Cardiac Anesthesia Subcommittee Minutes

October 9, 2020

11:30am-12:30pm EST

Zoom

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

1. **Introductions & Background of MPOG/ASPIRE**
    a. Roles within ASPIRE and Roll Call
        i. Allison Janda, MD – MPOG Cardiac Anesthesia 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
        v. Roll call for attendance- see above
    b. MPOG History

i. Formed in 2008
ii. >50 hospitals (Academic and private practice)
iii. 13 million cases
iv. 27 billion physiologic observations to date
v. Dual mission of research and quality improvement

c. Data Collected through MPOG
i. Demographic Information
ii. Preoperative H&P
iii. Medications / Infusions / Fluids / Outputs
iv. Physiologic values/ Laboratory values
v. Intraop events
vi. IV Access
vii. Staff in / out
viii. Professional fee CPT codes
ix. Discharge ICD 9/10 codes
x. Outcome record / Outcome registry

d. MPOG currently has 3 subcommittees that are continuing to expand upon the mission of improving quality and developing research in the following areas: obstetric pediatric and cardiac anesthesia
e. Cardiac subcommittee is using Basecamp to communicate between meetings: please accept your Basecamp invitations (sent via email) to stay in the loop
f. Overall goal is to create measures that are consistent with other existing and developing guidelines, useful to cardiac anesthesia providers, and reliable within our data

2. MPOG offers the opportunity for sites to integrate with other registry data:
a. ACS-NSQIP
b. STS-Adult Cardiac Surgical Database (STS-ACSD, aka "STS Cardiac") → 3 sites
c. STS-General Thoracic Surgical Database (STS-GTSD, "STS Thoracic") → 8 sites
d. STS-Intemacs (LVAD database) → tentative
e. More STS-MPOG integrated sites are in the pipeline
f. MPOG data contains more granular intraoperative data such as medication doses/times, physiologic data, ventilator data, and administrative codes (ICD 9/10 + CPT)
g. NSQIP and STS have more detailed procedure type and surgical data, adjudicated patient history and preop status, and more postoperative outcomes
h. Both MPOG & STS/NSQIP registries provide labs, demographics, and lab-based outcomes
i. For more information: consult the surgical registry page and FAQ section on the MPOG website: https://mpog.org/surgicalregistries/

3. MPOG provides a reporting dashboard to assist sites with quality improvement as well as provider feedback emails that are sent monthly to participating sites
a. Some of the ASPIRE measure are pertinent to cardiac cases though not specific to cardiac anesthesia
b. Individual providers can review their email to identify practice opportunities to improve care

4. 2020-2021 Plans
a. Call for Measure Survey Results
i. 16 providers completed the survey – Thank you!
ii. Highest rated measures (no overwhelming consensus)
1. **Post-bypass hypothermia avoidance (62% listed in the top 3)**
2. **Glucose management (56% listed in the top 3)**

3. Postoperative AKI avoidance (44% listed in the top 3)
4. Hypotension avoidance (44% listed in the top 3)
5. Antibiotic timing (38% listed in the top 3)

iii. FYI: MPOG data capture - measure limitations
1. 4 Hours before Anesthesia Start → 6 hours after Anesthesia End (for hemodynamic and medication administration granular data)
2. Laboratory values are included within 365 days of the procedure
3. What can't we do?
a. Limited outcome data at this point
b. Unable to provide feedback for STS data as only a few sites have merged STS data at this point

b. Post-bypass hypothermia avoidance
i. Current TEMP-03 Measure:
1. Percentage of patients, with procedures >60 minutes under GA/neuraxial, with at least one body temperature ≥ 36°C
2. Excludes cardiac surgeries

ii. Considerations in new measure development:
1. Threshold?
2. Timing (post-CPB)?
3. Exclusions for specific cardiac cases (e.g. spinal protection w/ thoracic aortic)?

iii. Variation Data Presented (see slides)
1. % of total cardiac cases with last temperature above threshold- 2019
a. 35.5-36 degrees Celsius
i. Mean: 85%
ii. SD: 13%
b. 36.1-36.5 degrees
i. Mean: 66%
ii. SD: 21%
c. >36.5
i. Mean: 35%
ii. SD: 19%
2. Caveats to this data:
a. Allison Janda (MPOG/Michigan Medicine): Will review individual cases once measure is built to identify corner case scenarios and add exclusions as needed
b. Ashan Grewal (University of Maryland): Were circulatory arrest cases were included in this data?
i. Allison Janda (MPOG/Michigan Medicine): Yes, they were included but can exclude in measure if determined appropriate by committee. Would need an algorithm to determine the time frame to exclude specifically.
3. What threshold should we target?
a. Joel Kileny (St. Joseph Mercy- Ann Arbor): Should we consider temperature modality used?
i. Allison Janda (MPOG/Michigan Medicine): MPOG data does include temperature route - can add to measure details the route utilized or incorporate into measure

criterion. This data reflects values with core or near-core temperature routes

   ii. *TJ Krall (UCSF): Nasal route flows into MPOG data for UCSF*

b. *Danny Muehlschlegel (BWH): We also know that hyperthermia leads to poor outcomes; should consider that patients with >36 degrees Celsius may be actually >37 or 38 and hyperthermic. Should account for this in the measure.*
c. *TJ Krall (UCSF): Has had discussions with perfusionist to keep the nasal temp below 37 during bypass*
d. *Joel Kileny (St. Joseph Mercy- Ann Arbor): Should also consider temps recorded on EMR during bypass through perfusion*
e. *Doug Shook (BWH): Helpful to pay attention to where the temperature is coming from. Check blood temperature to ensure we are not re-perfusing at too high of a temperature. Up to individual institutions to clean their own data and determine accuracy. This has relevance for brain function but also extubation criteria. Great topic to focus on!*
   i. *Allison Janda (MPOG/Michigan Medicine): Measure development for non-cardiac surgery has caused sites to look back into their data and assess if it is representative of practice. Fast track papers note that early extubation and temp management is important for ERAS protocols. This measure may have a downstream effect of quality improvement. There are studies that prolonged hypothermia after surgery increases morbidity and mortality but transient hypothermia did not.*
f. *Jake Abernathy (Johns Hopkins): Not sure that MPOG needs to establish the same threshold but AQI-65 defines hyperthermia during bypass as 37 degrees for their measure. Accessible here for review: https://www.aqihq.org/files/MIPS/2019/2019_QCDR_Measure_Book.pdf*
g. *Rob Schonberger (Yale): Should we focus on acceptable thresholds or best practice thresholds?*
   i. *Guarav Katta (Henry Ford): Hard to define best practice in all circumstances- easier to determine what acceptable or 'avoiding harm' threshold might be. Start with acceptable care and then go from there*
   ii. *Danny Muehlschlegel (BWH): Always strive for best care- acceptable is not good enough. If you aim for acceptable, then if you don't meet the benchmark, care is determined unacceptable. If you aim for best care, then at least not meeting benchmark, may still result in acceptable care.*
   iii. *Ashan Grewal (University of Maryland): While best care should always be the goal but can we really define what best care in every circumstance or surgery is?*

iv. *Nirav Shah (MPOG Quality Director): We have been struggling with this issue for years in ASPIRE. Our hope is that this subcommittee can take the lead on this- maybe that means we have two versions of the measure. Two bars: ideal care vs. acceptable care.*

c. Glucose Management
    i. Current GLU-01 Measure:
        1. Percentage of cases with perioperative glucose > 200 mg/dL with administration of insulin or glucose recheck within 90 minutes of original glucose measurement
    ii. Considerations:
        1. Lower glucose threshold?
        2. Set a shorter threshold for rechecks?
        3. Initiation of an insulin infusion or treatment requirement?
    iii. Variation Data Presented (see slides)
        1. % of total cardiac cases with a max glucose below threshold
            a. 181-200 mg/dL
            b. 151-180 mg/dL
            c. <150 mg/dL
        2. Adapted GLU 01 measure data:
            a. % of cases with periop glucose > 200 mg/dL with administration of insulin or glucose recheck within 60 minutes of original glucose measurement
                i. Mean: 85%
                ii. SD: 11%
            b. % of cases with periop glucose > 180 mg/dL with administration of insulin or glucose recheck within 60 minutes of original glucose measurement
                i. Mean: 79%
                ii. SD: 14%
            c. % of cases with periop glucose >150 mg/dL with administration of insulin or glucose recheck within 60 minutes of original glucose measurement
                i. Mean: 64%
                ii. SD: 18%
            d. ASPIRE does have counter measures (GLU 02/GLU 04) that examine hypoglycemia which will be important to apply to the cardiac hyperglycemia measure as well
            e. Guarav Katta (Henry Ford): Curious to know the % of cases that came down below the threshold after treatment
                i. Allison Janda (MPOG/Michigan Medicine): We didn't specifically look at that in the data presented here but is something we can examine if we determine that we want to develop a treatment measure for hyperglycemia
            f. Doug Shook (BWH): Would be interesting to examine: what was the final glucose before you left OR, was it >200mg/dL? Was treatment successful? There will always be outliers, and there will outliers for acceptable reasons. Goal is to improve care at

your specific institution and review outliers and determine what data is actionable.

i. *Mike Mathis (MPOG/Michigan Medicine): In cardiac, we have unique opportunity because cases are longer, we can*
ii. *Jake Abernathy (Johns Hopkins): Where do you draw the line? Not too much variation here…looks like about 90% of centers are compliant with the >200 treatment measure. If we're aiming for acceptable, this looks to be meeting the bar.*
iii. *Nirav Shah (MPOG Quality Director): We can build a measure specific for cardiac anesthesiology – doesn't have to follow the same framework as the non-cardiac glucose measure*
iv. *Mike Mathis (MPOG/Michigan Medicine): Another option to differentiate between unacceptable care, acceptable care, and best practices, is a star rating (1, 2, 3 stars). For the rating systems, 2 stars is vastly majority, and 1 or 3 much less common but each deserving separate call-outs. Cardiac surgeons across Michigan use this type of measure: https://mstcvs.org/quality-ratings/*
v. *Jake Abernathy (Johns Hopkins): Star ratings for programs works well, does it work well for people?*
vi. *Ashan Grewal (University of Maryland): I agree stars for programs instead of individuals*
vii. *Nirav Shah (MPOG Quality Director): Applying stars to measures (BP 01 vs BP 03) rather than people may be conceptually a good idea to show the 'step-up' from acceptable measure to 'best practice' measure*
viii. *Doug Shook (BWH): Other option, show variation and let individual providers be motivated by the feedback*
ix. *Guarav Katta (Henry Ford): For glucose management, if we want to set our standards high, we could have 2 measures; one as a strict all intraoperative glucose values less than a threshold (<180 per STS) and another measure of less than some higher threshold OR treating/trending in the correct manner. This could give us information about meeting an ideal standard and another measure about avoiding unacceptable care. We could measure and collect both if the committee was interested in that.*
x. *Joel Kileny (St. Joseph Mercy – Ann Arbor): STS threshold is <180, should we consider that?*
    1. *Rob Schonberger (Yale): Agree with 180 mg/dL threshold. NICE-SUGAR was an attempt at tight glucose control that we should be aware of as we move forward with a glucose measure*

xi. *Joel Kileny (St. Joseph Mercy- Ann Arbor): Does it make sense to allow 24 hours, post CABG, to achieve glucose <180? (via chat- end of call, did not have time to discuss)*

d. Recommendations
    i. Build 1 cardiac-specific measure in 2020
        1. Glucose management?
        2. Post-bypass hypothermia avoidance?
        3. Where to start? Glucose management or temperature management?
            a. *Doug Shook (BWH): Temperature measure seems like we could have greater impact. Vote the subcommittee develops a temperature management measure first*
            b. *Mike Mathis (MPOG/Michigan Medicine): Votes for temperature measure*
            c. *Danny Muehlschlegel (BWH): Votes for temperature measure*
            d. *Jake Abernathy (Johns Hopkins): Votes for temperature measure*
            e. *Allison Janda (MPOG/Michigan Medicine): Votes for temperature measure*
            f. *Jay Guruswamy (Henry Ford): Votes for temperature measure*
            g. *Rob Schonberger (Yale): Temperature data can be complicated, would vote for glucose for first measure*
            h. *Valerie Sera (OHSU): Votes for temperature measure*
            i. *Nazish Hasmi (Duke): Votes for temperature measure*
            j. *Guarv Katta (Henry Ford): Glucose would be easier from a measurement standpoint*
            k. **Action Item: Majority of subcommittee in favor of proceeding with the temperature measure first- Coordinating Center to draft measure specification based on this discussion and will post to forum for further discussion in the upcoming weeks.**

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. How often should this group meet?
        i. Need help with measure build questions and the approval process
        ii. Decided to meet quarterly with intermittent electronic communications via Basecamp in between
    c. Proposed 2021 Meeting Schedule
        i. Winter 2021 Meeting: January 2021
        ii. Spring 2021 Meeting: April 2021

Meeting adjourned at 1235