Quality Committee Meeting

January 23, 2023

10:00am - 11:00am Eastern Time

MPOG
MULTICENTER PERIOPERATIVE OUTCOMES GROUP

Agenda

Announcements
Upcoming Meetings
Measure Page Updated

Measure Review
Opioid Equivalency - Mike Burns, MD, PhD

Measure Updates
TEMP 01

NMB Guideline Updates

Sustainability Toolkit

MPOG

Meeting Minutes
November 2022

Roll Call – via Zoom or contact us

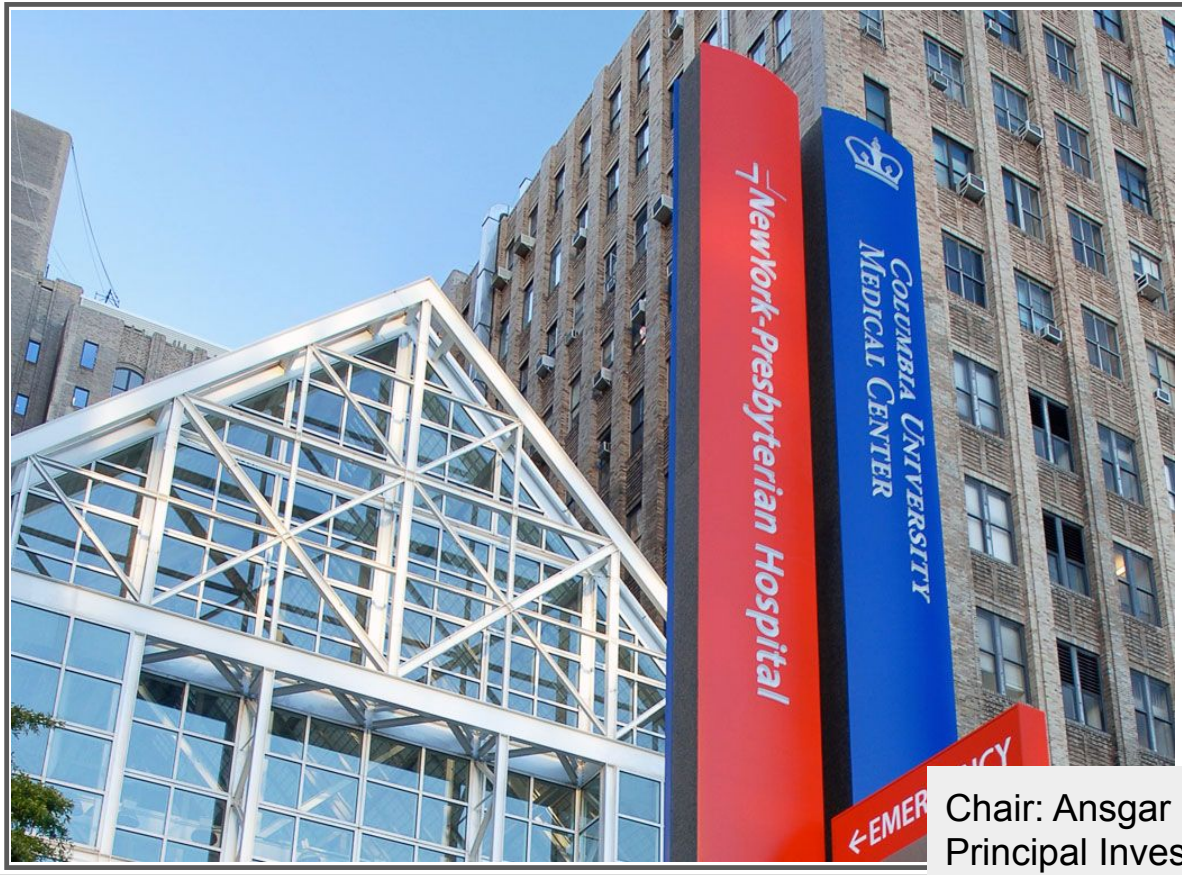
Announcements

Featured Member
January & February

MORE INFO

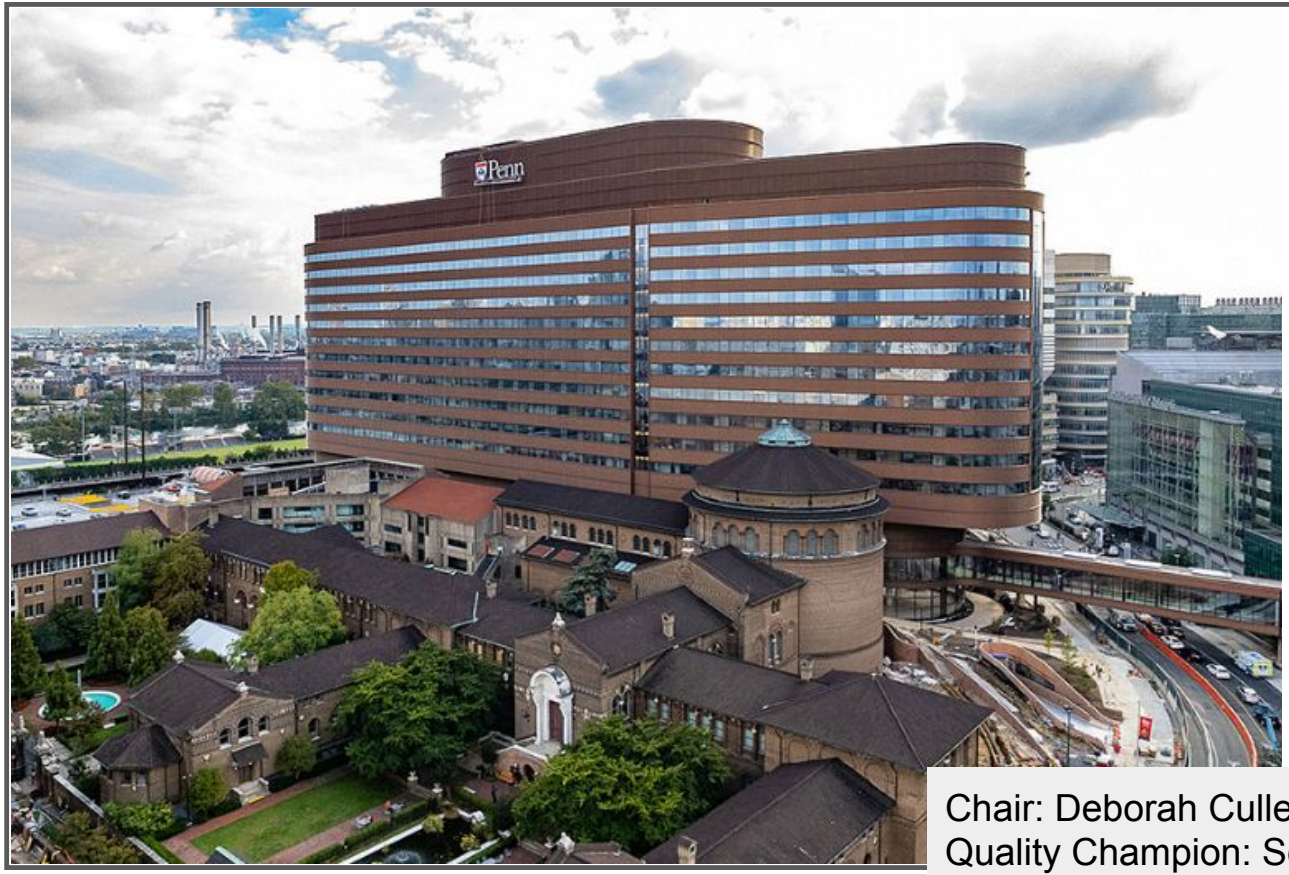
Amit Bardia, MBBS

Massachusetts General Hospital



Congrats to Columbia University Irving Medical Center for completing their recent Import Manager conversion!

Chair: Ansgar Brambrink, MD, PhD
Principal Investigator: Mitch Berman, MD



Congrats to University of Pennsylvania Medical Center for completing the Import Manager conversion!

Chair: Deborah Culley, MD
Quality Champion: Scott Falk, MD
Principal Investigator: Thomas Joseph, MD

2023 Meetings

Friday, April 21, 2023
MSQC/ASPIRE Collaborative Meeting
Michigan Union, Ann Arbor, Michigan

Friday, July 14, 2023
ASPIRE Collaborative Meeting
Henry Executive Center, Lansing, Michigan

Friday, September 15, 2023
ACQR Retreat
DoubleTree Hotel, Ann Arbor, Michigan

Friday, October 13, 2023
MPOG Retreat
San Francisco, California

2023-2024 Outcomes Research Fellowship

- Opportunity to complete a one-year fellowship either onsite at the MPOG coordinating center (University of Michigan, Ann Arbor, MI) or as a hybrid experience at MPOG participating site
- A minimum of 50% non-clinical time devoted to MPOG fellowship activities
- Fellows will engage in a Practicum Capstone Project related to an MPOG-based clinical research project or quality measure
- Application packet (cover letter, current CV, letters of support, 1-page research plan and 1-page training plan) due by **February 10, 2023**
- More information and FAQs available at https://mpog.org/research-fellowship/

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QI Measure Page Updated!

Obstetrics 	ABX-01-OB: Antibiotic Timing for Cesarean Delivery BP-04-OB: SBP < 90 in Cesarean Deliveries GA-01-OB: General Anesthesia During Cesarean Deliveries GA-02-OB: General anesthesia after neuraxial in Cesarean Deliveries TEMP-05-OB: Hypothermia in Cesarean Deliveries
Pediatrics 	FLUID-02-Peds: Minimizing Colloid Use, Pediatrics NMB-03-Peds: NMB Dosing, Pediatrics TEMP-04-Peds: Intraoperative Normothermia, Pediatrics TRAN-04-Peds: Overtransfusion, Pediatrics
Cardiac 	FLUID-01-C: Minimizing Colloid Use (Cardiac) TEMP-06-CARD: Hypothermia Avoidance in Cardiac Surgery TEMP-07-CARD: Hyperthermia Avoidance in Cardiac Surgery

Search:

BP-03 : Low Map Prevention < 65

Measure ID
BP-03

Domain
Blood Pressure

Description
Percentage of cases where intraoperative hypotension (MAP < 65 mmHg) was sustained for less than 15 minutes

Measure Type
Process

Rationale
Intraoperative hypotension (MAP < 65mmHg) is associated with compromised organ perfusion and puts patients at risk for post-operative mortality, cardiac adverse events (CAEs) and acute kidney injury (AKI). Multiple studies have addressed the impact of hypotension on patient outcomes and generally show less CAEs, AKI, and death by maintaining a MAP above 60-70mmHg.[1,2] One retrospective cohort analysis, including 57,315 non-cardiac surgical patients, demonstrated a MAP of less than 65mmHg was associated with a higher incidence of myocardial and kidney injury and the duration of low MAP significantly increases the odds of the aforementioned outcomes.[3] Furthermore, a retrospective review including 33,330 non-cardiac surgical patients determined that a MAP less than 65mmHg for any duration was associated with similar adverse outcomes[4]

Threshold
90%

Measure Time Period
Intraoperative. See 'Other Measure Build Details' for more information

Measure Reviewer(s)

Date Reviewed	QC Presentation	Reviewer	Institution	Summary	QC Vote
09/2022	09/26/2022	Kumal Maheshwari, MD	Cleveland Clinic	Review	Continue as Is

Version
Published Date: 09/2019

Date	Criteria Updated	Revision
07/12/2022	Exclusion	Added BP First in Room value as backup to Preop Blood Pressure Mean
06/09/2022	Exclusion	Modified to use new phenotype Preop Blood Pressure Mean
06/21/2021	Exclusion	Modified to consider Obstetric Anesthesia Type Phenotype; Valid measure duration

Still to come…

- Add flowcharts to outline measure logic
- Improve mobile UI
- Add ability to attach supporting documents

Measure Review: Opioid Equivalency

Mike Burns
University of Michigan

OPIOID : Opioid Equivalency

Rationale:
There remains variation in perioperative analgesia techniques.
Understanding opioid administration to help improve perioperative care.
Oral morphine equivalency (OME) is often used to compare opioid consumption.
We created this algorithm based on conversions obtained from literature.
Significant effort to develop algorithms to ensure proper capture.

This measure is intended as an informational tool to help understand opioid use in the operating room.

Details:
Cases are grouped by surgical site using CPT groupings.

Opioid equivalents are calculated using conversions derived from literature and given between anesthesia start and anesthesia end.
OME is normalized to patient weight (kg) and duration of anesthetic (anesthesia end – anesthesia start, hours as a decimal).

This is a process (informational) measure; success is not defined for these measures - informational only.
There is no threshold to achieve.
The measure time period is Anesthesia Start to Anesthesia End.
The measure returns a single value per case.

Measure Review:
https://docs.google.com/document/d/1pGJSVI-4hV1Ia5aM55OV1IJcwwZ2oIgF474ajQqXVUo/edit#heading=h.59kcj478p51l

Public Spec:
https://spec.mpog.org/Spec/Public/37

OPIOID : Opioid Equivalency
ASPIRE OME

The following case categories are currently included:

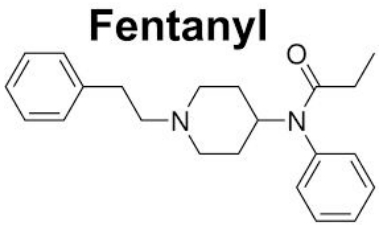
- Cardiac
- Spine (Adult): Patients ≥ 18yo
- Spine (Pediatric): Patients < 18yo
- Upper Abdomen
- Lower Abdomen
- Hysterectomy
- Knee/Popliteal
- Hip
- Tonsil/Adenoid (Pediatrics): Patients < 18yo

Review of Literature - OME

Reviewed the references within the measure specifications
Looked at articles that have references these articles over the past 10 years.
There were no major changes in conversions form the literature.

Reviewed new literature over the past 10 years for additional conversions
There were no major changes in conversions form the literature.
https://www.cdc.gov/drugoverdose/pdf/calculating_total_daily_dose-a.pdf

CDC clinical practice guideline for prescribing opioids for pain US, 2022
https://stacks.cdc.gov/view/cdc/122248



Calculating morphine milligram equivalents (MME)

OPIOID (doses in mg/day except where noted)	CONVERSION FACTOR
Codeine	0.15
Fentanyl transdermal (in mcg/hr)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone	
1-20 mg/day	4
21-40 mg/day	8
41-60 mg/day	10
≥ 61-80 mg/day	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3

These dose conversions are estimated and cannot account for all individual differences in genetics and pharmacokinetics.

Review of Literature - OME

Hydromorphone

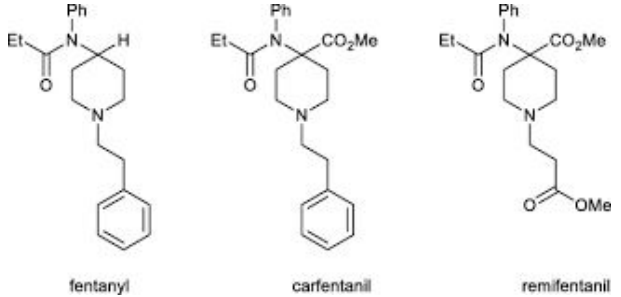
Reviewed EPIC's OME conversions in comparison to those used in our OME measure

Measure OME conversions were close/exact in all instances:
13 medication/route combinations matched.

7 medication/route combinations were in EPIC and not in our measure:
Belladonna (rectal)
Dihydrocodeine (oral)
Meperidine (IM)
Meperidine (SQ)
Meperidine (IV)
Opium (oral)
Pentazocine (oral)

21 medication/route combinations were in our measure but NOT in EPIC.

Recommendations - OME



Rationale is still mostly appropriate.
Unsure how often this is used as part of QI efforts around MPOG.
Feedback from group: is the OME measure useful?

1. Consider adding another procedure group: Vascular
   Feedback from group: Should we add other case categories?

Vascular	
00880	**Anesthesia for procedures on major lower abdominal vessels; not otherwise specified**
00882	**Anesthesia for procedures on major lower abdominal vessels; inferior vena cava ligation**

2. Consider adding in a few medications for which there are identified conversions:
   - Belladonna (rectal)
   - Dihydrocodeine (oral)
   - Meperidine (IM)
   - Meperidine (SQ)
   - Meperidine (IV)
   - Opium (oral)
   - Pentazocine (oral)

   Feedback from group: Should we add other medications?

3. Consider including PACU data if available (would be a new measure)

Opioid Equivalency Vote

1 vote/ site

Continue as is/ modify/ retire

Need > 50% to retire measure

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

Measure Updates
TEMP 01

TEMP 01 Update: Exclude cesarean deliveries

Description:

Percentage of cases in which an active warming device was applied intraoperatively, or the patient maintained a temperature above 36.0°C without active warming.

Active warming defined as:

- Convective warming
- Conductive warming
- Endovascular warming
- Radiant heaters

Exclusions:

- Labor epidurals & cases less than 60 minutes case duration
- Added exclusion for cesarean deliveries per Obstetric Subcommittee vote (12/2022)

***Minimal change to performance scores: Scores increased on average of 1.2%**

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NMB Guideline Update

Practice Parameter | January 2023

2023 American Society of Anesthesiologists Practice Guidelines for Monitoring and Antagonism of Neuromuscular Blockade: A Report by the American Society of Anesthesiologists Task Force on Neuromuscular Blockade FREE

Stephan R. Thilen, M.D., M.S. (co-chair); Wade A. Weigel, M.D. (co-chair); Michael M. Todd, M.D.; Richard P. Dutton, M.D., M.B.A.; Cynthia A. Lien, M.D.; Stuart A. Grant, M.D.; Joseph W. Szokol, M.D., J.D., M.B.A., FASA; Lars I. Eriksson, M.D., Ph.D., FRCA; Myron Yaster, M.D.; Mark D. Grant, M.D., Ph.D.; ... Show more

+ Author and Article Information

Anesthesiology January 2023, Vol. 138, 13–41.

https://doi.org/10.1097/ALN.0000000000004379

Recommendations

Recommendation	Strength of Recommendation	Strength of Evidence
1. When neuromuscular blocking drugs are administered, we recommend against clinical assessment alone to avoid residual neuromuscular blockade, due to the insensitivity of the assessment.	Strong	Moderate
2. We recommend quantitative monitoring over qualitative assessment to avoid residual neuromuscular blockade.	Strong	Moderate
3. When using quantitative monitoring, we recommend confirming a train-of-four ratio greater than or equal to 0.9 before extubation.	Strong	Moderate
4. We recommend using the adductor pollicis muscle for neuromuscular monitoring.	Strong	Moderate
5. We recommend against using eye muscles for neuromuscular monitoring.	Strong	Moderate
6. We recommend sugammadex over neostigmine at deep, moderate, and shallow depths of neuromuscular blockade induced by rocuronium or vecuronium, to avoid residual neuromuscular blockade.*	Strong	Moderate
7. We suggest neostigmine as a reasonable alternative to sugammadex at minimal depth of neuromuscular blockade.	Conditional	Low
8. To avoid residual neuromuscular blockade when atracurium or cisatracurium are administered and qualitative assessment is used, we suggest antagonism with neostigmine at minimal neuromuscular blockade depth. In the absence of quantitative monitoring, at least 10 min should elapse from antagonism to extubation. When quantitative monitoring is utilized, extubation can be done as soon as a train-of-four ratio greater than or equal to 0.9 is confirmed before extubation.	Conditional	Very low

*Deep: posttetanic count greater than or equal to 1 and train-of-four count 0; moderate: train-of-four count 1 to 3; shallow: train-of-four count 4 and train-of-four ratio less than 0.4; minimal: train-of-four ratio 0.4 to less than 0.9.

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Recommendations

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*Deep: posttetanic count greater than or equal to 1 and train-of-four count 0; moderate: train-of-four count 1 to 3; shallow: train-of-four count 4 and train-of-four ratio less than 0.4; minimal: train-of-four ratio 0.4 to less than 0.9.

Implications for MPOG

Aligned with our measures though recommend quantitative over qualitative NMB monitoring (NMB-01)

Try to understand how often quantitative monitoring is used

Sugammadex recommended for deep, moderate, or shallow levels of NMB blockade from rocuronium or vecuronium

Analyze usage of sugammadex vs neostigmine

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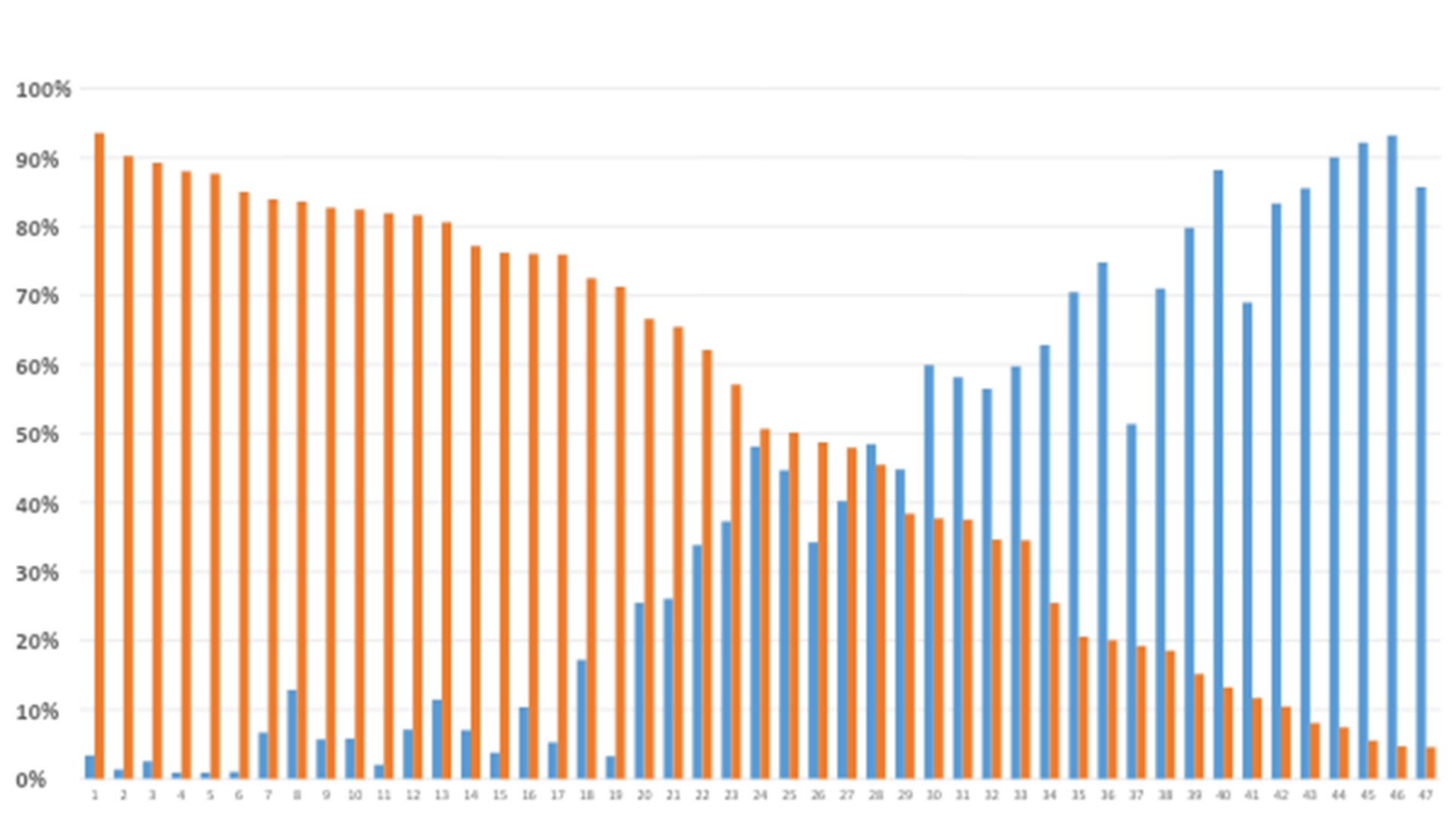
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Sustainability Toolkit

Sustainability Toolkit coming soon!

Thank you to Armaan Patel for reviewing the literature to create this toolkit!

Includes presentation slides: modify as needed to share with your departments

Please let us know if you wish to see a early version to review and provide feedback

Will be posted to the MPOG website by end of February

Objectives

- Overview sustainability in anesthesia
- Discuss selection of anesthetic agent
- Discuss management of fresh gas flow
- Review ASPIRE sustainability measures

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Thank You!

TRAN 01 Measure Discussion

Percentage of cases with a blood transfusion that have a hemoglobin or hematocrit value documented prior to transfusion.

- If multiple units are administered, documentation of a hemoglobin or hematocrit value must be present within 90 minutes before each administration.

- Caveat: If the last hemoglobin or hematocrit drawn *before* the first transfusion is ≤ 5/16, a second unit could be administered without rechecking hemoglobin/hematocrit.

Should we consider excluding cases where the *post*-transfusion hemoglobin/hematocrit is less then a certain value?

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