



## Cardiac Anesthesia Subcommittee Minutes

June 4, 2021

10:00am – 11:00am EST

Zoom

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

## 1. Introductions- MPOG Team

- i. Allison Janda, MD – MPOG Cardiac Subcommittee Chair
- ii. Nirav Shah, MD – MPOG Director of Quality
- iii. Michael Mathis, MD – MPOG Associate Research Director
- iv. Kate Buehler, MSN – Clinical Program Manager

## 2. Cardiac Dashboard on MPOG Reporting Tool

- a. Cardiac dashboard is now available for individual providers, site cardiac champions, and site quality champions to view
- b. To access the cardiac dashboard:
  - i. Default view when logging in from Provider Feedback Emails is your own performance for site-selected measures
  - ii. Change 'Entity' in upper left corner to your institution rather than your own name
  - iii. Choose 'Dashboards' then 'Cardiac' from the banner along the top
- c. Reach out if you have any questions: [support@mpog.zendesk.com](mailto:support@mpog.zendesk.com)

## 3. TRAN 01: % of cases with a blood transfusion that have hemoglobin or hematocrit value documented prior to transfusion

- a. Quality Committee recently voted to exclude all cardiac cases but wanted to pass this through the Cardiac Subcommittee for consideration
- b. Rationale:
  - i. EBL is not accurately documented for bypass cases
  - ii. Variable location of documentation for POC labs and blood products by perfusion team leads to potential inaccuracies
  - iii. Need for emergent transfusion is more frequent in cardiac cases (i.e. no time to check hemoglobin or hematocrit)
- c. Discussion:
  - i. Nirav Shah (ASPIRE Director): Quality Committee recommended specifically excluding cardiac bypass cases vs. all cardiac cases.
  - ii. Danny Muehlschlegal (BWH): What does the cardiac dashboard actually include as far as case types? Looks like there are more than just cardiac cases in there currently.
  - iii. Allison Janda (MPOG Cardiac Subcommittee Chair) - The current cardiac phenotype is over inclusive and there are many cases that are actually not cardiac. Working to use Surgical CPTs, Anesthesia CPTs, whether or not a clamp/bypass was used etc. It might be best to just exclude bypass cases at this point.
  - iv. Kate Buehler (MPOG) - To exclude Bypass cases it might be good to start with that and then wait until the updated cardiac phenotype is ready.
  - v. Nirav (ASPIRE Director) - I agree.
  - vi. Josh Billings (Vanderbilt): Does over-excluding prevent us from getting some meaningful information from those cases that get flagged? Even if they had reasonable care during an emergency, for instance, it may still be good to see those cases.
  - vii. Allison Janda (MPOG Cardiac Subcommittee Chair): That's a great point, Josh, yes, we're always trying to strike the balance for the quality measures to give providers pertinent feedback about their cases that may need a review but at

the same time, avoiding over-flagging cases so providers start ignoring the measure if it inappropriately flags cases frequently.

- viii. Josh Billings (Vanderbilt): Will you collect the data and not display it on the dashboard until the phenotype is complete?
- ix. Allison Janda (MPOG Cardiac Subcommittee Chair): This measure will retrospectively apply and that historical data will still be there for quality measures or for research purposes.
- x. Nirav Shah (ASPIRE Director): We also have the ability to create specific visualizations in our new QI reporting tool to help provide additional information for measures.
- xi. Mike Mathis (MPOG Assoc. Research Director): Can either take the path of an informational measure or build a cardiac-specific measure for transfusions in the future
- xii. Vote to exclude cardiac bypass cases in the general TRAN-01 measure:
  - 1. Joel Kileny (SJMAA), Gaurav Katta (Henry Ford) and Danny Muehlschlegal (BWH)- sounds reasonable.
- xiii. Allison Janda (MPOG Cardiac Subcommittee Chair): **Decision-** Move forward with excluding cardiac bypass cases first and then move forward with excluding other cardiac cases if needed using the revised phenotype once available

#### 4. Cardiac Procedure Type Phenotype

- a. Coordinating Center is working to develop a new cardiac procedure type phenotype to better identify types of cardiac procedures
- b. This phenotype will be used for quality measures (inclusions/exclusions) & research projects
- c. New categories resulting from this phenotype:
  - i. Open Cardiac
  - ii. Transcatheter/Endovascular
  - iii. EP/Cardiac catheterization
  - iv. Other cardiac
  - v. No/Non-cardiac
  - vi. Missing/unknown/unable to determine
- d. Data Elements Utilized:
  - i. Surgical CPTs (if present)- Not available for all cases
  - ii. Anesthesia CPTs
  - iii. Procedural Service IDs
  - iv. Cardiopulmonary bypass documentation phenotypes and concepts
  - v. Procedure text phrases
- e. Schema: Sequentially bins cases based on utilized fields if present
- f. Current Status: Undergoing validation
- g. Questions for group:
  - i. Sternal debridements: Cardiac or non-cardiac
  - ii. ECMO cases: other cardiac?
- h. Discussion:
  - i. Rob Schonberger (Yale)- Is the procedure type phenotypes for other categories of procedures a focus for MPOG in addition to cardiac procedures? I have seen some issues with a recent MPOG research project.
  - ii. Allison Janda (MPOG Cardiac Subcommittee Chair): We are aware of this but if you have specific examples of other procedure type phenotypes that aren't

- working as expected, please send them to us. The biggest issue was with the cardiac procedure type phenotype so we've started with tackling this one first.
- iii. Danny Muehlschlegel (BWH) What's the purpose of putting sternal debridements into separate bins? These are small cases that sometimes have nothing to do with cardiac. It could be done by the plastics service or others. Only consistent is that it might be done by a cardiac anesthesiologist. On the other hand these could be cardiac 're-op' cases
  - iv. Allison Janda (MPOG Cardiac Subcommittee Chair): We were not considering this as a bin on its own, we were considering this to be either non-cardiac or cardiac but wanted to know if we should put this in the other non-cardiac category. Would you prefer to put it in the non-cardiac bin if you had to pick one?
  - v. Danny Muehlschlegel (BWH)- yes, non-cardiac
  - vi. Josh Billings (Vanderbilt): Exclude sternal washouts/closures from the measure, but it would be nice to have a toggle. If you're looking for LOS or other outcomes I think you would want to distinguish traditional open heart cases. I wouldn't call them 'non-cardiac' but are just not as 'major'.
  - vii. Allison Janda (MPOG Cardiac Subcommittee Chair): There will be gray area in this other cardiac group. There could be instances where you do want to see sternal debridement cases but in general, wanted to know from the group, as a whole, do they fit better in non-cardiac or cardiac. They really are both, but since they vary in extent (i.e. some may just be a quick debridement above the sternum whereas others may be a more extensive complete washout for a bleeding bring-back) without any change in how they are booked or labeled so we should try to put them in a bin that makes sense, but allows researchers and the QI measures to either filter them out or in based on the specific question at that moment.
  - viii. Mike Mathis (MPOG Assoc. Research Director)- If we plan to study sternal debridements in the future, then it does make sense to separate. If the goal is to remove the dilution of other cardiac, maybe we call them non-cardiac, but they do have more similarities with cardiac cases than a general case.
  - ix. Josh Billings (Vanderbilt) - Could label the bucket above as 'Major Open Cardiac' procedures and these sternal debridements as 'other cardiac' since these cases are still in our service line and shouldn't be dumped into non-cardiac. I like the idea of putting them in the 'other-cardiac' bucket.
  - x. Allison Janda (MPOG Cardiac Subcommittee Chair) - Either way we are making an improvement to the current state but it is still a grey zone which is why we are bringing it to this group. For now, are we okay to separate the smaller cases into the 'other-cardiac' bucket
  - xi. Rob Schonberger (Yale) / Mike Mathis (MPOG Assoc. Research Director) - Agree
  - xii. **Decision:** Categorize sternal debridements & ECMO cases as 'Cardiac: Other.'

## 5. Post-bypass Hypothermia Avoidance

- a. Current TEMP 03 Measure: % of patients, with procedures >60 minutes under GA/neuraxial, with at least one body temp  $\geq 36^{\circ}\text{C}$  (excludes cardiac surgery)
- b. New TEMP-06-CARD measure
  - i. % of patients,  $\geq 18$  years age, who undergo open cardiac surgical procedures under GA of >120 minutes for whom last non-artifact body temperature prior to anesthesia end was  $\geq 35.5^{\circ}\text{C}$

ii. Timing:

1. Last non-artifact temperature documented, if more than one, preferentially use core temperature
2. Look back period of 15 minutes
  - a. Use core temperature if present in the anesthesia record within 15 minutes of the last documented non-artifact body temperature
3. Core or Near Core Temperature Monitoring Includes:
  - a. Pulmonary Artery Temperature
  - b. Distal Esophageal Temperature
  - c. Nasopharyngeal Temperature
  - d. Tympanic Membrane Temperature
  - e. Bladder Temperature
  - f. Rectal Temperature
  - g. Axillary Temperature (arm must be at patient side)
  - h. Oral Temperature
  - i. Zero-Flux Thermometer Temperature
4. Artifact Algorithm:
  - a. Less than 32°C (89.6°F)
  - b. Greater than 40°C (104.4°F)
  - c. Any minute-to-minute jumps >0.5°C equivalent
  - d. Example: 0.125°C/15s/0.25°C/30s, 1°C/2mins)
5. Attribution:
  - a. Any provider signed in for ≥40 minutes from bypass end until anesthesia end (or the provider signed in for the greatest number of minutes during this period, if this period is <40 minutes) per staff role.
  - b. If bypass was not used, the window would be expanded to any provider signed in for ≥40 minutes for the entire case
6. Inclusions: All patients, 18 years of age or older, who undergo open cardiac surgical procedures (as determined by Procedure Type: Cardiac phenotype) under GA of greater than or equal to 120 minutes
7. Exclusions:
  - a. Organ harvest (CPT: 01990)
  - b. Non-cardiac cases as defined as those cases not meeting criteria for the cardiac case type phenotype
  - c. Within the general cardiac case type phenotype, exclude: Transcatheter/Endovascular and EP/Cath groups
  - d. Invalid cases where Measure End results prior to Measure Start
  - e. Cases with age <18
  - f. Potential exclusions to add:
    - i. Cases with an intraoperative note mapped to intentional hypothermia (MPOG concept: 50037)
    - ii. Circulatory arrest cases
    - iii. Emergency cases (MPOG concepts: 70142 or 515)
    - iv. "Other Cardiac" bin
    - v. "Transcatheter/Endovascular" bin
  - g. Discussion regarding exclusions:
    - i. Allison Janda (MPOG Cardiac Subcommittee Chair): Does anyone object to including circulatory arrest

cases?

1. Rob Schonberger (Yale): Makes sense
  - ii. Allison Janda (MPOG Cardiac Subcommittee Chair):  
Other cardiac cases: include or exclude?
    1. Mike Mathis (MPOG Assoc. Research Director):  
If we are placing value on assessing if we improve, we want to be able to identify performance changes vs. the changing nature of cardiac surgery in case volume/type. Want to be able to understand changes over time and be over exclusionary to really be able to detect true changes in open cardiac cases.
    2. Danny Muehlschlegel (BWH): Makes sense to separate or exclude transcatheter cases as they are so different from open cardiac cases but should include circulatory arrest cases as they should be warm by the end of the case unless we're intentionally cooling someone after circulatory arrest
  - iii. Allison Janda (MPOG Cardiac Subcommittee Chair):  
Addressing question in the chat from Morgan Brown (Boston Childrens)- Transcatheter cases such as a PFO repair would fall into the transcatheter/endovascular bin. Cardiac cath cases where they are doing a right heart catheterization for instance, would fall under cardiac cath; ablations would fall under the EP category; If just getting echo or cardioversion, those would be under EP; cardiac MRI would be in MRI phenotype but would be considered non-cardiac for the cardiac phenotype.
  - iv. Mike Mathis (MPOG Assoc. Research Director) via chat:  
One comment re: using last non-artifact, non-core temperature... if we have 2 core temperatures document (e.g. nasopharyngeal + bladder), which were disconnected at a relatively similar time (e.g. within 15 minutes of each other), I would favor the \*higher\* of the two temperatures... getting at the issue of oliguric patients potentially having a low bladder temp. Maybe an issue to discuss via basecamp, given we have 5 minutes here... would be interested to hear what the group thinks.
8. Next Steps for TEMP-06-CARD
  - a. Incorporate your feedback in V2 of the measure specification
  - b. Incorporate suggestions into the Cardiac Procedure Type Phenotype
  - c. Apply the measure specification to past cases and test functionality
  - d. Update group with any updates or snags during validation
  - e. Circulate the revised measure specification for approval
  - f. Synergize efforts with SCA Quality & Safety Committee / CPI Subcommittees

## 6. Goals:

- a. Build 1 cardiac-specific measure in 2021 (Post-bypass normothermia avoidance)
- b. Build 1 additional cardiac-specific measure in late 2021
  - i. On-bypass hyperthermia avoidance?
    1. Allison Janda (MPOG Cardiac Subcommittee Chair): Is this the next measure we should be tackling?
    2. Mike Mathis (MPOG Assoc. Research Director): I think it's a good measure but wonder what the group thinks about the agency anesthesia has in controlling this though?
    3. Josh Billings (Vanderbilt): We do have responsibility for this- I don't think perfusionists are advocating for hyperthermia. I'm shocked at the performance you've just shown on the bar graph. Worth measuring.
    4. Rob Schonberger (Yale) via chat: Agency is an issue - though it may give us ammunition when we show a comparison with other institutions
    5. Ashanpreet Grewal (University of Maryland) via chat: It's not directly under our control but we can and should influence it
    6. Rob Schonberger (Yale): Want to make sure we aren't harming patients with our QI so agree with having hyperthermia as the counter measure is a great idea.
  - ii. Josh Billings (Vanderbilt): What is the best way to communicate with the group? Basecamp?
  - iii. Michael Mathis (MPOG Assoc. Research Director): Basecamp is best.
  - iv. Allison Janda (MPOG Cardiac Subcommittee Chair): I think we will send out another survey to determine what third measure we should build after the hypo and hyperthermia measures.
- c. Opportunities for STS-merged outcome reports->requires institutions to integrate with STS

## 7. Hyperthermia Avoidance (>38°C)

- a. Preliminary MPOG data shared: % of cases with any recorded temp above 38°C by institution (see slides for bar graph)
- b. Literature Review (see slides for full references)
  - i. 2020 Updates from the Adult Cardiac Anesthesiology Section of STS (Del Rio et al., 2020)
    1. Avoidance of temp >37 while on bypass
  - ii. Guidelines for perioperative care in cardiac surgery: enhanced recovery after surgery recommendations (Engelman et al., 2019)
    1. Avoid >37C for arterial outlet blood temperature while on bypass
  - iii. STS Practice Guidelines for temperature management while on bypass (Engelman et al., 2015)
    1. Avoid >37C for arterial outlet blood temperature while on bypass
  - iv. ERAS cardiac recommendations (Gregory et al., 2020)
    1. Avoid >37.9C while on bypass
  - v. Current cardiac hyperthermia avoidance [Anesthesia Quality Institute measure](#)
    1. AQI65, for cerebral hyperthermia avoidance defines hyperthermia as ≥37C while on bypass

## 8. Interested in STS-MPOG Integrations?

- a. Consult the Surgical Registry page and the FAQ
  - i. [Surgical Registry Page](#)
  - ii. [Surgical Registry FAQ](#)

## 9. Cardiac Anesthesia Subcommittee Membership

- a. Open to all anesthesiologists or those interested in improving cardiothoracic measures
  - i. Do not have to practice an active MPOG institution to participate
- b. Proposed 2021-2022 meeting schedule
  - i. Summer 2021 Meeting: August 2021
  - ii. Fall 2021 Meeting: October/November 2021
  - iii. Winter 2022 Meeting: January/February 2022
- c. Thank you for continued use of the Basecamp forum for discussion between meetings!

**Meeting adjourned at 1101**