Appendix D: Obstetric Hemorrhage Care Guidelines: Flowchart Format **ERRATA 7.18.22**

Prenatal

Does the patient have special condition/ history to address prior to admission?

Perform risk assessment to identify special conditions/history: Placenta previa/accrete spectrum, bleeding disorder, prenatal anemia, and/or patient declines blood products. Follow-up with appropriate workup(s), planning, preparing of resources/site of delivery, treatment, counseling/ education and notification.

Admission

What is the patient risk category? Communicate with patient and team Prepare as indicated

LOW RISK: Monitor all patients for hemorrhage. Routine obstetric care. Hold specimen or routine admission procedure.
MEDIUM RISK: Notify care team. Type & screen.
HIGH RISK: Notify care team and mobilize resources. Consider anesthesia attendance at delivery.
Type & Crossmatch 2 U PRBCs.
**If positive antibody screen in prenatal/admission lab work (except low level Anti-D from Rhogam), Type & Crossmatch 2 U PRCBs.*
Follow institutional Blood Bank procedures.

Stage 0

CBL exceeds normal OR concealed hemorrhage cues noted?

NO → **Standard postpartum management/ Assessment**

YES ↓

STANDARD STEPS: *All* patients receive active management of 3rd stage with oxytocin; Quantitative CBL for every birth;

Triggers for next stage: CBL ≥ 500ml vaginal / ≥ 1000 ml cesarean with *continued bleeding* OR Cues for concealed hemorrhage: VS abnormal or trending to abnormal or maternal confusion. VS monitored during and after delivery process.

Stage 1

CBL Vag > 500/ CS > 1000ml w/ cont. bleeding

Standard Steps Stage 1

Continuing hemorrhage OR meets clinical triggers?

NO → **Increased postpartum surveillance; Elevate to HIGH RISK**

YES ↓

STANDARD STEPS: Activate hemorrhage protocol; Call for extra help; Increase oxytocin infusion rate; Vigorous fundal/bimanual massage and express clots; IV access; empty bladder; VS monitored with 0^2 sat; continue quantitative CBL; rule out retained POC, laceration or hematoma; type and cross 2 units PRBC if not done previously; Consider giving TXA.

MOVE ON to 2nd level uterotonic if no response (see Stage 2 meds below)

Triggers for next stage: *Continued bleeding* w/CBL < 1500 ml or VS worsen or remain abnormal.

Stage 2

Continued bleeding CBL < 1500 ml OR VS remain abnormal OR signs of concealed hemorrhage

Standard Steps Stage 2

Continuing hemorrhage OR meets clinical triggers?

NO → **Increase PP surveillance; Confirm labs sent; TXA given; Blood available**

YES ↓

STANDARD STEPS: Activate OB Rapid Response; continue VS; give 2nd level uterotonic: methylergonovine or carboprost. Misoprostol *only* if hypertensive or asthmatic; 2nd IV access; Administer TXA of not already given; Prep products/labs/OR; Begin transfusion using a blood warmer when blood available unless bleeding is controlled and patient is stable. Be prepared to activate MTP. **Identify and treat source of hemorrhage- including concealed hemorrhage**

VAGINAL BIRTH:
Atony: Bimanual fundal massage; remove retained vaginal/LUS clots; Intrauterine balloon
Retained POC: Manual removal/Dilation and curettage
Lac/Hematoma: Packing/Repair as required
CESAREAN BIRTH:
Atony: Uterine massage; Uterine compression sutures/Intrauterine balloon
Continued Hemorrhage: Uterine artery/Descending branch litigation
VS/Lab abnormalities not c/w CBL: Workup for concealed hemorrhage, i.e., inspect broad ligament

Triggers for next stage: *Continued bleeding* w/CBL < 1500 ml or 2 units PRBCs given or VS abnormal or suspicion of DIC.

Stage 3

CBL > 1500 transfusion of > 2 U PRCBs OR VS abnormal

Standard Steps Stage 3

Uterine Sparing Techniques/ Hysterectomy

YES ↓

STANDARD STEPS: Expand clinical team; activate MTP; repeat coags & ABGs; Warmer for IV fluids; Upper body warming device; Central line; Sequential Compression Devices (SCDs); Family support

Uterine-sparing techniques: Uterine sutures; Uterine artery ligation; Balloon placement if not already tried; IR if stable for transport and team **immediately** available - physician who is able to **immediately** call for and move to surgery should be in house.

Hysterectomy: Definitive therapy after inadequate response to uterine sparing techniques *or* sooner based on patient desire for future childbearing and other risk factor considerations such as, extreme and rapid blood loss or degree of hypovolemia.

Postpartum

Risk for multiorgan failure or residual coagulopathy?

NO → **Increase surveillance**

Admit to ICU & continue MTP

STANDARD STEPS: Perform risk assessment on admission to postpartum care considering all prenatal, delivery, and intermediate postpartum factors. Provide routine care or increased surveillance and ensure adequate response readiness is in place based on risk assessment.

This figure was adapted from the Improving Health Care Response to Obstetric Hemorrhage: A California Quality Improvement Toolkit, funded by the California Department of Public Health, 2015; supported by Title V funds.