



ASPIRE Obstetric Anesthesia Subcommittee Meeting

December 11, 2019

Agenda

5 Minutes	Introductions	All
10 Minutes	MPOG/ASPIRE Overview <ul style="list-style-type: none">- Review minutes from last meeting – 2017	All
20 Minutes	Future Measure Build Discussion <ul style="list-style-type: none">- Call for Measures: Survey Results- SOAP Centers of Excellence- Informational only measures	All
20 Minutes	2020 Goals <ul style="list-style-type: none">- Collaboration with other OB anesthesia groups- Measure Build- Toolkits?	All
5 Minutes	Subcommittee Meeting Schedule <ul style="list-style-type: none">- Create Basecamp Forum?	All

Introductions & Membership

Sharon Abramovitz, Weill Cornell	Angel Martino, Sparrow Health System
Ami Attali, Henry Ford- Detroit	Arvind Palanisamy, Washington University
Melissa Bauer, Michigan Medicine	Carlo Pancaro, Michigan Medicine
Dan Biggs, University of Oklahoma	Mohamed Tiouririne, University of Virginia
Traci Coffman, St. Joseph Mercy Ann Arbor	Brandon Togioka, Oregon Health Science University
Eric Davies, St. Joseph Mercy Oakland	Joshua Younger, Henry Ford, Detroit
Ghislaine Echevarria, NYU Langone	Marie-Louise Meng, Duke
Ronald George, University of California- San Francisco	Nirav Shah, MPOG Associate Director
Jenifer Henderson, St. Joseph Oakland	Katie Buehler, MPOG Clinical Program Manager
Rachel Kacmar, University of Colorado	Meridith Bailey, MPOG QI Coordinator
Joanna Kountanis, Michigan Medicine	Brooke Szymanski, MPOG QI Coordinator

Will post slides to the MPOG website for those who could not attend.

What is MPOG?

- Formed in 2008
- Academic and community hospital consortium. Includes over 40 hospitals across the country (and 2 in the Netherlands)
- Aggregates data
- Dual mission of research and quality improvement



Our Mission

We are a group of passionate individuals from more than 50 hospitals across 18 states and 2 countries, working together to improve care for patients undergoing surgery. Our members include clinicians, quality improvement experts, software developers, statisticians, researchers, and administrators.

Over the last decade, we have built a comprehensive perioperative patient registry based on electronic healthcare data to improve quality of care, conduct research, educate caregivers and guide healthcare administration.

Please [join us](#) on our mission.



12

Million
Cases



170

Million
Medication
Records

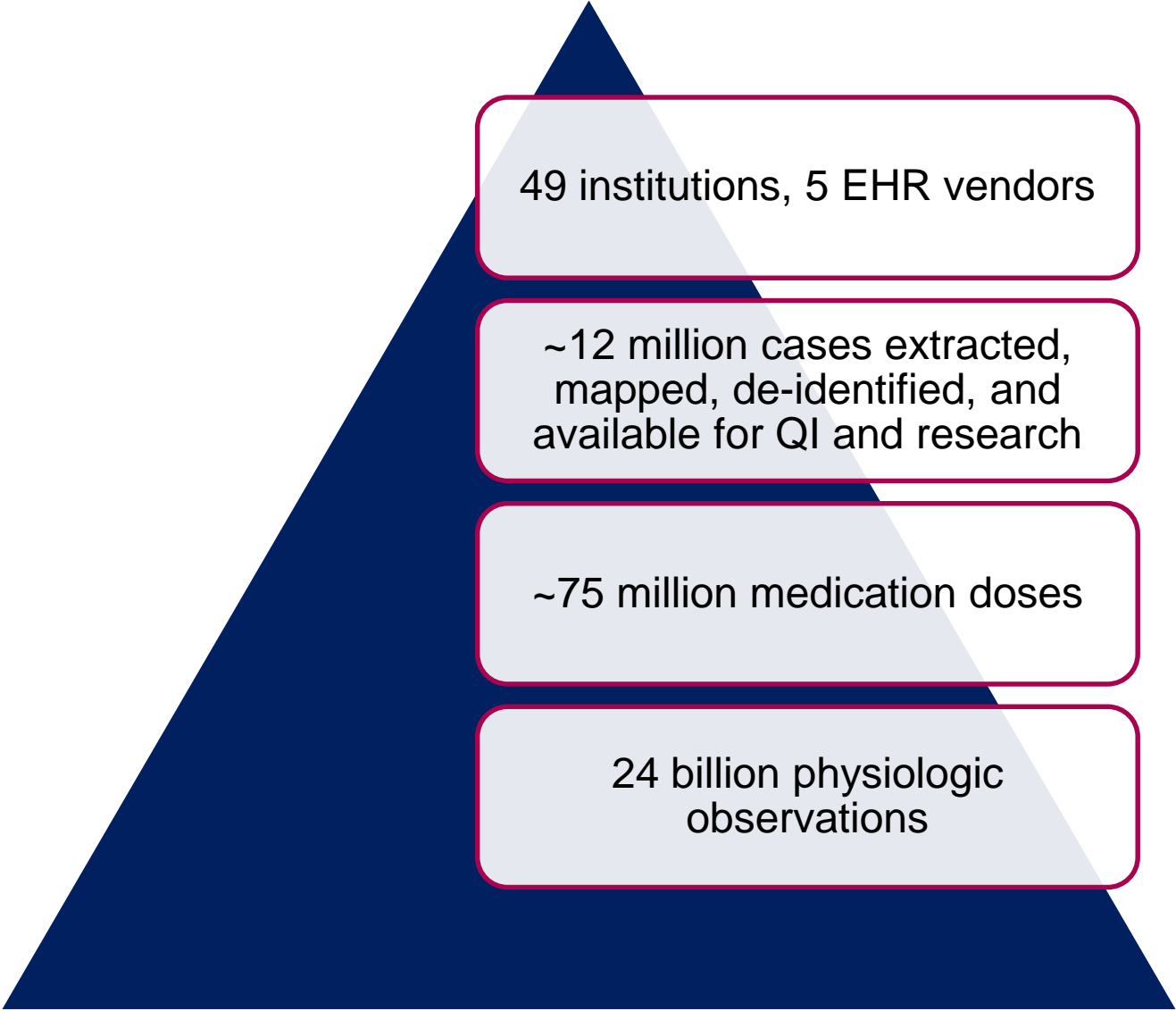


24

Billion
Physiologic
Observations

What we have achieved so far

- Demographic Information
- Preoperative H&P
- Medications / Infusions / Fluids / Outputs
- Physiologic values/ Laboratory values
- Intraop events
- IV Access
- Staff in / out
- Professional fee CPT codes
- Discharge ICD 9/10 codes
- Outcome record / Outcome registry



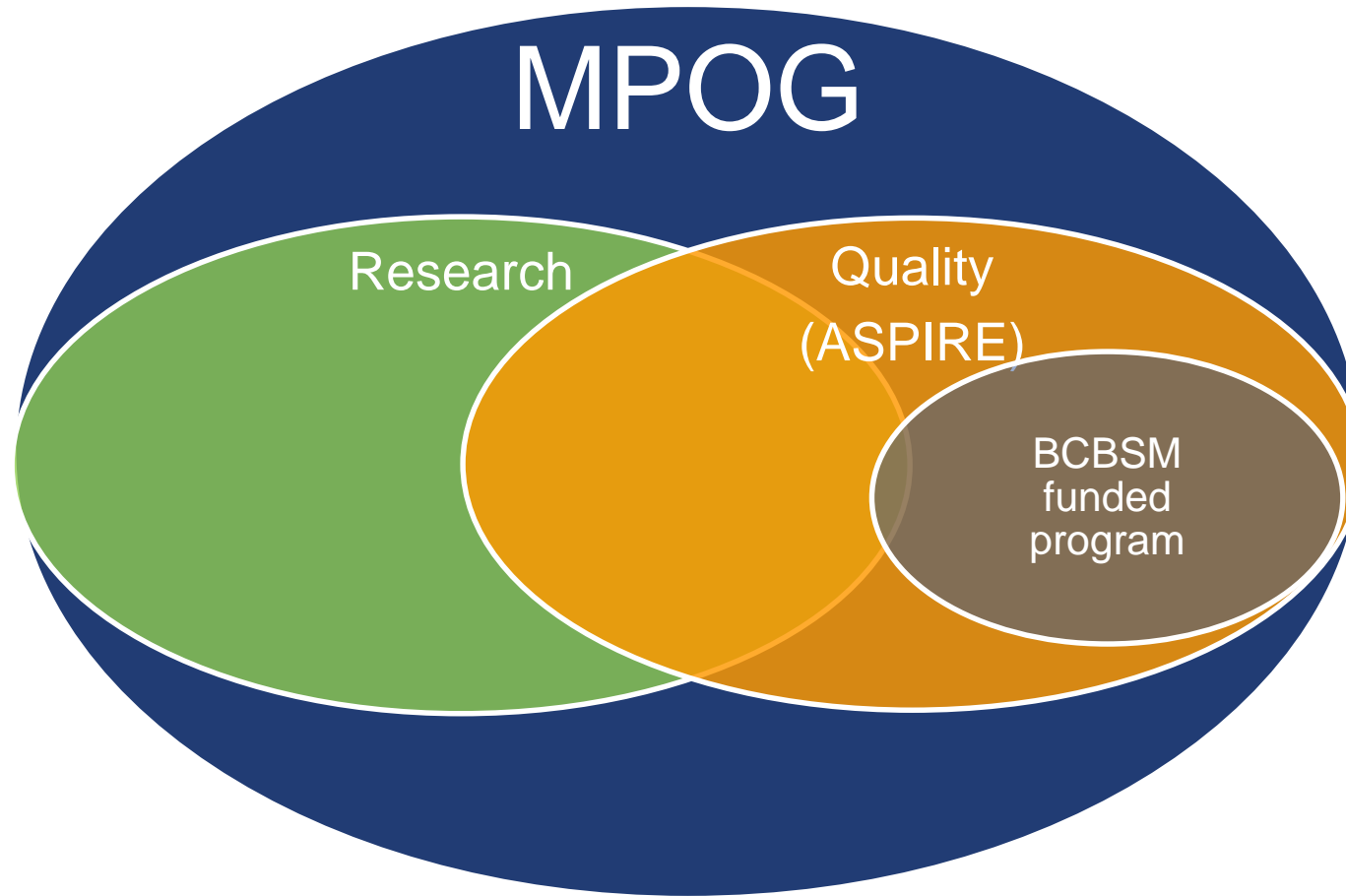
49 institutions, 5 EHR vendors

~12 million cases extracted, mapped, de-identified, and available for QI and research

~75 million medication doses

24 billion physiologic observations

ASPIRE is the quality improvement arm of the Multicenter Perioperative Outcomes Group



Not drawn to
scale



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OB Subcommittee: Where we left off...

- Met last in September 2017
- Reviewed existing MPOG measures for applicability to obstetric anesthesia
 - Modified exclusion criteria for TRAN 01/02; Exclude cases with:
 - 1. ICD 10 codes indicating postpartum hemorrhage
 - 2. VS Changes (HR>110, BP≤85/45, O2 sat<95%) or EBL ≥1500cc for patients undergoing caesarean section (CPT: 01961, 01968, 019262, 01963, 01969)
 - 3. Labor epidural cases.
 - 4. In the future, account for ≥ 15% change in vital signs from baseline (MPOG still does not capture baseline VS reliably.)
 - Modified success criteria for TEMP 01 to include fluid warming as an acceptable means warming for patients undergoing Caesarean Delivery.
 - Did not add exclusion criteria for AKI 01 to exclude patients diagnosed with preeclampsia or eclampsia using ICD 10 codes: cases flagged for provider review

ASPIRE Measures including Cesarean Delivery Cases (but not labor epidurals)

- AKI 01
- BP 01
- BP 02
- BP 03
- CARD 02
- CARD 03
- GLU 01
- GLU 02
- NMB 01 (with GA only)
- NMB 02 (with GA only)
- PONV 01 (with inhalational GA only)
- PONV 02 (with inhalational GA only)
- PUL 01 (with GA-ETT only)
- PUL 02 (with GA-ETT only)
- PUL 03 (with GA-ETT only)
- SUS 01 (with inhalational GA only)
- TEMP 01
- TEMP 02 (with GA only)
- TOC 01
- TOC 03
- TRAN 01
- TRAN 02

See MPOG website for measure specifications: <https://mpog.org/quality/our-measures/>

ASPIRE Measures including both Labor Epidurals & Cesarean Deliveries

- MED 01
- FLUID 01-NC
- PONV 03

ASPIRE Measures excluding all obstetric cases:

- TEMP 03
- TOC 02
- FLUID 01-C



See MPOG website for measure specifications: <https://mpog.org/quality/our-measures/>

Next Steps: OB Specific Measures

- Review MPOG Cesarean Delivery Data
- Call for Measures: Survey Results
- Review Draft Measure Specifications
 - Prolonged hypotension before cesarean delivery
 - General Anesthesia Rate for Cesarean Delivery
- SOAP Centers of Excellence Criteria
- Inclusion Criteria – Case types to focus on?



MPOG Cesarean Delivery Data



- 260,062 cesarean deliveries in MPOG database
- 1/22/2004-11/30/2019
- 52 Institutions represented
- Identified using anesthesia CPT codes:
 - 01961: Anesthesia for cesarean delivery only
 - 01968: Anesthesia for cesarean delivery following neuraxial labor analgesia/anesthesia

More Cesarean Data...

- Approximately 40,000 cases/year in registry (CPT: 01961 & 01968 only)
- 35 sites currently submitting cesarean delivery data
- Plans to create a phenotype to identify labor epidural cases that converted to c-section
- Likely missing many conversion cases in this analysis

Call for Measure Build: Survey Results* (8 responses)

#1: Prolonged hypotension before cesarean delivery: 4.38/5.00

#2: General Anesthesia Rate for Cesarean Delivery: 3.63/5.00

#3: Non-opioid adjunct used for post cesarean delivery pain: 3.38/5.00

#4: Antibiotic Timing for cesarean delivery: 3.25/5.00

#5: First temperature in PACU for cesarean delivery: 3.13/5.00

#6: PONV in PACU for cesarean delivery: 3.13/5.00



*All scores reported as mean using Likert scale (1-5).

Prolonged Hypotension before Cesarean Delivery

- Measure Time Period:
 - Spinal placement time to delivery of neonate OR
 - Spinal placement time to procedure start (incision)
- Hypotension Definition:
 - SBP < 90mmHg or <100mmHg; >20% decrease for pre-eclampsia patients (identified using ICD 10 codes)?
- Prolonged:
 - 5 or 10 minutes?
- Inclusions:
 - Patients undergoing anesthesia for cesarean section (CPT: 01968 & 01961); includes epidural, spinal, combined spinal epidural, & general anesthesia cases for cesarean section delivery
- Exclusions:
 - Emergency c-sections with diagnosis of placental abruption (O45*), Rupture of uterus (spontaneous) before onset of labor (O71.0), Newborn affected by intrauterine blood loss from ruptured cord (P50.1), Abnormal uterine or vaginal bleeding, unspecified (N93.9), Placenta previa with hemorrhage, third trimester (O44.13), Hemorrhage from placenta previa, antepartum condition or complication (641.13), Hemorrhage from placenta previa, delivered, with or without mention of antepartum condition (641.11)
- Provider Attribution- Anesthesia providers signed in at:
 1. Neuraxial- Spinal performed (50680), if not available then
 2. AACD Procedure Start Date/Time (50006), if not available then
 3. Obstetrics- Uterine Incision (50357), if not available then
 4. Obstetrics- Delivery of Neonate (50358).

General Anesthesia Rate for Cesarean Delivery

- Percentage of cesarean delivery procedures converted to general anesthesia
- Measure Time Period: Neuraxial Start to Neonate Delivery
- Inclusions:
 - Elective or Urgent C-Sections (CPT: 01961 & 01968) with neuraxial anesthesia (epidural, spinal, or CSE) with documentation of intubation, volatile gas, or NMB (indicating conversion to GA)
- Exclusions:
 - Patients undergoing emergency cesarean section
 - Patients undergoing cesarean section with hysterectomy (CPT: 01969)?
 - Contraindications to regional anesthesia including...?
 - Documentation of patient request for general anesthesia?
- Proposal: Informational only measure? No threshold/target

General Anesthesia Rate for Cesarean Delivery (continued)

- Provider Attribution: Anesthesia attending signed in at time of conversion to general anesthesia
- Algorithm to determine responsible provider:
 - Placement of endotracheal tube, or supraglottic airway (LMA), if not available
 - Anesthesia Induction Start, if not available
 - Administration of first NMB dose, if not available,
 - Initiation of volatile gas
- Alternative: Refrain from assigning attribution; institution rate only

Antibiotic Timing & Selection for Cesarean Deliveries

MPOG Registry Data: 39,654 cesarean delivery (Oct 2018-Nov 2019)

Antibiotic Timing:

- Percentage of cesarean deliveries with any antibiotic administered within 60 minutes before procedure start: 81.95% (past 12 months)

Antibiotic Selection:

Cefazolin	Cefazolin & Azithromycin	Ceftriaxone	Ceftriaxone & Azithromycin	Cefoxitin	Cefoxitin & Azithromycin	Cefuroxime	Cefuroxime & Azithromycin	Azithromycin Only
75.01%	9.01%	0.08%	0.01%	1.15%	0.20%	0.00%	0.00%	1.04%

Other Measures...continue to investigate or move on?

- #3: Non-opioid adjunct used for post cesarean delivery pain: 3.38/5.00
- #5: First temperature in PACU for cesarean delivery: 3.13/5.00
- #6: PONV in PACU for cesarean delivery: 3.13/5.00

Other suggested measure topics from survey:

- Rate of dural puncture during epidural placement
- Adjunctive azithromycin for non-elective cesarean deliveries (C/SOAP trial)
- TXA administration when EBL > specified amount (TBD)
- Transfusion rates
- Intraoperative Core Temperature Monitoring
- Intraoperative Active Warming
- Intraoperative sedation medication administration for cesarean delivery
- Rate of emergency c-sections after CSE with intrathecal opioids
- Rate of anemia prior to elective cesarean delivery
- Rate of success in neuraxial anesthesia in spinal fusion patients

Other Measure Options: SOAP Centers of Excellence Criteria

- Generated by expert consensus & incorporate evidence-based recommendations
- Topics:
 - Personnel & Staffing: MPOG does not capture
 - Equipment, protocols, & policies: MPOG does not capture
 - **Cesarean delivery management**
 - Routine utilization of a pencil-point needle, 25 gauge or less for the provision of spinal anesthesia
 - Multimodal analgesia protocols (Non-opioid adjunct used for post cesarean section pain)
 - Strategies to prevent intraop maternal and fetal hypothermia (TEMP 01)
 - Appropriate antibiotic prophylaxis
 - Spinal hypotension prophylaxis and treatment
 - Nausea & Vomiting prophylaxis and treatment
 - Labor Analgesia
 - Use of low-concentration local anesthetic solutions with neuraxial opioids
 - Recommendations & Guidelines implementation: MPOG does not capture
 - QA & Patient Follow-up: MPOG does not capture

Measure Inclusion Criteria: CPT Considerations

Procedure Types	CPT Anesthesia Code (2018)	CPT Anesthesia Descriptor
External Cephalic Version	01958	Anesthesia for external cephalic version procedure
Vaginal Delivery	01960	Anesthesia for vaginal delivery only
Cesarean Section	01961	Anesthesia for cesarean delivery only
	01968	Anesthesia for cesarean delivery following neuraxial labor analgesia/anesthesia
Labor Epidural	01967	Neuraxial labor analgesia/anesthesia for planned vaginal delivery (this includes any repeat subarachnoid needle placement and drug injection and/or any necessary replacement of an epidural catheter during labor)
Complex Obstetric Procedures	01962	Anesthesia for urgent hysterectomy following delivery
	01963	Anesthesia for cesarean hysterectomy without any labor analgesia/anesthesia care
	01969	Anesthesia for cesarean hysterectomy following neuraxial labor analgesia/anesthesia
Abortion Procedures	01964	Anesthesia for abortion procedures
	01965	Anesthesia for incomplete or missed abortion procedures
	01966	Anesthesia for induced abortion procedures

- Emergent vs. Non-Emergent
- ASA Status?

2020 Goals

- Collaboration with other OB anesthesia groups (SOAP, ASA Task Force for Obstetric Anesthesia)
- Measure Build: Prioritize & determine 'ownership'
 - Need volunteers to assist with measure build questions
 - Approval process
- Potential Toolkit Topics?



Avoiding Respiratory Complications Toolkit

This toolkit encompasses ASPIRE Measures PUL01, NMB01, and NMB02.

[Click Here](#)



Perioperative Transfusion Stewardship Toolkit

This toolkit encompasses ASPIRE Measures TRAN 01 and TRAN 02 with a focus on best transfusion practices in cardiac, orthopedic, and general surgery.

[Click Here](#)



Surgical Site Infection Toolkit

This toolkit encompasses ASPIRE Measures TEMP 01, TEMP 02, TEMP 03 and GLU 01.

[Click Here](#)

Future Meeting Schedule & Membership

- How often should this group meet?
- Create Basecamp forum?
- 2020 Existing Meetings:
 - Quality Committee Meetings (Webex)
 - February 24
 - April 27
 - June 22
 - August 24
 - October 26
 - MPOG Collaborative Meetings (In-person)
 - March 27, Schoolcraft College, Livonia, MI
 - July 17, Henry Center East Lansing, MI
 - October 2, ASA-Washington DC



THANK YOU!

Special thanks to Dr. Joanna Kountanis for her input in preparing this material.

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ASPIRE Measures including Obstetric Cases

- AKI 01 (c-sections only): Percentage of cases that baseline creatinine increased more than 1.5 times within 7 postoperative days *or* the baseline creatinine level increased by ≥ 0.3 mg/dL within 48 hours after anesthesia end.
- MED 01: Percentage of cases that required the use of nalaxone or flumazenil for medication overdose.
- BP 01 (c-sections only): Percentage of cases where intraoperative hypotension (MAP < 55 mmHg) was sustained for less than 20 minutes.
- BP 02 (c-sections only): Percentage of cases where gaps greater than 10 minutes in blood pressure monitoring are avoided.
- BP 03 (c-sections only): Percentage of cases where intraoperative hypotension (MAP < 65 mmHg) was sustained for less than 15 minutes
- CARD 02 (c-sections only): Percentage of cases with elevated postoperative Troponin levels or documentation of perioperative myocardial injury.

ASPIRE Measures including Obstetric Cases

- CARD 03 (c-sections only): Percentage of *high cardiac risk* cases with significantly elevated postoperative troponin levels.
- FLUID 01-NC: Percentage of non-cardiac cases in which colloids were not administered intraoperatively.
- GLU 01 (c-sections only): Percentage of glucose labs with perioperative glucose > 200 mg/dL with administration of insulin or glucose recheck within 90 minutes of original glucose measurement.
- GLU 02 (c-sections only): Percentage of glucose labs with perioperative glucose < 60 with administration of dextrose containing solution or glucose recheck within 90 minutes of original glucose measurement
- NMB 01 (c-sections with GA only): Percentage of cases with a documented Train of Four (TOF) after last dose of non-depolarizing neuromuscular blocker.

ASPIRE Measures including Obstetric Cases

- NMB 02 (c-sections with GA only): Administration of neostigmine, Sugammadex, and/or edrophonium before extubation for cases with nondepolarizing neuromuscular blockade
- PONV 01 (c-sections with inhalational GA only): 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.
- PONV 02 (c-sections with inhalational GA only): Percentage of patients aged 3 through 17 years of age, who undergo a procedure under general anesthesia in which an inhalational 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 preoperatively and/or intraoperatively.

ASPIRE Measures including Obstetric Cases

- PONV 03: Percentage of patients, regardless of age, who undergo a procedure and have a documented nausea/emesis occurrence postoperatively OR receive a rescue antiemetic in the immediate postoperative period.
- PUL 01 (c-sections with GA-ETT only): Percentage of cases with median tidal volumes less than 10ml/kg.
- PUL 02 (c-sections with GA-ETT only): Percentage of cases with median tidal volumes less than 8ml/kg.
- PUL 03 (c-sections with GA-ETT only): Percentage of cases in which Positive End Expiratory Pressure (PEEP) is used for patients undergoing mechanical ventilation during anesthesia.
- SUS 01 (c-sections with inhalational GA only): Percentage of cases with mean fresh gas flow (FGF) equal to, or less than 3L/min, during administration of halogenated hydrocarbons and/or nitrous oxide.

ASPIRE Measures including Obstetric Cases

- TEMP 01 (c-sections only): Percentage of cases that active warming was administered by the anesthesia provider- includes fluid warming for c-sections
- TEMP 02 (c-sections with GA only): Percentage of cases with increased risk of hypothermia that the anesthesia provider documented core temperature.
- TOC 01 (c-sections only): Percentage of patients who undergo a procedure under anesthesia in which a permanent intraoperative anesthesia staff change occurred, who have a documented use of a checklist or protocol for the transfer of care from the responsible anesthesia practitioner to the next responsible anesthesia practitioner.
- TOC 03 (c-sections only): Percentage of patients, regardless of age, who undergo a procedure under anesthesia and are admitted to an Intensive Care Unit (ICU) directly from the anesthetizing location, who have a documented use of a checklist or protocol for the transfer of care from the responsible anesthesia practitioner to the responsible ICU team or team member

ASPIRE Measures including Obstetric Cases

- TRAN 01 (c-sections only): Percentage of cases with a blood transfusion that have a hemoglobin or hematocrit value documented prior to transfusion.
- TRAN 02 (c-sections only): Percentage of cases with a blood transfusion that have a hemoglobin or hematocrit value documented prior to transfusion.
- Transfusion measures apply the following exclusion for c-sections:
 - Exclude patients undergoing cesarean section (CPT: 01961, 01968, 01962, 01963, 01969) with an EBL > 1500cc.
 - Exclude patients undergoing cesarean section (CPT: 01961, 01968, 01962, 01963, 01969) with a HR>110, SBP<85, DBP<45, or O2Sat <95%.
 - Exclude postpartum hemorrhage cases (ICD-10 code: O72.0, O72.1, O72.2, O72.3).