Cardiac Anesthesia Subcommittee Minutes

September 10, 2021

11:00am – 12:00pm EST

Zoom

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

Meeting Summary

1. **Introductions- MPOG Team**
    a. Allison Janda, MD – MPOG Cardiac Subcommittee Chair
    b. Nirav Shah, MD – MPOG Director of Quality
    c. Michael Mathis, MD – MPOG Associate Research Director
    d. 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

3. **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: Validation nearly complete - much improved from previous version!
    g. Discussed pericardial windows as they are currently binned as either cardiac open or cardiac other by the phenotype. **Consensus among committee members to bin pericardial windows as 'Other Cardiac' to make the Open Cardiac bin as clean as possible.**

4. **Post-bypass Hypothermia Avoidance**
    a. Current TEMP 03 Measure: % of patients, with procedures >60 minutes under GA/neuraxial, with at least one body temp ≥36℃ (excludes cardiac surgery)
    b. New TEMP-06-CARD measure

i. % of patients, ≥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 ≥35.5℃
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℃ (89.6℉)
        b. Greater than 40℃ (104.4℉)
        c. Any minute-to-minute jumps >0.5℃ equivalent
        d. Example: 0.125℃/15s/0.25℃/30s, 1℃/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
    8. Update: Measure is coded and is currently undergoing validation by coordinating center staff (preliminary performance shared)
    9. Questions for the group:
        a. Do we need to add hierarchy to prioritize core vs near core temperatures?
            i. STS-SCA practice guidelines (2015) referenced: nasal, PA, bladder all considered as reasonable approximation of core temp for patients weaned from bypass.

ii. **Discussion but no consensus from the group on prioritizing PA or bladder over nasal route. Recommendation to review how many cases would be changed as a result of implementing a hierarchy into the measure code. If a small number of cases would be impacted, perhaps leave as is & consider a non-issue. We will follow up with this issue on Basecamp.**

b. Do we need to increase look-back time from the last temperature to >15 minutes? **Consensus from group: No change needed. 15 minutes is sufficient.**

10. Next Steps:
    a. Update group with any updates or snags during validation
    b. Circulate the revised measure specification for approval
    c. Synergize efforts with SCA Quality & Safety Committee / CPI Subcommittees
    d. Goal to publish by October 8th MPOG Retreat
    e. Refining the measure will continue after we launch, please let us know if you see inappropriately flagged/passed cases on the dashboard once published.

5. Hyperthermia Avoidance - Literature Review

a. 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
b. Preliminary MPOG data shared (slide 17)
c. Hyperthermia Avoidance (TEMP-07-CARD) Measure Details
    i. % of patients, ≥ 18 years of age, who undergo open cardiac surgical procedures using cardiopulmonary bypass under general anesthesia of >120 minutes for whom the temperature did not rise above 37 degrees Celsius while on bypass for over 10 consecutive minutes
    ii. Timing: Cardiopulmonary bypass start until cardiopulmonary bypass end (phenotype exists but needs improvement)
    iii. Artifact algorithm:
        1. Less than 32℃ (89.6℉)
        2. Greater than 40℃ (104.4℉)
        3. Any minute-to-minute jumps >0.5℃ equivalent
        4. Example: 0.125℃/15s/0.25℃/30s, 1℃/2mins)
    iv. Attribution: Any provider signed in for ≥40 minutes from bypass start until bypass end (or the provider signed in for the greatest number of minutes during this period, if this period is <40 minutes) per staff role

v. Inclusions: All patients, 18 years of age or older, who undergo open cardiac surgical procedures using cardiopulmonary bypass (as determined by Procedure Type: Cardiac Open phenotype and Cardiopulmonary Bypass phenotype) under GA of ≥120 minutes
vi. Exclusions:
    1. ASA 6
    2. Organ harvest (CPT: 01990)
    3. Non-cardiac cases as defined as those cases not meeting criteria for the cardiac case type phenotype
    4. Within the general cardiac case type phenotype, exclude: Transcatheter/Endovascular, EP/Cath groups and Other Cardiac
    5. Non-CPB cases
    6. Cases with age <18
vii. **Consensus amongst the group to prioritize nasal temperatures over core temperature. Also, the group agrees that anesthesiologists should discuss these measures with their perfusionist colleagues to gain input and buyin to address these pertinent issues together. We will be recruiting perfusionists to have a work group meeting prior to the December meeting. If you have perfusionists at your institution who would be interested in helping, please email: ajanda@med.umich.edu (Allison Janda). Also agreed to report performance scores as an inverse measure (lower is better).**

6. **Future Measure Planning**
    a. Top ranked topics:
        i. AKI Avoidance
            1. 75% ranked in top 3
            2. AKI-01 version with just cardiac open cases?
        ii. Postop pulmonary complications avoidance
            1. 67% ranked in top 3
            2. PUL-02 version with just open cardiac cases?
            3. Extubation criteria in import manager would require deeper dive as the data quality may not be appropriate at all participating sites
        iii. Glucose management and hypotension avoidance
            1. Both with 42%- ranked in top 3
            2. High variation with glucose performance
            3. May be challenging to establish thresholds and exclusion periods for hypotension measures
        iv. Glucose variation data shared (Slides 22-24)

7. **Goals**
    a. Build 1 cardiac-specific measure in 2021
        i. Post-bypass hypothermia avoidance
    b. Build 1 additional cardiac-specific measures in late 2021
        i. On-bypass hyperthermia avoidance
    c. Plan next measure in late 2021
        i. AKI Avoidance
        ii. PPC Avoidance
        iii. Glucose Management
        iv. Hypotension avoidance
    d. Consensus: Start to evaluate extubation within 6 hours of anes end for Import Manager sites within the MPOG central database.

8. **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. Late 2021 Meeting: December 2021
        ii. Winter 2022 Meeting: February 2022
    c. Thank you for continued use of the Basecamp forum for discussion between meetings!
9. **MPOG Retreat Registration now available**
    a. In-person and virtual options available
    b. Contact Tory Lacca (lacca@med.umich.edu) with registration questions

Meeting adjourned at 1202