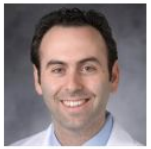
MPOG Pediatric Subcommittee Meeting

June 26, 2023



Brad Taicher, DO, MD
DUKE MEDICINE
Chair

Vikas O'Reilly-Shah, MD, PhD
SEATTLE CHILDREN'S
Vice-Chair

Meridith Wade, MSN, RN
MPOG
Pediatric Program Lead

MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

Agenda

Announcements

TEMP-04-Peds: Survey Results and Discussion

Quality Committee Follow up
Glycemic Management
Oral Morphine Equivalency

Measure Review: Antibiotic Prophylaxis (ABX-02-p)

Sustainability Toolkit Available on MPOG website

- Thank you to Dr. Eva Lu-Boettcher for adding the pediatric sections!

Sustainability

The Sustainability Toolkit addresses the selection of anesthetic agents, management of fresh gas flows, and is an overview of the sustainability measures.

Introduction

Climate change has become one of the most important public health issues of our time. Anesthesia providers can be part of the solution. As anesthetic agents can be significant environmental pollutants, MPOG has developed a Sustainability Toolkit that provides guidance to reduce our global warming footprint during care of patients undergoing general anesthesia

Toolkit

- PDF
- Downloadable Power Point

Educational Courses

Low Flow Anesthesia course offered by the American Society of Anesthesiology & Anesthesia Patient Safety Foundation:

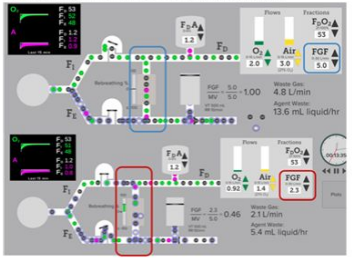
- Course Link (ASA website login required to access)

Anesthesia Patient Safety Foundation Technology Education Initiative on Low-Flow Anesthesia:

- Course Link

Minimizing FGF during Pediatric Inductions (cont.)

Setting induction FGF to exceed minute ventilation during induction prevents rebreathing and dilution of volatile concentration.



Simulation courtesy of "Low Flow Anesthesia" from the University of Florida Center for Safety, Simulation & Advanced Learning Technologies:

- Top diagram: FGF >/= VE with no evidence of rebreathing.
- Bottom diagram: FGF<VE with evidence of rebreathing.

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SUS-06-peds Measure Released!

Description: Percentage of pediatric cases with a max fresh gas flow (FGF) equal to or less than a weight-based threshold during the induction phase of anesthesia.

Measure Type: Process

Threshold: 90%

Measure Time Period: Induction Start → Intubation. If none, then Induction End

Inclusions: Pediatric cases < 18y where halogenated hydrocarbons and/or nitrous oxide were administered during the induction phase of anesthesia

Exclusions:

- Patients ≥ 18yo
- Cases without a valid weight documented
- Cases without automated FGF data (ie those that are manually entered)
- Cases in which halogenated hydrocarbons or nitrous oxide are NOT used during the induction phase of anesthesia

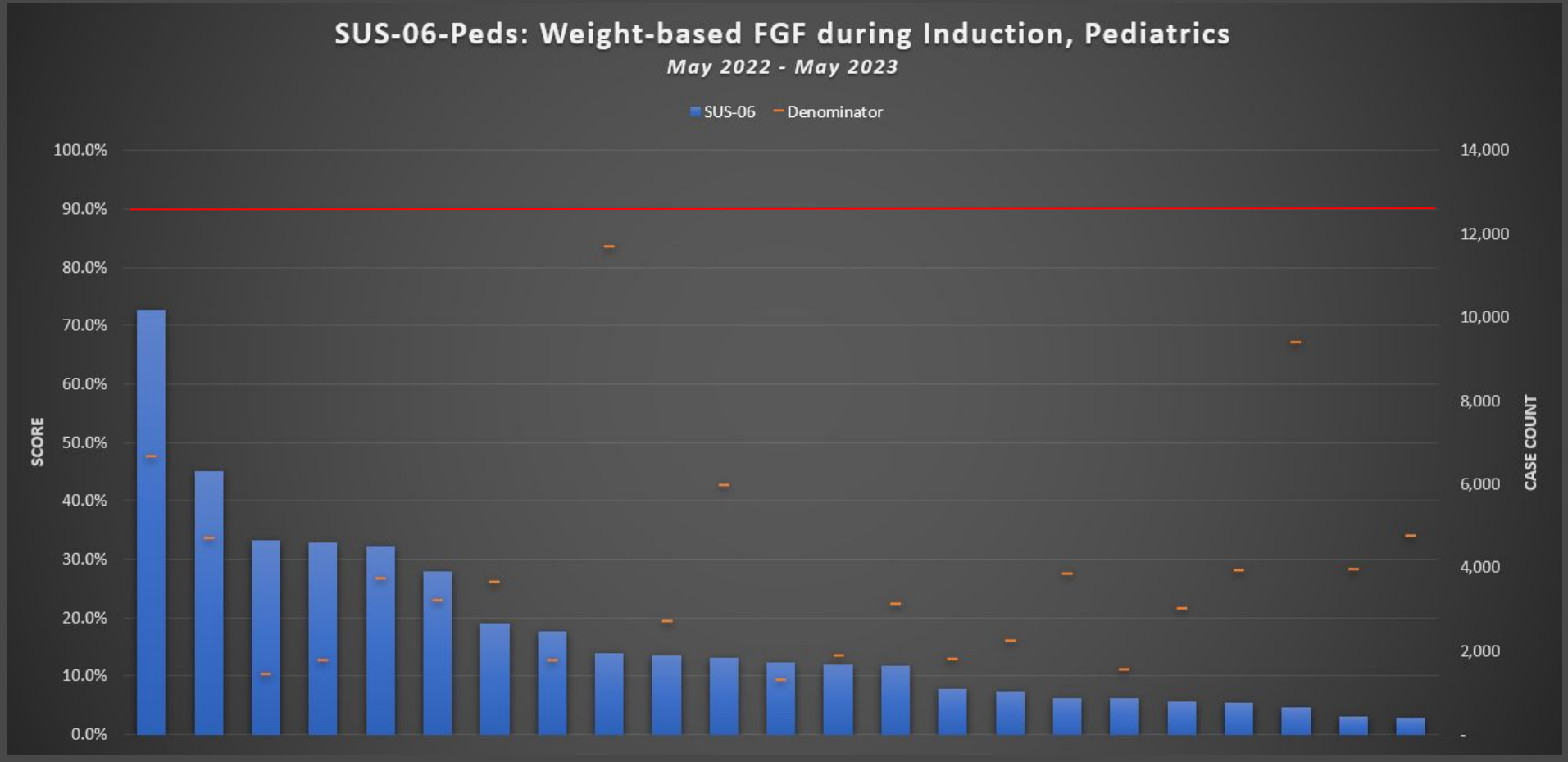
Success Criteria: Mean FGF equal to, or less than the weight-based max FGF (L/min) during the induction period of anesthesia, as displayed by table below

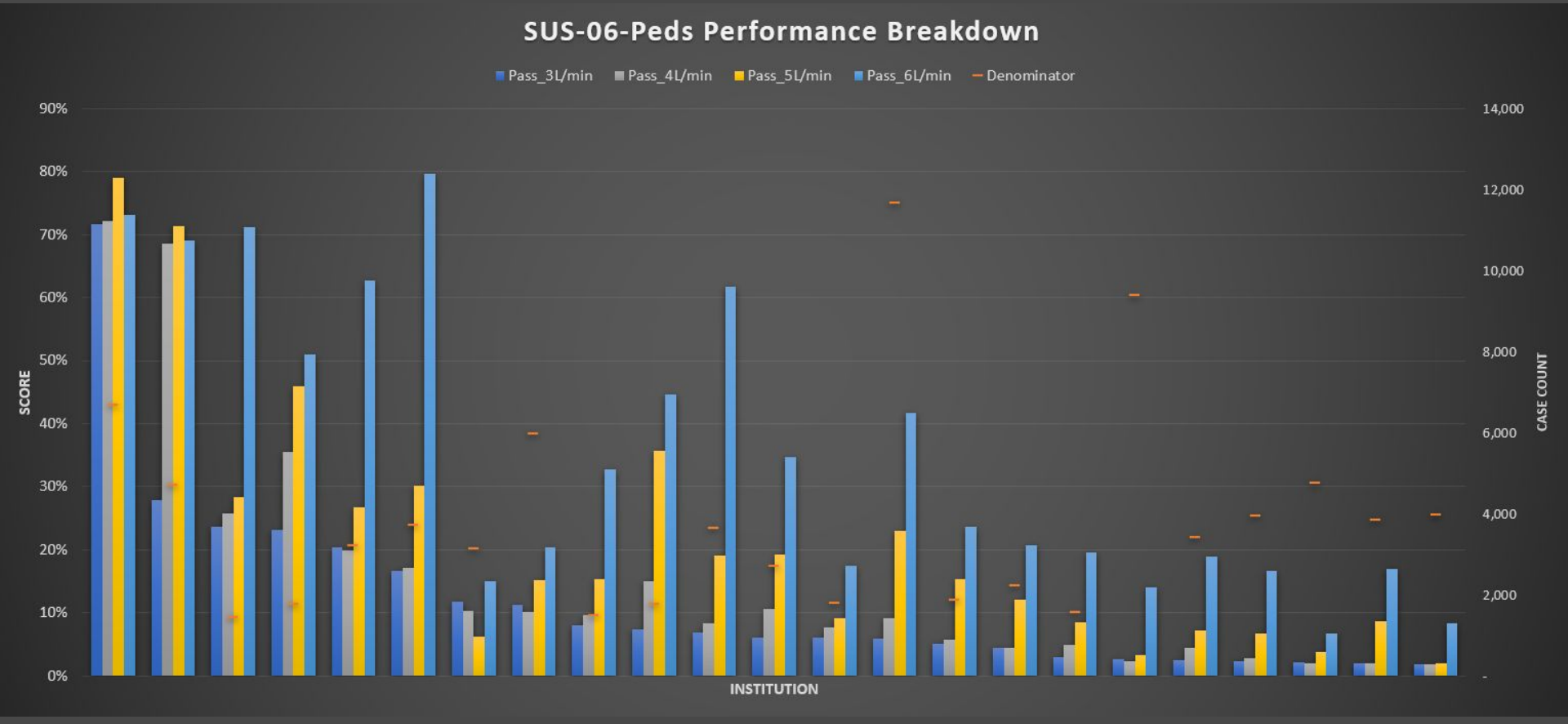
Provider Attribution: All providers signed in during the induction period of anesthesia

Other Measure Details:

Weight (kg)	Mean FGF
< 20	≤ 3 L/min
20-30	≤ 4 L/min
30-40	≤ 5 L/min
> 40	≤ 6 L/min

Table: Glenski et al 2022. "Low Flow Anesthesia in Pediatric Patients."


SUS-06-Peds: Weight-based FGF during Induction, Pediatrics
May 2022 - May 2023
SUS-06
Denominator
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
SCORE
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
CASE COUNT


SUS-06-Peds Performance Breakdown
Pass_3L/min
Pass_4L/min
Pass_5L/min
Pass_6L/min
Denominator
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
SCORE
14,000
12,000
10,000
8,000
6,000
4,000
2,000
-
CASE COUNT
INSTITUTION

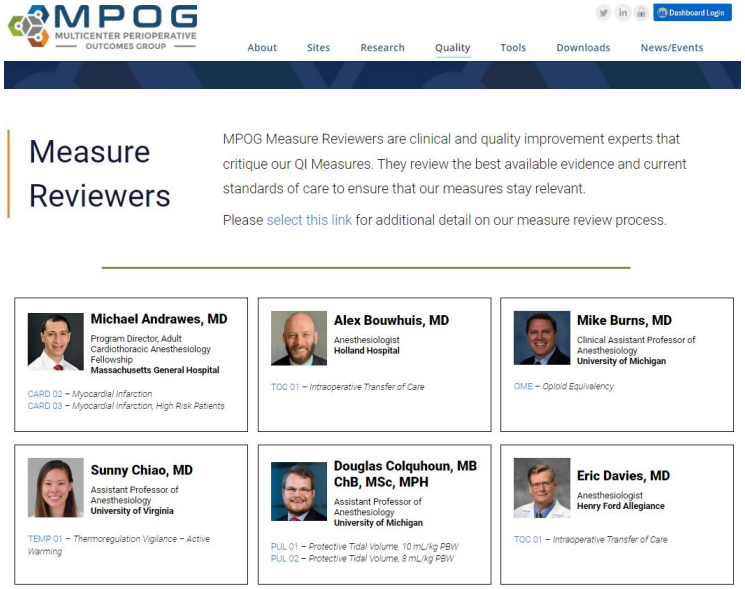
Call for Measure Reviewers!

PAIN-01-Peds: **Multimodal Analgesia, Pediatrics**

- Initial measure development - December 2020.
- First review due to be presented at the Winter 2023 pediatric subcommittee meeting

MPOG Measure Reviewers are clinical and quality improvement experts that critique our QI Measures to ensure they stay relevant.

- Review of New Literature
- Appropriateness of rationale
- Evaluation of inclusion/exclusion criteria
- Evaluation of definition of success criteria
- Recommend to modify, retire or continue measure as is



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Upcoming Pediatric Research Proposals

Two multicenter pediatric research proposals will be presented to the MPOG Perioperative Clinical Research Committee (PCRC) on **Monday, August 14th**

Must practice at an active MPOG site to join PCRC meetings

PCRC 0145: Prophylaxis Practice in Pediatric PONV: A Retrospective Observational Study

PCRC 0180: The Association of Guideline Directed Prophylaxis with the Incidence of Postoperative Nausea and Vomiting in Pediatric Patients.

Primary Collaborators: *Lucy Everett, Ben Andrew, Wes Templeton, Vikas O'Reilly-Shah, Lisa Vitale, Brad Taicher, Meridith Wade*

TEMP-04 Update

TEMP-04: Pediatric Normothermia, Intraop

Initial publish date: April 2020; Reviewed and presented to Peds committee March 2023

Success: median core/near core body temperature > 36C (96.8F)

Time period: Patient in room → Patient out of room

Exclusions

- Patients ≥ 18yo
- ASA 5 & 6
- Cases < 30 minutes
- Cases without a temperature route documented
- Labor epidurals, Cardiac procedures, MRI
- MAC/Sedation cases

Provider Attribution: Provider present for the longest duration of the case (per staff role)

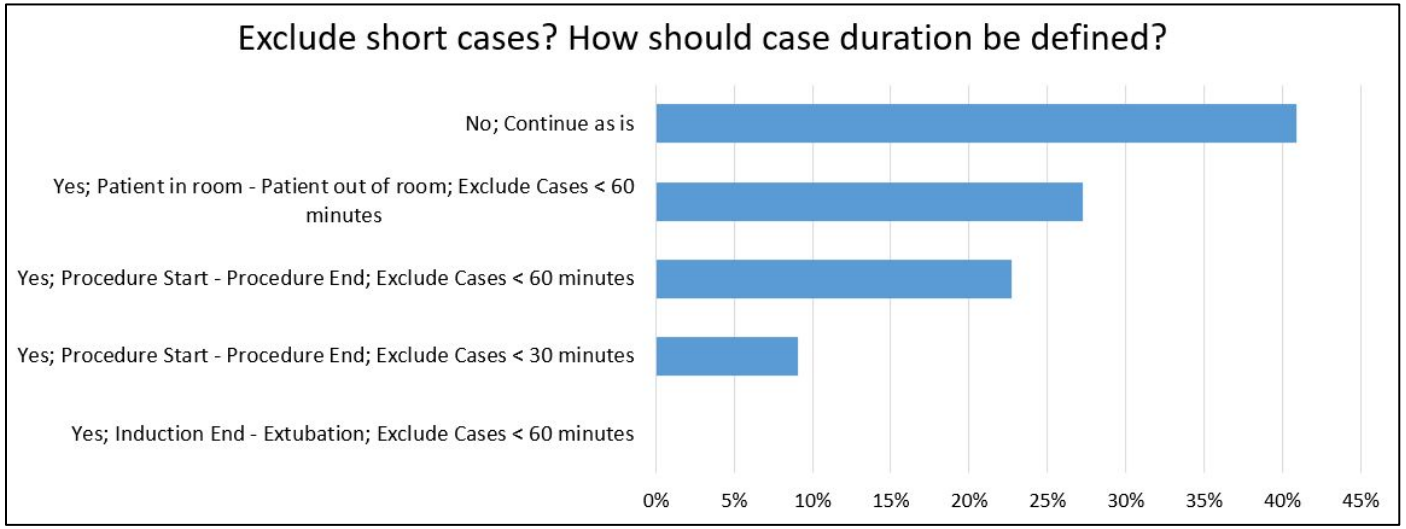
Thank you for your feedback! - 23 Survey responses

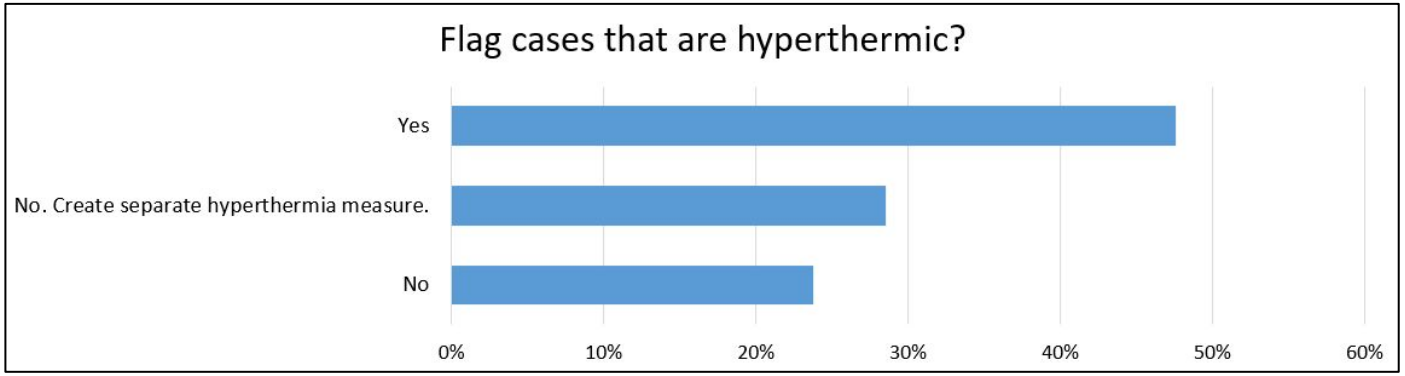
Majority vote to exclude:

- GI cases
- Cases where patient's baseline temperature was < 35.5C or > 38C

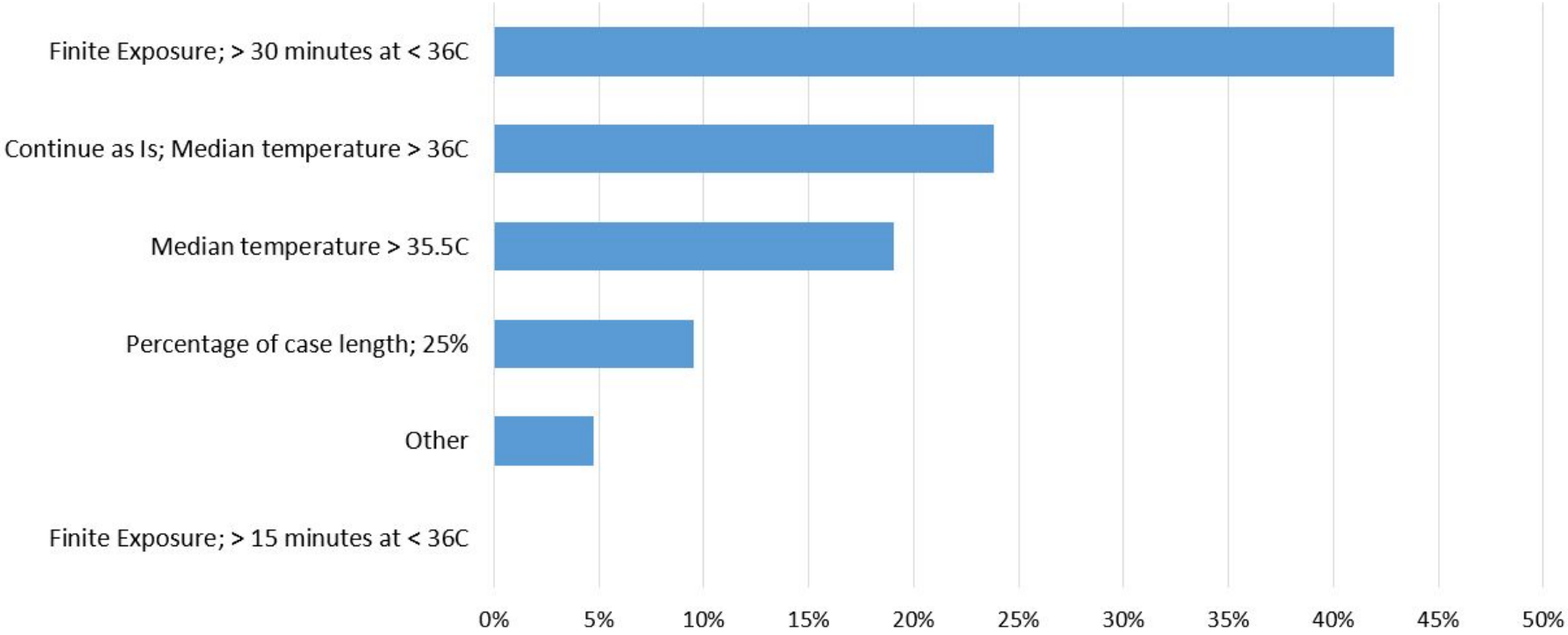
No real consensus on:

- Case duration definition (room duration vs. procedure duration)
- Excluding short duration cases (30 min vs. 60 min)
- Hyperthermia metric
- Measure success criteria


Exclude short cases? How should case duration be defined?
No; Continue as is
Yes; Patient in room - Patient out of room; Exclude Cases < 60 minutes
Yes; Procedure Start - Procedure End; Exclude Cases < 60 minutes
Yes; Procedure Start - Procedure End; Exclude Cases < 30 minutes
Yes; Induction End - Extubation; Exclude Cases < 60 minutes
0%
5%
10%
15%
20%
25%
30%
35%
40%
45%

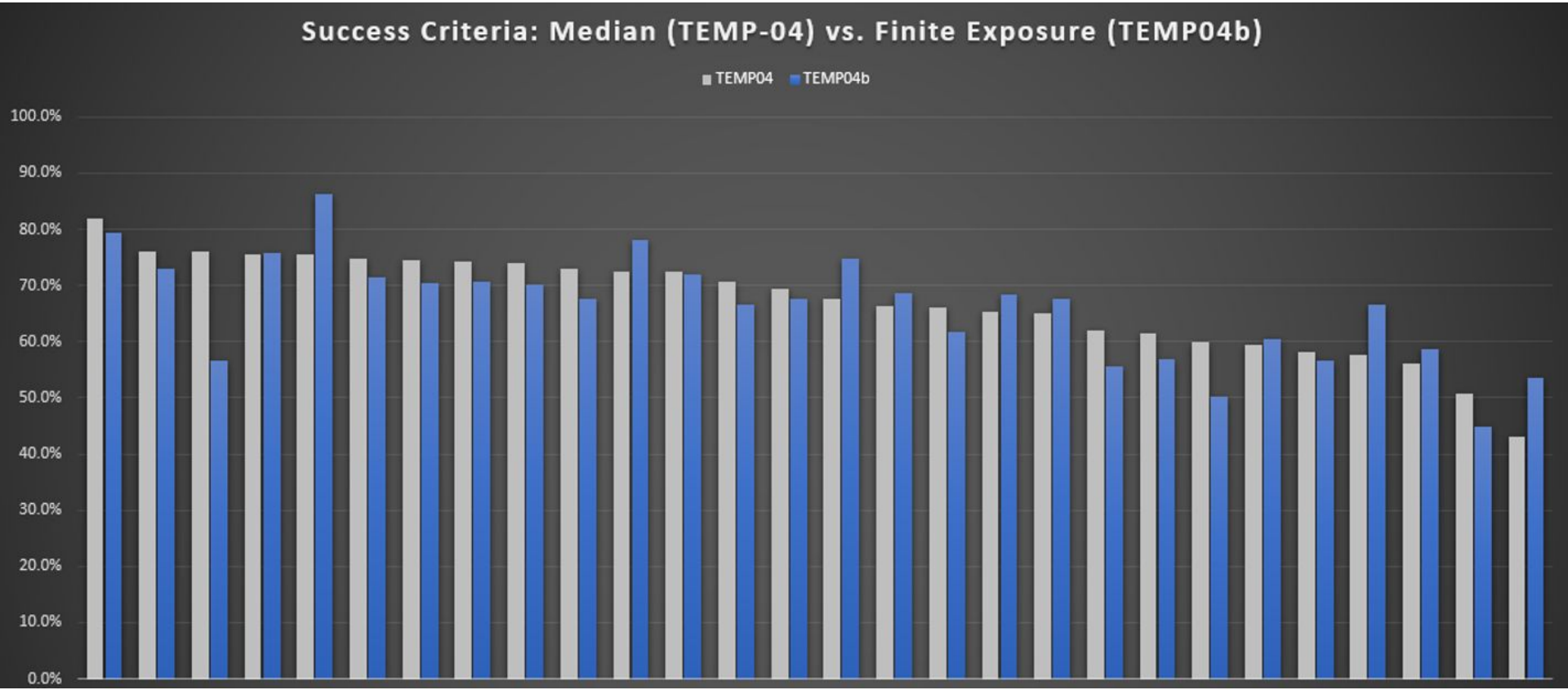

Flag cases that are hyperthermic?
Yes
No. Create separate hyperthermia measure.
No
0%
10%
20%
30%
40%
50%
60%

Subcommittee Vote: TEMP-04 Flag Criteria



Other Comments:

Though hyperthermia is equally bad, currently we haven't refined our knowledge about hypothermia, definition and outcomes - once we have achieved this refinement , maybe then we can look at hyperthermia.
In lieu of an AUC approach, it seems most reasonable to have a duration-based threshold given that the harm from hypothermia at least in theory should have both a magnitude and duration component (hence the value of AUC approaches). How to pick the threshold (both for the definition of hypothermia and for the time) is not straightforward, and I'm not sure we have adequate evidence to support any one specific threshold, but the 30 minutes / 36C option seems the most reasonable to me at this point.
Although there is little evidence specifically on this issue, I think this measure (as originally defined) is a better way to ensure normothermia than our other measures


Success Criteria: Median (TEMP-04) vs. Finite Exposure (TEMP04b)
TEMP04
TEMP04b
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%

Quality Committee Update

Glycemic Management Measure Review

Hyperglycemia (includes patients ≥ 12y)

GLU 01, 03: *Cases with glucose > 200 mg/dL with administration of insulin or lab recheck within 90 minutes.*

GLU 05: *Cases with glucose > 200 mg/dL with administration of insulin within 90 minutes.*

- **QC Vote: Modify,** Change threshold to 180 mg/dL
- Support for a recheck only measure

Hypoglycemia

GLU 02, 04: *Percentage of cases with glucose < 60 mg/dL with administration of dextrose or lab recheck within 90 minutes.*

- **QC Vote: Modify,** Change threshold to 70 mg/dL
- Reduce time to recheck/treat hypoglycemia to 30 minutes

Discussion

- Should these measures still exclude patients < 12y?
- Are the new thresholds appropriate for patients 12-18y?
- How often should glucose be checked after an abnormal lab?
- Support from this group for a glucose recheck measure?

Oral Morphine Equivalency (OME) Measure Review

OME: *Calculated using opioids given between anesthesia start and anesthesia end for each case. This value is normalized to patient weight (kg) and duration of anesthetic (anesthesia end – anesthesia start, hours as a decimal).*

QC Vote: Modify - Widen time frame to include PACU **OR** create separate measure for OME in PACU

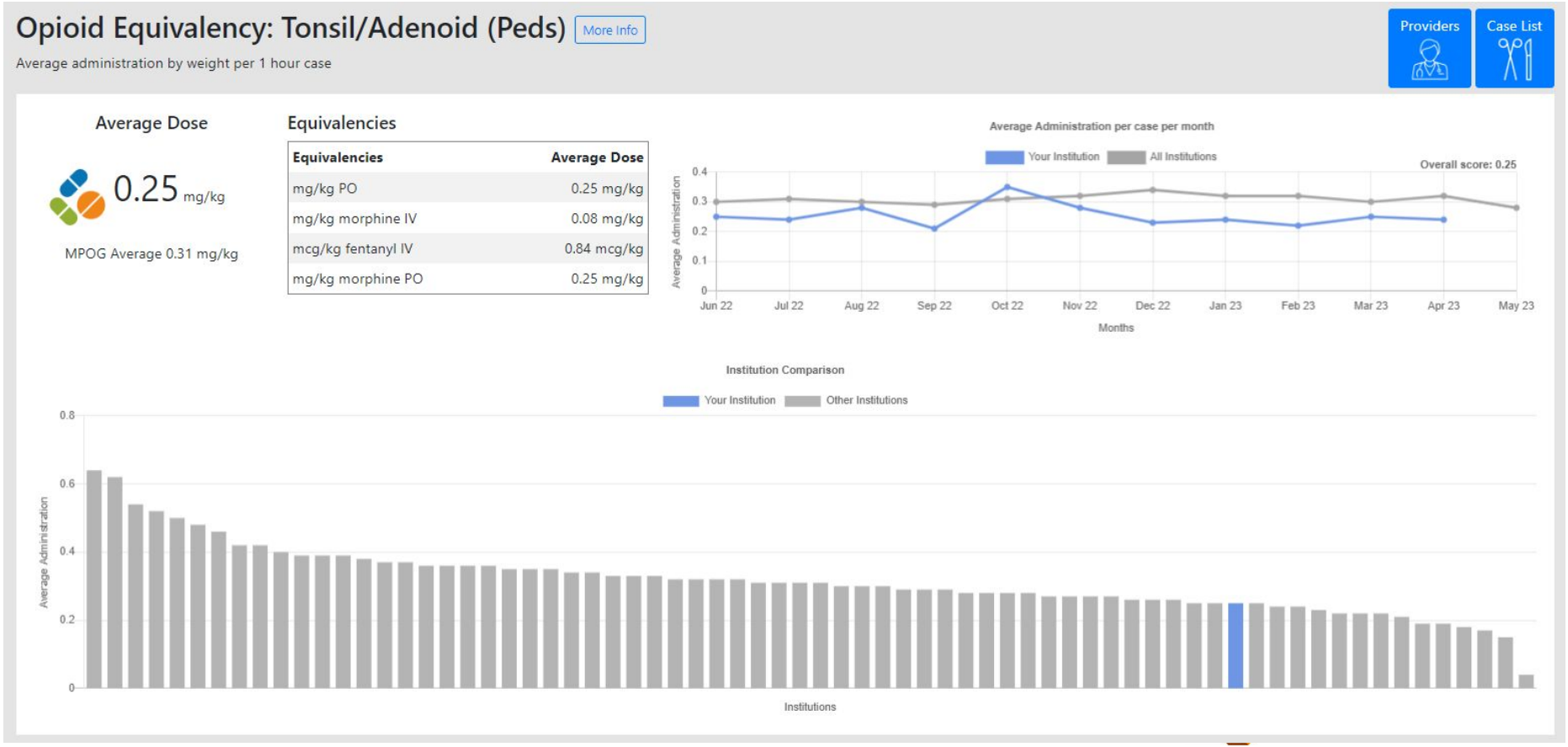
Spine (Pediatric)

- Cervical spine and cord (CPT: 00600, 00604)
- Thoracic spine and cord (CPT: 00620,00625,00626)
- Lumbar region (CPT: 00630)
- Extensive spine and spinal cord procedures (CPT: 00670)

Tonsil/Adenoid (Pediatric)

- Cases that return tonsillectomy, adenotonsillectomy or tonsil bleed from the tonsil/adenoid phenotype

Oral Morphine Equivalency (OME) Measure Review



Discussion

- Would displaying the 'score' as morphine IV equivalency be more valuable for peds?
- Additional OME cohorts of interest for pediatrics?
- Interest in separate PACU opioid equivalency measure for pediatrics? or combine with intraop?

Measure Discussion

ABX 02

Background

- Proposed by subcommittee members in previous ‘call for measure’ surveys
- Plans to include in future SSI measure bundle/dashboard
- Allows comparison of antibiotic timing adherence with SSI outcomes for sites who submit NSQIP-p data
- Currently refining MPOG microbiology data extract - future measures to include antibiotic susceptibility

ABX-02-Peds

Description: Percentage of patients < 18 years old with documentation of antibiotic administration initiated before surgical incision.

Measure Time Period: - 3 hours ≤ **Procedure Start** ≥ 30 minutes

Exclusions:

- ASA 6
- Patients ≥ 18 years of age
- Emergency Cases
- **Antibiotics not indicated for procedure. Defined as one of the following:**
  - Patients given IV antibiotic treatment > 3 hrs prior to Procedure Start/Incision
  - Case returns value code 0, 2, or 3 for ABXNotes
    - 0 - Not ordered/Indicated per surgeon
    - 2 - Patient on scheduled antibiotics/documented infection
    - 3 - Not administered for medical reasons
- Procedure Type List

Procedures Excluded from NSQIP-p Surgical Antibiotic Prophylaxis

**Limitation: Sites that do not submit billing data could not participate with this measure*

Split-thickness Autograft	15100, 15120
Full Thickness Graft	15200, 15220, 15240, 15260
Muscle, Myocutaneous or Fasciocutaneous Flap	15733, 15734, 15736, 15738
Free Flap	15756, 15757, 15758, 15842
Excision of chest wall tumor including ribs	19260
Application of External Fixation system	20692, 20696
Bone/Cartilage Graft	20902, 20910, 20970
Excision of Abdominal Wall Tumor	22900
Polydactyly/Syndactyly	26550, 26562, 26587, 28345

Lymph Node Dissection	38542, 38564, 38570, 38724, 38765, 38780
Enterotomy/Enterostomy	44110, 44111, 44227, 44300, 44620 , 44625, 44626, 44640, 44650, 44820
Anoplasty	45499, 46705
Intraperitoneal Cannula Placement	49324, 49421
Craniotomy with elevation of bone flap	61533, 61535
Neuroendoscopy	62161
Creation of Shunt	62192
Ventriculocisternostomy	62200, 62201
Myelomeningocele Repair	63704, 63706

ABX-02-Peds

Success Criteria: Patient received IV antibiotics within appropriate timing prior to Procedure Start.

Acceptable Antibiotics and Associated Timing:

15-60 min before incision

- 10032 Ampicillin
- 10033 Ampicillin/Sulbactam
- 10107 Cefazolin
- 10108 Cefepime
- 10109 Cefotaxime
- 10110 Cefotetan
- 10111 Cefoxitin
- 10114 Ceftriaxone
- 10115 Cefuroxime
- 10131 Clindamycin
- 10299 Metronidazole

45-90 min before incision

- 10048 Azithromycin
- 10126 Ciprofloxacin
- 10190 Fluconazole
- 10202 Gentamicin
- 10245 Levofloxacin
- 10444 Vancomycin

Wrap Up

Next Subcommittee Meeting: November 2023

Call for Measure Contributors!

- Multimodal Analgesia (PAIN-01-peds)

Contact Meridith (meridith@med.umich.edu) if interested


Thank You!

MPOG Membership Update

Welcome New Sites!

- University of Alabama Birmingham
- UMASS Memorial Health
- Nebraska Medicine
- Temple Health

In Progress

- Indiana University Health - Riley Children’s Hospital
- Lucile Packard Children’s Hospital

Measure Discussion

NMB-04

Background – cost containment

- Measure proposed by Dr. Megan Anders (Univ. Maryland)
- Strategies for cost-containment are an area of interest
  - Formulary restrictions
  - Lower-dosing strategies (0.5 or 1mg/kg)
  - Dosing at "adjusted" body weight instead of actual body weight
    - IWB + 0.4(Actual – IBW)
  - Decision support and email feedback for dosage guideline
- A timely measure – groups may be engaging in discussion of loosening formulary restrictions given ASA guideline

Pregnall AM, et al. Use of provider education, intra-operative decision support, and an email-feedback system in improving compliance with sugammadex dosage guideline and reducing drug expenditures. *J Clin Anesth*. 2022

Measure Specification/Rationale

- Percentage of cases with sugammadex administration where cumulative sugammadex dose < 200mg OR ≤ 3mg/kg
  - Fixed cost of 200mg vial
  - Acknowledges dose rounding given small injection volumes
  - Encourages judicious use of NMBD to end with at least TOF = 2
  - Compliant with FDA approved dosing and ASA 2023 guideline

- Threshold – 90%
  - Acknowledges CICV, unexpected discontinuation of surgery, safety margin for individualized dosing

Measure Specification - Detail

- Time Period: Anes start to Anes end
- Inclusion:
  - **Sugammadex administered**
  - Adult patients only?
- Exclusion: No weight documented, ASA 6
  - Exclude patients < 2y? < 10kg?
- Attribution options
  - **Provider(s) signed into case at time of last sugammadex administration**
  - Provider signed into case at time of last NMBD administration

TEMP 04

1 vote per site

Continue as is / modify / retire

Need > 50% to retire measure

Coordinating center will review all votes after meeting to ensure no duplication