Obstetric Anesthesia Subcommittee Minutes

July 15, 2020

1:00-2:00pm EST

Zoom

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

1. **OB Anesthesia Subcommittee Leadership**
    a. Thank you to Dr. Rachel Kacmar (University of Colorado) and Dr. Dan Biggs (University of Oklahoma) for serving as leaders of the OB Anesthesia subcommittee!
2. **3/2020 Meeting Recap**
    a. ABX 01-OB: Antibiotic Timing for Cesarean Delivery Specification Review
        i. Committee agreed on including emergent cases, but with a more forgiving timeframe for passing
        ii. Committee agreed on adjusting appropriate timeframe for azithromycin (60 min before incision through anes end) and clindamycin (within 60 minutes before surgical incision). All other antibiotics must be administered 'within 60 minutes before incision' (except vanco, which is 120 minutes) to 'pass' the measure
    b. Antibiotic selection measure
        i. Determined to be lower priority, may be useful to develop later in collaboration with surgical colleagues
    c. Prolonged Hypotension Measure Specification Review
        i. Discussed timeframe and applicable BP cutoffs for specific populations
        ii. Committee agreed on lack of standardization, this measure will remain informational only
        iii. Committee agreed on separate measures for patients with pre-eclampsia and those without

3. **New OB Concepts Available for Mapping**
    a. Fetal heart rate- Decelerations (50238)
    b. Fetal heart rate – Accelerations (50239)
    c. Fetal heart rate category (3166)
4. **Epic OB Variables –** MPOG is working with Epic to include more variables in the MPOG extract potentially used at your site.
    a. *See slide 8 of presentation for list of variables
    b. Contact the coordinating center if you would like to be connected with the individual who is responsible mapping for your site
5. **AKI Toolkit**
    a. MPOG is happy to announce the release of its 4th toolkit: Avoiding Kidney Injury. This toolkit reviews the pathophysiology and definitions of kidney injury as well as recommendations for perioperative care.
        i. This toolkit includes a one-pager summary and slide presentations
        ii. Overview, Pathophysiology & Definitions of Kidney injury
        iii. Recommendations to prevent Kidney injury: Adult Surgical Patients
            1. Pediatrics
            2. Cardiac
            3. Obstetrics
            4. https://mpog.org/akitoolkit/
6. **AKI-01**
    a. AKI 01 measures the percentage of cases where the baseline creatinine does not increase more than 1.5 times within 7 postoperative days or the baseline creatinine level does not increase by = 0.3 mg/dL within 48 hours postoperatively.
    b. Currently includes pre-eclampsia patients who undergo cesarean delivery
        i. AKI 01 excludes non-operative procedures including labor epidurals currently
        ii. Cesarean deliveries with pre-eclampsia are included
    c. References:
        i. Van Hook JW: Acute kidney injury during pregnancy. Clin Obstet Gynecol 2014; 57:851–61
        ii. Huang C, Chen S: Acute kidney injury during pregnancy and puerperium: a retrospective study in a single center. BMC Nephrol 2017; 18:146
        iii. Arulkumaran N, Lightstone L: Severe pre-eclampsia and hypertensive crises. Best Pract Res Clin Obstet Gynaecol 2013; 27:877–84
    d. Discussion: Should AKI 01 exclude pre-eclampsia patients?
        i. *Arvind Palanisamy (Washington University)* Separate pre-eclampsia patients with severe features from those without severe features to know if those without severe features are at increased risk for AKI. Wash U obtains preop chemistries on all OB patients.
        ii. *Dan Biggs (University of Oklahoma)* The only patients with preoperative SCr labs are those with pre-eclampsia. If you include, you will not be measuring normal patients. Should include patients with pre-eclampsia for this measure but understand, we are looking at a high-risk population.
        iii. *Joshua Younger (Henry Ford Detroit)* Agrees with including pre-eclampsia patients. Only going to have SCr labs for patients that are already of a concern. From a research perspective, look at patients with pre-eclampsia with severe features but those that don't relate to renal function. i.e. neuro issue of liver dysfunction.
        iv. *Ashraf Habib (Duke)* Agree. SCr mostly done on patients with pre-eclampsia with severe features. Interesting research question for AKI in pre-eclampsia patients.

1. *Nirav Shah (Michigan Medicine)* For AKI-01 we exclude patients where there is no baseline creatinine available. Agree there is a lot of room for research of AKI in pre-eclampsia patients. Contact the Coordinating Center if interested in this.

v. *Brandon Togioka (Oregon Health Science University)* – Concerns comparing performance across institutions; dependent on patient populations which are all treated very differently - especially midwife patients which rarely have preop labs drawn. Primarily would be including high-risk patients and wouldn't accurately reflect practice across the entire institution.
   1. *Nirav Shah (Michigan Medicine)* We perform risk adjustment for our AKI measure; not 100% accurate. Primary purpose of this measure is case review at the institution level – less so to provide feedback to individual providers. For benchmarking it is tough to make generalizations especially at a subspecialty level. Excluding pre-eclampsia patients from AKI-01 will not make a major difference in the overall performance score. MPOG bias is to include them. If we decide to do research or QI, it does make sense to be able to notice when those patients have AKI whether or not we expect it.

vi. *Angel Martino (Sparrow Health System)* – Is it possible to look at pre-eclampsia patients with severe features vs. pre-eclampsia patients without severe features? There is a qualifier in Epic documentation for this at Sparrow.
   1. *Nirav Shah (Michigan Medicine)* ICD 9/10 code could also be a possibility
   2. *Arvind Palanisamy (Washington University)* – It was mandated that academic institutions document severe features starting in 2019. Most sites should have this data. Criteria remains the same for pre-eclampsia w/severe features and 'severe pre-eclampsia'. Removed mild/moderate pre-eclampsia from definition to prevent the interpretation that pre-eclampsia was on a continuum. There now exists 'pre-eclampsia' which is simply BP>140/90 without other symptoms and 'pre-eclampsia with severe features' which is hypertension + additional symptoms (headache, kidney injury, vision changes, impaired liver function, etc.)

vii. *Joshua Younger (Henry Ford Detroit)* We could also look at patients who receive magnesium. Not guaranteed to have severe features

viii. **Final conclusion**: Exclude patients from AKI 01 who have pre-eclampsia with severe features using ICD-10 codes (O14.1%)

7. ABX 01-OB: Antibiotic Timing for Cesarean Delivery Performance Review

a. First MPOG OB measure released 7/15/20!
   i. Variation across institutions for this measure: Outlier low performing sites may be due to documentation/data extract rather than reflective of actual practice. Some sites do not consistently document procedure start for cesarean deliveries or document their antibiotics as note rather than on the MAR. Both of these scenarios result in flagged cases and lower performance on the dashboard. This measure is specifically looking at antibiotic timing and includes the most common antibiotics administered for cesarean delivery. See specification for more details.
   ii. Encourage all members of the committee to log into the ASPIRE dashboard to examine performance and cases for their own institution. If access is needed, contact Coordinating Center.

b. Dan Biggs (University of Oklahoma) How many people are giving Azithromycin for C-sections?
   i. Arvind Palanisamy (Washington University) – Azithromycin paper came from Wash U so this institution may be an outlier as compliance is 100%

ii. *Clarification from Coordinating Center: this measure does not examine antibiotic selection, only timing.*

c. *Joshua Younger (Henry Ford Detroit) Azithromycin always seems like a secondary thought after Cefazolin. Azithromycin is usually always given but not always before incision.*

i. *Arvind Palanisamy (Washington University) – For emergent procedures, patients should get azithromycin. For antepartum C-sections level 2and level 3, these patients don't get azithromycin prior to incision at WashU. Most cases still meet criteria to receive azithromycin but may not be administered prior to incision. For the clinical trial that was completed it was done in a very controlled fashion but may not be applicable to all clinical scenarios.*

8. BP-04-OB: Prolonged Hypotension Measure Specification Review

a. Based on prelim data from 7/1/19-4/30-20

i. 37,739 Total C-sections (scheduled or conversion from vaginal delivery)

ii. 3,800 (10%) of the total c-sections were identified as having pre-eclampsia using our phenotype

iii. 914 (24%) have a baseline BP in MPOG.

b. Measure Time Frame → Total cumulative minutes of hypotension will be resulted for two time periods: spinal placement to delivery and delivery through anesthesia end. Need to determine the threshold for number of minutes of hypotension that results in a flagged case.

c. Discussion:

i. *Joshua Younger (Henry Ford Detroit) Proposed two time frames: pre-delivery and post-delivery and women shouldn't have sustained hypotension for more than 10 minutes if patient has baby in utero.*

ii. *Nirav Shah (Michigan Medicine) QI dashboard visualization for this measure would display blood pressures for two, possibly three time periods:*

1. *Spinal placement to delivery and*
2. *Delivery to anesthesia End.*
3. *Could also display total cumulative minutes across the entire case*

iii. *Joshua Younger (Henry Ford Detroit) – I would suggest displaying all 3 phases: pre-delivery, post-delivery and cumulative minutes of hypotension for the full case: spinal placement to anes end.*

iv. *Rachel Kacmar (University of Colorado) – I agree it is best to split the data out. Most crucial time point to maintain normal blood pressure is spinal to delivery of fetus. A little more leeway on 10-20% blood pressure drift post-delivery as the fetus is no longer at risk.*

v. *Ronald George (UCSF) – Spinal placement to delivery of baby should be the focus*

vi. *Arvind Palanisamy (Washington University) – Agree- spinal placement to delivery time period is most critical. Post-delivery may not be a useful marker. Will see dips after delivery due to discontinuing infusions. We should focus on the pre-delivery phase.*

vii. *Mohamed Tiouririne (University of Virginia) – I propose we decide between a direct measure or indirect measure. Standard guidelines are to initiate infusions of phenylephrine or norepinephrine. Can we use that marker instead rather than actual blood pressure? Would be more of a global marker.*

1. *Ronald George (UCSF) – Very interesting point. We do have good evidence to support the use of these medications to manage hypotension.*

2. *Ashraf Habib (Duke) – We should look at 1) process of if you are using medications and 2) did you achieve the target or not. If we can look at both the process (medication administration) and outcome (hypotension)- would be best rather than one or the other. Sustained hypotension for 10 minutes is way too long while fetus in utero.*
    a. *Arvind Palanisamy (Washington University) – Not a lot of data to know what range of hypotension could impair perfusion of fetus. 3 minutes seems to be the point where there would be a consequence to the fetus. Will share some of the literature which uses 3 minutes.*
3. *Nirav Shah (Michigan Medicine) – Using 3 minutes would mean a single measurement of systolic < 90mmhg would be consequential. Would need to cycle the BP cuff sooner. We extract minute by minute BP values for arterial lines and we extract non-invasive BP values with their time stamps (3 min, 5 min etc). We do further processing at the coordinating center via artifact reduction algorithm and carry forward a blood pressure until the next one becomes available. For details, visit MPOG Blood Pressure Observations algorithm:* https://collations.mpogresearch.org/Detail.aspx?name=Blood%20Pressure%20Observations
    a. **Multiple blood pressures:** Instances where there are two blood pressure monitoring methods, the higher MAP will be used to determine measure compliance.
    b. **Artifact:** Artifact readings will be identified and removed from final measurement calculation. Artifact processing: if systolic and diastolic blood pressures are present, the values must be at least 5 mmHg apart; otherwise the values will be excluded. MAP values less than 10 are excluded.
        i. Each incidence of hypotension will count for a max of 5 minutes if there is a gap in blood pressure measurement
        ii. Average cumulative minutes of hypotension from spinal placement to delivery of the last neonate (if more than one) will be resulted as one number for the institution. Individual cases will show the total cumulative minutes of hypotension for this time period.
        iii. Average cumulative minutes of hypotension from delivery to anesthesia end will be resulted as a second number for the institution. Individual cases will show the total cumulative minutes of hypotension for this time period.
4. *Ashraf Habib (Duke) – frequency of BP measurements is a good measure as well.*

d. **Measure Description Discussion:**
    i. *Ashraf Habib (Duke) - Cases with SBP<90 for greater than 3-5 minutes would make the most sense for flagging cases*
    ii. *Arvind Palanisamy (Washington University) – 5 minutes should be ok instead of 3 minutes.*

iii. *Angel Martino (Sparrow Health System) – Is it possible to note inside the measure whether or not treatment was instituted for the low blood pressures sustained? Then you are capturing process and outcome data.*
    1. *Nirav Shah (Michigan Medicine) – yes we can provide this information in the case details tab of the dashboard. For flagged cases, we can indicate whether a vasopressor was initiated.*
iv. *Joshua Younger (Henry Ford Detroit) What about patients that are 90/50 at baseline? How do we account for that?*
    1. *Nirav Shah (Michigan Medicine) Can add baseline as information in case details. However, pre-anesthesia blood pressures aren't a great option as relative decreases will be difficult to determine.*
v. *Joshua Younger (Henry Ford Detroit) – Could use one BP prior to Anesthetic in the OR*
    1. *Ashraf Habib (Duke): Typically, the blood pressures before anesthesia are elevated and not reflective of the patient's baseline*
    2. *Angel Martino (Sparrow): Agree*

9. Meeting Conclusion

a. Meeting minutes and outstanding agenda items will be posted to the forum for further discussion:
    i. Given the low # of pts identified to have preeclampsia and the low % with baseline BP, should preeclampsia patients be excluded from this measure? Or included but noted to have pre-eclampsia?
    ii. Should scheduled and conversion cesarean delivery cases be treated the same for BP 04?
    iii. Should patients with HELLP syndrome be excluded or treated as pre-eclampsia patients?

Meeting adjourned at 1402