What Does the AQI Think You Should Measure?

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Who’s Talking?

8 years in private practice anesthesiology

Chief Quality Officer for Encompass Medical Partners, a practice management company

Quality consulting for physician practices, quality data collection software, and registry development

Chair, AQI Practice Quality Improvement Committee (PQIC)
Learning Objectives

At the conclusion of this activity, participants should be able to:

• Identify meaningful quality indicators for anesthesiology
• Assess measure applicability to a particular practice
• Assess technologic feasibility of data collection
Learning Objectives

• Identify meaningful quality indicators for anesthesiology
  ➢ What could you measure?
• Assess measure applicability to a particular practice
  ➢ What should you measure?
• Assess technologic feasibility of data collection
  ➢ What can you measure?
What could you measure?
Data Categories - AQI

• Practice characteristics
• Case-specific data (CPT code, anesthesia type, duration, agents used, fluid given, etc.)
• Outcome data (mortality, complications, etc.)
• Risk adjustment data (diagnosis codes, comorbidities, hospital LOS, etc.)
Data Categories - Technology Tier

Tier One: Administrative/Claims/Billing/Demographic
Tier Two: Registry/gross clinical (QR/QCDR)
Tier Three: AIMS/granular clinical
Data Categories Tier One – Billing Data

• Administrative/Claims/Billing/Demographic
  ➢ CPT codes
  ➢ Case duration
  ➢ Anesthesia type
  ➢ Characteristics of patient population
  ➢ Easiest to collect
Data Categories Tier Two – Registry Data

• Process
  - Utilization of checklists
  - Medication Administration
  - Easy(ish) to collect

• Outcome
  - Mortality
  - Adverse events
  - Harder to collect, but doable
Data Categories Tier Three – AIMS Data

• Granular, case-level clinical data
  ➢ Vital signs
  ➢ Fluids
  ➢ Medications and dosages
  ➢ Vent settings
  ➢ Most sophisticated/labor-intensive on IT side
Data Categories by Technology Tier

Tier One: Administrative/Claims/Billing/Demographic
Tier Two: Registry/gross clinical (QR/QCDR)
Tier Three: AIMS/granular clinical
Where to start?

MIPS Measures!

- 44: Preoperative Beta-Blocker in Patients with Isolated CABG Surgery
- 76: Prevention of Central Venous Catheter-Related Bloodstream Infections
- 404: Anesthesiology Smoking Abstinence
- 424: Perioperative Temperature Management
- 426: Post-Anesthetic Transfer of Care: Procedure Room to PACU
- 427: Post-Anesthetic Transfer of Care: Procedure Room to ICU
- 430: Prevention of PONV – Combination Therapy (Adult)
Where to start?

Non-MIPS Measures!*

- ASA 8: Prevention of Post-Op Vomiting – Combination Therapy (Pediatrics)
- ASA 10: Composite Anesthesia Safety (*Major Adverse Events*)
- ASA 11: Perioperative Cardiac Arrest
- ASA 12: Perioperative Mortality Rate
- ASA 13: PACU Re-intubation Rate
- ASA 14: Assessment of Acute Postoperative Pain
- ASA 15: Composite Procedural Safety for Central Line Placement
- ASA 16: Composite Patient Experience
- ASA 20: Surgical Safety Checklist Completed Before Induction of Anesthesia
- ASA 38: New Corneal Injury Not Diagnosed in PACU
What are major adverse events?

Major adverse events of anesthesia are defined according to the 2009 Committee on Performance and Outcomes Measurement work product “Development of the ASA Critical Incidents Reporting System”.

Major Adverse Events

- Death
- Cardiac arrest
- Perioperative myocardial infarction
- Anaphylaxis
- Malignant hyperthermia
- Transfusion reaction
- Stroke, cerebral vascular accident, or coma following anesthesia
- Visual loss
- Operation on incorrect site
- Operation on incorrect patient
- Medication error
- Unplanned ICU admission
- Intraoperative awareness
- Unrecognized difficult airway
- Reintubation

- Dental trauma
- Perioperative aspiration
- Vascular access complication, including vascular injury or pneumothorax
- Pneumothorax following attempted vascular access or regional anesthesia
- Infection following epidural or spinal anesthesia
- Epidural hematoma following spinal or epidural anesthesia
- High Spinal
- Postdural puncture headache
- Major systemic local anesthetic toxicity
- Peripheral neurologic deficit following regional anesthesia
- Infection following peripheral nerve block
Major Adverse Events

https://www.aqihq.org/qualitymeasurementtools.aspx
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tbody>
<tr>
<td>1</td>
<td>Outcome</td>
<td>An adverse event that affected the patient and may or may not have resulted in harm.</td>
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<td>2</td>
<td>Adverse</td>
<td>The occurrence of adverse drug reactions or adverse drug interactions with the blood and blood components, including anemia, bleeding disorders, allergic reactions, cardiac disorders, and respiratory difficulties.</td>
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<td>New or persistent loss of kidney function. Criteria include: 1. Increased serum creatinine (≥1.5 mg/dL within 48 hours) or 2. Increased serum creatinine (≥1.5 mg/dL) within 7 days.</td>
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<td>A serious, unexpected, and unexplained adverse reaction to a drug that results in discontinuation of the drug or hospitalization, or results in death.</td>
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Anaphylaxis

A severe, life-threatening allergic response, which is rapid in onset and characterized by a sudden drop in blood pressure and/or respiratory insufficiency.

Note: Elevated serum tryptase level may be used to confirm the diagnosis. Although anaphylaxis is a life-threatening allergic reaction, there may be other manifestations such as urticaria, bronchospasm, and edema. Epinephrine is often required as part of the treatment.

What should you measure?
What should you measure?

Numerators and denominators!
What should you measure?

**Numerator:** patients receiving a clinical action or experiencing a health outcome; the target of the performance measure

**Denominator:** the eligible population who should receive the clinical action or health outcome; the population evaluated by the performance measure
What should you measure?

Traditional performance measures
higher is better, 100% is target

Inverse performance measures
lower is better, 0% is target
What should you measure?

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- ASA 38: New Corneal Injury Not Diagnosed in PACU
What should you measure?

430: Prevention of PONV – Combination Therapy (Adult)

DESCRIPTION: Percentage of patients, aged 18 years and older, who undergo a procedure under an inhalational general anesthetic, AND who have three or more risk factors for post-operative nausea and vomiting (PONV), who receive combination therapy consisting of at least two prophylactic pharmacologic antiemetic agents of different classes preoperatively or intraoperatively
Pay attention to the denominator!

Denominator Criteria (Eligible Cases): Patients aged ≥ 18 years on date of encounter
AND Patient procedure during the performance period (CPT): 00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00326, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00566, 00580, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00633, 00635, 00640, 00670, 00700, 00702, 00703, 00730, 00740, 00750, 00752, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00810, 00820, 00830, 00832, 00836, 00840, 00842, 00844, 00846, 00848, 00851, 00850, 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, 01180, 01190, 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, 01510, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01665, 01670, 01680, 01682, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742, 01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01961, 01962, 01963, 01965, 01966
AND
Patient received inhalational anesthetic agent: 4554F
AND
Patient exhibits 3 or more risk factors for post-operative nausea and vomiting: 4556F
Pay attention to the numerator!

**NUMERATOR:**
Patients who receive combination therapy consisting of at least two prophylactic pharmacologic anti-emetic agents of different classes preoperatively or intraoperatively

**Definition:**
Anti-emetics Therapy - The recommended first- and second-line classes of pharmacologic anti-emetics for PONV prophylaxis in patients at moderate to severe risk of PONV include (but are not limited to):
- NK-1 Receptor Antagonists
- 5-Hydroxytryptamine (5-HT3) Receptor Antagonists
- Glucocorticoids
- Phenothiazines
- Phenylethylamines
- Butyrophenones
- Antihistamines
- Anticholinergics

**NOTE:** The foregoing list of medications/drug names is based on clinical guidelines and other evidence. The specified drugs were selected based on the strength of evidence for their clinical effectiveness. This list of selected drugs may not be current. Physicians and other healthcare professionals should refer to the FDA’s web site page entitled “Drug Safety Communications” for up-to-date drug recall and alert information when prescribing medications.

**Numerator Options:**
- **Performance Met:** Patient received at least 2 prophylactic pharmacologic anti-emetic agents of different classes preoperatively and intraoperatively (4558F)
- OR
- **Medical Performance Exclusion:** Documentation of medical reason for not receiving at least 2 prophylactic pharmacologic anti-emetic agents of different classes preoperatively and intraoperatively (e.g., intolerance or other medical reason) (4558F with 1P)
- OR
- **Performance Not Met:** Patient did not receive at least 2 prophylactic pharmacologic anti-emetic agents of different classes preoperatively and intraoperatively (4558F with 8P)
What should you measure?

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What can you measure?
Define your data collection process(es)

1. How will you obtain billing data?
Define your data collection process(es)

2. How will you obtain clinical data?
   - Can you pull data from your EHR/AIMS?
   - Paper forms?
   - Electronic data capture?
     • Web access
     • Mobile apps
Define your data collection process(es)

3. Will you need multiple collection processes across multiple facilities?
Define your data collection process(es)

4. Will your vendors work with you?

CAVEAT EMPTOR
Define your data collection process(es)

- Which measures can you report?
- How is data collected?
- How does data collection affect provider workflow?
- What kind of interfaces can be established to improve efficiency?
- Will group data be available for review before it is sent to the AQI?
- Will support be offered for go live?
- How much will this cost?
- Have you successfully transmitted **REAL DATA**?
- Can we speak with some of your customers?
Define your data collection process(es)

5. Do you have support systems in place to pull this off?
Define your data collection process(es)

Recommendations:

- Educate your partners
- Standardize definitions, processes, and measures*
- Prepare for problems
- Validate results
What might the data look like?
Local Level – *Main Street Anesthesia*

**Case Volumes**

- Total cases reported: 19,291
- Adverse events: 1,114
Local Level – *Main Street Anesthesia*

**Adverse Events (ASA #10)**

- **No Adverse Event**: 18,172
- **Any Adverse Event**: 1114
- **Serious Adverse Event**: 70
Local Level – *Main Street Anesthesia*

Cardiac Arrest (ASA #11)

- No: 19,281
- Yes: 10
Local Level – Main Street Anesthesia

Adult PONV Prophylaxis (PQRS #430)

- Met: 8,122
- Not Met: 98
Local Level – *Main Street Anesthesia*

**Reintubation (ASA #13)**

- **No**: 19,271
- **Yes**: 20
Local Level – *Main Street Anesthesia*

- Hypotension requiring vasopressor infusion: 19
- Delayed emergence: 18
- Laryngospasm: 10
- Unplanned ICU admission: 9
- STAT page/code call: 8
- Failed regional anesthetic: 8
- Corneal Abrasion/Eye Irritation: 8
- Unable to extubate in OR: 8
- Significant desaturation (<90% for >5 mins): 6
- Reintubation: 6
- Difficult airway, unanticipated: 6
- Bronchospasm: 6
- New dysrhythmia: 6
- Central line placement complication: 4
- Suspected aspiration: 3
- Seizure: 3
- High spinal (requiring airway intervention): 3
- Cardiac arrest: 3
- Any rescue anti-emetic given or Vomiting: 3
Thank you!

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