It is Time to Say Goodbye to PPH Racial Disparities

Mallory Cummings, MHA, RN, PHN and Saranae Thimm, RNC

October 22, 2024| MNPQC Summit

Passion for excellence. Compassion for people.

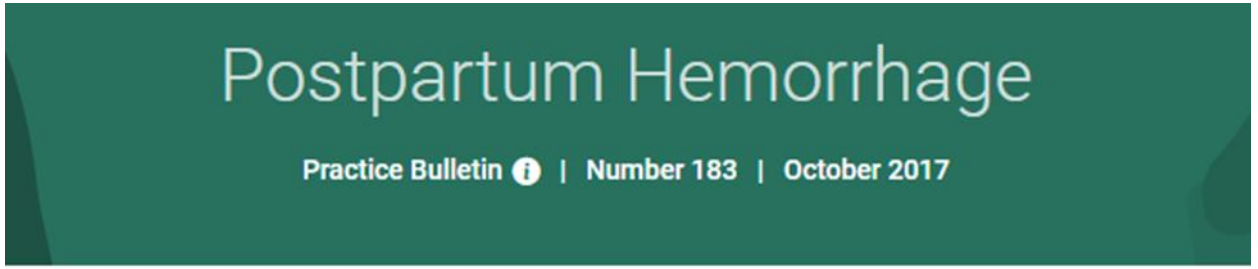
ASPIRUS® HEALTH

PRESENTATION OBJECTIVES

- Review ACOG Guidelines
- Review US and MN data
- Review PPH medications and protocols
- Discuss actions to reduce PPH & racial disparities
- Consider current US happenings

DEFINITION

ACOG Practice Bulletin



ABSTRACT: Maternal hemorrhage, defined as a cumulative blood loss of greater than or equal to 1,000 mL or blood loss accompanied by signs or symptoms of hypovolemia within 24 hours after the birth process, remains the leading cause of maternal mortality worldwide [1]. Additional important secondary sequelae from hemorrhage exist and include adult respiratory distress syndrome, shock, disseminated intravascular coagulation, acute renal failure, loss of fertility, and pituitary necrosis (*Sheehan syndrome*).

https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2017/10/postpartum-hemorrhage

ACOG COMMITTEE OPINION 794

Qualitative Blood Loss in Obstetric Hemorrhage: Reaffirmed in 2022

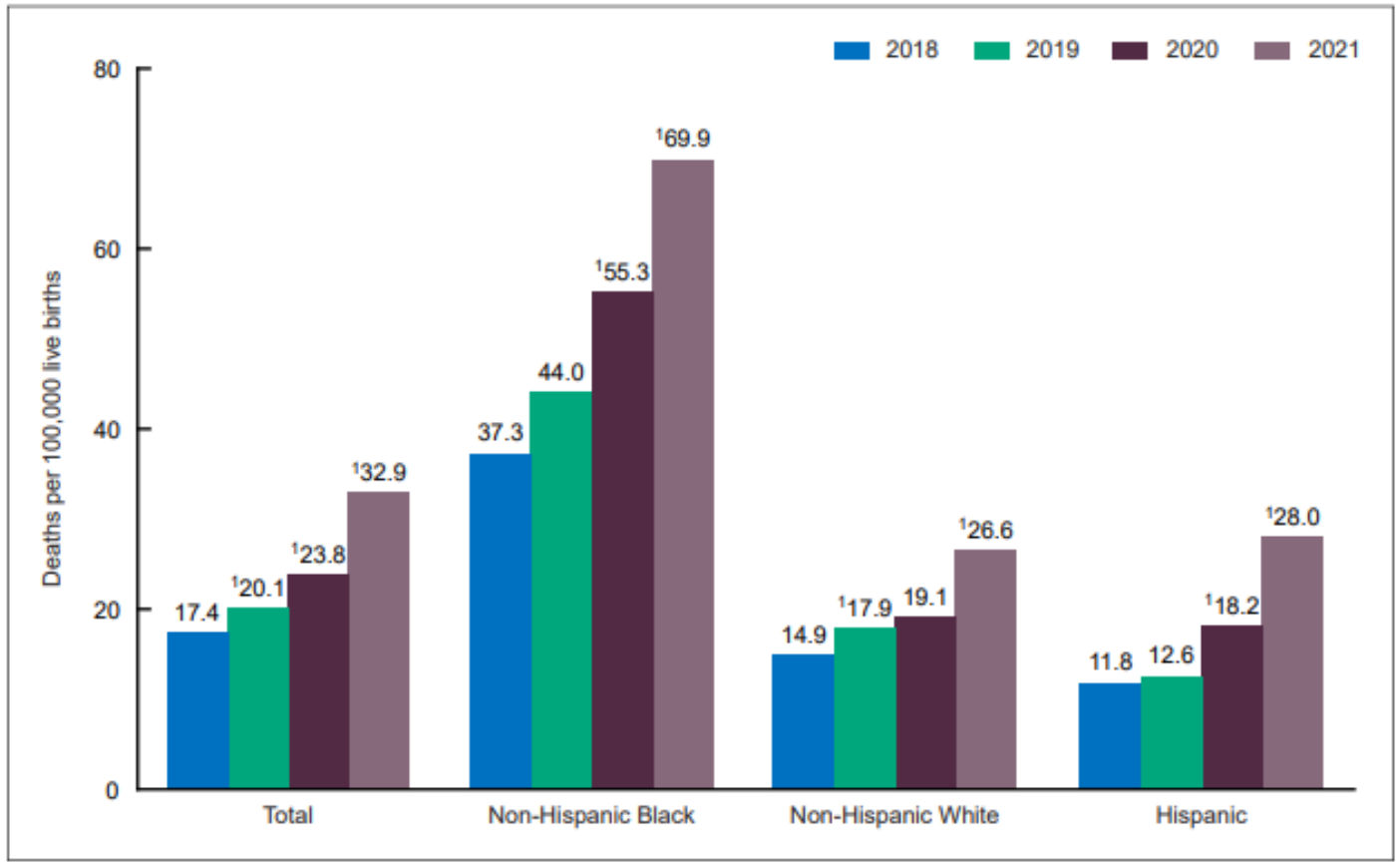
Postpartum hemorrhage causes approximately 11% of maternal deaths in the United States and is the leading cause of death that occurs on the day of birth. Importantly, 54–93% of maternal deaths due to obstetric hemorrhage may be preventable.

Studies that have compared visual estimation to quantitative measurement have found that visual estimation is more likely to underestimate the actual blood loss when volumes are high and overestimate when volumes are low (ACOG, 2019).

US MATERNAL MORTALITY RATES

Maternal Mortality By Race 2018-2021

Figure 1. Maternal mortality rates, by race and Hispanic origin: United States, 2018–2021



[1]Statistically significant increase from previous year ($p < 0.05$).
NOTE: Race groups are single race.
SOURCE: National Center for Health Statistics, National Vital Statistics System, Mortality.

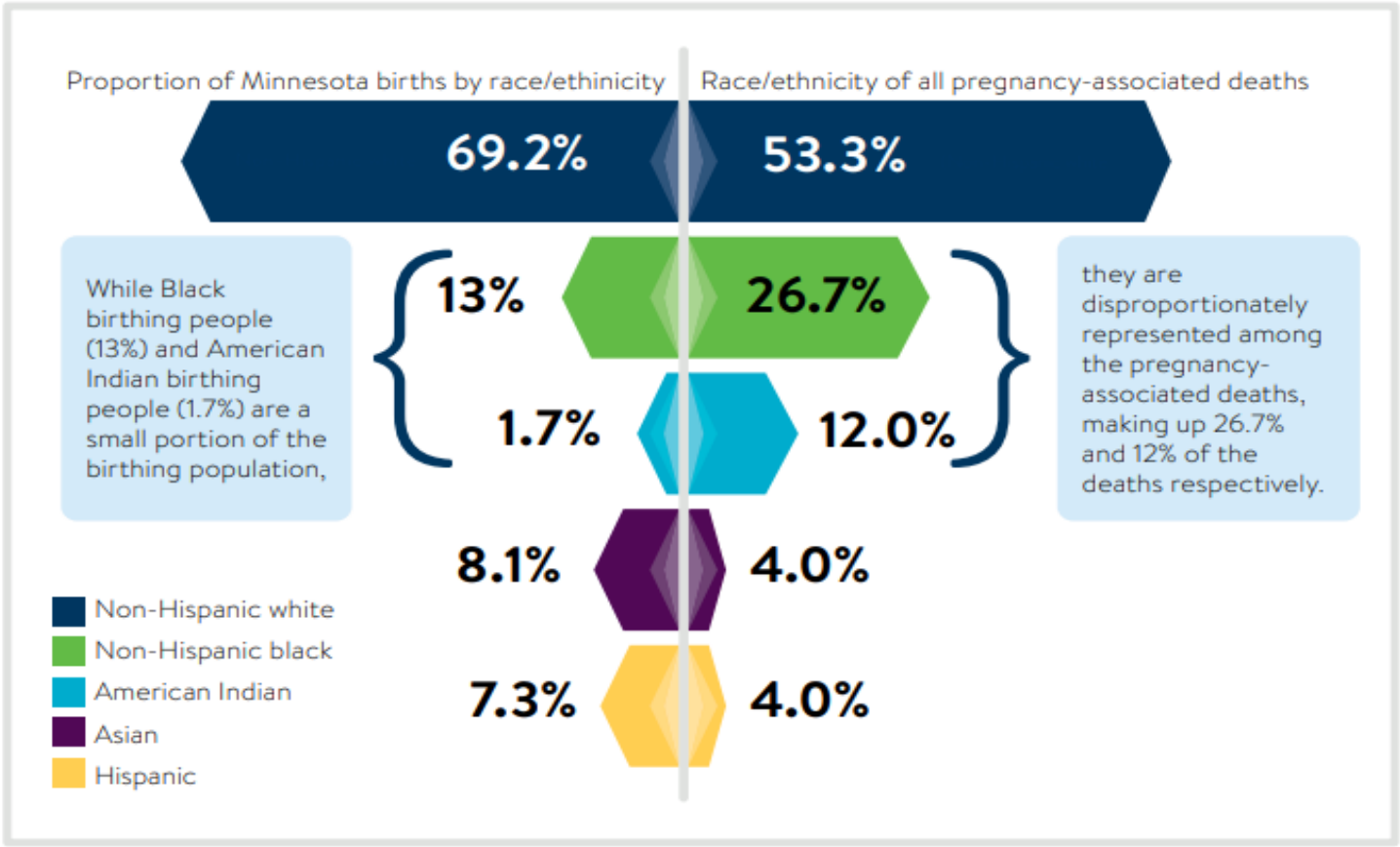
https://www.cdc.gov/nchs/data/hestat/maternal-mortality/2021/maternal-mortality-rates-2021.pdf

ASPIRUS HEALTH

MINNESOTA DEPARTMENT OF HEALTH

Maternal Mortality Update

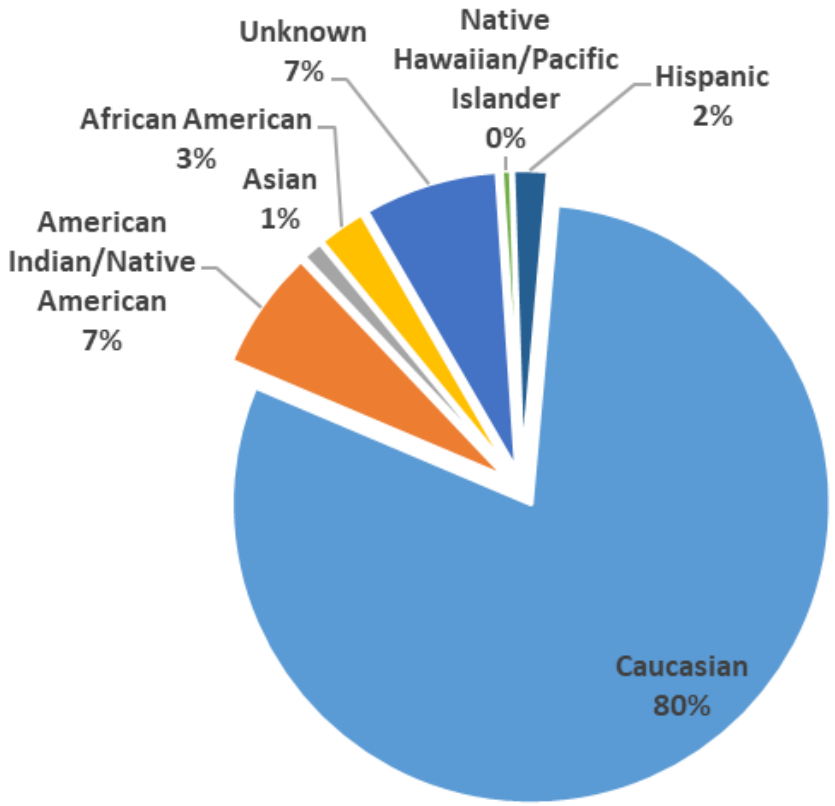
Pregnancy-associated deaths by race/ethnicity (overall) 2017-2019



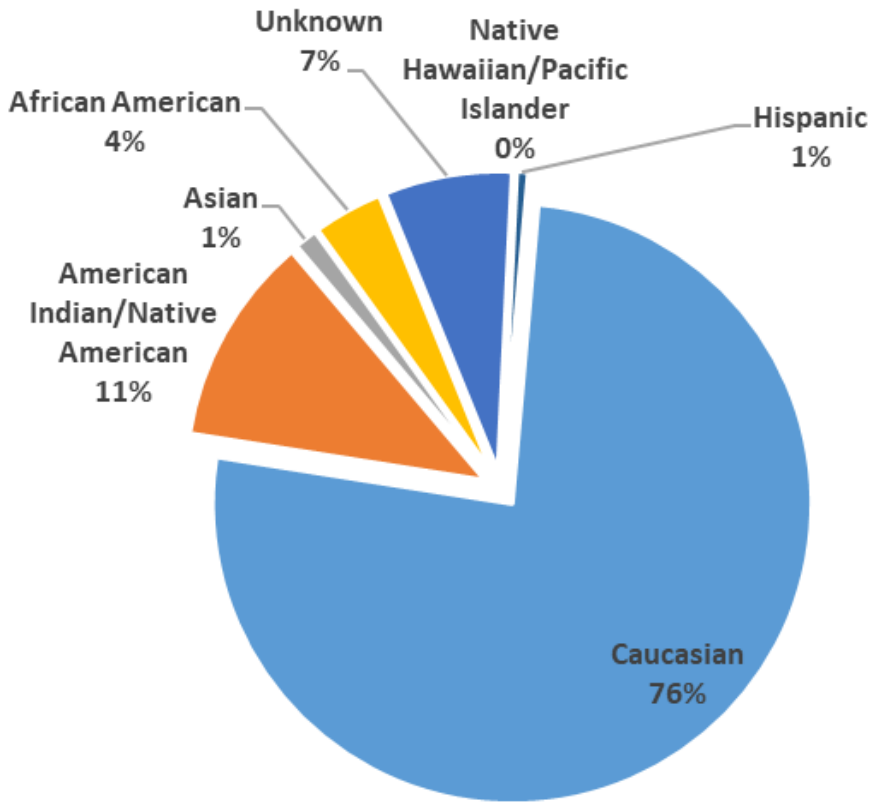
https://www.health.state.mn.us/people/womeninfants/maternalmortality/maternalmortreport.pdf

PPH ON THE ASL BIRTHING CENTER

Baseline Data



6E Deliveries by Race 1/2020-9/1/2021

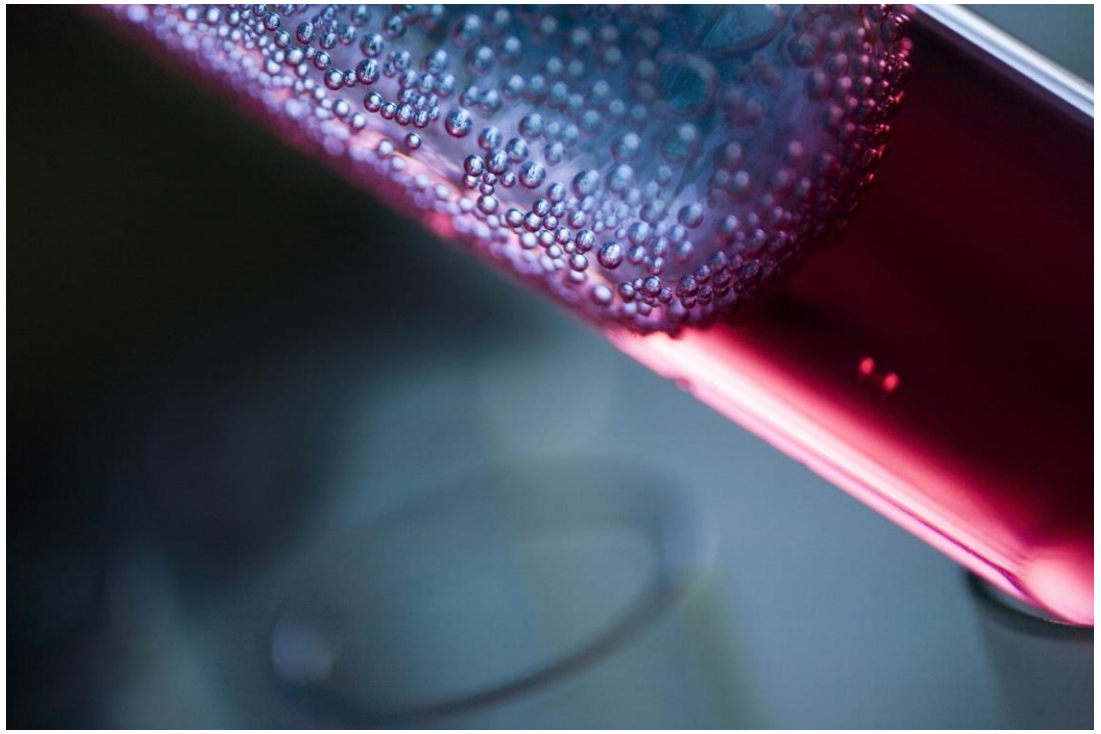


6E PPH's by Race 1/2020-9/1/2021

QUANTITATIVE BLOOD LOSS

ASL Implementation of QBL

- Go live 2019
- EMR calculator
- MCH training
- OR training
- PACU training



PPH RACIAL DISPARITY

Now what?

- L&D nurses
- Group practices
- Individual provider practices
- Pharmacy
- Evidence-based research

Analyze

Research

Propose

ACTION STEPS

Steps Taken at ASL to Address PPH Racial Disparities

CMQCC Toolkit

- Update PPH risk assessments
- Recommendation for Black Women

AIM Bundle

- Ensure availability of all PPH interventions
- ACOG hemorrhage checklist

Internal Policies/Protocols

- Standardize Pitocin protocol
- Education!

CMQCC Toolkit

CMQCC: ADMISSION PPH RISK ASSESSMENT

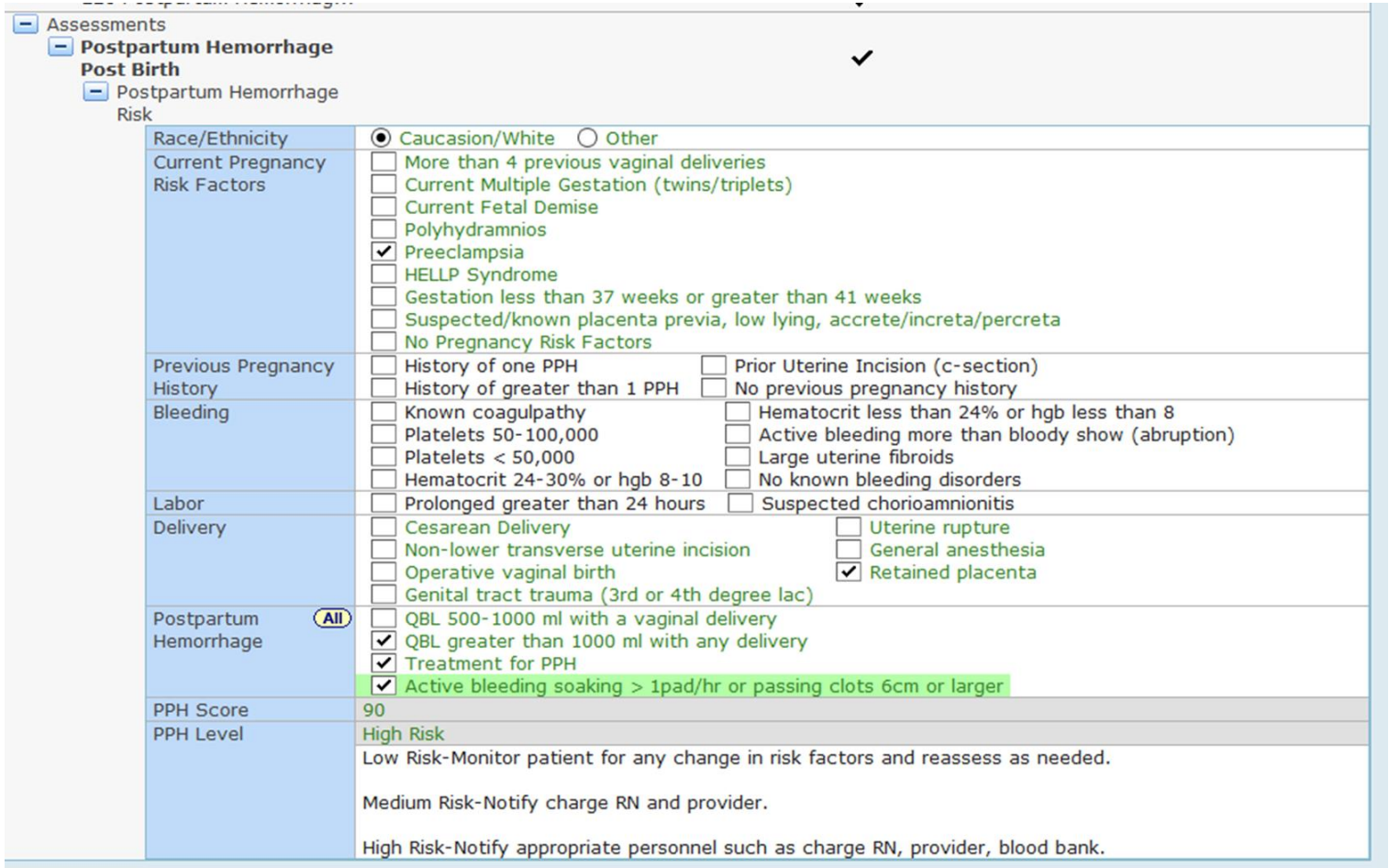
Completed on All Admissions and Triage Patients

ADMISSION and LABOR RISK FACTORS [8,17-20,23,29]		
LOW RISK	**MEDIUM RISK**	**HIGH RISK**
MONITOR FOR HEMORRHAGE *Routine obstetric care*	NOTIFY CARE TEAM *Personnel that could be involved in response are made aware of patient status and risk factors*	NOTIFY CARE TEAM MOBILIZE RESOURCES *Consider anesthesia attendance at birth*
Specimen on hold in blood bank	*Type and screen*	*Type and cross, 2 units on hold*
No previous uterine incision	Prior cesarean(s) or uterine surgery	Placenta previa, low lying placenta
Singleton pregnancy	Multiple gestation	Suspected/known placenta accreta spectrum
≤ 4 vaginal births	> 4 vaginal births	Abruption or active bleeding (greater than show)
No known bleeding disorders	Chorioamnionitis	Known coagulopathy
No history of PPH	History of previous postpartum hemorrhage	History of > 1 prior postpartum hemorrhage
	Large uterine fibroids	HELLP Syndrome
	Platelets 50-100,000	Platelets < 50,000
	Hematocrit < 30% (Hgb < 10)	Hematocrit < 24% (Hgb < 8)
	Polyhydramnios	Fetal demise
	Gestational age < 37 weeks or > 41 weeks	2 or more medium risk factors
	Preeclampsia	
	Prolonged labor/Induction (> 24 hours)	

https://www.cmqcc.org/resources-tool-kits/toolkits/ob-hemorrhage-toolkit

CMQCC: PRE & POST BIRTH PPH RISK ASSESSMENT

Policy For PPH Risk Assessment Patients Based on Level



Assessments ✔

Postpartum Hemorrhage
Post Birth

Postpartum Hemorrhage Risk

Race/Ethnicity	◉ Caucasion/White ○ Other
Current Pregnancy Risk Factors	☐ More than 4 previous vaginal deliveries ☐ Current Multiple Gestation (twins/triplets) ☐ Current Fetal Demise ☐ Polyhydramnios ☑ Preeclampsia ☐ HELLP Syndrome ☐ Gestation less than 37 weeks or greater than 41 weeks ☐ Suspected/known placenta previa, low lying, accrete/increta/percreta ☐ No Pregnancy Risk Factors
Previous Pregnancy History	☐ History of one PPH ☐ Prior Uterine Incision (c-section) ☐ History of greater than 1 PPH ☐ No previous pregnancy history
Bleeding	☐ Known coagulpathy ☐ Hematocrit less than 24% or hgb less than 8 ☐ Platelets 50-100,000 ☐ Active bleeding more than bloody show (abruption) ☐ Platelets < 50,000 ☐ Large uterine fibroids ☐ Hematocrit 24-30% or hgb 8-10 ☐ No known bleeding disorders
Labor	☐ Prolonged greater than 24 hours ☐ Suspected chorioamnionitis
Delivery	☐ Cesarean Delivery ☐ Uterine rupture ☐ Non-lower transverse uterine incision ☐ General anesthesia ☐ Operative vaginal birth ☑ Retained placenta ☐ Genital tract trauma (3rd or 4th degree lac)
Postpartum Hemorrhage (All)	☐ QBL 500-1000 ml with a vaginal delivery ☑ QBL greater than 1000 ml with any delivery ☑ Treatment for PPH ☑ Active bleeding soaking > 1pad/hr or passing clots 6cm or larger
PPH Score	90
PPH Level	High Risk

Low Risk-Monitor patient for any change in risk factors and reassess as needed.

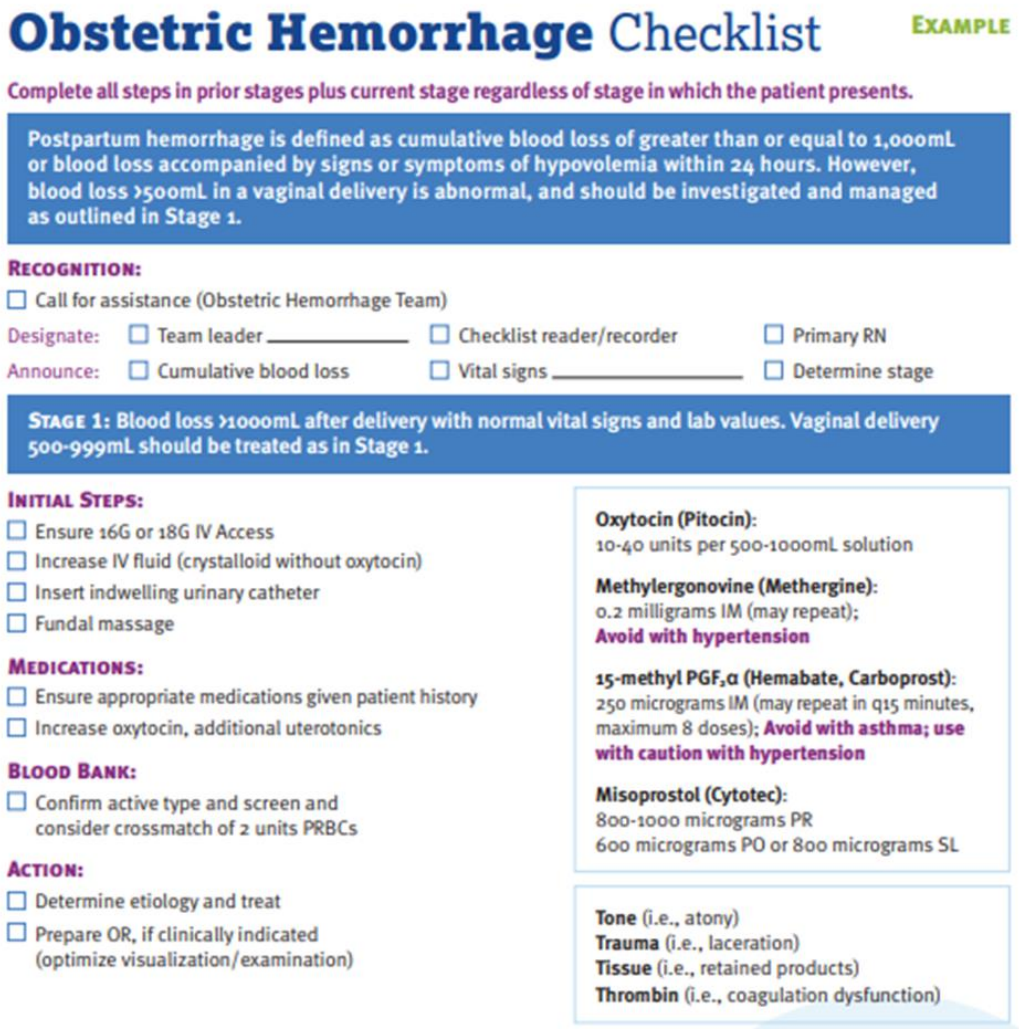
Medium Risk-Notify charge RN and provider.

High Risk-Notify appropriate personnel such as charge RN, provider, blood bank.

AIM Bundle

AIM BUNDLE

Stage 1: OB Hemorrhage Checklist



Obstetric Hemorrhage Checklist

EXAMPLE

Complete all steps in prior stages plus current stage regardless of stage in which the patient presents.

Postpartum hemorrhage is defined as cumulative blood loss of greater than or equal to 1,000mL or blood loss accompanied by signs or symptoms of hypovolemia within 24 hours. However, blood loss >500mL in a vaginal delivery is abnormal, and should be investigated and managed as outlined in Stage 1.

RECOGNITION:

☐ Call for assistance (Obstetric Hemorrhage Team)

Designate: ☐ Team leader _____ ☐ Checklist reader/recorder ☐ Primary RN

Announce: ☐ Cumulative blood loss ☐ Vital signs _____ ☐ Determine stage

STAGE 1: Blood loss >1000mL after delivery with normal vital signs and lab values. Vaginal delivery 500-999mL should be treated as in Stage 1.

INITIAL STEPS:

☐ Ensure 16G or 18G IV Access
☐ Increase IV fluid (crystalloid without oxytocin)
☐ Insert indwelling urinary catheter
☐ Fundal massage

MEDICATIONS:

☐ Ensure appropriate medications given patient history
☐ Increase oxytocin, additional uterotonics

BLOOD BANK:

☐ Confirm active type and screen and consider crossmatch of 2 units PRBCs

ACTION:

☐ Determine etiology and treat
☐ Prepare OR, if clinically indicated (optimize visualization/examination)

Oxytocin (Pitocin):
10-40 units per 500-1000mL solution

Methylergonovine (Methergine):
0.2 milligrams IM (may repeat);
Avoid with hypertension

15-methyl PGF,α (Hemabate, Carboprost):
250 micrograms IM (may repeat in q15 minutes, maximum 8 doses); **Avoid with asthma; use with caution with hypertension**

Misoprostol (Cytotec):
800-1000 micrograms PR
600 micrograms PO or 800 micrograms SL

Tone (i.e., atony)
Trauma (i.e., laceration)
Tissue (i.e., retained products)
Thrombin (i.e., coagulation dysfunction)

ASPIRUS HEALTH

AIM BUNDLE

Stage 2: OB Hemorrhage Checklist

STAGE 2: Continued Bleeding (EBL up to 1500mL OR ≥ 2 uterotonics) with normal vital signs and lab values *(*two or more uterotonics in addition to routine oxytocin administration; or ≥ 2 administrations of the same uterotonic)*

INITIAL STEPS:

- ☐ Mobilize additional help
- ☐ Place 2nd IV (16-18G)
- ☐ Draw STAT labs (CBC, Coags, Fibrinogen)
- ☐ Prepare OR

MEDICATIONS:

- ☐ Continue Stage 1 medications; consider TXA

Tranexamic Acid (TXA)
1 gram IV over 10 min (add 1 gram vial to 100mL NS & give over 10 min; may be repeated once after 30 min)

BLOOD BANK:

- ☐ Obtain 2 units PRBCs (DO NOT wait for labs. Transfuse per clinical signs/symptoms)
- ☐ Thaw 2 units FFP

ACTION:

- ☐ For uterine atony --> consider uterine balloon or packing, possible surgical interventions
- ☐ Consider moving patient to OR
- ☐ Escalate therapy with goal of hemostasis

Possible interventions:

- Bakri balloon
- Compression suture/B-Lynch suture
- Uterine artery ligation
- Hysterectomy

Huddle and move to Stage 3 if continued blood loss and/or abnormal VS

AIM BUNDLE

Stage 3: OB Hemorrhage Checklist

STAGE 3: Continued Bleeding (EBL > 1500mL OR > 2 RBCs given OR at risk for occult bleeding/ coagulopathy OR any patient with abnormal vital signs/labs/oliguria)

INITIAL STEPS:

- ☐ Mobilize additional help
- ☐ Move to OR
- ☐ Announce clinical status (vital signs, cumulative blood loss, etiology)
- ☐ Outline and communicate plan

MEDICATIONS:

- ☐ Continue Stage 1 medications; consider TXA

BLOOD BANK:

- ☐ Initiate Massive Transfusion Protocol (If clinical coagulopathy: add cryoprecipitate, consult for additional agents)

ACTION:

- ☐ Achieve hemostasis, intervention based on etiology
- ☐ Escalate interventions

Oxytocin (Pitocin):
10-40 units per 500-1000mL solution

Methylergonovine (Methergine):
0.2 milligrams IM (may repeat);
Avoid with hypertension

15-methyl $PGF_2\alpha$ (Hemabate, Carboprost):
250 micrograms IM
(may repeat in q15 minutes, maximum 8 doses)
Avoid with asthma;
use with caution with hypertension

Misoprostol (Cytotec):
800-1000 micrograms PR
600 micrograms PO or 800 micrograms SL

Tranexamic Acid (TXA)
1 gram IV over 10 min (add 1 gram vial to 100mL NS & give over 10 min; may be repeated once after 30 min)

Possible interventions:

- Bakri balloon
- Compression suture/B-Lynch suture
- Uterine artery ligation
- Hysterectomy

ASPIRUS HEALTH

AIM BUNDLE

Stage 4: OB Hemorrhage Checklist

STAGE 4: Cardiovascular Collapse (massive hemorrhage, profound hypovolemic shock, or amniotic fluid embolism)

INITIAL STEP:

- ☐ Mobilize additional resources

MEDICATIONS:

- ☐ ACLS

BLOOD BANK:

- ☐ Simultaneous aggressive massive transfusion

ACTION:

- ☐ Immediate surgical intervention to ensure hemostasis (hysterectomy)

Post-Hemorrhage Management

- Determine disposition of patient
- Debrief with the whole obstetric care team
- Debrief with patient and family
- Document

https://saferbirth.org/psbs/obstetric-hemorrhage/

Internal Policies/Protocols

ACTIVE MANAGEMENT FOR PPH

Standardization of Oxytocin Protocol for Post Delivery

Universal active management of the third stage of labor using Oxytocin

Each facility uses a different protocol

Evidenced based	Standardized	Audits	Clear policy

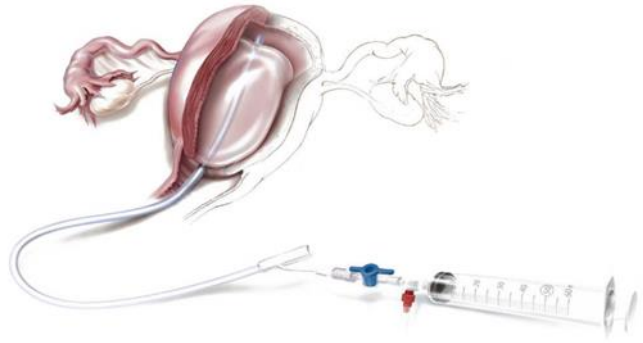
TYPES OF INTERVENTIONS

Who is Responsible, Where Are They Located, and When Do You Get them?

Order sets, policies, medications

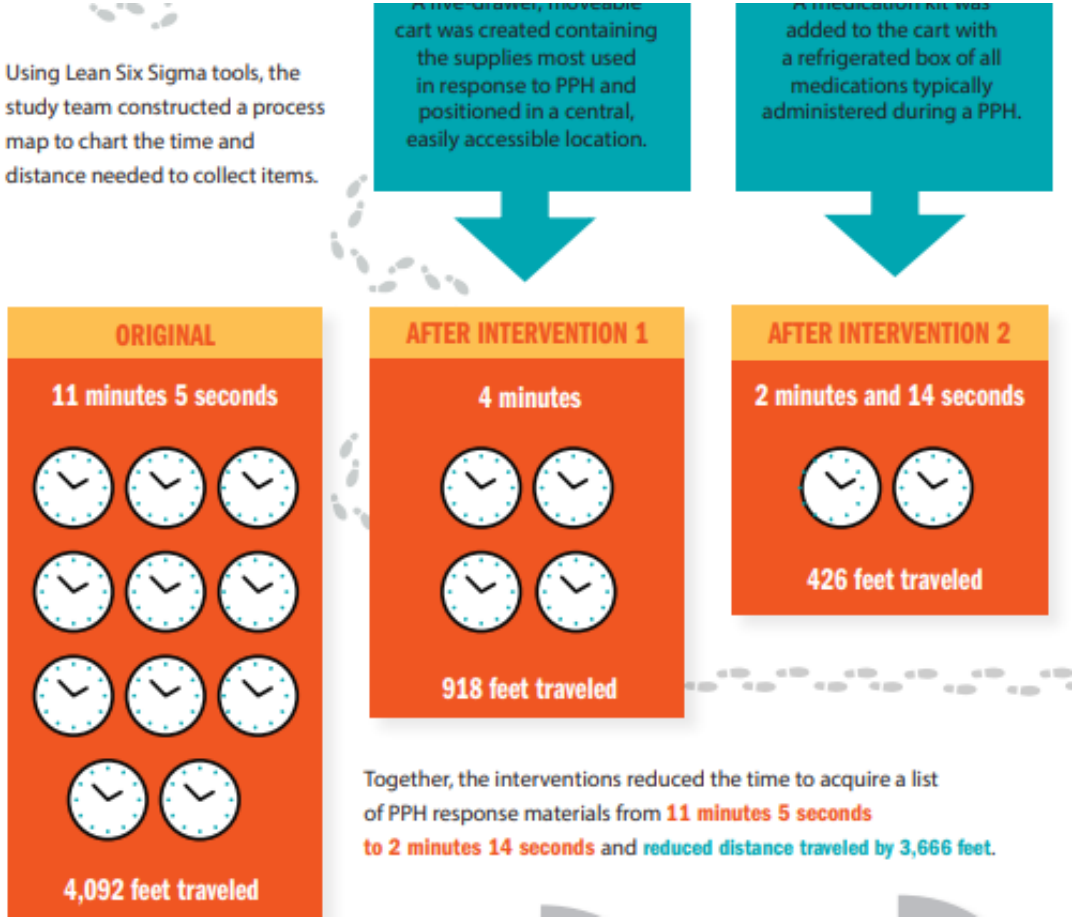
BAKRI: Mechanical

JADA: Vacuum



JOINT COMMISION STUDY

Average Time to Access Medications and Treat PPH: 11 Minutes



Postpartum hemorrhage cart and medication kit interventions improve response to leading cau of maternal morbidity

Study in February 2022 issue of The J Commission Journal on Quality and Patient Safety

https://jointcommission.new-media-release.com/2022/feb-jqps-hemorrhage/assets/jc-hemorrhage-infographic-final.pdf

RAPID RESPONSE UNIT-CRECHE INNOVATIONS

ASL Birthing Center Postpartum Hemorrhage Cart

https://files.constantcontact.com/8647f2f0901/aaab5858-3269-4773-a879-eb3ee1c76df6.pdf

ASPIRUS HEALTH

ASL PPH Cart

PPH Cart Stocking List

PPH Cart Stocking List

Top and side of cart:

Scale, O2 tank, adult Ambubag, Stocking List, Dry weight list, 3 IV pumps

*Must lock with yellow tag once stocked- found in med room

Drawer 1:

2	Infusion Set
2	Extension Set (32 inch)
2	7 inch Extension Set
2	IV Start Kit
2	Secondary sets
2	#18 g Insyte
2	#20 g Insyte
4	10 ml Saline Flushes

Extra Copies of Stocking List for Restocking (Yellow Folder)

Copies of the ACOG Obstetric Hemorrhage Checklist

Drawer 2:

2	Lactated Ringers 1000 ml
2	0.9 NS 250ml
2	Blood Infusion Set
1	Non-rebreather Mask
1	1000ml Pressure Infuser Bag

Drawer 3:

2	Long Needle Holders
2	Sponge Holders
1	Suture Scissor
1	Long Metz Scissor
1	Graves Speculum
4	Vaginal Packing Roll

Sutures 2 Each: 2-0, 3-0, 4-0 Chromic Gut
2-0, 3-0, 4-0 Vicryl
3-0 Polysorb
4-0 Perma-Hand

Drawer 4:

1	Ski Slope Vaginal Speculum
1	Long Heany Retractors
1	Flashlight/Extra Batteries

Sterile Gloves: 2 of Each Size 6, 6 ½ , 7, 7 ½ , 8, 8 ½

Lubricating Jelly, Box of Non-sterile Gloves, Hand Sanitizer

Drawer 5:

Jada kit

Bakri Balloon Kit (with 50 ml syringe, vaginal packing, and urinary drainage bag, 2 vaginal packings)

Foley Tray

6 large q-tips, 20 Lap Sponges (2 pks of 10 or 4 pks of 5)

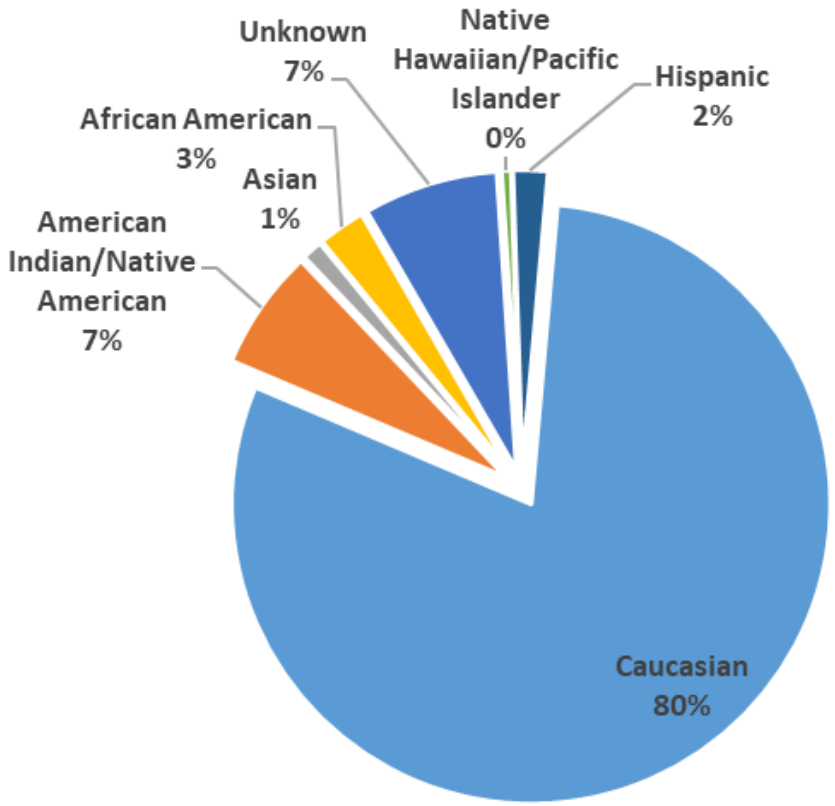
1 bottle of 500cc sterile water

Suction Set-up Kit- 1 janker, 1 wall suction meter.

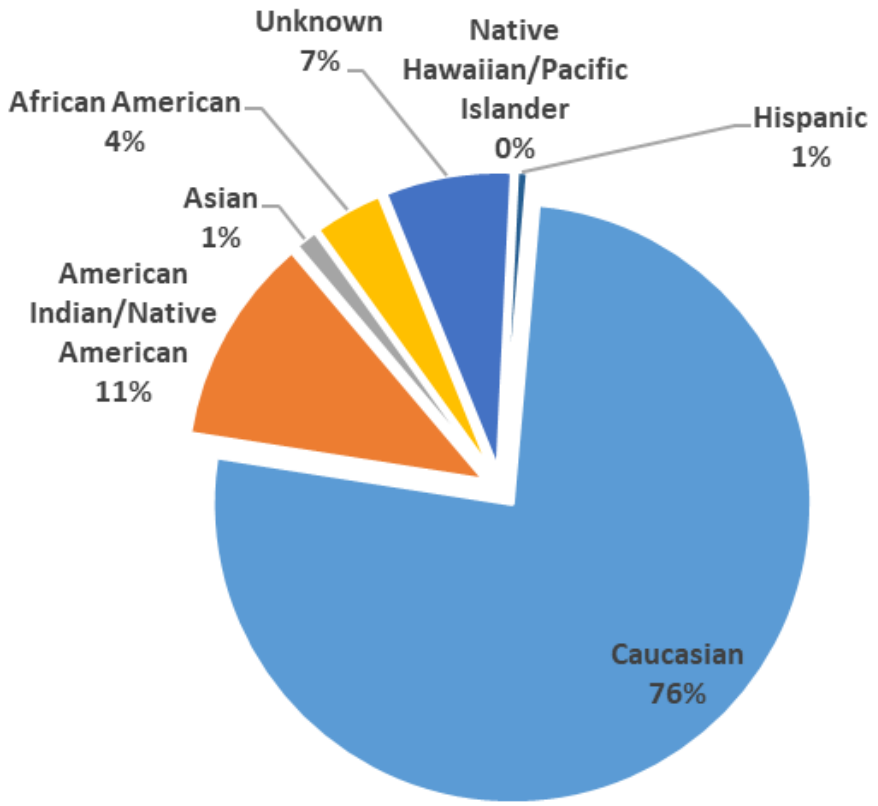
Putting It All Together To Reduce Racial Disparities

HOW IT STARTED

Baseline Data



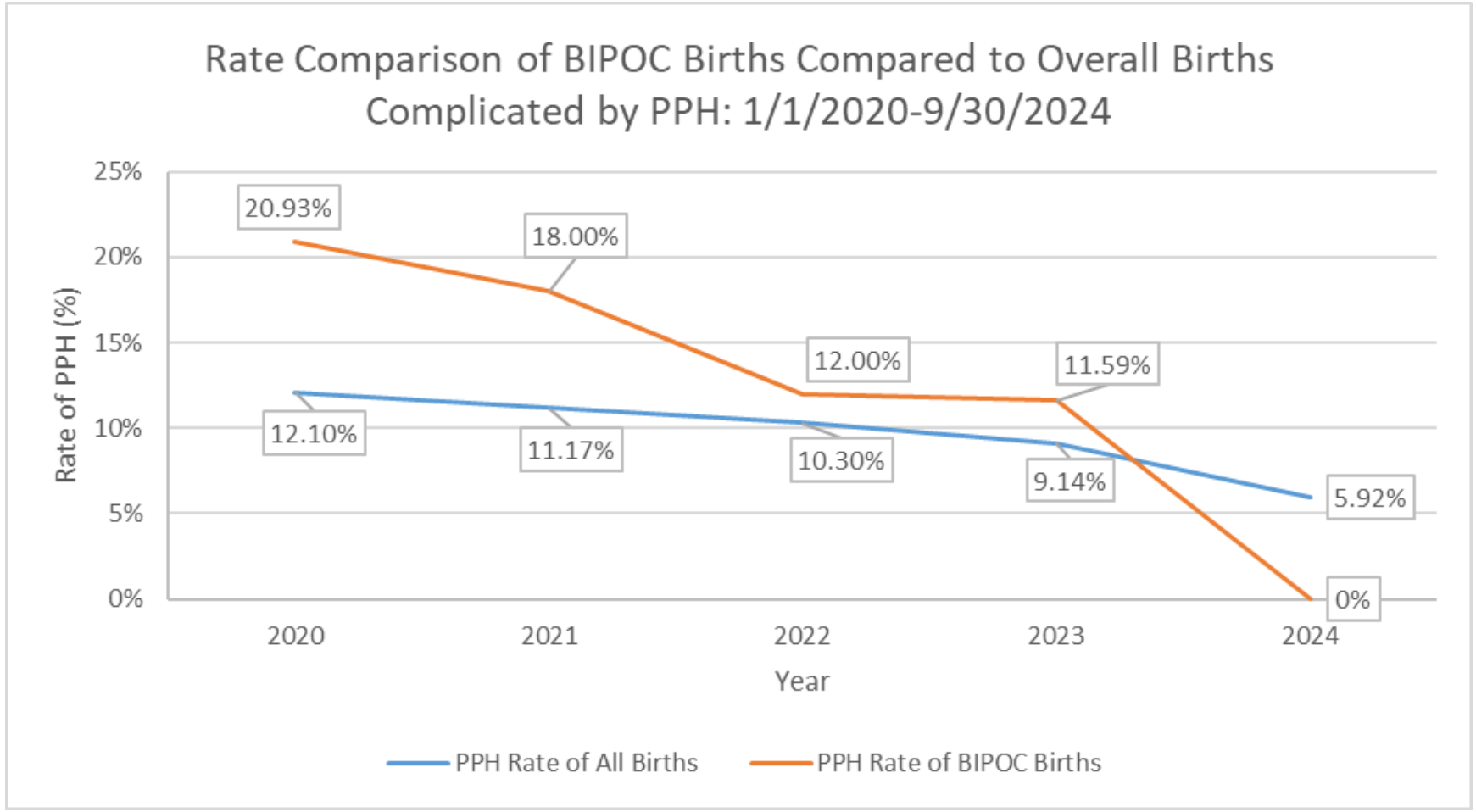
6E Deliveries by Race 1/2020-9/1/2021



6E PPH's by Race 1/2020-9/1/2021

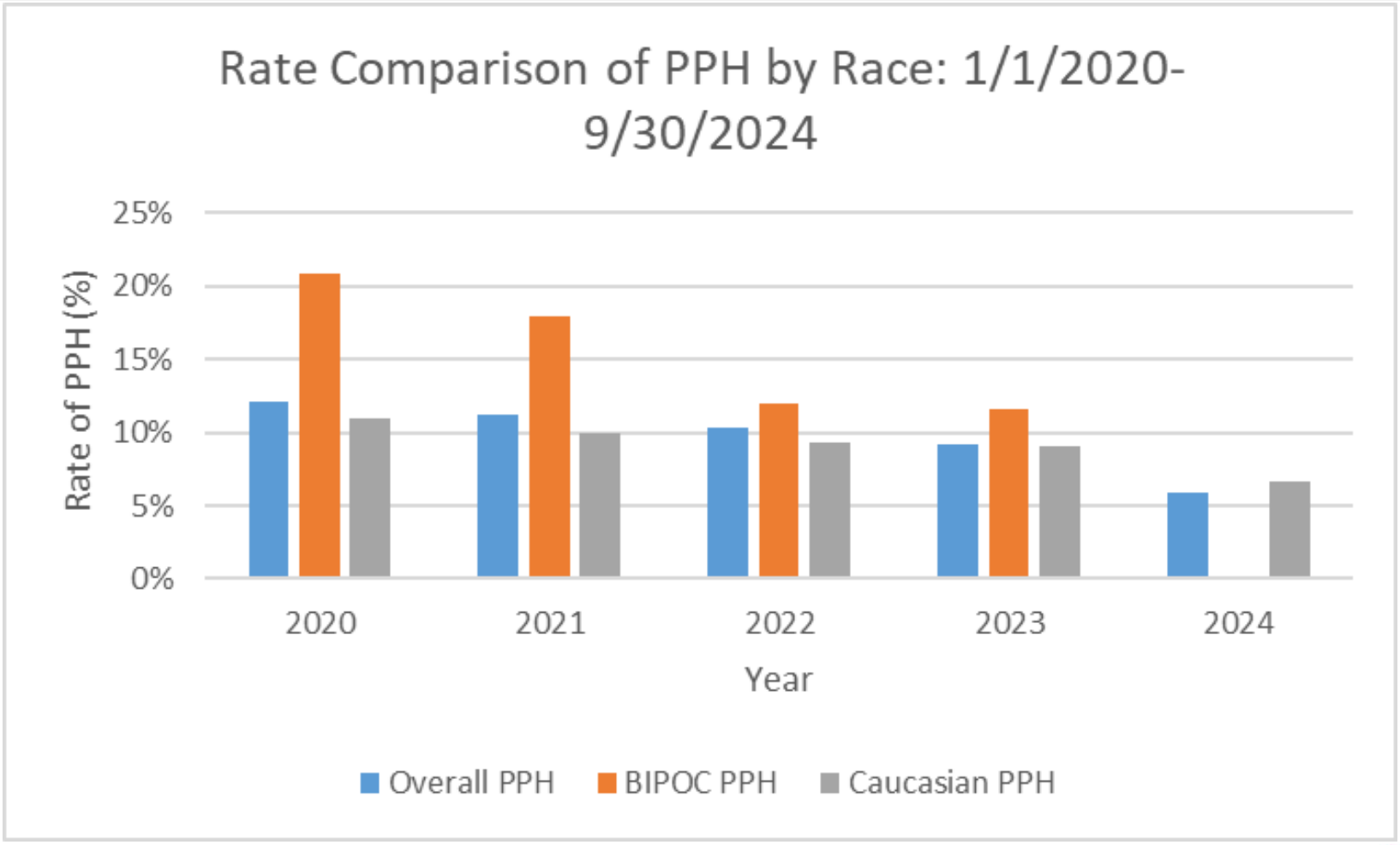
ASL PPH STATUS

Yes, this is Validated…. It is Real



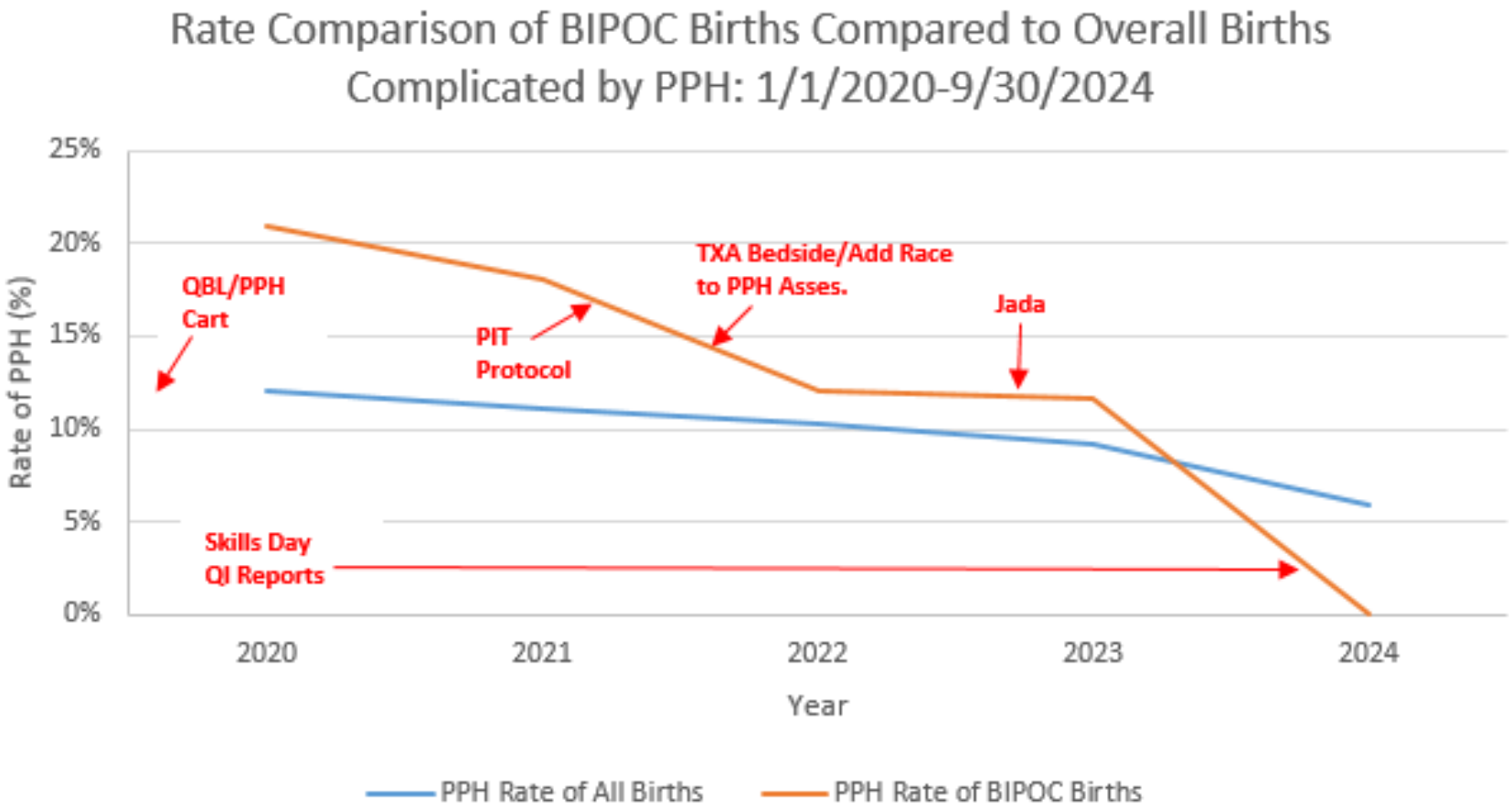
ASL PPH RATES

Comparison of Overall, BIPOC, and Caucasian Rates



ACTION STEPS

What Matters the Most?



NEWSWORTHY CONSIDERATIONS

US and Minnesota

- Louisiana: Misoprostol
- Hurricane Helen: Baxter Plant Closure

https://www.cnn.com/2024/10/01/health/abortion-drugs-louisiana-law/index.html

TAKEAWAYS

- Always room for improvement
- What does the data tell you at your hospital or birthing center?
- What can you do?
- Actionable items
- Take time and educate!

Mallory Cummings
Mallory.cummings@aspirus.org

Saranae Thimm
Saranae.thimm@aspirus.org

Thank you

REFERENCES

- Alliance for Innovation on Maternal Health (AIM). (2021). Obstetric Hemorrhage. *AIM.* https://saferbirth.org/psbs/obstetric-hemorrhage/
- American College of Obstetrics and Gynecologists (ACOG). (2019). Quantitate Blood Loss in Obstetric Hemorrhage. *ACOG Committee Opinion 794*. https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2019/12/quantitative-blood-loss-in-obstetric-hemorrhage
- American College of Obstetrics and Gynecologists (ACOG). (2017). Postpartum Hemorrhage. *ACOG Practice Bulletin 183.* https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2017/10/postpartum-hemorrhage
- California Maternal Quality Care Collaborative (CMQCC). (2022). Improving Health Care Response to Obstetric Hemorrhage, V3.0. *CMQCC*. https://www.cmqcc.org/resources-tool-kits/toolkits/ob-hemorrhage-toolkit
- Hoyert, D. L. (2023). Maternal mortality rates in the United States, 2021. *NCHS Health E-Stats.* DOI: https://dx.doi.org/10.15620/cdc:124678
- Kogutt, B. K., Kim, J. M., Will, S. E., & Sheffield, J. S. (2022). Development of an Obstetric Hemorrhage Response Intervention: The Postpartum Hemorrhage Cart and Medication Kit. *The Joint Commission Journal on Quality and Safety, 48(2),* 120-128. https://www.jointcommissionjournal.com/article/S1553-7250(21)00240-3/fulltext
- Minnesota Department of Health (MDH). (2024). Minnesota Maternal Mortality Update: Reporting or 2017-2019. *MDH.* https://www.health.state.mn.us/people/womeninfants/maternalmortality/maternalmortreport.pdf