South Division Quantifying Blood Loss

Providence

Obstetric hemorrhage is the most preventable cause of maternal morbidity and mortality in the U.S. This course explores the role of quantification of blood loss in reducing OB hemorrhage.

Course Objectives

Click the boxes below after reviewing each course objective.

- [ ] Recognize the role Quantitative Blood Loss (QBL) plays in reducing maternal morbidity and mortality.
- [ ] Understand the differences between estimating and quantifying blood loss.
- [ ] Identify and describe prevention and recognition of postpartum hemorrhage with every delivery.
- [ ] Accurately identify and describe obstetric postpartum hemorrhage stages.
- [ ] Recognize when quantification of blood loss begins and ends with every birth.

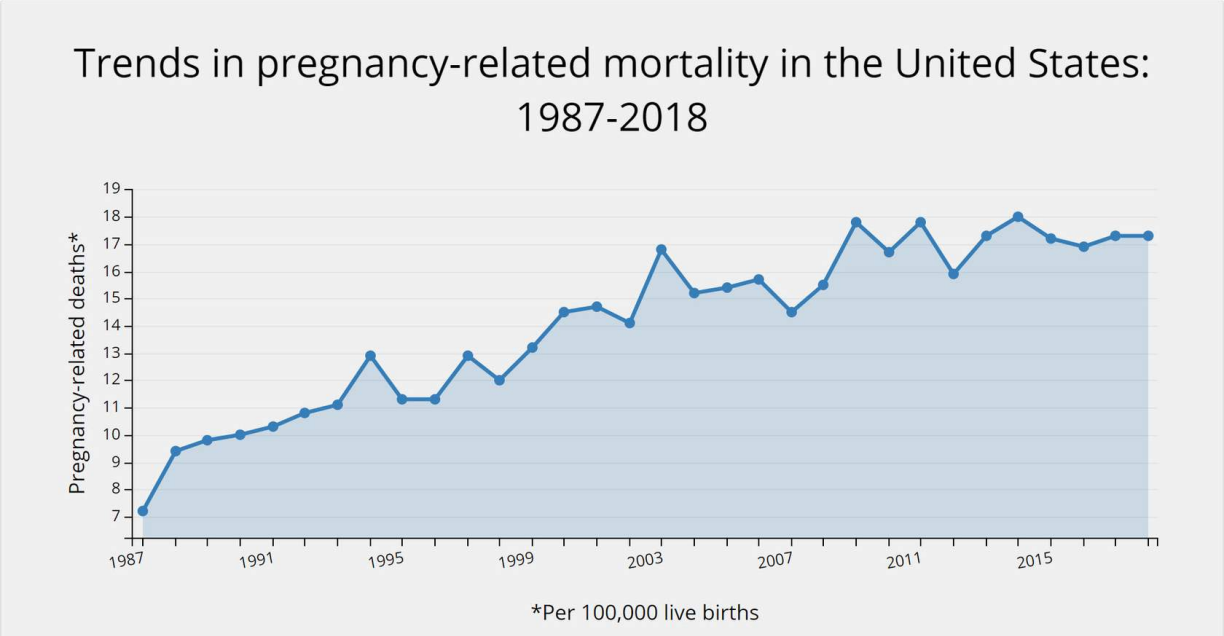
The content in this module is used with permission from the California Maternal Quality Care Collaborative (CMQCC) Improving Health Care Response to Obstetric Hemorrhage, V3.0: A CMQCC Quality Improvement Toolkit.

Complete the content above before moving on.

Statistics

Mortality rates rise

As you can see from the graph below, pregnancy related mortality rates in the U.S., per 100,000 live births, has been rising dramatically since 1987.

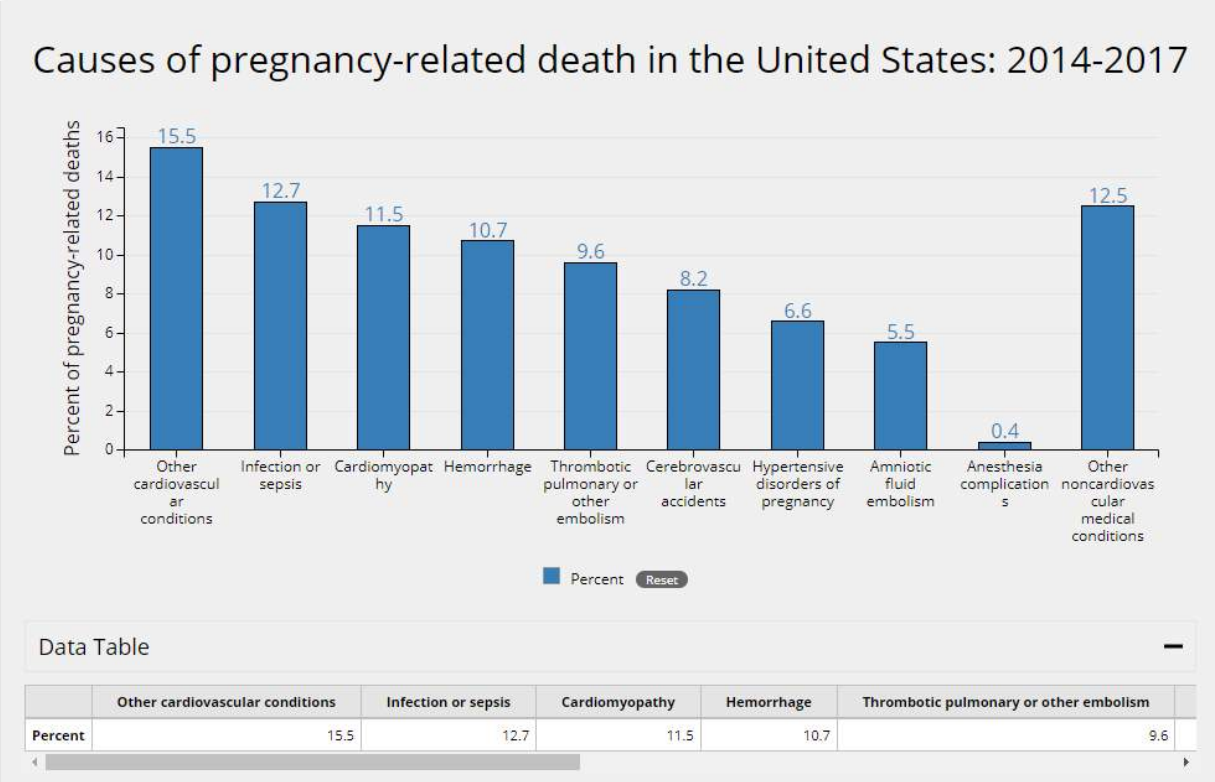


SOURCE: Centers for Disease Control and Prevention Pregnancy Mortality Surveillance System

Hemorrhage related deaths

Of the percentage of pregnancy related deaths, you can see that OB hemorrhage is a leading cause.

According to the Alliance for Innovation on Maternal Health (AIM), it is estimated that worldwide one woman dies every 4 minutes from Obstetrical Hemorrhage.



Click or tap to zoom in.

SOURCE: Centers for Disease Control and Prevention Pregnancy Mortality Surveillance System

"Obstetric hemorrhage-related mortality is amenable to change: **54% to 93%** of the deaths reviewed were deemed **preventable**."

JOGNN, 41, 531-539; 2012.DOI: 10.1111/j.1552-6909.2012.01372.x

Quantitative Blood Loss (QBL) Defined

What is QBL and What is the Goal?

Quantitative Blood Loss (QBL) is an objective method used to evaluate excessive bleeding by measuring **CUMULATIVE** blood loss after delivery.

The goal of QBL is early recognition and improved patient outcomes.

Please watch the brief AWHONN video below for critical information about QBL.

Complete the content above before moving on.

"When quantitative blood loss is included as a component of a bundle of practices that focus on prevention and early diagnosis of excessive blood loss, it may improve situational awareness and thereby improve hemorrhage diagnosis and response time."

Committee on Obstetric Practice

This improves communication among team members and avoids a delay in management of excessive blood loss.

CONTINUE

Key Points

Prevention & Recognition of OB Hemorrhage for all Births

Preparation for every delivery should include:

- Risk assessment
- Active management of third stage
- Prepare for every patient according to hemorrhage risk factors
- Measure quantitative cumulative blood loss for every birth

Stage 0

Stage 0: Risk assessment and active management of third stage

- Oxytocin IV infusion or 10u IM
- Ongoing quantitative evaluation of blood loss

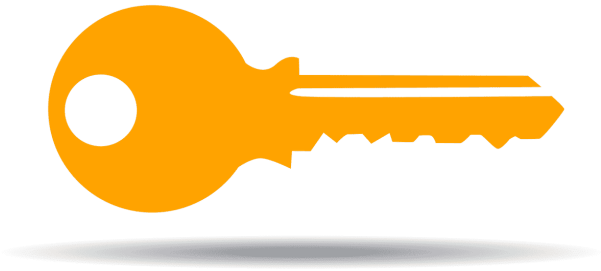
Expand and review the content above before moving on.

Hemorrhage: How Much is Too Much?

>500 mL for vaginal delivery and > 1000 mL for cesarean. But, 500 mL for NSVD is the average and 1000 mL for C-Section is average, and for most women well tolerated.

ACOG (reVITALize) - cumulative EBL >1000 mL for either vaginal or cesarean birth with enhanced surveillance and early interventions, as needed, for 500-1000 mL.

4-5% of women >1000 mL = a clinically significant amount! One third of women with >1000 mL have NO risk factors.



Weighed supplies: 1gm = 1 mL

Complete the content above before moving on.

QBL from Delivery to Recovery

PERFORM QBL IN ALL DELIVERIES

Immediately after delivery and repair (replaces provider delivery EBL)

Total for delivery QBL includes the following:

1. Volume from the delivery

- Vaginal
  - Volume in under-buttocks drape
  - Weight of supplies (4x4 gauze, blue surgical towel, chux, etc.)
- Cesarean
  - Volume in suction canister
  - Weight of laps

PERFORM QBL IN ALL DELIVERIES

2. First fundal expression

- Vaginal
    - After repair complete, before removing under-buttocks drape

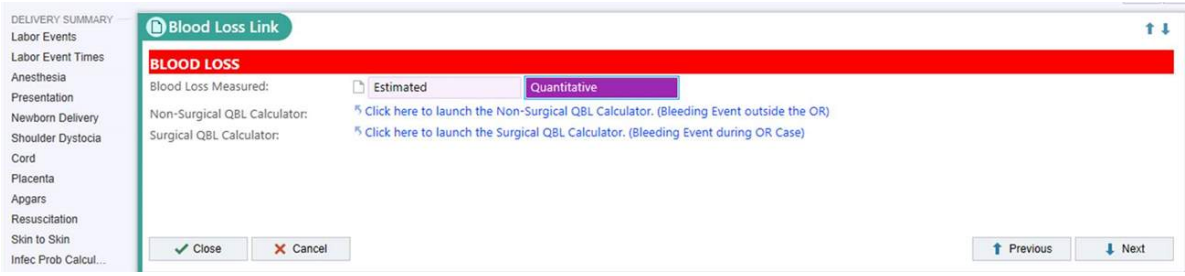
- Cesarean
    - After skin closed, before moved to PACU

PERFORM QBL IN ALL DELIVERIES

QBL Charting:

- Select "Quantitative" in "Blood Loss Link" in Delivery Summary
- Select Non-Surgical or Surgical to take you to the appropriate calculator

Click or tap on the image below to zoom in.



PERFORM QBL IN ALL DELIVERIES

Vaginal Deliveries

1. Blood loss in graduated under-buttocks drapes

- **First count:** baby delivers - "pre-placenta volume"
    - Provider states volume of amniotic fluid after baby delivers
    - Tip: ask provider for amniotic fluid volume when starting postpartum Pitocin

- **Second count:** placenta delivers, repair completed, fundal massage complete, drape about to be removed - "post-placenta volume"
    - Identify total volume in drape

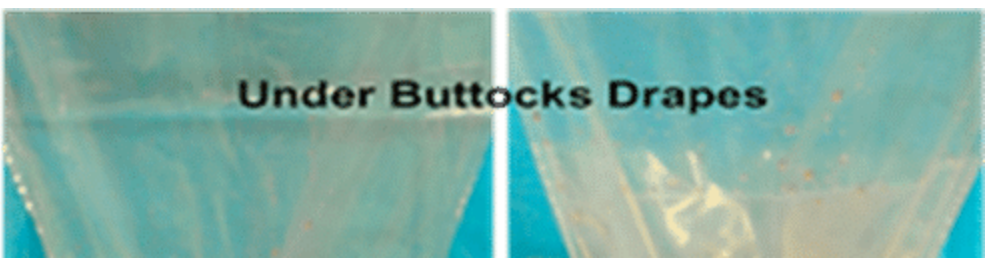
Post-placenta volume - pre-placenta volume = TOTAL

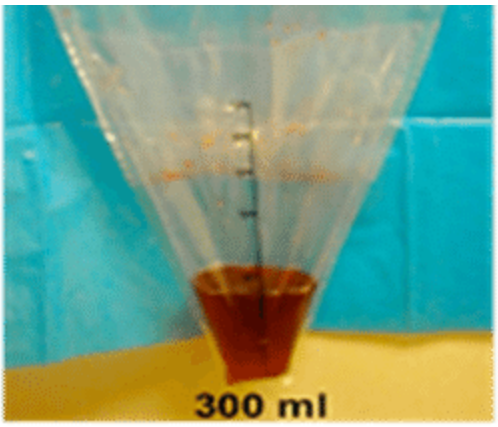
2. Weighing bloodied supplies

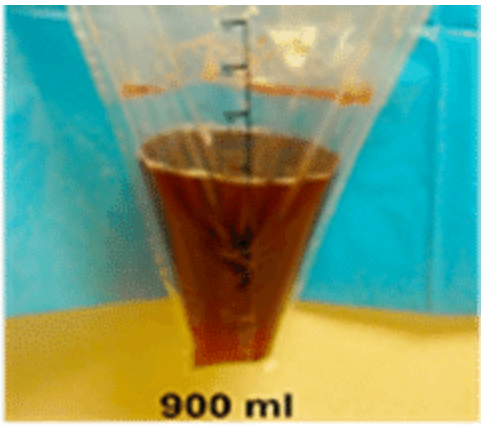
Weight of bloodied supplies - dry weight of those supplies = TOTAL

Remember 1 gm (weight) = 1 mL (volume)

Total of #1 + Total of #2 = TOTAL QBL







PERFORM QBL IN ALL DELIVERIES

Cesarean Deliveries

1. Blood loss captured in suction canisters

- After baby delivers, Surgeon and Scrub suction side drapes
    - Mostly amniotic fluid

- Per ministry policy, Circulator swaps suction tubing to second canister
    - Tip: if irrigation is used, Scrub communicates volume with Circulator so it can be subtracted from second canister volume
    - **2nd canister volume - irrigation (if used) = TOTAL**

or

- Makes note of the pre-placenta volume in the suction cannister and makes note of the final volume, then subtracts pre-placenta volume and any irrigation
    - Mostly blood

2. Lap sponges

- Weigh laps in lap sleeve(s) at end of case

Weight of bloodied supplies - dry weight of those supplies = TOTAL

Remember 1 gm (weight) = 1 mL (volume)

Total of #1 + Total of #2 = TOTAL QBL

PDF

QBL Calculator updated for region.pdf

430.1 KB

PERFORM QBL THROUGH RECOVERY

QBL is ongoing until bleeding is stable. It can last 2-4 hours postpartum.

Measuring of blood loss should resume if patient begins to demonstrate active bleeding.

If cumulative blood loss ≥ 500 mL vaginal birth or ≥ 1000 mL cesarean with continued bleeding, proceed to Postpartum Hemorrhage Stage 1.

QBL continues throughout all Postpartum Hemorrhage Stages until bleeding is stable.

All bloodied supplies are weighed throughout recovery period.

Weigh as you go:

- bloodied peri pads, towels, chux, etc. as you change them out during recovery
- QBL must be documented using QBL calculator in Epic

PERFORM QBL THROUGH RECOVERY

QBL Charting

PDF

QBLTrifold.pdf
777.4 KB

Preparation & Recognition of OB Hemorrhage for all Births

Preparation for every delivery should include:

- Oxytocin for active management of third stage
- Supplies needed for measuring of blood loss
- Postpartum hemorrhage cart for medium-high risk patients

Stage 1 OB Hemorrhage

Stage 1 Clinical Trigger:

- Cumulative blood loss ≥ 500mL vaginal or ≥ 1000 mL cesarean with continued bleeding (weigh materials, calculate, and record cumulative blood loss q 5-15 minutes)

or

- Signs of concealed hemorrhage:
    - Vital signs abnormal or trending (HR ≥ 110, BP ≤ 85/45, O_2 sat < 95%, shock index 0.9)

or

- Confusion

Stage 2 OB Hemorrhage

Stage 2 Clinical Trigger:

Continued bleeding with cumulative blood loss < 1500 mL or vital signs remain abnormal

Administer second level uterotonic medication:

- **Methylergonovine** 0.2mg IM per protocol (if not hypertensive)

or

- If hypertensive or Methylergonovine dose ineffective: **carboprost** 250 mcg IM (if not asthmatic)
    - Can repeat carboprost every 15-90 minutes, max 8 doses in 24 hours

- Continue IV oxytocin and provide additional IV crystalloid solution
- Administer tranexamic acid (TXA) 1 gram IV over 10 minutes
    - May give a second dose of 1 gm if bleeding continues after 30 minutes or if bleeding stops and then restarts within 24 hours of completing the first dose.

Start 2nd IV access (minimum 18 gauge)

Stage 3 OB Hemorrhage

Stage 3 Clinical Trigger:

- Continued bleeding with cumulative blood loss > 1500mL

or

- > 2 units PRBCs given

or

- Abnormal vital signs

or

- Suspicion of disseminated intravascular coagulation (DIC)

See the CMQCC Appendix C PDF below for more details on interventions for each OB Hemorrhage stage.

PDF

CMQCC Appendix C Obstetric Hemorrhage Care Guidelines Table Format Errata 7.2022.pdf

15.9 MB

PDF

Measurement of Blood Loss in Labor and Delivery using Epic QBL Calculators.pdf

163.6 KB

Expand and review the content above before moving on.

Post Test

This post test includes 13 questions to test your knowledge of quantifying blood loss. In order to successfully complete this test and receive course completion credit you must meet the minimum passing score of 80%. Good luck!

Question

01/13

You have a patient who is G4 P3. In preparation for the delivery what equipment or supplies should be readily available? *(Select all that apply)*

- [ ] Oxytocin for active 3rd stage management
- [ ] Scale, pads and chuxs
- [ ] OB hemorrhage cart

Question

02/13

Immediately after birth, during delayed cord clamping. What question are you asking the provider before beginning your QBL calculation?

- How much fluid is in the drape pocket?
- Do you want me to start the oxytocin bolus?
- Will you need sutures?

Question

03/13

The placenta is delivered and there is a gush of blood. When do you get your second delivery count?

- ◯ After the repair is complete
- ◯ After your delivery sponge count
- ◯ After legs are down

Question

04/13

Stage 0 is prevention and recognition of OB hemorrhage with every birth. *(Select all interventions that apply)*

- [ ] Oxytocin infusion titrated to uterine tone
- [ ] Evaluation of uterine tone
- [ ] Expression of uterine blood clots
- [ ] Assessment of bladder
- [ ] Ongoing quantitative evaluation of blood loss
- [ ] Administering misoprostol rectally
- [ ] OB hemorrhage cart readily available

Question

05/13

Prior to delivery of placenta there were 200 mls of amniotic fluid in the drape pocket. Your patient's repair is done and there is now 400 mls of fluid in the drape pocket. How much blood loss does your patient have so far?

- ◯ 100 mls
- ◯ 200 mls
- ◯ 400 mls

Question

06/13

QBL is 500 ml in the first hour of vaginal recovery. Your patient is now noted to be trickling.

What are your next steps? *(Select all that apply)*

- [ ] Notify MD of cumulative blood loss
- [ ] Assess the uterus
- [ ] Assess the bladder
- [ ] Check vital signs
- [ ] Administer additional uterotonic medication
- [ ] Apply cold pack to perineum

Question

07/13

You express a large blood clot weighing 300 gm. Cumulative blood loss is now 800 mls and vital signs are stable. What stage is she in?

- ◯ Stage 0
- ◯ Stage 1
- ◯ Stage 2
- ◯ Stage 3

Question

08/13

Criteria for Stage 1 OB Hemorrhage: *(Check all that apply)*

- [ ] Vaginal birth blood loss > 500 mls
- [ ] B/P ≤ 88/50
- [ ] HR ≥ 110
- [ ] Increased bleeding during recovery or postpartum period
- [ ] B/P ≤ 85/45
- [ ] O_2 sats < 95%

Question

09/13

Criteria for Stage 2 OB Hemorrhage: *(Check all that apply)*

- [ ] QBL > 1500 mls
- [ ] Continued bleeding
- [ ] Vital signs remain abnormal
- [ ] QBL < 1500 mls
- [ ] 1 unit PRBC's transfused

Question

10/13

Criteria for Stage 3 OB Hemorrhage: *(Check all that apply)*

- [ ] Continued bleeding
- [ ] QBL > 1500 mls
- [ ] QBL < 1500 mls
- [ ] Suspicion of DIC
- [ ] Abnormal vital signs
- [ ] Foley catheter insertion

Question

11/13

Massive Transfusion Protocol (MTP) can be activated at which Stage in the Hemorrhage?

- Stage 0
- Stage 1
- Stage 2
- Stage 3
- Stage 2 or Stage 3

Question

12/13

Your patient's vital signs and bleeding are stable at this time. What must be completed before she is transferred to her postpartum room in preparation for handover?

- Complete QBL count documented in EHR
- Newborn bath complete
- Sitz bath offered

Question

13/13

During the postpartum period when would you begin to measure blood loss again? *(Select all that apply)*

- [ ] Large clot expressed
- [ ] Actively bleeding
- [ ] Unstable vital signs
- [ ] After the first independent void

Final Thoughts

We Can Do Better...

- Most maternal mortalities and near misses due to hemorrhage are *preventable*.
- One third of patients will have NO risk factors prior to labor: we must be prepared for every patient and we must perform QBL with every delivery so we can respond early.
- Requires reliance not on individuals but on a team approach.
- Quantification of maternal blood loss is a team effort.

CONTINUE

Summary

Thank you for completing the Quantifying Blood Loss course!

If you have any unit-specific questions within your ministry, please contact your supervisor or preceptor.

Exit

Click to exit the course.

EXIT

Status **Active** PolicyStat ID **16407819**

Origination	05/2021
Last Approved	09/2024
Effective	09/2024
Last Revised	09/2024
Next Review	09/2027

Owner	Daniel Kelly: Division Chief Nursing Officer - South
Policy Area	Women's Services
Applicability	CA - Divisional/ Regional
References	South Division

Obstetric Hemorrhage Policy

I. PURPOSE:

Establish guidelines for care, risk assessment, early recognition and implementation of evidence-based practice (EBP) management of obstetric hemorrhage by a multidisciplinary team. These apply to obstetrical patients wherever they are cared for in the acute care setting.

II. POLICY:

These guidelines apply to Registered Nurses (RN), Attending Licensed Practitioner (LP) OB Hospitalist/ Laborist, Anesthesiologist, Technicians, and Nurse's Aides. Specific functions apply to blood bank staff, pharmacy staff, laboratory staff, and emergency response team. https://epicdocs.providence.org/Stork/OB_Hemorrhage_Checklist_2023.pdf.

III. DEFINITIONS OF TERMS:

Hemorrhage: Quantitative Blood Loss (QBL) >500 milliliters (mL) vaginal birth or >1000 mL C/S or VS changes (by >15% or HR $\geq$ 110, BP $\leq$ 85/45, O_2 sat <95%) or increased bleeding during recovery or postpartum.

IV. PROCEDURE:

A. Risk Assessment:

Perform hemorrhage risk assessment on admission to Labor and Delivery, and postpartum, and every shift, using an evidence-based tool in the electronic medical record (EMR).

B. Admission Assessment and Planning:

1. Blood type and screen will be sent on all patients regardless of risk status.
2. It is recommended that patients who are identified as high risk have a blood type and crossmatch available for packed red blood cells (PRBC).
3. Patients who are identified as having special considerations or who decline blood products:

   a) Notify LP(s)and anesthesia of specific situation details.

   b) If patient condition permits, assist in facilitation of plan of care development including consent for or refusal of blood/blood products and acceptable options if blood/blood products are refused.

C. Cumulative Evaluation of Blood Loss:

1. Document quantitative blood loss (QBL) in the EMR for all deliveries.
2. Ongoing quantitative evaluation of blood loss throughout initial recovery phase, approximately two hours.
3. After two-hour initial recovery, if at any time patient has heavy bleeding, reestablish quantitative blood loss.

D. Standard considerations for postpartum bleeding:

1. Stage and manage Post Partum Hemorrhage (PPH) intervention care utilizing the Providence Obstetric Hemorrhage Protocol Checklist in the EMR (https://epicdocs.providence.org/Stork/OB_Hemorrhage_Checklist_2023.pdf.
2. Monitor vitals signs per post-partum high frequency vital signs https://epicdocs.providence.org/Stork/PPH_High_Frequency_Vitals_2023.pdf.

E. Provide and document education to patients (and their families including the designated support person whenever possible). At a minimum, education includes:

1. Signs and symptoms of Post Partum Hemorrhage (PPH) during hospitalization that alert the patient to seek immediate care.
2. Signs and symptoms of Post Partum Hemorrhage (PPH) after discharge that alert the patient to seek immediate care.

F. Complete documentation of OB hemorrhage in the EMR.

G. Conduct post event debriefing.

H. Review cases where blood loss > 1,000mL.

I. Consider intensive case review with multidisciplinary team for obstetric hemorrhage cases that require > 4 units of blood products.

J. Obstetric Unit will have a standardized, secured, and dedicated hemorrhage supply kit stocked per the hospital's defined process and contain, at a minimum, the following:

1. Emergency hemorrhage supplies as determined by the hospital.
2. The hospital's approved procedures for severe hemorrhage response.

K. Provide education to all staff and providers who treat pregnant and postpartum patients about the hospital's hemorrhage procedure. At a minimum, education occurs at orientation, whenever changes to the procedure occur, or every two years. Education provided should be role specific.

L. Conduct drills at least annually to determine system issues as part of ongoing quality improvement efforts. Drills include representation from each discipline identified in hospital's hemorrhage response procedure and include a team debrief after the drill.

V. RELATED POLICIES:

Massive Transfusion Protocol

Blood and Blood Components: Administration of (or equivalent)

Emergency Response Team (or equivalent)

VI. RELATED FORMS:

VII. REFERENCE:

California Maternal Quality Care Collaborative (2022). *Improving health care response to obstetric hemorrhage version 3.0. Retrieved https://www.cmqcc.org/resource/improving-health-care-response-obstetric-hemorrhage-toolkit-version-30-errata-72022*

The Joint Commission (2021). Standard PC.06.01.01 EP1-7. Reduce the Likelihood of Harm Related to Maternal Hemorrhage

ACOG Committee Opinion, *Quantitative Blood Loss in Obstetric Hemorrhage*, No 794,

Dec 2019. *Retrieved from* Quantitative Blood Loss in Obstetric Hemorrhage | ACOG

ACOG Practice Bulletin, *Postpartum Hemorrhage*, Number 183, 2017.

Wildflower. (2021). Circle (Version 4.0.1752) [Mobile application software]. Retrieved from http://itunes.apple.com

Attachments

Obstetric Hemorrhage Policy_Addendum

Approval Signatures

Step Description	Approver	Date
b/o Divisional Nursing Cabinet	Wen Yun Chang: Senior Business Analyst	09/2024
Division CNO - South	Daniel Kelly: Division Chief Nursing Officer - South	09/2024
Perinatal Council	Kathryn Quinn: Director Clinical Program	09/2024
Divisional Policy Owner	Daniel Kelly: Division Chief Nursing Officer - South	09/2024

Applicability

CA - Regional/Divisional

Standards

No standards are associated with this document