11.9, E13.00, E13.01, E13.10, E13.11, E13.21, E13.22, E13.29, E13.311, E13.319, E13.3211, E13.3212, E13.3213, E13.3219, E13.3291, E13.3292, E13.3293, E13.3299, E13.3311, E13.3312, E13.3313, E13.3319, E13.3391, E13.3392, E13.3393, E13.3399, E13.3411, E13.3412, E13.3413, E13.3419, E13.3491, E13.3492, E13.3493, E13.3499, E13.3511, E13.3512, E13.3513, E13.3519, E13.3521, E13.3522, E13.3523, E13.3529, E13.3531, E13.3532, E13.3533, E13.3539, E13.3541, E13.3542, E13.3543, E13.3549, E13.3551, E13.3552, E13.3553, E13.3559, E13.3591, E13.3592, E13.3593, E13.3599, E13.36, E13.37X1, E13.37X2, E13.37X3, E13.37X9, E13.39, E13.40, E13.41, E13.42, E13.43, E13.44, E13.49, E13.51, E13.52, E13.59, E13.610, E13.618, E13.620, E13.621, E13.622, E13.628, E13.630, E13.638, E13.641, E13.649, E13.65, E13.69, E13.8, E13.9

AND

Off Campus-Outpatient Hospital, On Campus – Outpatient Hospital, Ambulatory Surgical Center, and Office-Based Setting: Place of Service **Codes 11, 19, 22 or 24**

AND

Experienced a blood glucose level >180 mg/dL (10.0 mmol/L) prior to anesthesia end time: 11A44

AND

Patient encounter during the reporting period (CPT):

00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00164, 00170, 00172, 00174, 00176, 00300, 00320, 00322, 00400, 00402, 00404, 00410, 00450, 00454, 00520, 00522, 00524, 00530, 00532, 00534, 00537, 00700, 00702, 00730, 00731, 00732, 00750, 00752,

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

00790, 00797, 00800, 00802, 00811, 00812, 00813, 00820, 00830, 00832, 00851, 00870, 00872, 00873, 00902, 00906, 00910, 00912, 00914, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01202, 01250, 01260, 01320, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01464, 01470, 01472, 01474, 01480, 01520, 01610, 01620, 01622, 01630, 01634, 01638, 01670, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01758, 01760, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01916, 01920, 01930, 01937, 01938, 01939, 01940, 01941, 01942, 01965, 01966, 01991, 01992

Denominator Exclusions:

- Procedure <30 minutes duration: **11A45**

Numerator:

Patients who received education on managing their glucose in the postoperative period prior to discharge

Numerator Note: To meet this measure, the anesthesiologist or other member of the care team must provide both oral and written education. Provision of written materials alone is not sufficient.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

***Performance Met**:*

11A58 Patient received education on managing their glucose in the postoperative period prior to discharge.

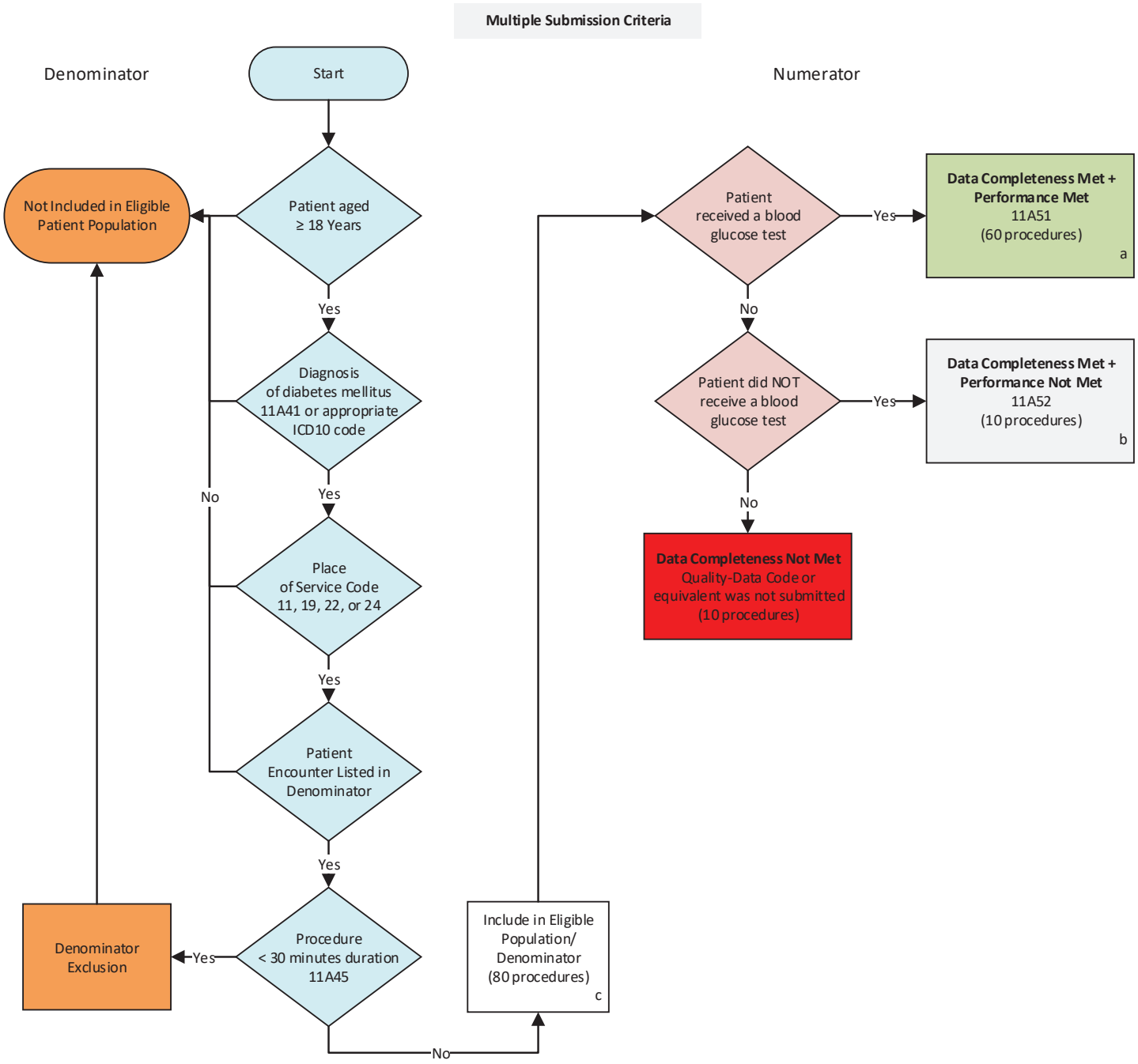
OR

Performance Not Met:

11A59 Patient did NOT receive education on managing their glucose in the postoperative period prior to discharge.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #71a: Ambulatory Glucose Management: Ambulatory Point-of-Care Testing



SAMPLE CALCULATIONS

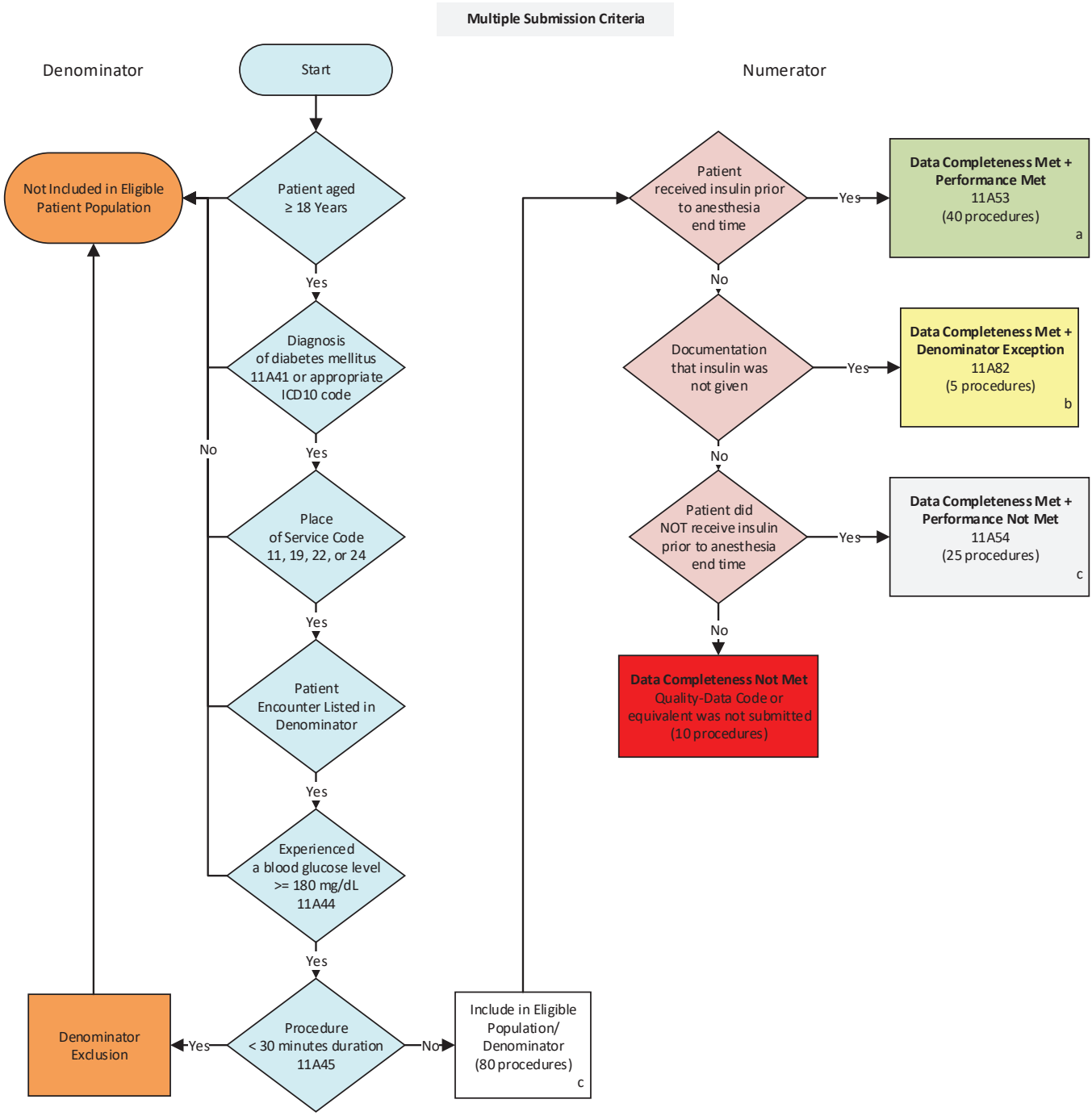
Data Completeness =
Performance Met (a=60 procedures) + Performance Not Met (b=10 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=60 procedures) = 60 procedures = 85.71%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 2.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #71b: Ambulatory Glucose Management: Ambulatory Hyperglycemia Control



SAMPLE CALCULATIONS

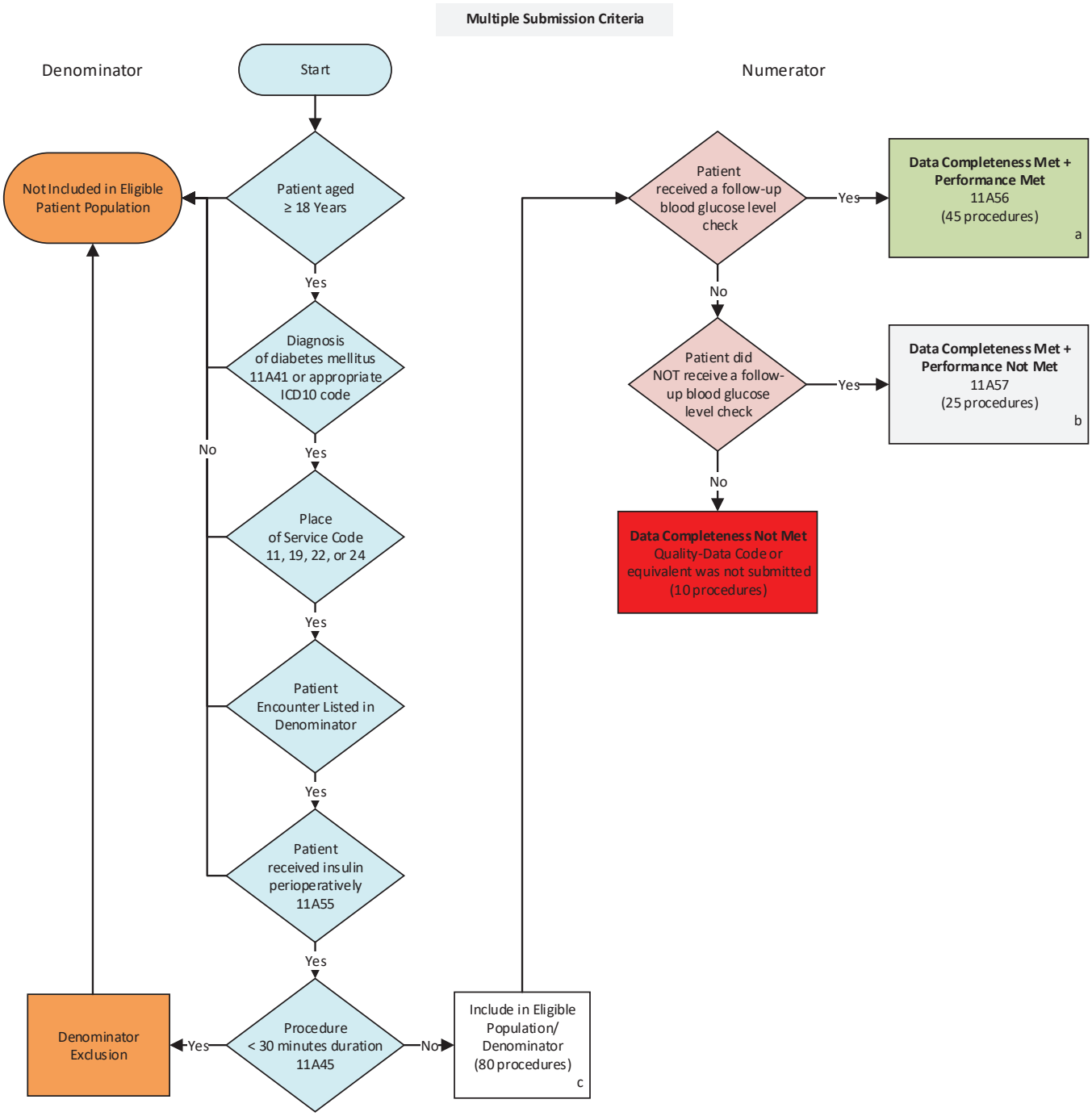
Data Completeness =
Performance Met (a=40 procedures) + Denominator Exceptions (b=5 procedures) + Performance Not Met (c=25 procedure) = 70 procedures = 87.50%
Eligible Population / Denominator (d=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=40 procedures) = 40 procedures = 61.54%
Data Completeness Numerator (70 procedures) – Denominator Exceptions (b=5 procedures) = 65 procedures

Version 2.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #71c: Ambulatory Glucose Management: Follow-Up Glucose Check for Patients Receiving Insulin



SAMPLE CALCULATIONS

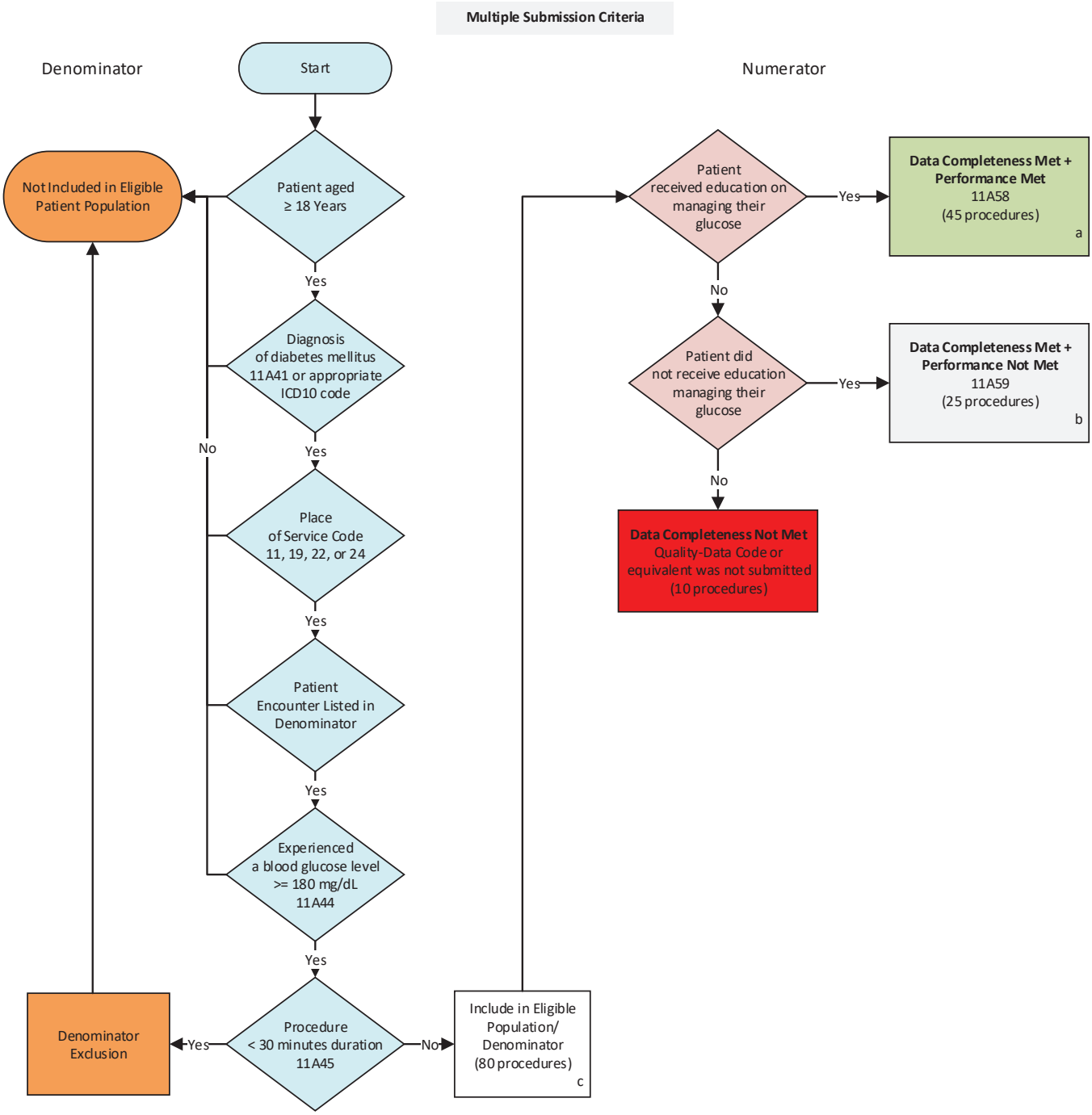
Data Completeness =
Performance Met (a=45 procedures) + Performance Not Met (b=25 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=45 procedures) = 45 procedures = 64.29%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 2.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #71d: Ambulatory Glucose Management: Hyperglycemia Management Patient Education



SAMPLE CALCULATIONS

Data Completeness =
Performance Met (a=45 procedures) + Performance Not Met (b=25 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=45 procedures) = 45 procedures = 64.29%
Data Completeness Numerator (70 procedures) = 70 procedures

Version 2.0
December 2022

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

2024 Qualified Clinical Data Registry Measure Flow for AQI ID #71: Ambulatory Glucose Management: Sample Overall Calculation

Multiple Submission Criteria

SAMPLE CALCULATIONS: Ambulatory Point-of-Care Glucose Testing

Data Completeness =
Performance Met (a=60 procedures) + Performance Not Met (b=10 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=60 procedures) = 60 procedures = 85.71%
Data Completeness Numerator (70 procedures) = 70 procedures

SAMPLE CALCULATIONS

Data Completeness =
Performance Met (a=40 procedures) + Denominator Exceptions (b=5 procedures) + Performance Not Met (c=25 procedure) = 70 procedures = 87.50%
Eligible Population / Denominator (d=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=40 procedures) = 40 procedures = 61.54%
Data Completeness Numerator (70 procedures) – Denominator Exceptions (b=5 procedures) = 65 procedures

SAMPLE CALCULATIONS: Follow-Up Glucose Check for Patients Receiving Insulin

Data Completeness =
Performance Met (a=45 procedures) + Performance Not Met (b=25 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=45 procedures) = 45 procedures = 64.29%
Data Completeness Numerator (70 procedures) = 70 procedures

SAMPLE CALCULATIONS: Hyperglycemia Management Patient Education

Data Completeness =
Performance Met (a=45 procedures) + Performance Not Met (b=25 procedures) = 70 procedures = 87.50%
Eligible Population / Denominator (c=80 procedures) = 80 procedures

Performance Rate =
Performance Met (a=45 procedures) = 45 procedures = 64.29%
Data Completeness Numerator (70 procedures) = 70 procedures

SAMPLE CALCULATIONS: Sample Overall Calculation

Performance Rate =
Ambulatory Point-of-Care Glucose Testing Performance Rate (85.71%) + Ambulatory Hyperglycemia Control Performance Rate (61.54%) +
Follow-Up Glucose Check for Patients Receiving Insulin Performance Rate (64.29%) + Hyperglycemia Management Patient Education Performance Rate (64.29%)
4

Performance Rate =
85.71% + 64.29% + 64.29% + 64.29% = 275.83 = 68.96%
4 = 4

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measure Title

AQI72: Perioperative Anemia Management

Measure Description

Percentage of patients, aged 18 years and older, undergoing elective total joint arthroplasty who were screened for anemia preoperatively AND, if positive, have documentation that one or more of the following management strategies were used prior to PACU discharge.

Management strategies include one or more of the following:

- Cell salvage techniques employed intraoperatively
- Intraoperative antifibrinolytic therapy or tourniquet, if not contraindicated
- Preoperative iron supplementation, epoetin alpha
- Use of evidence-based preoperative anemia management algorithm supplemented with laboratory testing and/or multidisciplinary consult

NQS Domain/Meaningful Measures Area

Patient Safety/Preventable Healthcare Harm

Measure Type

Process

High Priority Status

Yes

Inverse Measure

No

Instructions

This measure is to be reported each time a patient undergoes an elective total joint arthroplasty 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

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, aged 18 years and older, undergoing elective total joint arthroplasty.

Denominator Note: For the purpose of this measure, total joint arthroplasty includes arthroplasty of the knee, hip, and shoulder.

Denominator Criteria (Eligible Cases):

All patients, aged 18 years and older

AND

Elective Surgery: G9643

AND

Patient encounter during the reporting period (CPT): 01214, 01215, 01402, 01638

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Denominator Exclusions

Surgeon or other non-anesthesia professional clinician completed one or more of the management strategies without direction or assistance from the anesthesia professional: **11A80**

Numerator

Patients who were screened for anemia preoperatively AND, if positive, have documentation that one or more of the following management strategies were used prior to PACU discharge.

Management strategies include one or more of the following:

- Cell salvage techniques employed intraoperatively
- Intraoperative antifibrinolytic therapy or tourniquet, if not contraindicated
- Preoperative iron supplementation, epoetin alpha
- Use of evidence-based preoperative anemia management algorithm supplemented with laboratory testing and/or multidisciplinary consult

Numerator Definition*: For the purpose of this measure, a positive preoperative anemia screening result is defined as a Hgb value <13 gm/dL all adults, regardless of gender.*[35]

Numerator note*: Preoperative screening for anemia could include any of the following tests: complete blood count (CBC), arterial blood gas (ABG), venous blood gas (VBG), or other point of care hemoglobin/hematocrit test within 90 days and until one day prior to the surgical procedure.*

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met*:*

11A67 Patient was screened for anemia preoperatively AND documentation of one or more selected management strategies used prior to PACU discharge.

OR

Denominator Exception*:*

11A68 Negative preoperative anemia screening result.

OR

Denominator Exception*:*

11A69 Documentation of medical or patient reason(s) for not screening for anemia and/or using selected management strategies (e.g., patient refusal, contraindication, etc.).

OR

Performance Not Met*:*

11A70 No preoperative patient screen for anemia OR positive preoperative anemia screening result and no documentation of one or more selected management strategies used prior to PACU discharge.

NQF Number: Not Applicable

eCQM: Not Applicable

---

[35] Spahn DR, Muñoz M, Klein AA, Levy JH, Zacharowski K. Patient Blood Management: Effectiveness and Future Potential. Anesthesiology. 2020 Jul;133(1):212-222. doi: 10.1097/ALN.0000000000003198. PMID: 32108683.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Rationale

Anemia is a common complication of many chronic illnesses that interferes with iron absorption. It has been estimated that at least one-third of patients undergoing non-emergent surgical procedures have potentially treatable anemia.[36] Preoperative anemia is associated with increased need for perioperative blood transfusion as well as significant perioperative morbidity and mortality. Appropriate preoperative anemia management can reduce the risk of perioperative blood transfusion, help identify co-morbidities, and improve perioperative outcomes by improving patients' readiness for surgery. The 2015 American Society of Anesthesiologists Guideline on Perioperative Blood Management indicate "TEG and ROTEM-guided algorithms are shown to be effective in reducing blood transfusion requirements."[37] Additionally, studies have found that preoperative anemia has been associated with postoperative joint infections. The preoperative screening for anemia would reduce the number of post-operative joint infections." More resources can be found at the American Association of Blood Banks.[38]

The purpose of this measure is to drive quality changes within perioperative anemia management. Testing algorithms may not be available in all practices. Those that do not have testing algorithms should use a different strategy to fulfill requirements of this measure.

Clinical Recommendation Statements

2015 ASA Practice Guidelines for Perioperative Blood Management[39]

"Review available laboratory test results including hemoglobin, hematocrit, and coagulation profiles. Order additional laboratory tests depending on a patient's medical condition (e.g., coagulopathy, anemia)."

"Erythropoietin with or without iron may be administered when possible to reduce the need for allogenic blood in selected patient populations (e.g., renal insufficiency, anemia of chronic disease, refusal of transfusion). Administer iron to patients with iron deficiency anemia if time permits."

"If anemia is suspected, monitor hemoglobin/hematocrit values based on estimated blood loss and clinical signs."

Data Source: Claims/Paper Medical Record, Registry

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

Number of Performance Rates: 1

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

Care Setting: Hospital

Telehealth Reporting Option: No

---

[35] Shander A, Knight K, Thurer R, Adamson J, Spence R. Prevalence and outcomes of anemia in surgery: a systematic review of the literature. Am J Med. 2004;116 Suppl 7A:58S-69S.

[36] Practice Guidelines for Perioperative Blood Management: An Updated Report by the American Society of Anesthesiologists Task Force on Perioperative Blood Management*. Anesthesiology 2015;122(2):241-275. doi: https://doi.org/10.1097/ALN.0000000000000463.

[37] American Association of Blood Banks. http://www.aabb.org/pbm/Pages/pbm-resources.aspx. http://www.aabb.org/pbm/Documents/PBM-Addressing-Preoperative-Anemia-May-Improve-Surgical-Outcomes.pdf.

[38] Practice Guidelines for Perioperative Blood Management: An Updated Report by the American Society of Anesthesiologists Task Force on Perioperative Blood Management*. Anesthesiology 2015;122(2):241-275. doi: https://doi.org/10.1097/ALN.0000000000000463.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measure Title

ABG44: Low Flow Inhalational General Anesthesia

ASA LICENSED THIS MEASURE FROM ABG

Measure Description
Percentage of patients aged 18 years or older, who undergo an elective procedure lasting 30 minutes or longer requiring inhalational general anesthesia who during the maintenance phase of the anesthetic have a total fresh gas flow less than or equal to 1 L/min (less than or equal to 2 L/min for Sevoflurane).

NQS Domain/Meaningful Measures Area
Efficient Use of Healthcare Resources/Clinical Process/Effectiveness

Measure Type
Process

High Priority Status
No

Inverse Measure
No

Instructions:
This measure is to be reported each time a patient undergoes an elective procedure in which inhalational general anesthesia is used. 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
All patients aged 18 years or older, who undergo an elective procedure lasting 30 minutes or longer requiring inhalational general anesthesia.

Denominator Criteria (Eligible Cases):
Patients aged 18 years and older

AND
Elective procedure: **G9643**

AND
Patient who receives inhalational general anesthesia: **11A96**

AND
Procedure lasts 30 minutes or longer: **11A97**

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

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, 00566, 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, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01961, 01962, 01963, 01965, 01966

Numerator

Patients who undergo an elective procedure lasting 30 minutes or longer requiring inhalational general anesthesia who during the maintenance phase of the anesthetic have a total fresh gas flow less than or equal to1 L/min (less than or equal to 2 L/min for Sevoflurane).

Definition: Inhalational general anesthesia is defined as the use of at least one inhalational anesthetic gas (e.g., halothane, isoflurane, desflurane, sevoflurane, nitrous oxide) as the primary mode of anesthesia for the procedure.

The maintenance phase of the inhalational anesthetic is defined as the portion of the case in which Stage III surgical anesthesia (e.g., unconsciousness, amnesia, immobility, unresponsive to surgical stimulation) is achieved at a safe anesthetic depth while also maintaining respiratory and hemodynamic stability. This occurs between the induction and emergence phases of the case.[51]

Fresh gas flow (FGF) is defined as the combined admixture of medical gases such as air, oxygen, or nitrous oxide as well as volatile anesthetics as set by the anesthesia provider.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

11A98 The total FGF is reduced to less than or equal to 1 L/min (less than or equal to 2 L/min for Sevoflurane) for the duration of the maintenance phase of the anesthetic. .

Performance Not Met:

12A00 Patient or technical reason exists for not providing low flow inhalational anesthesia (e.g., flow meter not capable of generating low flows, patient hypermetabolic, lack of CO_2 absorbents without KOH and low concentrations of NaOH, etc.)

OR

Performance Not Met:

11A99 The total FGF is greater than 1 L/min (greater than 2 L/min for Sevoflurane) for the duration of the maintenance phase of the anesthetic.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

NQF Number: Not applicable

eCQM: Not applicable

Rationale

Managing Fresh Gas Flow to Reduce Environmental Contamination

Introduction

When using a circle anesthesia system, any anesthetic gases and vapors that enter the scavenging system will flow through the hospital vacuum system and ultimately be vented outside the hospital to the atmosphere. The total fresh gas flow determines the amount of gas entering the scavenging system per minute. Whenever fresh gas flow exceeds the patient's requirement, gases and vapors will enter the scavenging system and ultimately contaminate the atmosphere. By choosing the minimal total fresh gas flow, the environmental impact of anesthetic vapors and gases can be minimized. Although the environmental impact of a single case may be minimal, every practitioner can make a significant difference over the thousands of procedures during their career by practicing careful fresh gas flow management for each case. There are three strategies to minimize fresh gas flow and environmental contamination. To implement these strategies, it is important to understand how to utilize anesthetic agent and oxygen concentration monitors to safely deliver the minimum fresh gas flow.

Strategy #1: Minimize Fresh Gas Flow During Maintenance

With this background, the first strategy to reduce the environmental impact of anesthetic vapors is to minimize the fresh gas flow during the maintenance phase of the case. As an example of a low, or minimal, flow anesthetic technique, consider a case of a 70 kg male requiring general anesthesia. Following intravenous induction, isoflurane was administered using oxygen and air at 2 L/min each for a total fresh gas flow of 4 L/min. Once the exhaled concentration of isoflurane is close to the inspired concentration, uptake from the lungs has slowed and the fresh gas flow can be reduced. Assuming oxygen consumption to be about 350 mL/min, the oxygen flow can be set to 350 mL/min. The air flowmeter can be set at 500 mL/min which would deliver an additional 105 mL/min of oxygen and the total fresh gas flow will be less than 1 L/min. If nitrous oxide is used, the oxygen flowmeter should be set to 500 mL/min at a minimum and nitrous oxide at 500 mL/min.

Managing this technique requires that the inspired oxygen concentration be monitored. If oxygen consumption exceeds the total oxygen delivered, the inspired oxygen concentration will diminish over time, which will be an indication that oxygen flow needs to be increased. There is still some environmental contamination with this technique, since the total fresh gas flow exceeds what is consumed, but it is easier to manage than a true "closed circuit" technique. Unless the patient has a large oxygen consumption (e.g., trauma, pregnancy) it should be possible during the maintenance phase of anesthesia to limit the fresh gas flow to a maximum of 1 L/minute. For smaller patients with even lower oxygen consumption requirements, the maintenance fresh gas flow can be reduced even further with the same caveat of monitoring inspired oxygen concentration.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Greening the Operating Room and Perioperative Arena: Environmental Sustainability for Anesthesia Practice

Task Force on Environmental Sustainability Committee on Equipment and Facilities, American Society of Anesthesiologists (ASA).

https://www.asahq.org/about-asa/governance-and-committees/asa-committees/committee-on-equipment-and-facilities/environmental-sustainability/greening-the-operating-room#3gas

Described in 1952 by Foldes, the technique of reducing the fresh gas flow during an anesthetic to a level < 1 L/min is both safe and effective. Additionally, there are benefits to both the patient, cost savings to the facility and benefits to the environment.[53]

- The inhalational anesthetic agents sevoflurane isoflurane and desflurane have global warming potentials 2-3 orders of magnitude higher than CO_2.[53]
- Nitrous oxide contributes significantly to global warming and ozone depletion.[53]
- 5% of the carbon footprint (CO_2e) of the British National Health System is attributable to exhaled anesthetic agents.[53]
- Reducing the environmental impact of anesthesia, can be achieved through behavior change.
- The chemical properties and global warming impacts of these gases vary, with atmospheric lifetimes of 1–5 years for sevoflurane, 3–6 years for isoflurane, 9–21 years for desflurane, and 114 years for N_2O.[55]
- The conservation of heat and moisture within the breathing system is an added benefit of low flow anesthesia to the patient especially when humidifier connection filters are not used.
- Low flow anesthesia can result in cost savings even when the increased cost of CO_2 absorber is factored in, especially with regards to usage of Sevoflurane and Desflurane.[54]
- The simulated low flow anesthesia of 1 L/min FGF across all agents predicted a 48% reduction in costs of volatile anesthetics at a tertiary hospital.[56]

Data Source: Claims, EHR, Hybrid, Paper medical record, Claims, Other

Measure Steward: ABG QCDR

Number of Performance Rates: 1

Number of Multiple Performance Rates: Not applicable

Care Setting: Ambulatory surgery center, ambulatory care: hospital, hospital inpatient, hospital outpatient, imaging facility, office-based surgery center, imaging facility

Proportion Measure Scoring: Yes

Continuous Measure Scoring: No

Risk Adjustment: No

---

[52]Foldes F, et al. The Administration of Nitrous Oxide-Oxygen Anesthesia in Closed System, Ann Surg, 1952, vol 136 (pg. 978-81).

[53]Campbell M, et al. Atmospheric Science, Anaesthesia and the Environment, BJA Education, 15 (4): 173–179 (2015).

[54]Varuguese, S, et al. Environmental and Occupational Considerations of Anesthesia: A Narrative Review and Update. Anesthesia & Analgesia: October 2021, Volume 133, Issue 4, p826-835.

[55]Effect of Co2 Absorbent on the Cost of Low Flow Anesthesia: Lower Flows Are Not Always Cheaper (asaabstracts.com)

[56]Edmonds A, et al. Evidence-Based Project: Cost Savings and Reduction in Environmental Release with Low-Flow Anesthesia. AANA Journal, February 2021, Vol. 89, No. 1.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Measure Title

ePreop31: Intraoperative Hypotension among Non-Emergent Noncardiac Surgical Cases

ASA LICENSED THIS MEASURE FROM Provation

Measure Description: Percentage of general anesthesia cases in which mean arterial pressure (MAP) fell below 65 mmHg for cumulative total of 15 minutes or more

NQS Domain/Meaningful Measures Area
Patient Safety/Preventable Healthcare Harm

Measure Type
Intermediate Outcome

High Priority Status
Yes

Inverse Measure
Yes – A lower score indicates better quality. Note that providers are not expected to receive a score of zero on the measure, because some patients could have a MAP that falls below 65 for reasons outside a provider's control.

Instructions
This measure evaluates the proportion of cases in which the patient's MAP is below 65 mmHg for 15 minutes or more, cumulatively over the course of the surgery. The numerator condition is met when MAP is below 65 mmHg for one continuous period lasting 15 minutes or more, or if the patient has several discrete periods with a MAP below 65 mmHg that collectively sum to 15 minutes or more. Note that this measure is not intended to substitute for the clinician's judgement about managing IOH for any given patient, and for some patients the clinician may manage blood pressure using a higher or lower target MAP (e.g., a higher MAP target for patients with chronic hypertension).

To report the measure, the reporting clinician must submit data on the patient's MAP over the course of the surgery as monitored by an anesthesia information management system (AIMS). The reporting clinician must submit intraoperative patient vitals extracted directly from an interface with the monitor. Reporting clinicians who track blood pressure manually are not eligible to report the measure. If the record for a given case includes both vitals pulled from the monitor and manually recorded vitals, only those from the monitor will be used to score the measure.

The first blood pressure reading is defined as the anesthesia start time. The measure end time is defined as the anesthesia end time. A given blood pressure reading will be attributed to the period that runs from the time the reading was recorded to the time of either the next reading or the measure end time. If the period between a given reading and either the next reading or the measure end time lasts for longer than five minutes, the reading will only be attributed for five minutes. If the reporting clinician monitors a patient using more than one method and there are two MAPs available at the same point in time, the measure uses the invasive value for scoring the measure. The measure attributes the full case to all reporting clinicians who provide care during any portion of the case from the beginning to the end of the measurement period.

The measure excludes patients with a baseline MAP below 65 mmHg. To determine the patient's baseline MAP, the measure relies on the most recent reading taken from the preoperative holding area. If no such reading is available, the measure uses the most recent MAP taken in the operating room before induction of anesthesia.

If a clinician does not have MAP values available to report either for the baseline MAP or for measurements across the measurement period, the clinician may submit pairs of systolic and diastolic blood pressures (SBPs and DBPs) as a replacement for the MAP. The registry collecting the data will use these systolic and diastolic pressure values to calculate MAP values. Specifically, the registry will calculate MAP using the following formula:
MAP = 1/3 (SBP) + 2/3 (DBP) (Sesso et al. 2000).

Non-emergency surgeries include both elective and urgent surgeries.

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Because longitudinal blood pressure data can contain artifactual values (for example, inaccurate readings caused by the surgeon's leaning on the blood pressure cuff), the measure will drop MAP, SBP, and DBP readings that are likely to be artifacts. Specifically, the measure will drop individual MAP readings that meet any of the following criteria:

Documented as an artifact by the clinician

SBP ≥ 300 mmHg or ≤20 mmHg

DBP ≤5 mmHg or DBP ≥ 225 mmHg

SBP and DBP within 5 mmHg

MAP ≤30 mmHg or ≥ 250 mmHg

Measure Reporting via the Qualified Clinical Data Registry

CPT codes, patient demographics and billing data are used to identify patients who are included in the measure's denominator. Denominator eligible cases are required to be sent from an electronic reporting facility to qualify. Registry codes are used to report the numerator. Reporting clinicians who track information manually are not eligible to report the measure.

Denominator

- Unadjusted measure score: All cases in which adults (ages 18 and older) with noncardiac, non-emergency surgery requires general, neuraxial, or regional anesthesia care.
- Risk adjusted measure score: The expected number of cases in which patients have a MAP below 65 mmHg that exceeds the cumulative length of 15 minutes with noncardiac, non-emergency surgery requiring general, neuraxial, or regional anesthesia care, based on the risk adjustment model.

  Denominator Criteria (Eligible Cases):

  Patient aged 18 years and older

  AND

  Anesthesia Types: General Anesthesia, Neuraxial Anesthesia, Regional Anesthesia

  AND

  Patient encounter during the reporting period (CPT):

  00100, 00103, 00160, 00162, 00164, 00170, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00350, 00352, 00400, 00402, 00404, 00406, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00524, 00528, 00529, 00530, 00532, 00534, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00750, 00752, 00756, 00770, 00790, 00792, 00794, 00797, 00800, 00802, 00820, 00830, 00832, 00840, 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, 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, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 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, 01916, 01920, 01922, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01937, 01938, 01939, 01940, 01941, 01942, 01951, 01952, 01953

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Denominator Exclusions

- **99A16** – The measure excludes patients with a baseline MAP below 65 mmHg
  - To determine the patient's baseline MAP, the measure relies on the most recent reading taken from the preoperative holding area. If no such reading is available, the measure uses the most recent MAP taken in the operating room before induction of anesthesia.
  - If a clinician does not have MAP values available to report either for the baseline MAP or for measurements across the measurement period, the clinician may submit pairs of systolic and diastolic blood pressures (SBPs and DBPs) as a replacement for the MAP. The registry collecting the data will use these systolic and diastolic pressure values to calculate MAP values. Specifically, the registry will calculate MAP using the following formula: MAP = 1/3 (SBP) + 2/3 (DBP) (Sesso et al. 2000).
- **99135** CPT code – The measure excludes surgeries where add on code 99135 (Anesthesia complicated by utilization of controlled hypotension) is listed separately in addition to the code for the primary anesthesia procedure)
- American Society of Anesthesiologists (ASA) Physical Status Classification of 1, 5 and 6
- Emergency case

Numerator

Patients who have a MAP below 65 mmHg that exceeds the cumulative length of 15 minutes with noncardiac, non-emergency surgery requiring general, neuraxial, or regional anesthesia care

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

99A17	MAP below 65 mmHg that exceeds the cumulative length of 15 minutes.

Performance Not Met:

99A18	MAP does not fall below 65 mmHg for a cumulative length of 15 minutes

NQF Number: Not applicable

eCQM: Not applicable

Rationale

MAP below 60–70 mmHg among adults having non-cardiac surgery is associated with increased risk of acute kidney injury (AKI), myocardial injury, and mortality, and the risk is a function of both hypotension severity and duration (Sessler et al. 2019). Noncardiac surgery patients are at increased risk of AKI when their cumulative time below a MAP of 65 mmHg reaches or exceeds 13 minutes. When patients fall even further below this threshold (for example, MAP below 55 mmHg), even shorter durations are associated with increased risk of AKI (Salmasi et al. 2017). Among adult noncardiac surgery patients, 31.3 percent have experienced MAP below 65 mmHg for 10 minutes or longer (Bijker et al. 2007). Different approaches for managing patients' blood pressure during surgery are significantly associated with higher or lower risks of postoperative organ dysfunction, including renal dysfunction (Futier et al. 2017).

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.

Data Source:	Claims, EHR (AIMS, patient record)
Care Setting:	Hospital
Telehealth:	No
Measure Steward:	ePreop Anesthesia Quality Registry/Cleveland Clinic
Number of Multiple Performance Rates:	Not applicable
Proportional Measure:	No
Continuous Variable Measure:	No
Ratio Measure:	Yes - This is a ratio measure that will score greater than or equal to zero
Risk Adjusted:	Yes
Risk adjustment:	Variables incorporated into the risk adjustment model include the following: • Age • ASA physical status classification • Body mass index • Duration of surgery • Gender

© 2024 Anesthesia Quality Institute. All rights reserved. Please contact Anesthesia Quality Institute at askaqi@asahq.org for permission to use any of the information in this document.