Measure Title
Post-Anesthetic Transfer of Care: Use of Checklist or Protocol for Direct Transfer of Care from Procedure Room to Intensive Care Unit (ICU)

Measure Description
Percentage of patients, regardless of age, who receive an anesthetic and are admitted to an Intensive Care Unit (ICU) directly from the anesthetizing location, that have a documented use of a checklist or protocol for the transfer of care from the responsible anesthesia practitioner to the responsible ICU practitioner

NQS Domain
Communication and Care Coordination

Numerator
Patients who have a documented use of a checklist or protocol for the transfer of care from the responsible anesthesia practitioner to the responsible ICU practitioner

Definition: The key handoff elements that must be included in the transfer of care protocol or checklist include:

1. Identification of patient
2. Identification of responsible practitioner (primary service)
3. Discussion of pertinent medical history
4. Discussion of the surgical/procedure course (procedure, reason for surgery, procedure performed)
5. Intraoperative anesthetic management and issue/concerns to include things such as airway, hemodynamic, narcotic, sedation level and paralytic management and intravenous fluids/blood products and urine output during the procedure
6. Expectations/Plans for the early post-procedure period to include things such as the anticipated course (anticipatory guidance), complications, need for laboratory or ECG and medication administration
7. Opportunity for questions and acknowledgement of understanding of report from the receiving ICU team

Denominator
All patients, regardless of age, who receive an anesthetic and are admitted to an ICU directly from the anesthetizing location.

Denominator Exclusions / Exceptions
None

Rationale
Hand-offs of care are a vulnerable moment for patient safety, but required in any 24/7 healthcare system. Anesthesia providers routinely transfer critically ill patients from the OR to the ICU, and are responsible for transmitting knowledge about patient history, a summary of intraoperative events, and future plans for hemodynamic and pain management to the ICU team. Evidence demonstrates that this process can be facilitated by use of a checklist that motivates completion of all key components of the transfer, and this is an emerging best practice in anesthesia care.

Measure Type (Process/Outcome)
Process

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

Data Source
Claims and Registry

Measure Title
Prevention of Post-Operative Nausea and Vomiting (PONV) - Combination Therapy (Adults)

Measure Description
Percentage of patients, aged 18 years and older, who receive an inhalational general anesthetic, and have three or more risk factors for post-operative nausea and vomiting (PONV), who receive combination therapy consisting of at least two prophylactic pharmacologic anti-emetic agents of different classes preoperatively or intraoperatively

NQS Domain
Person and Caregiver-Centered Experience and Outcomes

Numerator
Patients who receive combination therapy consisting of at least two prophylactic pharmacologic anti-emetic agents of different classes preoperatively or intraoperatively.
Definition: 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):
• 5-hydroxytryptamine (5-HT3) receptor antagonists (eg, ondansetron, dolasetron, granisetron and tropisetron)
• steroids (eg, dexamethasone)
• phenothiazines (eg, promethazine, prochlorperazine)
• phenylethylamine (eg, ephedrine)
• butyrophenones (eg, droperidol, haloperidol)
• antihistamine (eg, dimenhydrinate, diphenhydramine)
• anticholinergic (eg, transdermal scopolamine)

Denominator
All patients aged 18 years and older who receive an inhalational general anesthetic and have three or more risk factors for PONV

Definition:
Risk factors for PONV are:
(1) female gender,
(2) history of PONV or a history of motion sickness,
(3) non-smoker, and
(4) intended administration of opioids for post-operative analgesia*

*This includes use of opioids given intraoperatively and whose effects extend into the post anesthesia care unit (PACU) or post-operative period, or opioids given in the PACU, or opioids given after discharge from the PACU.

Denominator Exclusions / Exceptions
Documentation of medical reason(s) for not administering pharmacologic prophylaxis (eg, intolerance or other)

Rationale
Postoperative nausea and vomiting (PONV) is an important patient-centered outcome of anesthesia care. PONV is highly dis-satisfying to patients, although rarely life-threatening. A large body of scientific literature has defined risk factors for PONV, demonstrated effective prophylactic regimes based on these risk factors, and demonstrated high variability in this outcome across individual centers and providers. Further, a number of

papers have shown that performance can be assessed at the level of individual providers -- the outcome is common enough that sufficient power exists to assess variability and improvement at this level.

Measure Type (Process/Outcome)
Process

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

Data Source
Claims and Registry

Measure Title
Prevention of Post-Operative Vomiting (POV) - Combination Therapy (Pediatrics)

Measure Description
Percentage of patients, aged 3 through 17 years of age, who receive a general anesthetic in which an inhalation anesthetic is used for maintenance AND who have two or more risk factors for post-operative vomiting (POV), who receive combination therapy consisting of at least two prophylactic pharmacologic anti-emetic agents of different classes

NQS Domain
Person and Caregiver-Centered Experience and Outcomes

Numerator
Patients who receive combination therapy consisting of at least two prophylactic pharmacologic anti-emetic agents of different classes.

Denominator
All patients aged 3 through 17 years of age, who are having a general anesthetic in which an inhalational anesthetic is used for maintenance AND who have two or more risk factors for POV.
Definition: Risk factors for POV are:
- Surgery ≥ 30 minutes
- Age ≥ 3 years
- Strabismus surgery
- History of POV or PONV in parent or sibling

Denominator Exclusions / Exceptions
Denominator Exclusion: Cases in which an inhalational anesthetic is used only for induction.
Denominator Exception: Documentation of medical reason(s) for not administering pharmacologic prophylaxis (eg, intolerance or other)

Rationale
Postoperative nausea and vomiting (PONV) is an important patient-centered outcome of anesthesia care. PONV is highly dis-satisfying to patients, although rarely life-threatening. A large body of scientific literature has defined risk factors for PONV, demonstrated effective prophylactic regimes based on these risk factors, and demonstrated high variability in this outcome across individual centers and providers. Further, a number of papers have shown that performance can be assessed at the level of individual providers -- the outcome is common enough that sufficient power exists to assess variability and improvement at this level. A separate measure is needed for pediatric patients because the risk factors and recommended prophylaxis are different from adults.

Measure Type (Process/Outcome)
Process

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

Data Source
Claims and Registry

Measure Title

Anesthesiology: Post-Anesthetic Transfer of Care Measure: Procedure Room to a Post Anesthesia Care Unit

Measure Description

Percentage of patients who are under the care of an anesthesia practitioner and are admitted to a PACU in which a post-anesthetic formal transfer of care protocol or checklist which includes the key transfer of care elements is utilized.

NQS Domain

Communication and Care Coordination

Numerator

All age patients who have been cared for by an anesthesia practitioner and are transferred directly from the procedure room to post-anesthesia care unit (PACU) for post-procedure care for whom a checklist or protocol which includes the key transfer of care elements is utilized.

- All age patients under the care of an anesthesia practitioner AND
- Are transferred to another practitioner in a PACU following completion of the anesthetic care AND a transfer of care protocol or handoff tool/checklist that includes the required key handoff elements is used. The key handoff elements that must be included in the transition of care include:

1. Identification of patient
2. Identification of responsible practitioner (PACU nurse or advanced practitioner)
3. Discussion of pertinent medical history
4. Discussion of the surgical/procedure course (procedure, reason for surgery, procedure performed)
5. Intraoperative anesthetic management and issues/concerns.
6. Expectations/Plans for the early post-procedure period.
7. Opportunity for questions and acknowledgement of understanding of report from the receiving PACU team

Denominator

All age patients who are cared for by an anesthesia practitioner and are transferred directly from the procedure room to the PACU upon completion of the anesthetic.

- All age patients under the care of an anesthesia practitioner AND
- Who are transferred directly to the PACU at the completion of the anesthetic.
- This measure does not include transfer of care during an anesthetic or to the ICU.

Denominator Exclusions / Exceptions

All age patients who have been cared for by an anesthesia practitioner who are not admitted from the operating room directly to a PACU.

Rationale

Hand-offs of care are a vulnerable moment for patient safety, but required in any 24/7 healthcare system. Anesthesia providers routinely transfer patients from the OR to the PACU, and are responsible for transmitting knowledge about patient history, a summary of intraoperative events, and future plans for hemodynamic and pain management to the new care team. Evidence demonstrates that this process can be facilitated by use of a checklist that motivates completion of all key components of the transfer, and this is an emerging best practice in anesthesia care.

Measure Type (Process/Outcome)
Process

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

Data Source
Claims and Registry

Measure Title:
Composite Anesthesia Safety

Measure Description:
Completion of a scheduled surgical procedure without the occurrence of a serious adverse event.

NQS Domain:
Effective Clinical Care

Numerator:
All patients who have the planned procedure, and who do not have a major complication of anesthesia

Denominator:
All scheduled procedures receiving anesthesia

Denominator Exclusions / Exceptions:
None

Rationale:
Serious adverse events are rare in anesthesia care, but can be assessed for performance improvement purposes as a composite of mortality, major organ system injury, and unintended events (e.g. anaphylaxis, cardiac arrest) that carry a high risk. Completion of a scheduled surgery or procedure WITHOUT complication is the fundamental goal of both patients and anesthesia providers, suggesting that this metric is at the core of assessment for the specialties involved.

Measure Type (Process/Outcome):
Outcome

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

Data Source:
Claims, Registry, and EHR

Measure Title:
Immediate Perioperative Cardiac Arrest Rate

Measure Description:
For all non-emergent surgical cases, the number of patients who experience a cardiac arrest prior to PACU discharge.

NQS Domain:
Patient Safety

Numerator
Number of patients experiencing an unanticipated cardiac arrest

Denominator:
All scheduled procedures receiving anesthesia

Denominator Exclusions / Exceptions:
Cases with planned cardiac arrest: deep hypothermia, electrophysiology cases, cardiac bypass cases

Rationale:
Cardiac arrest in the perioperative period is an unintended serious adverse event, associated with immediate mortality of about 50%. Arrest can occur as the result of sudden physiologic disruption due to surgery or medications (e.g. anaphylaxis, air embolus) or as the cumulative result of progressive deterioration (e.g. bleeding, heart failure). Prevention of cardiac arrest is a core goal of anesthesia providers, with high face validity as a discriminator of the quality of anesthesia care.

Measure Type (Process/Outcome):
Intermediate Outcome

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

Data Source:
Claims and Registry

Measure Title:
Immediate Perioperative Mortality Rate

Measure Description:
For all non-emergent surgical cases, the mortality prior to PACU discharge.

NQS Domain:
Patient Safety

Numerator:
The Number of patients who die in OR or PACU

Denominator:
All scheduled procedures receiving anesthesia

Denominator Exclusions / Exceptions:
Organ Donors

Rationale:
Mortality is the outcome of ultimate interest to patients and providers. Albeit very rare in the perioperative period, death in the OR or PACU is a sentinel event in any anesthesia department, as the majority of such occurrences can be traced directly to anesthetic management issues. Capturing this data in a uniform fashion will allow assessment of variability across practices and facilities, as well as identification of the rare outlier at the individual physician level.

Measure Type (Process/Outcome):
Outcome

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

Data Source:
Claims, Registry, and EHR

Measure Title:
PACU Reintubation Rate

Measure Description:
For all patients with a planned extubation following general anesthesia, the number requiring re-intubation prior to PACU discharge.

NQS Domain:
Patient Safety

Numerator:
The number of patients re-intubated with an ETT or new surgical airway

Denominator:
All patients receiving GETA who are extubated prior to PACU discharge

Denominator Exclusions / Exceptions:
None

Rationale:
Early reintubation of surgical patients is strongly associated with subsequent serious adverse outcomes, prolonged ICU and hospital stay, and increased costs of care. Assessment of this metric under a unified definition will be an important tool for benchmarking the performance of surgical facilities, anesthesia departments, and individual practitioners.

Measure Type (Process/Outcome):
Intermediate Outcome

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

Data Source:
Claims, Registry, and EHR

Measure Title:
Short-term Pain Management

Measure Description:
The number of patients admitted to the PACU following an anesthetic with a maximum pain score >7/10.

NQS Domain:
Person and Caregiver-Centered Experience and Outcomes

Numerator:
The number of lucid patients with an initial pain score 7/10 or higher

Denominator:
All patients age 10 and greater admitted to PACU who can be assessed for pain

Denominator Exclusions / Exceptions:
Chronic pain patients taking narcotics prior to surgery, patients with major psychiatric disorders, patients who do not speak English (or Spanish?)

Rationale:
Alleviation of pain is a core responsibility of the anesthesia provider, and adequate postoperative pain control is an important component of patient satisfaction with anesthesia and surgery. A large body of literature exists to support evidence-based practice in this area. Significant variability in outcomes exists at the practice, facility and individual provider level. Capture of this metric under a common definition will greatly enhance anesthesia quality management and lead directly to improvements in patient outcome.

Measure Type (Process/Outcome):
Intermediate Outcome

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

Data Source:
Claims, Registry, and HER

Measure Title:
Composite Procedural Safety for Central Line Placement

Measure Description:
The number of patients who experience pneumothorax or arterial injury following central line placement.

NQS Domain:
Patient Safety

Numerator:
The number of patients with documented arterial injury (from the medical record or PSI code) or pneumothorax requiring thoracostomy placement

Denominator:
All patients receiving central line placement for a planned surgical procedure

Denominator Exclusions / Exceptions:
Emergencies

Rationale:
Placement of central venous catheters is common for anesthesia providers, but may be associated with serious adverse events. Arterial injury and pneumothorax each require additional treatment that adds to the cost and discomfort of care. Recent scientific literature has documented that the risk for these complications can be reduced through evidence-based practice, including the use of ultrasound localization of the central vein. This measure will allow for documentation of variability in occurrence of this outcome, and will empower quality improvement efforts.

Measure Type (Process/Outcome):
Intermediate Outcome

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

Data Source:
Claims, Registry, and HER

Measure Title:
Composite Patient Experience Measure

Measure Description:
Would base this on S-CAHPS survey, using only items relating to anesthesia

NQS Domain:
Person and Caregiver-Centered Experience and Outcomes

Numerator:
As per S-CAHPS methods

Denominator:
All adult patients who can complete the S-CAHPS interview

Denominator Exclusions / Exceptions:
Non- verbal patients, patients with major psychiatric disorders, patients who cannot be surveyed due to language barriers.

Rationale:
Patient-centered outcomes are important discriminators of the quality of anesthesia practice, and every anesthesia department and provider should have access to relevant S-CAHPS data collected by the facility, as a means of guiding quality improvement initiatives.

Measure Type (Process/Outcome):
Composite

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

Data Source:
Other - CAHPS