Anesthesiology Performance Improvement and Reporting Exchange (ASPIRE)

Pediatric Subgroup Meeting Minutes – May 19, 2021

Attendance:

Alina Bodas, Cleveland Clinic	Lucy Everett, Mass General Hospital
Amber Franz, Seattle Children's	Lori Reigger, Michigan Medicine
Anshuman Sharma, Washington University	Lora Gibbs, Michigan Medicine
Bob Brustowicz, Boston Children's	Morgan Brown, Boston Children's
Brooke Szymanski-Bogart, MPOG	Meridith Bailey, MPOG Pediatric Program Lead
Carrie Menser, Vanderbilt	Olga Eydlin, NYU Langone
Cheryl Gooden, Yale University	Nirav Shah, MPOG Associate Director
Dave Moore, Vanderbilt	Priti Dalal, Penn State University
David Waisel, Yale University	R.J. Ramamurthi, Stanford
James Xie, Stanford	Shobha Malviya, Michigan Medicine
Jerri Heiter, St. Joseph Mercy Ann Arbor	Stephanie Kahntroff, University of Maryland
Jessica Wren, Henry Ford Health System	Tory Lacca, MPOG
Joe Cravero, Boston Children's	Vikas O'Reilly-Shah, Seattle Children's
Jonathan Halem, Penn State Children's	Vivian Onyewuche, Henry Ford Detroit
Kate Buehler, MPOG	Wilson Chimbira, Michigan Medicine
Laura Downey, Emory University	Wes Templeton, Wake Forest
Liem Pham, NYU Langone	

Agenda & Notes

I. **Announcements**
   a. 2021 Pediatric Subcommittee Meetings
      i. August 18th
      ii. October 9th (In person @ SPA if possible)
      iii. December 15th
   b. MPOG Annual Retreat 2021 (virtual version will also be offered for those unable to travel)
      i. October 8th (In person in San Diego, CA, if possible)
      ii. Everyone is invited to this meeting regardless of MPOG member status

II. **February 17 Meeting Recap**
   a. Measure Discussion: PONV Prophylaxis in Pediatrics
      i. PONV 02 Inclusion/Exclusion Criteria Updated
         1. Inclusion: Patient ages 3-17 years old (no longer require GA only or >/= 2 risk factors)
         2. Exclusion:

   a. Patients <3 or > 17 years old
   b. Patients transferred directly to ICU
   c. ASA 5 or 6
   d. Labor Epidural Cases
   e. Diagnostic Imaging procedures
3. Discussion:
   a. Lucy Everett (MGH): Should patients undergoing radiation be excluded from PONV 03 given that they are on chronic antiemetics?
   b. Bob Brustowicz (Boston Children's): How about patients receiving LP's for chemotherapy? They are on chronic antiemetics.
   c. Wes Templeton (Wake Forest): I think it makes the most sense to exclude these patients using CPT/ICD-9 codes. Going to be a relatively small number of patients…
   d. Nirav Shah (ASPIRE Director): Okay! We will work on adding that exclusion to the PONV 03 measure specification
4. Risk factors updated:
   a. Post-pubertal females (≥12yo)
   b. Inhaled anesthetic duration ≥30 minutes (halogenated or nitrous)
   c. Hx of PONV (personal or first degree relative)
   d. At Risk Surgery
      i. Strabismus
      ii. Adenotonsillectomy
      iii. Tympanoplasty/otoplasty
   e. Postoperative long-acting opioids (administered after induction)
5. Discussion:
   a. Vikas O'Reilly-Shah (Seattle Children's): I'd only worry about validity across sites of risk factor data.
   b. Nirav Shah (ASPIRE Director): Yes- we have done a lot of data cleaning in recent years so we are pretty confident but this is always a potential issue.
6. Success Criteria

        a. Low (0 risk factors): Receives at least one prophylactic antiemetic
        b. Medium (1-2 risk factors): Receives at least 2 prophylactic antiemetics from different classes
        c. High (≥2 risk factors): Receives three prophylactic antiemetics
7. Choice of Antiemetics and Frequency: Graphs of antiemetic use for both prophy and rescue shared with the group- see PPT slides for more information
8. Discussion:
    a. James Xie via chat (Stanford): Our oncologists are increasingly using Aloxi (palonosetron) which lasts days and might not be documented intraop
    b. Vikas O'Reilly Shah via chat (Seattle CHildrnes): I sent you an email about atypical antipsychotics and the growing literature there. Would be given preop, not intraop. Unsure if amisulpride has a pediatric indication
    c. Priti Dalal via chat (Penn State Children's): We are also using Aloxi for hemonc
    d. Wes Templeton via chat (Wake Forest): Haldol? Interesting…more than droperidol…?
    e. Vikas O'Reilly-Shah via chat (Seattle Children's): Droperidol only recently (re)started manufacture in the US, I believe. https://www.prnewswire.com/news-releases/american-regent-re-introduces-droperidol-injection-usp-ap-rated-and-therapeutically-equivalent-to-inapsine1-300796783.html
    f. Wes Templeton via chat (Wake Forest): We use droperidol at Wake Forest
    g. Bob Brustowicz via chat (Boston Children's): Is the Propofol rescue an infusion or a bolus?
    h. Meridith Bailey via chat (MPOG Coordinating Center): Infusion

III. Measure Review: Transfusion Measures

a. Graph of current performance across pediatric sites shared for both TRAN 01 and TRAN 02 (see PPT slides)
b. Transfusion Vigilance Measure (TRAN 01)
    i. Description: Percentage of cases with a blood transfusion that have a hemoglobin or hematocrit value documented prior to transfusion.
        1. Transfusion is defined as packed red blood cells or whole blood
        2. Prior to the first transfusion, a hgb/hct of any value should be checked in a time period of 0 to 90 minutes before the transfusion, or the most recent documented hgb/hct was <8/24 within 36 hours before the transfusion
    ii. Responsible Provider: Provider(s) who administered the transfusion
    iii. See measure [TRAN 01] specification for current inclusion/exclusion criteria
    iv. Proposed Pediatric Inclusion/Exclusion Criteria:
        1. Inclusions: All patients who receive a transfusion between anesthesia start and anesthesia end
        2. Exclusions:
            a. Patients ≤ 6 months or ≥ 18 years of age
            b. ASA 5 & 6
            c. Patients with cyanosis preoperatively AND congenital heart disease
            d. Patients with transfused volume or EBL > 40cc/kg.
            e. Patients on ECMO
            f. Burn Debridement Cases?
            g. All Obstetric procedures
        3. Discussion:
            a. Vikas O'Reilly-Shah via chat (Seattle Children's): what about cases where there a strong a priori expectation of transfusion e.g. we typically just start blood at the beginning of the case for our craniosynostosis cases
                i. Laura Downey via chat (Emory): We discussed such cases, but shouldn't you still have a Hematocrit or Hb prior to that type of case?
                ii. Nirav Shah (ASPIRE Director): This is our thought as well. Should have a hgb/hct for those cases

b. Morgan Brown (Boston Children's): What about cardiopulmonary bypass cases in which the pump is primed with blood product?
    i. Nirav Shah (ASPIRE Director): Should we exclude this time period? Interested in hearing your opinion
    ii. Morgan Brown (Boston Children's): This is a complex decision making process in which we are tracking these patients closely and deciding to transfuse. I don't think we want to focus on those cases. I worry that we'll have a hard time excluding based on congenital heart disease ICD 9/10 codes alone
    iii. Nirav Shah (ASPIRE Director): Some may be covered under the massive transfusion or high EBL exclusion but broadly decided to include cardiac cases at the Quality Committee level and just exclude units given while on bypass. Need to review this from a pediatric standpoint
    iv. Morgan Brown (Boston Children's): May just lead to excessive blood testing since these are complicated cases
c. Vikas O'Reilly-Shah via chat (Seattle Children's): that also gets to my point. don't think I would cancel a case if I didn't have a preop hgb for a kid i'm sure I was going to transfuse. would probably just send an early lab h/h and trend poct
d. Lori Reigger (Michigan Medicine): If PRBC are added to the pump circuit by the perfusionist and documented in anesthetic record, then those cases would be flagged if there is a not a hct/hgb documented.
    i. Nirav Shah (ASPIRE Director): Yes, that's true.
e. Meridith Bailey (MPOG Coordinating Center): Does it make sense to write a separate measure for cardiac cases relative to transfusion?
    i. Morgan Brown (Boston Children's): I think I would just recommend excluding the cardiac bypass cases
    ii. Lori Reigger (Michigan Medicine): I would agree with that.

iii. Shoba Malviya (Michigan Medicine): Can we do that reliably?
    1. Nirav Shah (ASPIRE Director): Yes, we have created sophisticated logic using both CPT code and other elements of the case

f. RJ Ramamurthi via chat (Stanford): iSTAT Hct is acceptable for this measure or need lab tested Hct?
    i. Meridith Bailey (MPOG Coordinating Center): Yes, iSTAT is acceptable
    ii. Nirav Shah (ASPIRE Director): As long as those iSTAT values are uploaded to the lab system and come over with the lab extract (not manually documented as a note)

g. Vikas O'Reilly-Shah via chat (Seattle Children's): date time 'preop' would count if…?

h. Nirav Shah (ASPIRE Director): Okay excluding OB cases?
    i. Wilson Chimbira (Michigan Medicine): Yes agree
    ii. Wes Templeton: Yes – okay with excluding OB cases
    iii. Vikas: Agree

i. Wes Templeton (Wake Forest): why exclude burn patients…this is a highly transfused population which may/may not be at risk for over transfusion…maybe should be separated.
    i. Nirav Shah (ASPIRE Director): I believe the Quality Committee feedback for burn patients was related to access and reliability to draw samples intraop; also, oozing so not always checking in between. If folks feel differently, let's discuss
    ii. Wes Templeton (Wake Forest): but I thought you just had to check a hgb…doesn't have to be low. These kids will have a hgb.
    iii. Nirav Shah (ASPIRE Director): More about not being able to check intraop due to their burn status, not so much what the value would be

    j. Bob Brustowicz (Boston Children's): What about intraoperative blood salvage? These patients often get their blood back without any additional labs.
        i. Nirav Shah (ASPIRE Director): Decided years ago that the risk of transfusion with your own blood is less and so those instances are excluded. Thoughts from the group on this?

4. Definitions/Considerations: see TRAN 01 specification for current considerations
5. Proposed Pediatric-specific considerations:
    a. Massive Transfusion defined as ≥40 cc/kg: No objections to this change from the group.
    b. 1 Unit of Blood for patients ≥12 years
    c. Patients less than 12 years: define a 'unit' as 15 cc/kg
        i. Discussion:
            1. Joe Cravero (Boston Children's): How rapidly a patient is losing blood is not considered with this measure; If a patient is losing blood quickly, you wouldn't want to wait for a H&H– there could be a lot of flags in these instances
            2. Nirav Shah (ASPIRE Director): We have not seen this historically with this measure as being an issue. Will be interesting to see if that presents as an issue with the pediatric population
            3. Vikas O'Reilly-Shah via chat (Seattle Children's): I do worry a bit about how well your data quality is going to assure that fallouts/fails are real. There will be a lot of variability in e.g. when blood tx is documented, when EBL is intermittently (or not) documented, when labs are documented, whether POCT vs lab sent h/h are available. Tightening too much may be counterproductive
    d. Cyanosis and CHD
        i. Cyanosis: At least two SpO2 readings <90% (between preop start and Patient in Room)
        ii. CHD defined by ICD-9/10 codes

            1. Discussion:
                a. Meridith Bailey (MPOG Coordinating Center): I met with Bishr Haydar (Michigan Medicine) and Laura Downey (Emory) earlier this month and came up with this definition. Okay with the group?
                b. Morgan Brown (Boston Children's): ICD codes aren't always great. Fontan patient with sat of 94% may still want a higher transfusion trigger.

6. Success Criteria: see TRAN 01 specification for current success definition
7. Proposed Pediatric-specific Success Definition:
    a. Documentation of hgb/hct prior to transfusion
        i. If the most recent Hgb/Hct drawn before the first transfusion is ≤ 5/16, an additional 15cc/kg could be administered without rechecking Hgb/Hct between units.
        ii. For patients < 12y?
        iii. If multiple units are administered, documentation of a Hgb/Hct value must be present within 60 minutes before each transfusion.
            1. Morgan Brown (Boston Children's): Is there a practical implication for limiting to 60 minutes rather than 90 minutes? If someone checks it at 64 minutes, rather than 60, does that matter in terms of transfusion administration?
            2. Nirav Shah (ASPIRE Director): That's a great question and one for this group to consider.
            3. Meridith Bailey (MPOG Coordinating Center): I believe 60min time frame was suggested due to the total blood volume of younger patients
            4. Morgan Brown: Recommend adjusting this measure to 60

minutes rather than 90 minutes to see the impact on performance first

iv. All transfusions administered between cardiopulmonary bypass start → end will not be included for determining measure results for the case.

c. Overtransfusion Measure (TRAN 02)

  i. Description: Percentage of cases with a post transfusion hgb/hct value ≥10/30

    1. All hgb/hct labs resulted between the time of last transfusion and 18 hours after anes end are evaluated.

  ii. Responsible provider: Provider(s) who administered the last transfusion

  iii. See TRAN 02 specification for current inclusion/exclusion criteria

  iv. Proposed Inclusion Criteria: All patients who receive a transfusion between anesthesia start/end (no change)

  v. Proposed Exclusion criteria:

    1. Patients ≤ 6 months or ≥ 18 years old
    2. ASA 5 & 6
    3. Patients with cyanosis preoperatively and congential heart disease
    4. Patients with transfused volume or EBL>40cc/kg
    5. Patients on ECMO
    6. Burn Debridement Cases?
    7. All Obstetric procedures

  vi. Success Criteria: Hgb/hct value documented as ≤ 10/30 within 18 hours after anesthesia end OR if no hgb/hct checked within 18 hours of anesthesia end, the case will pass (should these instances be excluded or flagged instead?)

    1. Discussion:

      a. Morgan Brown (Boston Children's): Seems like you should check a hct after a transfusion so would suggest these cases should be flagged. Only other consideration is that some patients continue to bleed postop

      b. Bob Brustowicz via chat (Boston Children's): Flagged for review.

d. Next Steps

i. MPOG Coordinating Center will incorporate your feedback and update the transfusion metrics as needed or decide if we should create new pediatric-specific measures

ii. Next meeting: August 18th at 1pm

    1. NMB 01/NMB 02 are scheduled to be reviewed next

Meeting adjourned at: 1404