# ASPIRE Obstetric Anesthesia Subcommittee Meeting
# February 7, 2024

# Agenda

- Announcements
- November 2023 Meeting Recap
- SOAP Centers of Excellence: Dr. Brendan Carvalho
- Measure Review: GA-01 & GA-02
- Azithromycin Measure Proposal
- BP-04 Measure Revision Proposal
- BMI Data

# Announcements

- Congratulations to our new Chair Dr. Brandon Togioka!
- Thank you to Dr. Servin for her service to the OB Subcommittee
- Future OB Subcommittee Meeting Dates:
  - May 22, 2024 @1pm EST
  - Oct 2, 2024 @1pm EST
- PCRC meeting February 12th. Jeremy Juang, MD (UCSF) will be presenting PCRC 249 (Racial disparities in cesarean delivery anesthesia type by race and social determinants of health). If you are interested in attending, please email Nicole

# Welcome New Members!

- Hannah Burcham – University of Texas Southwestern
- Katie O'Conor - Johns Hopkins
- Mellany Stanislaus - Johns Hopkins
- Jack Peace - Temple University
- Jeremy Juang – University of California, San Francisco
- Arthur Calimaran – Cleveland Clinic
- Muhammad Athar – UAMS
- Alexandra Taylor –Trinity Health

MPOG Obstetric Anesthesia Subcommittee is open to all individuals interested in improving obstetric care. Please reach out to Nicole if interested in joining.

# November Meeting Recap

- Thank you to Dr. Dan Biggs for leading the measure review of BP-04-OB: Hypotension during Cesarean Delivery. Subcommittee voted to continue this measure as is (no changes).

- New Azithromycin measure proposed:
  - Percentage of unscheduled cesarean deliveries in which azithromycin was administered within 60 minutes before incision and anesthesia end.
  - Subcommittee interested in chorioamnionitis data before moving forward – will share data with committee today

- Reviewed MPOG data to assess variation in administration of uterotonic agents and transfusions.

- Presented data to examine patients undergoing cesarean delivery stratified by Body Mass Index (BMI).

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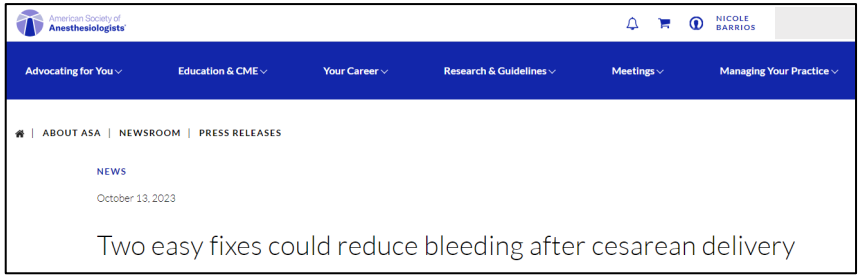
# In the News: Winter 2024

*Two easy fixes could reduce bleeding after cesarean delivery*




**1- Calcium Chloride Solution**

- Double-blind, randomized, controlled trial included 120 women who required a cesarean delivery after labor with an oxytocin infusion.
- 60 women received 1 gram of calcium chloride infusion and the other 60 received a placebo.
- In placebo group 57% had PPH, 15% required a blood transfusion while those who received calcium chloride, 40% had PPH and 8.3% required a blood transfusion.

**2- Early Warning System**

- Alert built into EHR triggering uterine tone assessment at 2, 7 and 12 minutes after delivery
  - Rating scale: 0-10
  - Scores ≤6: Uterus is not contracting well and the woman is at higher risk for PPH.
- Study assessed more than 1,000 consecutive cesarean deliveries by 70 different obstetricians over 8 months.
- At 12 minutes, 179 women (18%) had scores of 6 or lower, meaning they were at higher risk for severe bleeding.
- Of those with scores of 6 or lower, 77% experienced hemorrhage, 46% experienced major hemorrhage and 25% needed a blood transfusion.

British Journal of Anaesthesia
Volume 126, Issue 5, May 2021, Pages 1022-1028

Obstetric Anaesthesia

# Association between ionised calcium and severity of postpartum haemorrhage: a retrospective cohort study

Danny Epstein [1], Neta Solomon [2 3], Alexander Korytny [4 5], Erez Marcusohn [6], Yaacov Freund [5], Ron Avrahami [7], Ami Neuberger [1 5 8], Aeyal Raz [5 9], Asaf Miller [10]

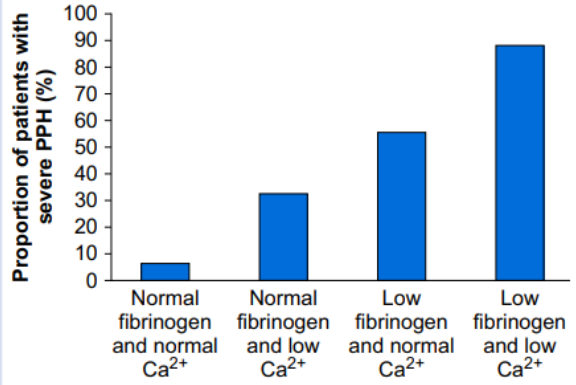



Fig 2. The relationships between fibrinogen, ionised calcium, and clinical outcome. Low fibrinogen was defined as fibrinogen <200 mg $dl^{-1}$ and low $Ca^{2+}$ was defined as $Ca^{2+}$ <1.16 mmol $L^{-1}$. $Ca^{2+}$, ionised calcium; PPH, postpartum haemorrhage.

- Retrospective Cohort Study of women diagnosed with PPH during vaginal delivery between January 2009 and April 2020.
- Primary outcome was severe PPH.
  - Hypocalcemia present in 52% severe PPH vs 11% less severe bleeding.
  - Hypocalcemia may identify those at risk for severe PPH.
- Calcium and fibrinogen are independently associated with severe PPH.

# SOAP Centers of Excellence for Anesthesia Care of Obstetric Patients


*Brendan Carvalho MBBCh, FRCA, MDCH, FASA*

*Professor, Chief Division of Obstetric Anesthesiology and Maternal Health*
*Vice Chair, Faculty Development*
*Stanford University School of Medicine*
*Past President, Society for Obstetric Anesthesia and Perinatology*

Stanford Children's Health | Lucile Packard Children's Hospital Stanford

SOAP Society for Obstetric Anesthesia and Perinatology

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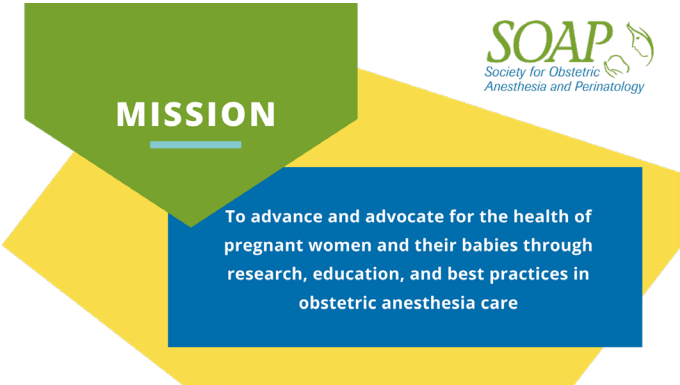
SOCIETY FOR OBSTETRIC ANESTHESIA AND PERINATOLOGY

# CENTER of EXCELLENCE

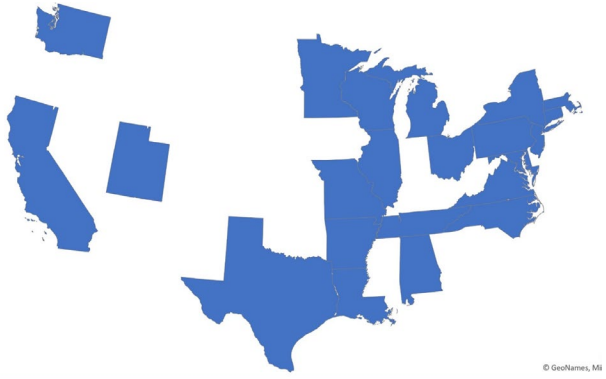
- Recognize programs that demonstrate excellence
- Set a benchmark for optimal care
- Surrogate quality metric for institutions
- Promote sub-specialty of obstetric anesthesia

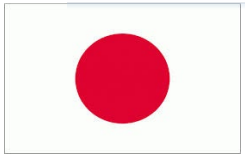



https://www.soap.org/centers-of-excellence_program
Anesth Analg. 2019;128(5):844-846

# SOAP Centers of Excellence

## For Anesthesia Care of Obstetric Patients Designation





## 90 institutions

- USA (78) and worldwide (12)
- Academic and private/community
- Deliveries/year: <1,000 to >15,000

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# SOAP COE for Anesthesia Care of Obstetric Patients

## Metrics

**General Anesthesia for Cesarean Delivery**

- < 5% overall
- *Ongoing quality assurance review*

**Labor epidural block replacement rate**

- Ideally 3-6%
- *Ongoing quality assurance review*

**“Wet tap” rate**

- < 2%
- *Ongoing quality assurance review*

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American Society of Anesthesiologists

# Statement on Quality Metrics

***Developed By:*** *Committee on Obstetric Anesthesia*
***Original Approval:*** *October 26, 2022*

**Outlines six areas for quality improvement based on relevant and quantifiable metrics to measure obstetric anesthesia care:**

1. Mode of Anesthesia for Cesarean Delivery
2. Neuraxial-Induced Hypotension during Cesarean Delivery
3. Post Cesarean Opioid Consumption
4. Responsiveness to the Request for Labor Analgesia
5. Post Dural Puncture Headache Accountability
6. Labor Epidural Replacements

https://www.asahq.org/standards-and-practice-parameters/statement-on-quality-metrics

# SOAP COE for Anesthesia Care of Obstetric Patients

## Criteria

- **Domains:**
  - Personnel and Staffing
  - Equipment, Protocols, Policies
  - Recommendations and Guidelines Implementation
  - Cesarean Delivery Management
  - Labor Analgesia
  - Quality Assurance and Patient Follow-up
- **Requirements:**
  - All ‘essential’ criteria
  - Majority of other criteria

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https://www.soap.org/centers-of-excellence_program
Anesth Analg. 2019;128(5):844-846

# COE for Anesthesia Care of Obstetric Patients
## Personnel and Staffing

- Leadership: Physician, obstetric anesthesia fellowship or equivalent
- Core staffing with obstetric anesthesia training
- Ongoing staffing education
- Adequate supervision
- In-house (24/7), dedicated coverage
- Ability to mobilize backup

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# COE for Anesthesia Care of Obstetric Patients
## Equipment, Protocols and Policies

- Hemorrhage protocols, airway management, emergencies (LAST, MH)
- Emergency response, simulation program, cognitive aids
- Daily multidisciplinary rounds, triage
- Institutional resources
- Ultrasound/TTE/POC testing
- Community and interprofessional education
- Promote diversity, equity and inclusion
- ASA Guidelines, SOAP Consensus Statements, National Partnership Maternal Safety Bundles

# COE for Anesthesia Care of Obstetric Patients
## Cesarean Delivery Management

- ERAC protocol
- Multimodal analgesia protocols, minimize opioid usage
- Pencil-point ≤25-gauge needle
- Temperature management, Antibiotic prophylaxis
- Spinal hypotension
- Nausea and vomiting prophylaxis and treatment
- Intraoperative pain management
- Postpartum monitoring

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# COE for Anesthesia Care of Obstetric Patients

## Labor Analgesia

- Low concentration local anesthetic solutions with neuraxial opioids
- Standardized, pharmacy prepared
- Combined-spinal epidural (CSE)
- PCEA and ideally PIEB
- Flexible epidural catheters
- Regular assessment of labor epidurals
- Track epidural replacements
- Non-neuraxial analgesic options

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# COE for Anesthesia Care of Obstetric Patients
## Quality Assurance and Patient Follow-up

- Anesthesiologist serves as multidisciplinary clinical policy and committees
- Structured follow-up all patients who received analgesia/anesthesia
- Evaluate complications
- Evaluate and treat post-dural puncture headache
- Collect patient feedback
- Root cause analysis or equivalent
- Educate nurses, obstetricians and allied professionals

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# SOAP COE for Anesthesia Care of Obstetric Patients

## Applications and Reviews

- **Annual Application Cycle:** Open July to August
- **Certificate:** Valid for 4 years
- **Cost** (Application $500; Certification $2000; Recertification $1000)
- **Information:** SOAP website, talks/webinars, consultations

- **Rigorous review process**
- **Self-reporting with no hospital visits**

https://www.soap.org/centers-of-excellence_program

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# SOAP COE for Anesthesia Care of Obstetric Patients

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# Measure Review

GA-01: General Anesthesia for Cesarean Delivery

GA-02: General Anesthesia after Neuraxial for Cesarean Delivery

**Thank you to our reviewers!**

Sharon Abramovitz, MD - Weill Cornell Medical College

Melinda Mitchell, MD - Henry Ford, Jackson

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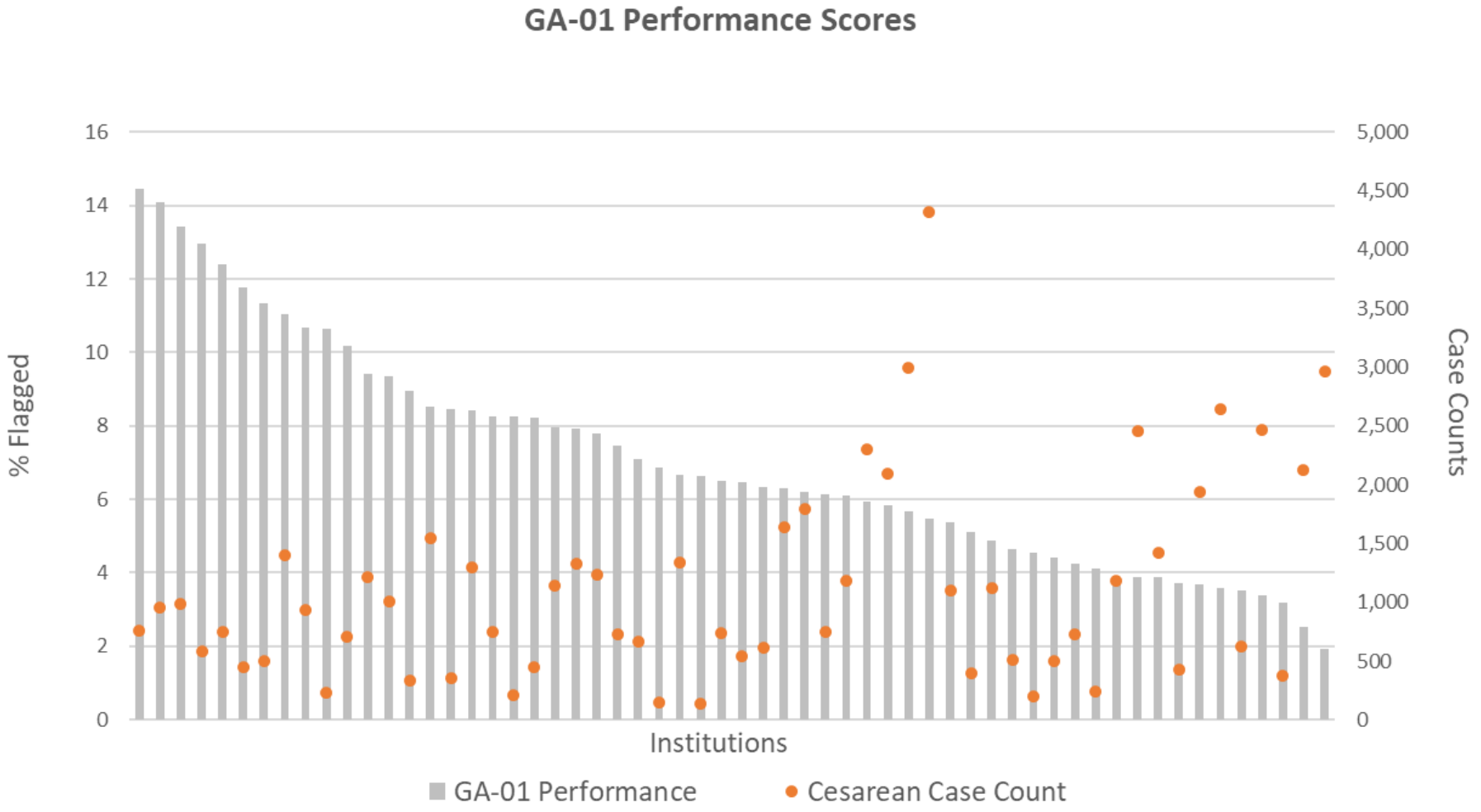
GA-01 Performance Scores
16
14
12
10
8
6
4
2
0
% Flagged
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Case Counts
Institutions
GA-01 Performance
Cesarean Case Count

# GA-01: General Anesthesia for Cesarean Delivery

- Measure was first published 2/16/2021. First revised 6/19/2021.
- **Appropriateness of rationale**: Tracking general anesthesia rates is an important benchmark.
- **Evaluation and definition of success**: Success defined as cesarean delivery without the use of general anesthesia. Case will be flagged if GA used as anesthetic method.
- **Other Feedback to consider:**
  - Should an outcome threshold be considered?
    - Would need risk adjustment.
- **Recommendation for GA-01:**
  - Continue as is

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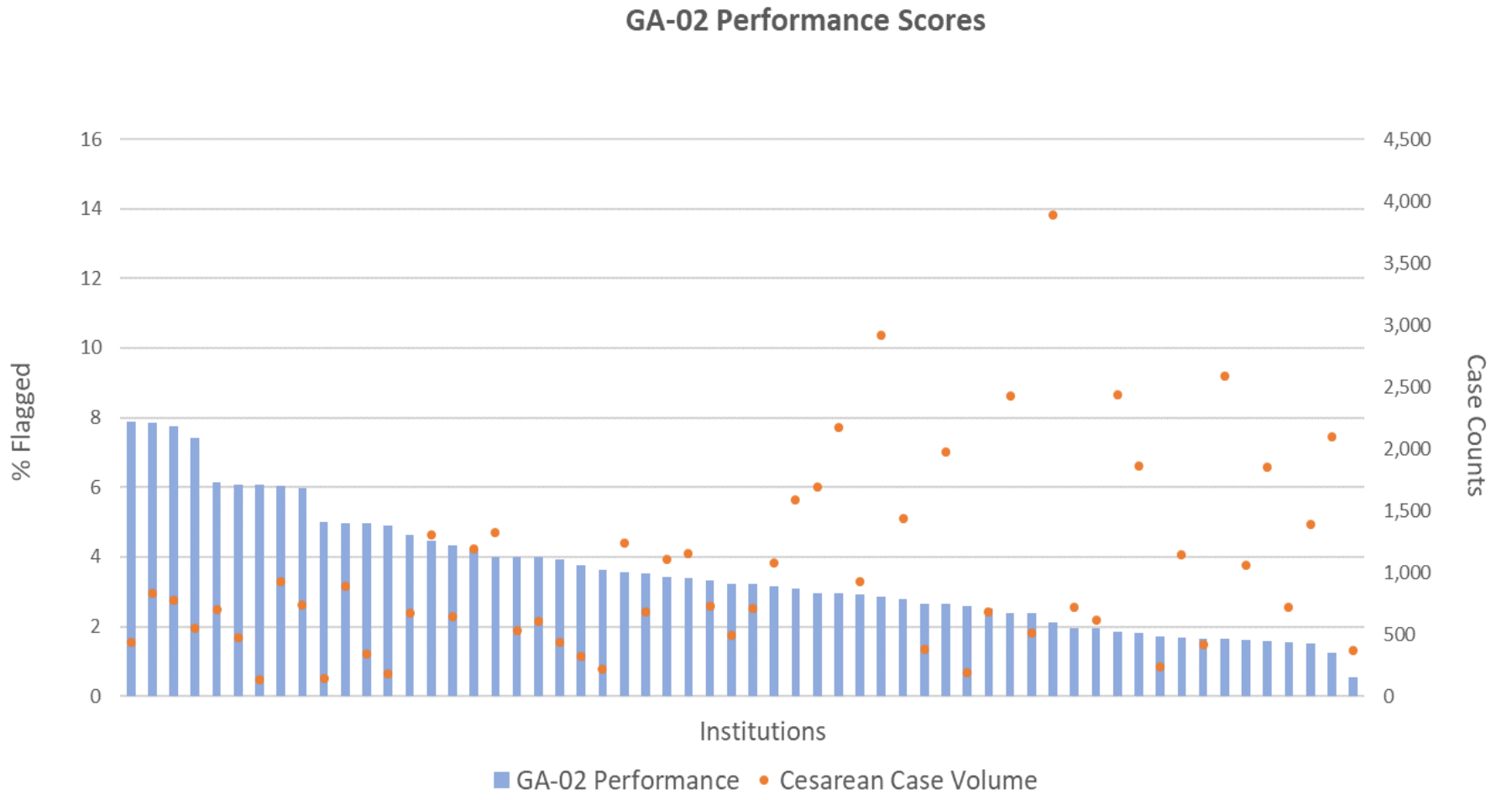
GA-02 Performance Scores
16
14
12
10
8
6
4
2
0
% Flagged
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Case Counts
Institutions
GA-02 Performance
Cesarean Case Volume

# GA-02: General Anesthesia after Neuraxial for Cesarean Delivery

- Measure was first published 8/10/2021. First revised 7/23/2023.
- **Appropriateness of rationale**: Tracking rates of GA after neuraxial is an important benchmark.
- **Evaluation of success**: Success defined as cesarean delivery with neuraxial anesthesia completed without use of general anesthesia. Case will be flagged if patient receives GA after neuraxial anesthesia administered.
- **Recommendation for GA-02**:
  - Continue as is

# GA-03-OB : General Anesthesia Administered after Epidural for Cesareans

- May 2023: GA-03-OB published
- July 2023: Revised to exclude placenta accreta cases

- New Consideration:
  - Currently examines the % patients with an epidural that also required general anesthesia
  - Proposed change: Limit to % of labor epidurals that converted to GA (exclude epidurals placed immediately before cesarean delivery for pain control only)

- Will present data at next meeting

# GA-01-OB: General Anesthesia for Cesarean Delivery
# GA-02-OB: General Anesthesia after Neuraxial for Cesarean Delivery

- 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

# Next Measure Review: TEMP-05

- Next measure review scheduled for the May 22nd meeting:
  - TEMP-05: Hypothermia in Cesarean Delivery
  - Reviewers: Christine Warrick and Wandana Joshi
- Measure review template

# THANK YOU!

Brandon Togioka, MD
MPOG Obstetric Anesthesia Subcommittee Chair
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Nicole Barrios MHA, BSN-RN
Obstetric Anesthesia Subcommittee Lead
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MULTICENTER PERIOPERATIVE OUTCOMES GROUP

# BP-04 Request to add Provider Attribution

- BP-04: Percentage of cases with systolic blood pressure < 90 mmHg for ≤ 5 (cumulative) minutes.

- Currently this is a departmental only measure - not available for provider feedback emails.
  - Request from sites to be able to add to monthly provider emails.

- Provider Attribution Discussion
  - Provider signed in for at least 5 min of hypotension? Propose all roles for attribution?

# Azithromycin Data

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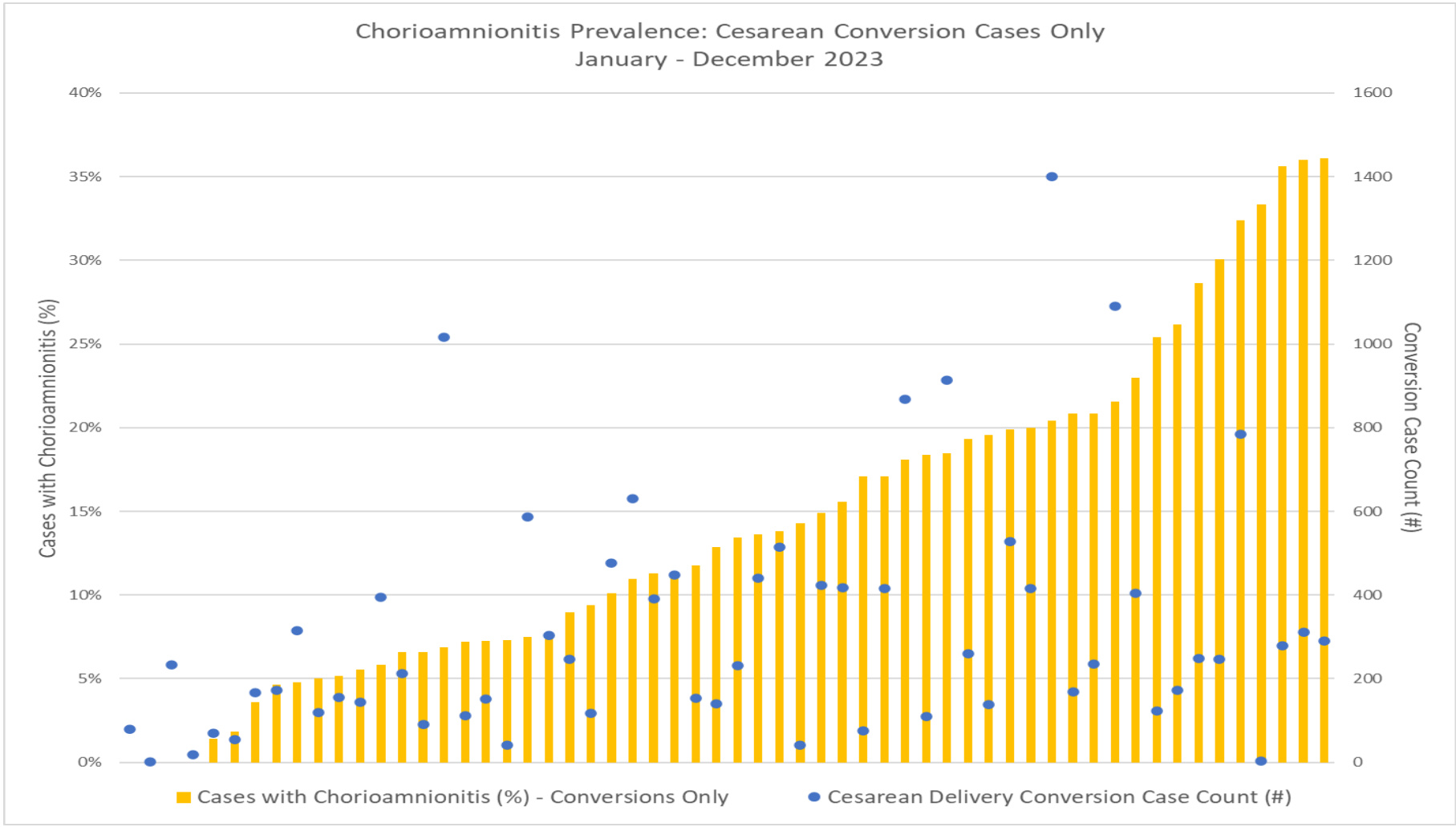
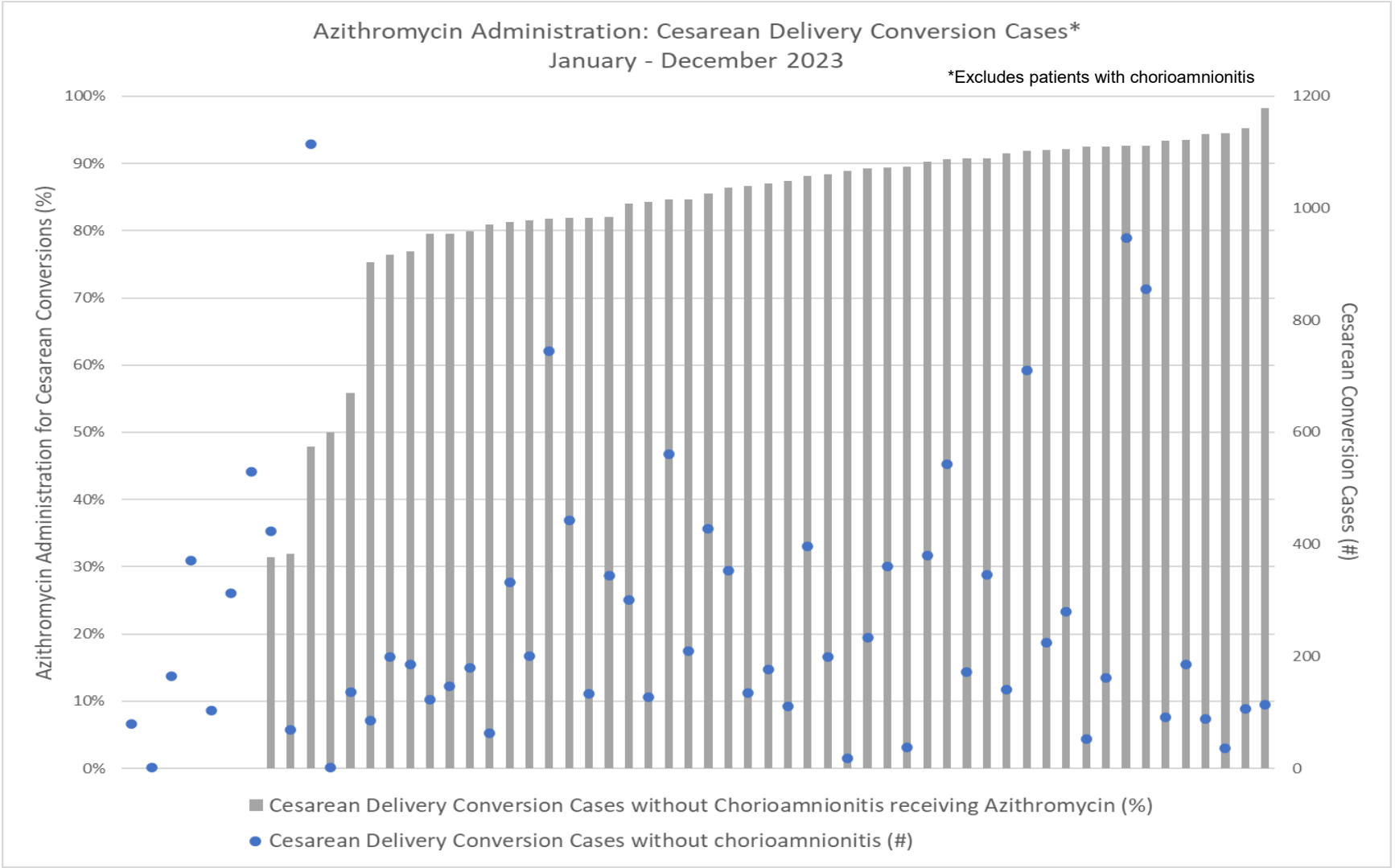
OUTCOMES GROUP

# Chorioamnionitis diagnosis in MPOG

- Proposed Azithromycin measure: *Percentage of unscheduled cesarean deliveries in which azithromycin was administered in the time period 60 minutes before incision through anesthesia end.*

- Analyzed Chorioamnionitis using ICD.10 codes (O41.12x)
  - 3,994 cases in past 12 months
  - 21,367 cases from 2019-2023
  - Most common ICD.10 code: O41.1230 – Chorioamnionitis, Third trimester, not applicable or unspecified.


Chorioamnionitis Prevalence: Cesarean Conversion Cases Only
January - December 2023
40%
35%
30%
25%
20%
15%
10%
5%
0%
Cases with Chorioamnionitis (%)
1600
1400
1200
1000
800
600
400
200
0
Conversion Case Count (#)
Cases with Chorioamnionitis (%) - Conversions Only
Cesarean Delivery Conversion Case Count (#)


Azithromycin Administration: Cesarean Delivery Conversion Cases*
January - December 2023
*Excludes patients with chorioamnionitis
Azithromycin Administration for Cesarean Conversions (%)
Cesarean Conversion Cases (#)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1200
1000
800
600
400
200
0
Cesarean Delivery Conversion Cases without Chorioamnionitis receiving Azithromycin (%)
Cesarean Delivery Conversion Cases without chorioamnionitis (#)

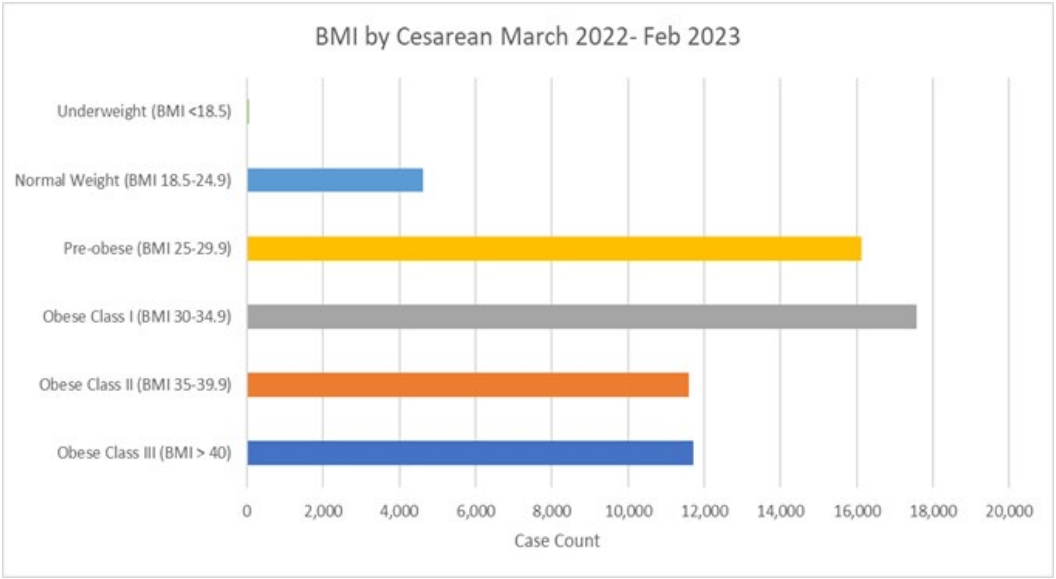
# Build new Antibiotic Measure?

Azithromycin measure proposed: *Percentage of unscheduled cesarean deliveries in which azithromycin was administered in the time period 60 minutes before incision through anesthesia end.*

Vote: Build Azithromycin measure?

- Yes
- No

# Recap from Nov Meeting- BMI and Cesarean Deliveries




- According to the CDC, in 2020 31.8% of live births were cesarean deliveries
- Charting in EHR is often of woman's current gestational weight
- Subcommittee interested in examining upper BMI >40 data

Ann Med Surg (Lond). 2018 Dec; 36: 129–134.
Published online 2018 Nov 2. doi: 10.1016/j.amsu.2018.10.023
PMCID: PMC6234280
PMID: 30455878

# Anesthetic and obstetric outcomes in pregnant women undergoing cesarean delivery according to body mass index: Retrospective analysis of a single-center experience

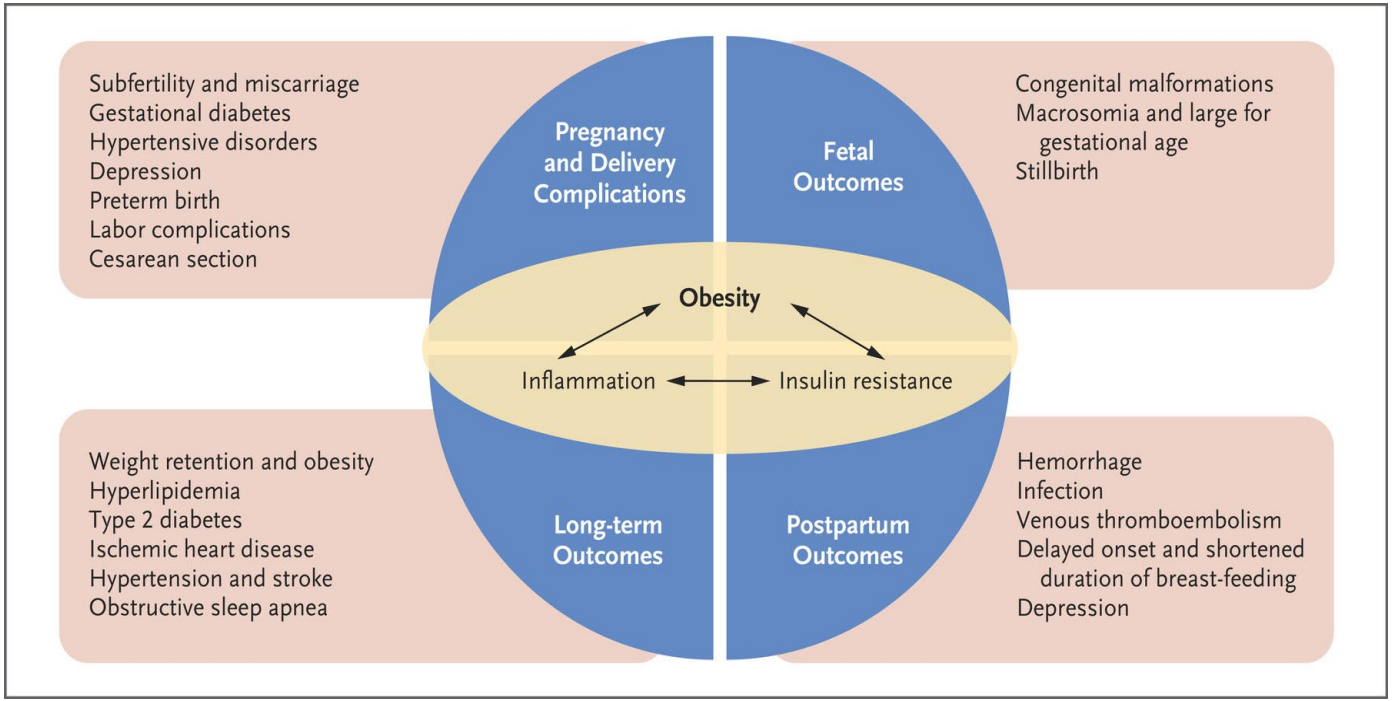
Efrain Riveros-Perez,[a,b,*] Jacob McClendon,[c] Jennifer Xiong,[d] Thomas Cheriyan,[e] and Alexander Rocuts[e]

- Retrospective analysis of 771 patients
- Found intraoperative blood loss was significantly higher in the morbidly obese category.
- Approximately 100 ml greater blood loss in morbidly obese.

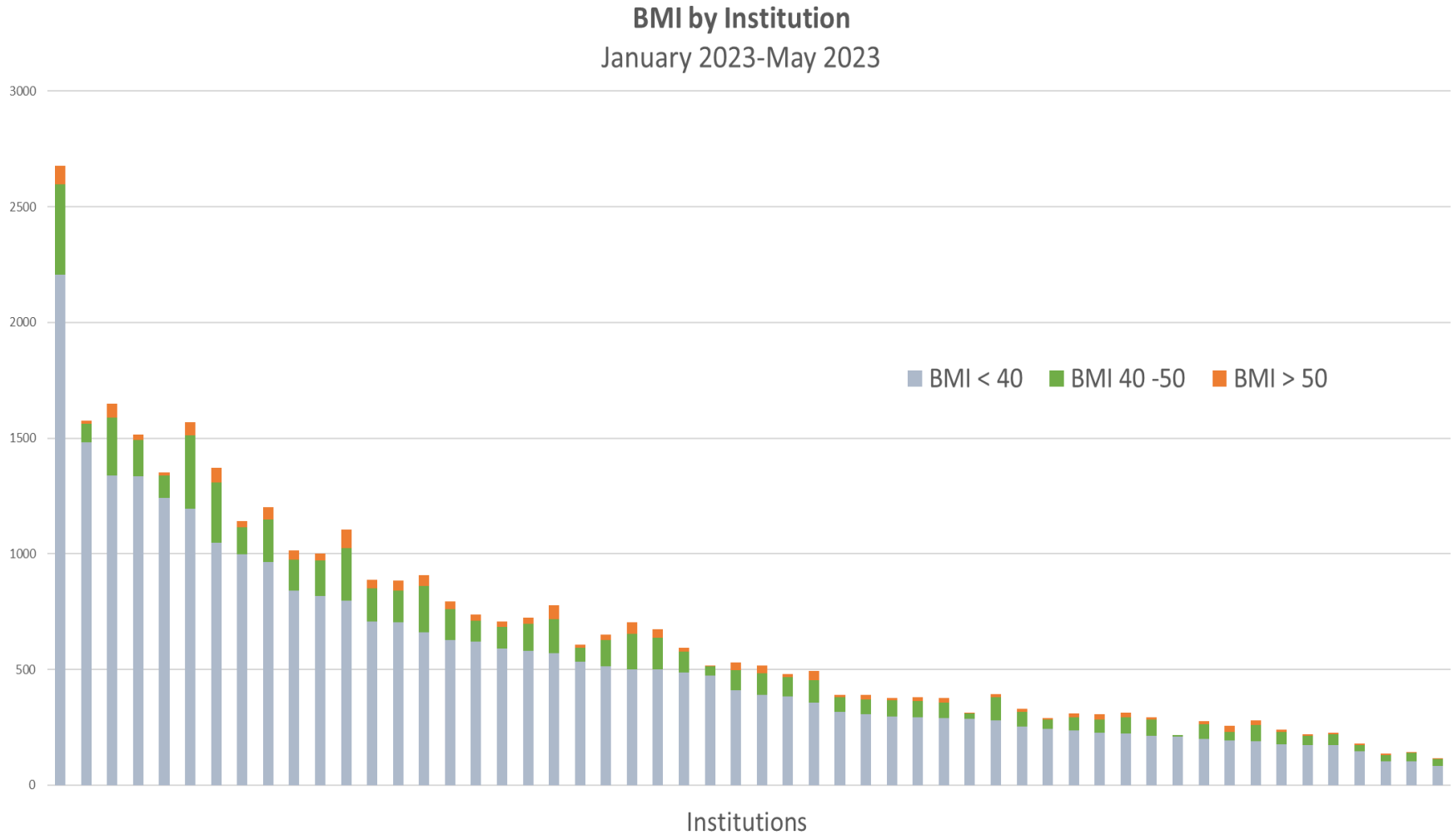
Demographic variables between normal, obese and morbidly obese patients.

| Characteristics | Normal (n = 213) | Obese (n = 365) | Morbidly Obese (n = 193) | *P*-value |
|---|---|---|---|---|
| Age (years) | | | | |
| Median ± SD | 27.05 ± 6.1 | 27.98 ± 5.9 | 28.9 ± 5.1 | **0.036** |
| Gestational age at delivery (weeks) | | | | |
| Median ± SD | 35.7 ± 4.0 | 37.1 ± 3.1 | 36.7 ± 3.9 | .023 |
| Race, n (%) | | | | |
| Asian | 9 (4.2) | 12 (3.3) | 1 (0.5) | **<.001** |
| Black | 95 (44.6) | 209 (57.3) | 128 (66.3) | |
| Caucasian | 96 (45.1) | 115 (31.5) | 56 (29) | |
| Hispanic | 9 (4.2) | 28 (7.7) | 5 (2.6) | |
| Other | 4 (1.9) | 1 (0.3) | 3 (1.6) | |

# Maternal Outcomes Associated with Obesity




- Obesity in Pregnancy | NEJM


BMI by Institution
January 2023-May 2023
3000
2500
2000
1500
1000
500
0
BMI < 40
BMI 40 -50
BMI > 50
Institutions

# Additional Points of Interest for BMI

- Is the subcommittee interested in continuing to investigate this topic?
- Are there other data points that would be of interest?