Obstetric Anesthesia Subcommittee Minutes

May 5, 2021

1:00-2:00pm EST - Zoom

	First Name	Last Name	Institution
	Sharon	Abramovitz	Weill-Cornell
	Aymen	Alian	Yale
	Ami	Attali	Henry Ford-Detroit
X	Dan	Biggs	University of Oklahoma
	Traci	Coffman	St. Joseph Ann Arbor
	Eric	Davies	Henry Ford- Allegiance
	Carlos	Delgado Upegui	University of Washington
	Ghislaine	Echevarria	NYU
X	Kim	Finch	Henry Ford
X	Ronald	George	UCSF
	Antonio	Gonzalez-Fiol	Yale
X	Ashraf	Habib	Duke
	Jenifer	Henderson	St. Joseph Oakland
X	Wandana	Joshi	Dartmouth
X	Rachel	Kacmar	University of Colorado
	Tom	Klumpner	University of Michigan
	Joanna	Kountanis	University of Michigan
	Stephanie	Lim	UCSF
X	Angel	Martino-Horrall	Beaumont Health System
	Marie-Louise	Meng	Duke
	Arvind	Palanisamy	WashU
	Carlo	Pancaro	University of Michigan
X	Monica	Servin	University of Michigan
	David	Swastek	St. Joseph Ann Arbor
	Mohamed	Tiouririne	UVa
X	Brandon	Togioka	OHSU
	Christine	Warrick	University of Utah

X	Jessica	Wren	Henry Ford
X	Joshua	Younger	Henry Ford-Detroit
X	Nirav	Shah	MPOG Quality Director
X	Kate	Buehler	MPOG Clinical Program Manager
X	Meridith	Bailey	MPOG QI Coordinator
X	Brooke	Szymanski-Bogart	MPOG QI Coordinator (OB program lead)

Announcements:

A. Two remaining meeting dates
    a. August 4th at 1pm EST
    b. November 3rd at 1pm EST
B. GA 01 and BP 04 are now available on the QI Reporting Tool OB Dashboard
C. OB Dashboard in New QI Reporting Tool
    a. OB Dashboard - Please reach out with any feedback!
    b. Steps to access OB Departmental Dashboard
        i. Change 'Entity' in upper left corner to your institution
            1. The default view when logging in from Provider Feedback Emails is your own performance on your sites' selected measures
        ii. Choose 'Dashboards', then 'Obstetric' from banner along the top
D. February 2021 Meeting Recap
    a. GA01 that is now available on OB Dashboard
        i. Now available on the OB Dashboard
        ii. Platelet information added to the Measure Case Report tool to assist in case review per request from the committee. Helps identify patients in which neuraxial anesthesia may be contraindicated
        iii. Determining the cause for general anesthesia will need to be completed at the local level through case review due to limitations with EHR documentation
        iv. Standardization of this documentation in the EHR is a possible area for development in order to capture the data within the measure
        v. Future interest Normothermia and PONV for cesarean deliveries
E. OB Anesthesia Phenotype

a. Underpinning of how all the OB measures are developed and helps us understand what type of OB case a given case is (labor epidural vs cesarean delivery vs conversion vs cesarean hysterectomy)

b. We are continuing to refine the OB Anesthesia Type Phenotype to find and label "Cesarean Hysterectomies" (current state is only finding a subset of them)

    i. If a patient has a cesarean delivery case followed by a separate hysterectomy case, should the second case still be considered a "cesarean hysterectomy" by the phenotype?

        1. Example: A patient has a case labeled "cesarean delivery" followed by a second case within 24 hours labeled as "cesarean hysterectomy" and coded as a cesarean hysterectomy. How do we classify the second case?

        2. *Angel Martino-Horrall (Beaumont Health System)* - For clarification, how would a separate case that doesn't have a cesarean section included in it be considered a cesarean hysterectomy? Is this literally a separate OR case or a cesarean case that is followed by a planned or unplanned hysterectomy at the same time?

        3. *Rachel Kacmar (University of Colorado)* - What I could reason out is if there is a c-section that goes to the PACU, starts bleeding and then has to return to the OR, so a hysterectomy that shortly follows a c-section

        4. *Brooke Szymanski-Bogart (MPOG)* - This is what I am seeing in the data, where the cases are back to back. It is not super common, but we are trying to figure out how to categorize these cases

        5. *Carlos Delgado (University of Washington)*- We use the term "peripartum hysterectomy" in that case. A c-hyst is a c-hyst where in the same procedure you do a hysterectomy, but the other scenario where the patient has a lot of bleeding and goes back, we would call that a "peripartum hysterectomy" but we wouldn't call that a c-hyst because they are not done together

            a. *Angel Martino-Horrall (Beaumont Health System)* - Agree. To me this would be outside of what we consider for GA 01

        6. *Brooke Szymanski-Bogart (MPOG)*- We are seeing cases where the second case has a procedure text of "cesarean hysterectomy" or has billing codes for cesarean hysterectomies. For these cases, we would not want to label them as cesarean hysterectomies, correct?

            a. *Angel Martino-Horrall (Beaumont Health System)* - I agree. The data we are trying to capture is that failed epidural converting to general or the reason why we are doing general for the c-section portion, but once you get into the bleeding case where the

patient goes to PACU and then comes back, at that point we are in a different level of thinking for anesthetics

b. Multiple subcommittee members agree

7. *Nirav Shah (MPOG)*-In any case, both postpartum hysterectomies and a cesarean hysterectomy would be excluded from GA 01, so from an exclusion standpoint we are OK, but from a case labeling perspective there is an issue, likely because these are emergency cases. We may want to recategorize these cases within OB anesthesia type as peripartum hysterectomies.

F. BP 04 Measure review

a. BP 04: Hypotension (SBP <90) during cesarean delivery between neuraxial start and neonate delivered

i. Variation across sites reviewed. Please see slides for the graph.

1. The scale of the y-axis is from 80-100%. The variation is small across sites.

ii. Generally high performance across MPOG sites

iii. Measure duration (neuraxial start to neonate delivered) on most cases is between 25 and 46 minutes, with an average of 33 minutes

b. Data review and discussion of data validity

i. *Nirav Shah (MPOG)*- The duration seems longer than I remember from my OB training. Some people before said that they were surprised that they did not see more hypotension

ii. *Ron George (UCSF)* - This generally shows the nature of practice now, being vigilant of hypotension has been standard practice now for a number of years, so I am not surprised by the data. As for the length, things just take longer now, things have gotten slower

iii. *Ashraf Habib (Duke)* - Is this measure for only elective cesareans or all cesareans?

1. *Kate Buehler (MPOG) via chat*- Only emergency cesareans with dx of placental abruption or requiring hyster are excluded. Not all emergency cases. Exclusions listed here: https://spec.mpog.org/Spec/Public/45

iv. *Ashraf Habib (Duke)* - Are these only under spinal anesthesia or also epidural? So topping up an epidural is included here too?

1. *Nirav Shah (MPOG)* - Any neuraxial technique is included

v. *Ron George (UCSF)* What is your 'neuraxial start'?

1. *Brooke Szymanski-Bogart (MPOG)*- Neuraxial start is based on an algorithm that looks at the earliest medication given or the time of the placement notes

2. *Ashraf Habib (Duke)* - This may explain some of the longer times. I am not surprised by the data, prophy vasopressor infusions have been standard practice and this looks reasonable

vi. *Niravh Shah (MPOG)* - There are only two sites below threshold. This may be something like our hypoglycemia measures where it is a rare event and so sites use it to investigate every case that has hypoglycemia. Instead of looking at it as a performance measure, they look at it as a rare or never event. BP 04 may want to be treated as such where sites looked into flagged cases as individual events to see if there was a circumstance where it could have been prevented (ie the vasopressor wasn't available)

vii. *Dan Biggs (University of Oklahoma)* - If we would have looked at this 10 years ago, we would not have seen this good of data. Now everyone is starting phenylephrine prophylactically and we don't see hypotension the way we used to.

viii. *Niravh Shah (MPOG)* - We will continue to follow this. We review each measure every 3 years to decide if we want to continue as is, modify it, or retire it. If this problem becomes very rare than we may consider retiring it in three years even though we just built it.

ix. *Joshua Younger (Henry Ford - Detroit)* - For the epidurals and loading the epidurals and monitoring patients afterwards, this may be an opportunity to capture the hypotension if it isn't already in here. There is variation in how people load their epidurals prior to cesarean (where they do it, etc). At Henry Ford we click a button that says "epidural to procedure" that marks the end of when it is being used as a labor epidural and the start of it being used for cesarean.

1. *Nirav Shah (MPOG)*- The algorithm that we use to determine that it is a neuraxial does break them down by epidural vs spinal vs CSE, so we may be able to use that to stratify down these cases and allow the user to filter by each of these categories

2. *Ashraf Habib (Duke)* - I do think there may be value in looking at each type individually (spinal and CSE together and then epidural on its own)

G. GA 01 - General Anesthesia for Cesarean Delivery: Percentage of cesarean delivery cases where general anesthesia was used

   a. Variation across sites reviewed. Please see slides for the graph.

      i. Note: The outlier site with >30% is a known data issue being resolved

ii. Variation: Scores range from around 2-12% for rates for GA

iii. These are not risk or case mix adjusted data

iv. Will require review at the local level to find out the cause for GA

v. The number of cases per month per site is small (around 0-10 cases)

b. Discussion:

i. *Wandana Joshi (Dartmouth)*- I think there is going to be variation depending on the facility where the data is coming from. I think in a teaching hospital the epidural success rate may not be as good as in programs where it is mostly experienced anesthesiologists. The nature of patients may also be a factor.

ii. *Nirav Shah (MPOG)* - Some sort of adjustment based on those factors may be interesting. Similar to BP 04, this may be a relatively rare event that might warrant review of each case to see if there is a pattern.

iii. *Ashraf Habib (Duke)* - Do we have the ability to differentiate cases that were GA from the start vs cases that were neuraxial to GA?

1. *Nirav Shah (MPOG)* - I don't think that we can do that with this measure. Would that be of interest?

2. *Ashraf Habib (Duke)*- I think it would because it would be a measure of neuraxial converted to GA for a number of reasons, such as the neuraxial not working well, could be a measure of how well we are monitoring epidurals during labor and replacing them if they are not working well.

3. *Ron George (UCSF)* - Different centers also have different tolerances of when to convert and when to push the envelope to get the mom through the delivery. I think this is where we need to start really talking about how to capture the reason for why they used GA. You will have cases that converted in the middle and some that converted before incision all for the same reason.

4. *Josh Younger (Henry Ford Detroit)*- A similar question would be 'what is your epidural replacement rate'? How many people aren't getting adequate analgesia

5. *Nirav Shah (MPOG)*- Most people on this call are on Epid except University of Michigan and University of Oklahoma. There is an opportunity here for standardization if one or two sites have implemented standard documentation for reason for GA then that build could very easily be shared. Then, sites without Epic could modify that build into their own anesthesia systems. If there is something to share, we would be very happy to disseminate.

6. *Ron George (UCSF)* - We have been trying to incorporate into the intraoperative record, but I think ultimately (and I think Stanford does this too) where all the reasons for GA are captured in a postpartum note

iv. *Angel Martino-Horrall (Beaumont Health System)*- What is the exclusion criteria for this measure? I would love to know the true failure rate of neuraxial to GA, but I also would be interested to know other factors like platelet count would be helpful in determining if the patient was ineligible

v. *Kate Buehler (MPOG)*- The only exclusions are non-cesarean deliveries and cesarean hysterectomies. For the conversions, I think we could tease out who had a neuraxial and who had a GA with the timing of certain data elements. Should this be a separate measure or part of GA 01?

1. *Ron George (UCSF)*: A separate measure

2. *Dan Biggs (University of Oklahoma)*-The most common issue I run into at my institution is that they rush the case back and I don't have time to do a neuraxial or top up an epidural

3. *Ashraf Habib (Duke)* - this is still an important quality metric because it is related to good communication on your labor floor regarding patients who might need to go to the OR rather than waiting until the last second.

4. *Kate Buehler (MPOG)* - We will do some analysis on our end and present it at the next meeting to see what that breakdown would look like and what we can tease out of the data. We probably can't tell you who had a failed neuraxial, but we can probably tell you who had a neuraxial and then received general anesthesia. You would then need to do some digging to see the reason why.

vi. *Brandon Togioka (OHSU)* - I am seeing that our rate is lower than expected and all cases are being excluded

1. *Nirav Shah (MPOG)* - This is an important review that sites take a look at their case lists to make sure that cases are being included appropriately. Please look with a skeptics eye and let us know if you need any help.

vii. *Nirav Shah (MPOG)* - If your site has done anything to standardize documentation of reason for GA, please share it with the coordinating center and we will bring some examples to the next meeting.

viii. *Wandana Joshi (Dartmouth) via chat* -I feel that this data is important to define specifically since SOAP has a specific percentage of patients undergoing general for cesarean delivery for becoming an OB center of excellence.

H. Cesarean Delivery Case volume by MPOG Site - 1 year

a. Graph of case volume reviewed. Please see slides for details.

b. The number of cesarean deliveries done per year by each site his highly variable (from about 2,000/year to <200/year)

c. There is large variation in the number of labor epidurals that convert to cesarean deliveries

I. Hypothermia after Cesarean Delivery – Modify TEMP01/TEMP02/TEMP 03 vs new measure development discussion

a. This is our opportunity to review the current MPOG measures to see if they are relevant for the OB population, should be modified, or if more relevant OB measures should be developed

b. Normothermia in Cesarean Deliveries - SOAP ERAC Guidelines for Normothermia (CLASS I, Level C, Low-Grade Level of Evidence)

i. Benefits: Reduced SSI risk, shorter LOS, improved neonatal umbilical artery pH and APGAR scores

ii. Active warming = decreased hypothermia and perioperative shivering

iii. Preferred methods of facilitating maternal-neonatal warming in cesarean delivery

1. Preoperative patient warming

2. Intraoperative fluid warmer

3. Intraoperative forced air warming

4. OR room temp >72 F (23C)

iv. Bollag L, Lim G, Sultan P, Habib AS, Landau R, Zakowski M, Tiouririne M, Bhambhani S, Carvalho B. Society for Obstetric Anesthesia and Perinatology: Consensus Statement and Recommendations for Enhanced Recovery After Cesarean. Anesth Analg. 2021 May 1;132(5):1362-1377. doi: 10.1213/ANE.0000000000005257. PMID: 33177330.

c. TEMP 01: Percentage of cases where active warming was administered by the anesthesia provider

i. Inclusion: Cesarean deliveries (general or neuraxial anesthesia)

ii. Exclusion: Labor epidurals

iii. Success: Cases with documentation of an active warming device applied OR cases with at least one temperature greater than or equal to 36.0°C within the 30 minutes before case end.

iv. For cesarean deliveries, fluid warmers are considered an active warming device

v. Reviewed current TEMP 01 scores filtered to Cesarean Delivery Cases. Please see slides for the graph.

vi. Discussion: Keep measure as is, modify for OB, or exclude OB patients?

1. *Joshua Younger (Henry Ford - Detroit)* - This is one of the metrics that really bothers me as much as I am on labor and delivery. The reason is not that I am not providing quality care for my patients, it's that I can't get a reliable temperature on the patient during this and getting it at 36. One of the things we are asked is how it is being measured. Skin temperature is not adequate but if you are trying an axillary temperature, their arms are out so I am getting temperatures of 32 or 33 which is obviously not accurate. If a patient's not wanting a bair hugger because it's too warm for them or you don't have a fluid warmer for every single case, it leaves you little wiggle room for hw not to fail this measure. We have had discussions around foley temperatures, but those are expensive.

2. *Niravh Shah (MPOG)*- This measure accounts for some of that in that it will take temperatures up until the first PACU temperature if I remember correctly and it will accept temperatures from any route, unlike the core temperature measure. This is a lot of the discussion we had years ago when we tried to convince ourselves that this measure was applicable to the OB population. The feedback we got was that arms are out or, as Rachel Kacmar mentioned on the chat, there are a number of patients that don't want a forced air warmer on them while they are holding their baby which presents a challenge. We want to make sure we are capturing the things you are doing in the OR, including fluid warmer and raising the temperature in the room, and things you think would make sense for us to capture while taking into account this is a unique population and context.

3. *Joshua Younger (Henry Ford* - Detroit)- Is there any evidence that there is improvement in care or temperature of this population? One thing is to get an accurate temperature, but how much does that really mean? I feel like I am never getting an accurate temperature. What are we protecting with this metric?

4. *Ron George (UCSF) via chat* - We never measure temperature intraoperatively during c-sections under regional

5. *Rachel Kacmar (University of Colorado) via chat*- We also never measure temperature under neuraxial. We also have a significant portion of patients who don't even want a blanket on them, let alone a forced air warmer.

6. *Ashraf Habib (Duke) via chat* - We used forced air warming, we are supposed to measure temperature intraop but we are not consistent

7. *Nirav Shah (MPOG)*- As an overview, TEMP 01 looks at if you are actively trying to warm the patient during the case. TEMP 02 is a core temperature measure. TEMP 02 looks at if you are measuring core temperatures in patients undergoing general anesthesia and again was developed for the non-cesarean population. TEMP 03 is our temperature outcome measure that looks at if a patient is hypothermic at the end of the case or immediately postop. These are the three measures that comprise our suite of temperature management measures in ASPIRE right now. What we are trying to figure out is how relevant these are to the OB population and take into consideration the SOAP guidelines and relevant evidence. As you can see in the SOAP guidelines, these are Class I Level C, so not gold standard randomized controlled trial where normothermia reduces risk of complications

8. *Ashraf Habib (Duke)* - The issue with normothermia or temperature outcomes in obstetric patients is that we don't really have good data looking into it similar to what we have in the general surgical population. It does make sense and we suspect that it does make a difference similar to what we see in the general surgical population but we don't have data for it. There are meta analyses that show active warming does improve temperature and might improve outcomes. There is sparse data in the obstetric patient population. I see on the chat that there is variability in what folks do in terms of active warming or not active arming and the practicalities of that. So maybe an important metric to look at would be the temperature in PACU measure. This would be an important place to see if we have a problem or not. In our practice, we do use active warming and we thought that we weren't doing a good job, and then we looked at our data and were pleasantly surprised with our PACU data

9. *Brandon Togioka (OHSU)* - Each of the three temperature measures have different exclusion in terms of the length of the case

10. *Nirav Shah (MPOG)* - Measures were built at different times and while TEMP 03 is an outcome measure, TEMP 01 and TEMP 02 are process of care measures. For a core temperature perspective, the discussion was around how short a case would need to be to not require placement of a temperature probe. The thought was that for any case with GA, you should place a temperature probe to reduce the risk of surgical site infections and other potential known issues. This leads us to our discussion regarding TEMP 03, where many cesarean deliveries are being excluded from this measure due to the exclusion of cases <60 minutes

d. TEMP 03: Percentage of patients, regardless of age, who undergo surgical or therapeutic procedures under general or neuraxial anesthesia of 60 minutes duration or longer for whom at least one body temperature was less than or equal to 36 degrees Celsius (or 96.8 degrees Fahrenheit) recorded within the 30 minutes immediately before or the 15 minutes immediately after anesthesia end time

   i. Included: Cesarean Deliveries >60 minutes

   ii. Excluded: Labor epidurals, cesarean deliveries marked as emergent, cases less than 60 minutes

   iii. Reviewed current TEMP 03 scores filtered to Cesarean Delivery Cases. Please see slides for the graph. There is wide variation in performance across sites, although we have not done a further analysis.

   iv. Case counts show that many cesarean deliveries across sites that are excluded currently, likely due to the case being <60 minutes. To make this more relevant, we may want to include all these cesarean delivery that were done in <60 minutes to provide a more complete picture of what the temperature outcomes are for this patient population.

   v. Discussion

      1. *Niravh Shah (MPOG)* - Does anyone feel otherwise that we should not change the length of case exclusion? Agreement or disagreement that we should focus on the outcome (TEMP 03)?

      2. *Ron George (UCSF)*- This is where we should focus and if we see that is is an outcome problem then we can start to target the need for better measurement intraoperatively and other warming techniques

      3. *Niravh Shah (MPOG)*- TEMP 02 (core monitoring) is probably the least relevant for the OB population because there are so few cases where you have the option to have a core or near core temperature probe on. There are sites in MPOG that are monitoring their active warming, so we will continue to have TEMP 01 on their OB dashboard so that those sites can continue to have that data. Our ask is to view this through your dashboard and, like we did for BP 04 and GA 01, let us know if this accurately reflects your practice or if we are potentially over or under excluding cases

      4. *Ron George (UCSF)*- TEMP 01 may become more useful as we collect more TEMP 03

      5. *Brandon Togioka (OHSU)* - For TEMP 01, how long do you need to have active warming in place to get an effect? I wouldn't want to encourage people to put one on just to meet the quality metric. Forced air warmers are also more expensive than foley temperatures. I wonder if there is any data around that.

6. *Ashraf Habib (Duke)* - There is no data. The studies that were conducted say to just use active warming in the OR and during the cesarean delivery, or preoperative warming, but there is no data as to the practice.

7. *Nirav Shah (MPOG)*- TEMP 01 is a yes/no measure that looks to see if any active warming was used.

8. *Brooke Szymanski-Bogart (MPOG)*- Sounds like the plan moving forward is to look at TEMP 03, what kinds of modifications (inclusions/exclusions) we can make to the measure to make it more relevant to TEMP 03. This will likely be broken out into its own separate OB temperature outcome measure. We will work on getting a spec for this measure and we appreciate subcommittee feedback along the way

e. (Not explicitly discussed during the meeting) TEMP 02: Percentage of cases with increased risk of hypothermia that the anesthesia provider documented at least one core temperature intraoperatively for any patient receiving a general anesthetic.

   i. Inclusion: Cesarean deliveries with general anesthesia only

   ii. Exclusion: Labor epidurals

   iii. Success: Cases with at least one core or near core temperature documented between Anesthesia Start and Patient out of Room. If not available then, Anesthesia End.

      1. Pulmonary Artery Temperature
      2. Zero-Flux Thermometer Temperature
      3. Distal Esophageal Temperature
      4. Oral Temperature
      5. Nasopharyngeal Temperature
      6. Axillary Temperature (arm must be at patient side)
      7. Tympanic Membrane Temperature
      8. Rectal Temperature
      9. Bladder Temperature