Cardiac Anesthesia Subcommittee Minutes

February 12, 2021

12:00pm – 1:00pm EST

Zoom

X	Abernathy, Jake (Johns Hopkins)		Kertai, Miklos (Vanderbilt)
	Andrawes, Michael (MGH)	X	Kileny, Joel (St. Joseph Mercy Ann Arbor)
	Billing, Josh (Vanderbilt)		Krall, Thomas (TJ) (UCSF)
X	Bailey, Meridith (MPOG)	X	Lacca, Tory (MPOG)
	Bottiger, Bandi (Duke)	X	Low, Ying (Dartmouth)
X	Buehler, Kate (MPOG)		Luria, Brent (NYU Langone)
X	Burrage, Peter (Darmouth)		Mamoun, Negmeldeed (Duke)
	Clark, Cantwell (Dartmouth)	X	Mathis, Mike (MPOG)
X	Chen, Yunwei (Washington University)	X	Muehlschlegel, Danny (Brigham and Women's)
	Davies, Eric (Henry Ford Health System)		Neuburger, Peter (NYU Langone)
X	Douin, Josh (University of Colorado)		Podgoreanu, Mihai (Duke)
	Dubovoy, Anna (Michigan Medicine)		Rangrass, Govind (University of Chicago)
X	Fisher, Clark (Yale)		Reidy, Andrea (Washington University)
	Ian Gannon, Michigan Medicine	X	Rhee, Amanda (Mount Sinai)
	Michael Grant, Johns Hopkins		Sera, Valerie (OHSU)
	Grewal, Ashanpreet (Ashan) (University of Maryland)		Schonberger, Rob (Yale)
X	Guruswamy, Jayakar (Jay) (Henry Ford Health System)		Shah, Nirav (MPOG)
	Hasmi, Nazish (Duke)	X	Shook, Doug (Brigham and Women's)
X	Janda, Allison (MPOG)		Szymanski, Brooke (MPOG)
	Jelacic, Srdjan (University of Washington)	X	Varelmann, Dirk (Brigham and Women's)
	JohnBull, Eric (Duke)	X	Vega, Eleanor (Duke)
X	Katta, Gaurav (Henry Ford Health System)		

1. **Introductions and interim updates**
    a. Introductions MPOG Team
        i. Allison Janda, MD – MPOG Cardiac Subcommittee Lead
        ii. Nirav Shah, MD – MPOG Director of Quality
        iii. Michael Mathis, MD – MPOG Director of Research
        iv. Kate Buehler, MSN – Clinical Program Manager
    b. Cardiac subcommittee is using Basecamp to communicate between meetings: please accept your Basecamp invitations (sent via email) to stay in the loop
    c. Individual Performance E-mail link to new QI Reporting tool

2. **Recap from Meetings #1 & 2**
    a. Call for Measure Survey Results Overview
        i. 16 providers completed the survey
        ii. Highest rated measures (no overwhelming consensus)
            1. **#1: Post-bypass hypothermia avoidance (62% listed in the top 3)**
            2. **#2: Glucose management (56% listed in the top 3)**
            3. #3: Postoperative AKI avoidance (44% listed in the top 3)
            4. #4: Hypotension avoidance (44% listed in the top 3)
            5. #5: Antibiotic timing (38% listed in the top 3)
        iii. MPOG data capture - measure limitations
            1. 4 Hours before Anesthesia Start 6 hours after Anesthesia End
    b. Overview of variation for 2019 cardiac data:
        i. >35.5vC, mean: 85%, SD: 13%
        ii. >36.0 C, mean: 66%, SD: 21%
        iii. >36.5 C, mean: 35%, SD: 19%
3. **Post-Bypass Hypothermia Avoidance**
    a. Current TEMP-03 Measure:
        i. % of patients, with procedures >60 minutes under GA/neuraxial, with at least one body temperature ≥ 36°C
        ii. Excludes cardiac surgeries
    b. Literature Review (see slides for more information)
        i. Current guidelines and consensus statements:
            1. 2020 Updates from the Adult Cardiac Anesthesiology Section of STS
            2. Guidelines for perioperative care in cardiac surgery: enhanced recovery after surgery recommendations
        ii. Current guidelines and consensus statements:
            1. STS Practice Guidelines for temperature management while on bypass
            2. ERAS cardiac recommendations
            3. Current guidelines and consensus statements
        iii. Additional Literature
            1. Retrospective observational study in cardiac patients
            2. Retrospective study evaluating the impact of hypothermia on morbidity and mortality after off-pump CAB surgery
            3. RCT in non-cardiac surgery patients with cardiac comorbidities
            4. Systematic review of the impact of mild perioperative hypothermia on blood loss for non-cardiac Surgery
    c. Hypothermia Avoidance Measure
        i. Considerations:
            1. Threshold: (≥35.5C)
                a. Further Discussion?
                    i. Muehlschlegel: Where are we getting the measurement? We need to reference where we get the measurement (i.e. core vs. peripheral). Looking at the post bypass period, the general group thought that core was most ideal. We need to do more digging to make sure we're noting the source..
                    ii. Vega: Bladder temperature, if it's not being linked to bladder and there is no urine output, it may not be accurate. Mathis: There will be a bioinformatics

discussion. Temperature data will only be as good as we can remove artifacts. We should think about edge cases but during this meeting, we should focus on the clinical aspects.

iii. Allison: We will dive into the most common sources once we develop the first draft of the query specification and dig into the data. It will be a heavy programmer lift to look into the data on the fringe cases or those cases with a non-core temp documented to see if we should look back 5-10 minutes for example. As far as the actual threshold, are folks okay with this temperature (>/=35.5)?

iv. Answer: Yes.

2. Timing: Last non-artifact temperature documented, if more than one, preferentially use core temperature
    a. Basecamp confirmed we will look at last non artifact temperature documents, if more than one, preferentially core temperature, discussion?
        i. Fisher: if not more than one at the last but within the last 10-minutes may be the best. Mathis: There will be a look-back period to ensure we are getting the most accurate temperature. We will only figure this out when we get out hands on the data.
        ii. Consensus: "Last" recorded temperature with preference of core temperature measures, will review the data to see if we should include a look-back period, and if so, what duration, once we dig into the output from the first draft of the specification.
3. Exclusions: Items to consider: Limit to open cardiac cases; limit to bypass cases; exclude cases requiring circulatory arrest in light of hypothermia contributing to neuroprotection
    a. Discussion: Muehlschlegel: What's our outcome? Janda: In the measure generation itself, we do not have a specific outcome. The initial purpose is to establish a threshold and after we get more data we can see how we can use them in research to possibly look at outcomes such as AKI or mortality. Muehlschlegel: Depending on the outcome, it would dictate how I would create the measure. If you're just being descriptive it may be valuable to include everything. I would be in favor of limiting it to cardiac cases. Shook: I agree it should be broad but if we are using it as a quality measure we want to be certain about what we're telling people they want to achieve. It may not be related to core temperature. We would want information on everything at first. If we are trying to figure out all subsets, why can't we have all three? Janda: I agree, we can include all in the measure. The providers will have their own case list and could look specifically at those flagged cases and determine if there needs to be change in practice. Shook: 35.5 is a low threshold. Make more inclusive for including off pump

bypass. Douin: I like the idea of categorizing it separately. My other thought is emergent cases, those are a different subset of cases and may strongly influence temperature management. Janda: Do we want to exclude them or include emergency cases and flag them? Mathis: emergency cases are going to matter the most. Those are the cases where we can make a difference vs. straight forward CABG which may not matter that much.

b. Janda: Regarding picking very specific types of cases (HCA or ECMO) are at the mercy of the quality of the data and how they are binned. We also have a predicted CPT that has a complex algorithm and some of the fringe cases could slip through. Part of the process will be to validate and review the cases. Abernathy: Is this just temperature at the end of the case? With what clarification? Why exclude any case? Is there ever a case that hypothermia leaving the OR is desired? If there isn't that case, I would argue to include all cases. Mathis: One thing to consider is to be able to compare apples to apples, which not the sole goal of the measure. Are you an outlier because you have a certain cohort of patients that are more challenging? Any exclusion criteria we apply can be turned off for research. For getting some sense of where we stand it will be some effort and to have truncating at the edges is helpful. Janda: One fringe case is TVAR where the surgeon refuses to turn on the bair hugger and that will be determined by practice patterns. When we get into other measure development, such as glucose management, we can hone into those, but we are intentionally leaving this patient at 35.5. Varelmann: Hypothermia leads to SSI and other complications. Janda: Agreed, some of the literature focused on surgical site infection and bleeding, which implies the existence of an incision/sternotomy/larger surgery. That may be a good reason to limit the group to open cardiac cases since the temperature management could matter more in those patients as opposed to a 2 hour TAVR. What is most helpful for you and your team? Mathis: One other consideration is that this is just a starting point. What do we want to see as the first number? If you are interested in a particular sub-population, you can add filters. Shook: If you can do it for all the cases and I can easily filter, that is great. If you are going to do it one way across institutions, I would like to see the first cases to be pump cases. For my institutions, I would want to see cases in all ways so I can first see how we are doing at my institution. Fisher: If we are looking for comparison across hospitals, I would weed out hypothermic cases because if your site does not do many, you may think you're in line with other sites. Abernathy: If the goal is to leave the room warm and measure the temperature of the room then it doesn't matter. I agree this should be limited to pump cases. Muehlschlegel: The temperature drop after the case can be dramatic. Janda: Agreed, I would favor including these HCA cases so when that

case is flagged, it draws attention to these cases. If the case is never included, people may not know they're missing an opportunity to improve. Chen: If we are just including "pump" cases, are we including ECMO cases? Mathis via chat: Yunwei -- this will be determined by the MPOG 'cardiac case' phenotype -- on MPOG website --> Tools --> Phenotype browser... the detailed logic (which we can revise/improve) is there --would love to hear your feedback on it. Janda: Not every site contributes surgical CPTs. Surgical CPTs are collected over time and we might not have those to include in time to be added to the quality measure, and to rule in/our an ECMO case, we don't have the granularity in anesthesia CPTs that would be needed to identify those cases. Mathis: Version 1 of the measure is that we will have to make sure we add all the nuances of cardiac cases and we will make adjustments as we go. Muehlschlegel: I agree, let's make a decision and review the data first. This will help us to make sure we agree with the data coming out and make modifications as we go.

   c. Janda: We will come up with a version of this measure based on these discussions. We may not have a completed consensus but we do have a good starting point. We will be sending out via Basecamp or Google Doc.

4. Attributions: Options include: 1) Attending physician signed in for the most number of minutes; 2) attending physician signed in for the most number of minutes post bypass; 3) attending physician signed in upon transport from operating room; 4)attending signed in during the minute of the case which yielded the temp used for the measure, or any additional ideas?
   a. Discussion: Abernathy: Whole case? I think most outcomes should be attributed to person the person who is in the case the majority of the time. Muehlschlegel: if we can get reliable data on rewarming post-bypass, we should consider post-bypass. Abernathy: How do you attribute PONV that relies on timing for other measures? Buehler: It is attributed to all providers signed into the case for ≥ 40 minutes. We assume they will have discussions and determine that someone is responsible. Abernathy: Is that the answer here? If you started the cases and you were there for two-hours. Meridith via chat: All providers for a given case who are signed in ≥ 40 minutes. If a given case is ≤ 60 minutes, all providers are responsible. Janda: I suggest we take a hybrid approach and use the starting time of "conclusion of bypass" since identifying the time rewarming started during bypass may be challenging, but we would be able to see timing of "bypass end" within a few minutes more reliably. Katta: we are all in agreement that merely using the attending at the time the temperature is taken is not acceptable. A hybrid approach is nice to include all those in the case after bypass should be attributed. Janda: Also, as an aside, this is not meant to be punitive, it is meant to be constructive

feedback with the end goal to have all parties that could improve to take an extra look at the case. I would hedge on overinclusion to draw the attention of more people to ensure providers have what they need. Shook: I like including everyone and would vote for post bypass. Mathis: would you include pre-bypass? Shook: No, I would start at bypass, I do not think pre-bypass matters. Katta: For simplicity should we just grab everyone signed into the case to start? Janda, we don't want to err in the other direction and provide too much information. We don't want to frustrate providers by giving them feedback on something they couldn't intervene on. I like the idea of narrowing the window to incorporate those during the post-bypass period.

   b. Janda: Thanks to everyone for their feedback, we have a starting point and will send out information after meeting including a drafted measure specification.

d. Hypothermia Avoidance Next Steps
   i. We will incorporate your feedback and draft a measure specification
   ii. Apply the measure specification to past cases and test functionality
   iii. Circulate the measure specification for approval
   iv. Synergize efforts with SCA Quality & Safety Committee / CPI Subcommittees
      1. Should we engage with SCA Quality & Safety or CPI Committees: Shook: Involves another layer, their job is to create things that we do not have to synthesize anymore because they do the job. Does MPOG want to create a synergized effort and cross relationship? Personally, I'm for inclusivity to make sure we do the best. There will be a little bit of politics but those are little humps that shouldn't get in the way.
      2. Mathis: From a broad QA framework, we can include them broadly in a measure specific way. Its' better to have the conversation than to stay in our silos.

4. 2020-2021 Plans

a. Build 1 cardiac-specific measure in 2020/early 2021
   i. Post-bypass **hypo**thermia avoidance
b. Build 2-3 cardiac-specific measures in 2021
   i. Glucose management?
c. On-bypass **hyper**thermia avoidance?
   i. Antibiotic timing?
d. More discussion
   i. Hypotension avoidance
   ii. AKI avoidance
e. Opportunities for STS-merged outcome reports requires institutions to integrate with STS – see surgical registry page on MPOG website

5. New Cardiac- Specific Reporting Dashboard released in beta version

a. See slides for screenshot of reporting dashboard
b. Visit the mpog.org website and click on the blue login button in the top right corner of the website to login and view: for access issues- please contact: **ajanda@med.umich.edu**

6. Subcommittee membership and meeting schedule

a. Open to all anesthesiologists or those interested in improving cardiothoracic measures
    i. Do not have to practice at an active MPOG institution
b. Proposed 2021/2022 Meeting Schedule
    i. Spring 2021 Meeting: April/May, 2021
    ii. Summer 2021 Meeting: July/August, 2021
    iii. Fall 2021 Meeting: October/November, 2021
    iv. Winter, 2022 Meeting: January/February, 2022

Meeting adjourned at 1:00pm