Cardiac Anesthesia Subcommittee Minutes

March 14, 2025

1:00pm – 2:00pm EST

Zoom

Addo, Henrietta (MPOG)	LaLonde, Heather (Trinity Health)
Atwood, Tammy (Henry Ford)	Lopacki, Kayla (Trinity Health)
Barrios, Nicole (MPOG)	Malenfant, Tiffany (MPOG)
Bartoszko, Justyna (Toronto)	McCaughan, Michael (Sparrow)
Benitez, Julio (Sparrow)	Mathis, Mike (MPOG)
Bow, Peter (Michigan)	Mirizzi, Kam (MPOG)
Brown, Morgan (Boston Children's)	O'Conor, Katie (Johns Hopkins)
Buehler, Kate (MPOG)	Notorianni, Andrew (Yale)
Calabio, Mei (MPOG)	O'Dell, Diana (MPOG)
Cassidy, Ruth (MPOG)	Nugele, Judy, Trinity Health)
Corpus, Charity (Corewell Health)	Pennington, Bethany (WUSTL)
Crimi, Ettore (Wake Forest)	Shah, Nirav (MPOG)
Coleman, Robert (MPOG)	Smiatacz, Frances Guida (MPOG)
Delhey, Leanna (MPOG)	Steinhorn, Rachel (Mass Gen)
Geube, Mariya (Cleveland)	Stumpf, Rachel (MPOG)
Gebhardt, Brian (UMass)	Sturmer, David (Michigan)
Guruswamy, Jayakar (Jay) (Henry Ford)	Tabbara, Abdo (Henry Ford)
Janda, Allison (MPOG)	Weinberg, Aaron (Weill Cornell)
Kinney, Daniel (Yale)	

Meeting Start: 1302

1. **Agenda**
    a. Introduction & announcements
    b. Measure Reviews:
        i. TEMP-06-C: Hypothermia Avoidance, Cardiac

ii. TEMP-07-C: Hyperthermia Avoidance, Cardiac

c. Measures Updates:
   i. AKI-02-C: Acute Kidney Injury, Cardiac
   ii. ABX-03-C: Antibiotic Re-dosing, Open Cardiac
   iii. ABX-04-C: Antibiotic Selection, Open Cardiac
d. Preliminary Data for New Measure:
   i. BP-07-C: Hypothermia Avoidance, Induction, Open Cardiac (MAP < 55 mmHg)
   ii. TRAN-05-C: Coagulation Monitoring
e. Summary and Next Steps

2. Introductions

a. ASPIRE Quality Team
   i. Allison Janda, MD – MPOG Cardiac Anesthesia Subcommittee Lead
   ii. Michael Mathis, MD – MPOG Director of Research
   iii. Henrietta Addo, MSN, RN – Quality Improvement Specialist
b. Cardiac Anesthesiology Representatives joining us from around the US!

3. Seeking Cardiac Subcommittee Vice-Chair

a. 3 – year term
b. Help shape direction of Cardiac Subcommittee
c. Measure performance review, new measure development, measure revision
d. Identify and participate in research opportunities
e. Work with Allison, Henrie, and the MPOG team
f. Be able to devote 2 – 4 hours per month to this role
g. Cardiac Subcommittee Vice-Chair Description: here
h. Interested faculty should submit their interest to MPOG QI Director (Nirav Shah) at nirshah@med.umich.edu and MPOG Cardiac Subcommittee Chair (Allison Janda) at ajanda@med.umich.edu

4. Measure Review Process

a. Review literature for given measure topic and provide review using MPOG Measure Review Template
b. Present review of literature and recommendations at Cardiac Subcommittee meetings
c. Reviewers' names will be added to measure specifications as well as MPOG Measure Reviewer website

5. Upcoming Cardiac-Focused Measure Reviews

Measure	Review Date	Reviewers
TEMP-06-C: Hypothermia Avoidance	March 2025	Mariya Geube, Cleveland Clinic
TEMP-07-C: Hyperthermia Avoidance	March 2025	Ashan Grewal, UMaryland
GLU-06-C: Hyperglycemia Management	June 2026	Josh Billings, Vanderbilt

GLU-07-C: Hypoglycemia Management	June 2026	Rob Schonberger, Yale
GLU-08-C: Hyperglycemia Treatment	June 2026	Josh Billings, Vanderbilt

a. Thank you in advance for ensuring MPOG Cardiac-specific measures remain relevant & consistent with published recommendations
b. Contact Allison with any questions: ajanda@med.umich.edu

5**. Measure Review**

a. TEMP-06-C: Hypothermia Avoidance, Cardiac – Mariya Geube, MD, Cleveland Clinic
    i. Description: Percentage of adult patients undergoing an open cardiac surgery for whom any core temperature at the end of the case was < 35.5 °C (95.9 °F)
    ii. Timing:
        (a) Measure start:
            1. Cardiopulmonary bypass initiated (ID:5410), if not present,
            2. Cardiopulmonary bypass start phenotype
        (b) Measure End:
            1. 30 minutes after Anesthesia End
            2. For cases without bypass: Anesthesia End 30 minutes after Anesthesia End
    iii. Success: Last non-artifact body temperature ≥ 35.5 °C (95.9 °F) at Anesthesia End (prioritizes core temperature measurements)
    iv. Core temperature measurements will be prioritized over near-core temperature measurements with hierarchy applied in the following order:
        (a) Bladder (Core)
        (b) Rectal (Core)
        (c) Blood (Core) or PA Catheter (Core)
        (d) Nasal (Core)
        (e) Esophageal (Core)
        (f) Zero Flux Thermometer (Near core)
        (g) Other non-core routes (axillary, oral, skin, temporal, tympanic)
    v. Additional references:
        (a) Engelman et al. Guidelines for Perioperative Care in Cardiac Surgery: ERACS Recommendations JAMA 2019
        (b) Grant et al. Perioperative Care in Cardiac Surgery: Expert Consensus Statement. Ann Thoracic Surg 2024
        (c) Del Rio et al. Adult Cardiac Anesthesia Section of STS: 2020 Update on Quality and Outcomes
        (d) Sessler et al. Intraoperative warming vs routine thermal management during non-cardiac surgery: PROTECT Trial
        (e) Shout et al. Impact of intraoperative blood products, fluids and persistent hypothermia on reexploration for bleeding in cardiac surgery.

(f) Stuart et al. Perioperative Hypothermia in Robotic-Assisted Thoracic Surgery

vi. Discussion:

vii. *Mike Mathis (UMichigan):* Reasonable to keep at 35.5 rather than increasing the bar to 36.0 Celsius.

viii. *Mariya Geube (Cleveland Clinic):* Recommend keeping measure defined as <35.5°Celsius rather than 36.0

ix. *Bethany Pennington (WashU):* What is the most common reason for flagged cases: not having a temperature or for being <35.5?

(a) *Allison Janda (MPOG Coordinating Center):* Was actually due to patients being hypothermic rather than just not getting a temperature at the end of the case.

x. Vote:

(a) 1 vote/site

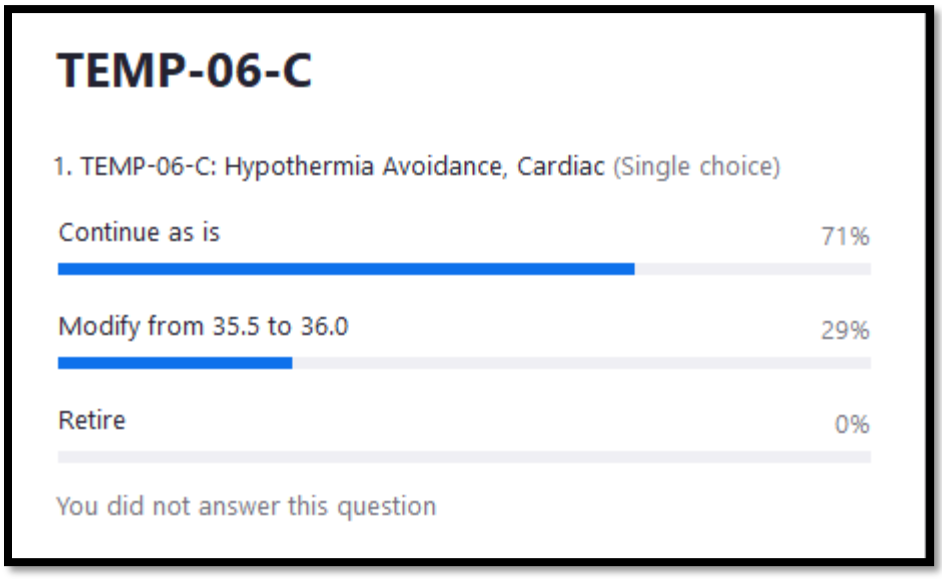
(b) Continue as is / modify to <36.0°Celsius / retire

(c) Need > 50% to retire measure

(d) Coordinating Center will review all votes after meeting to ensure no duplication

xi. Next Steps:

(a) Continue as is with the addition of a breakdown of flagged cases to QIRT for # of cases without a temperature vs. # of cases flagged for hypothermia



b. TEMP-07-C: Hyperthermia Avoidance, Cardiac – Ashan Grewal, University of Maryland

i. Description: Percentage of adult patients undergoing an open cardiac surgery for whom core was > 37.5 °C (99.5 °F)

ii. Timing:

(a) Measure Start:

1. Cardiopulmonary bypass initiated (ID:54010), if not present,
2. Cardiopulmonary bypass start phenotype

(b) Measure End:

1. Cardiopulmonary bypass terminated (ID:50409), if not present,
2. Cardiopulmonary bypass end phenotype, if not present
3. Anesthesia End

iii. Success: Less than 5 consecutive minutes of non-artifact temperature > 37.5 °C (99.5 °F) between cardiopulmonary bypass start and cardiopulmonary bypass end (prioritizes core temperature measurements)

iv. Core temperature measurements will be prioritized over near-core temperature measurements with hierarchy applied in the following order:

(a) Arterial bypass cannula temperature (Concept ID:3263)

(b) Nasopharyngeal (Concept ID:3059)

(c) Esophageal (Concept ID:3055)

(d) Blood (Concept ID:3056) or keyword PA catheter

(e) Bladder (Concept ID:3058)

(f) Rectal (Concept ID:3061)

(g) Zero Flux thermometer (non-core) via keyboard search of temperature routes

(h) Other non-core routes (axillary, oral, skin, temporal, tympanic, unspecified)

v. Discussion:

(a) Ashan Grewal (UMaryland) Recommendation: Consider prioritizing nasopharyngeal route over arterial bypass cannula temperature measurement when available.

(b) *Tammy Atwood (Henry Ford Allegiance):* Our guidelines recommend not allowing temperatures >37.0 for arterial cannula route anyways.

(c) *Mike Mathis (UMichigan):* Trade off we're discussing is most accurate vs. most common across sites. Do we want to prioritize more accurate vs. most common route? I would lean towards the most accurate route rather than most used.

(d) *Bethany Pennington (WashU) via chat:* Does this impact the majority of sites or just a few?

vi. Vote:

(a) 1 vote/site

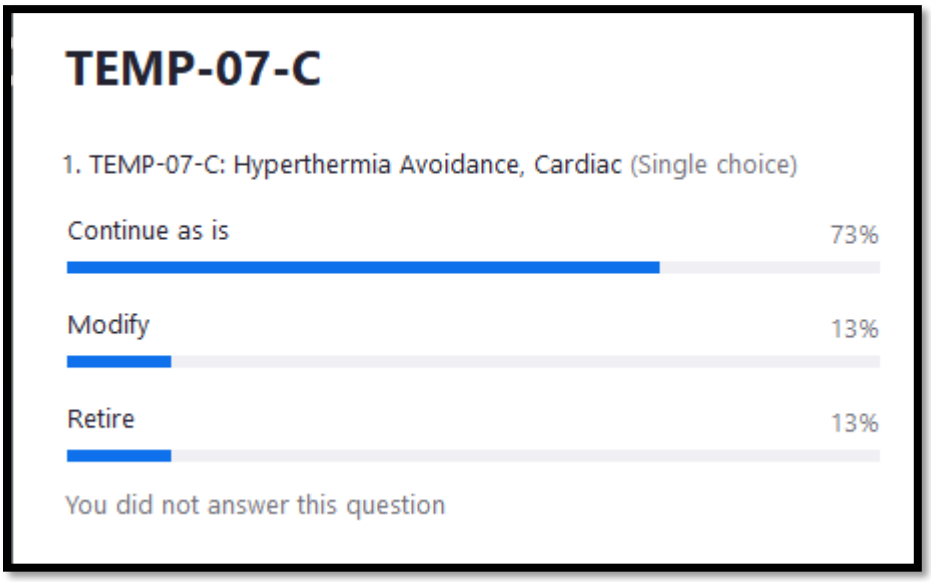
(b) Continue as is / modify the route algorithm to prioritize nasopharyngeal over arterial bypass cannula/ retire

(c) Need > 50% to retire measure

(d) Coordinating Center will review all votes after meeting to ensure no duplication

vii. Next Steps:

(a) Continue as is with an updated breakdown of flagged cases to show # of cases with route: nasopharyngeal source vs. arterial bypass cannula source for temperature.



6. Measure Updates:

1. AKI-02-C: Acute Kidney Injury in patients undergoing Open Cardiac Surgery (reported as an inverse measure)
   i. Description: Percentage of adult patients undergoing open cardiac surgery with more than 1.5x increase in baseline creatinine within 7 postoperative days or the baseline creatinine level increases by ≥ 0.3 mg/dL within 48 hours postoperatively
   ii. Timing: up to 7 days after Anesthesia End
   iii. Success Criteria:
      1. The creatinine level does not go above 1.5x the baseline creatinine within 7 days postop
      2. The creatinine level does not increase by ≥ 0.3 mg/dL within 48 hours after anesthesia end
   iv. Change:

1. Increased measure threshold to ≤ 20% from the original threshold of ≤ 10%
2. Update is live in QI Reporting Tool (dashboards) now!

2. ABX-03-C: Antibiotic Re-dosing, Open Cardiac
   i. Description: Percentage of adult patients undergoing open cardiac surgery with an antibiotic re-dose initiated within 3-4 hours after initial antibiotic administration (cephalosporins only)
   ii. Timing: 120 minutes prior to Anesthesia Start through Surgery End. If Surgery End is not available, then Anesthesia End.
   iii. Success Criteria: Documentation of cephalosporin re-dose within 165-255 minutes after each cephalosporin administration (max: 3 doses)
   iv. Upcoming updates:
      1. The measure will consider the most recent dose administered before surgical incision start/procedure start as the initial dose
      2. Score changes were minimal
      3. Update will reflect on your dashboard on April 7th
3. ABX-04 Antibiotic Selection, Open Cardiac Procedures
   i. Description: Percentage of adult patients undergoing open cardiac surgery with the recommended antibiotic agents administered for surgical site infection prophylaxis
   ii. Timing: 120 minutes prior to Anesthesia Start through Anesthesia End
   iii. Success Criteria: Documentation of appropriate antibiotics administered preoperatively or intraoperatively
   iv. Acceptable antibiotic combinations for Open Cardiac Procedures:
      1. Vancomycin + Cephalosporin
      2. Vancomycin + Aminoglycoside
      3. Vancomycin + Any gram negative
      4. Cephalosporin Only
   v. Cases will be assigned one of the following result reasons:
      1. Passed – Vancomycin + Cephalosporin
      2. Passed – Vancomycin + Aminoglycoside
      3. Passed – Vancomycin + Any gram negative
      4. Passed – Cephalosporin Only
      5. Flagged – Non-standard antibiotic selection
      6. Flagged – Prophylactic antibiotic not administered (Not documented in MAR)
      7. Flagged – Antibiotic not ordered/indicated per surgeon
      8. Flagged – Not administered for medical reasons
      9. Excluded – Scheduled antibiotics/documented infection
   vi. Summary of changes:

1. Updated the rationale section of the measure to reflect the addition of prophylactic gram-negative antibiotics
2. Added 2 new antibiotics to the Vancomycin + Aminoglycoside combination
3. Added a combination of Vancomycin + Any gram negative
4. Score changes anticipated to minimal for most sites. However, sites with a primary regimen of Vanco + gram negative antibiotic will see upwards of 25% improvement in scores
5. Change will reflect on your dashboard on April 7th

vii. Questions for the group:

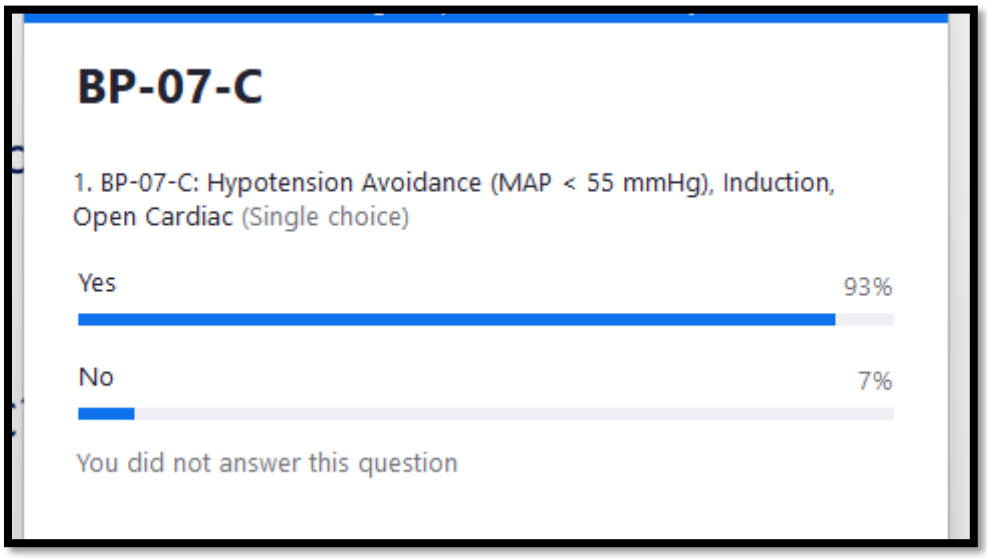
1. If there is documentation of 'Patient on Scheduled Antibiotics,' should the case be excluded or should we include and assess for appropriate antibiotics administered?
    a. Finding cases were Vancomycin + gram negative antibiotic administered by case is excluded due to documentation of scheduled antibiotic.
2. Discussion:
    a. Micheal Mathis: Keep them excluded
    b. Mariya Geube via chat: Keep them excluded

Preliminary Measures

1. BP-07-C: Hypotension Avoidance (MAP < 55 mmHg), Induction, Open Cardiac
    i. Description: Percentage of adult patients undergoing open cardiac procedures where hypotension (defined as MAP < 55 mmHg) was avoided during the induction period until surgery start
    ii. Timing: Anesthesia Start through Surgery Start
    iii. Inclusions: Adult patients undergoing open cardiac procedures (determined by Procedure Type: Cardiac value code:1)
    iv. Success criteria: MAP >/= 55 mmHg throughout induction period until surgery start
    v. Exclusions:
        i. Age < 18
        ii. ASA 6 including Organ Procurement (CPT:01990)
        iii. Non-cardiac, Transcatheter/Endovascular, EP/Cath, and Other Cardiac cases as defined by the Procedure Type: Cardiac phenotype (value codes: 0, 2, 3, and 4)
        iv. Lung transplants
    vi. Discussion:
        i. Any questions or comments with this specification?
            1. Any duration thresholds?
        ii. Any concerns with moving forward with BP-07-C?

iii. Should we move this to a vote?

vii. Vote



viii. Next steps:

i. Set duration of MAP < 55mmHg to 5 or 10 minutes

ii. Proceed with measure spec development

Next Steps:

1. Open to all anesthesiologists or those interested in improving cardiothoracic measures
    a. Do not have to practice at an active MPOG institution
2. Meeting schedule:
    a. June 2025
    b. November 2025
3. Thank you for using the forum for discussion between meetings

Meeting adjourned: 1403