

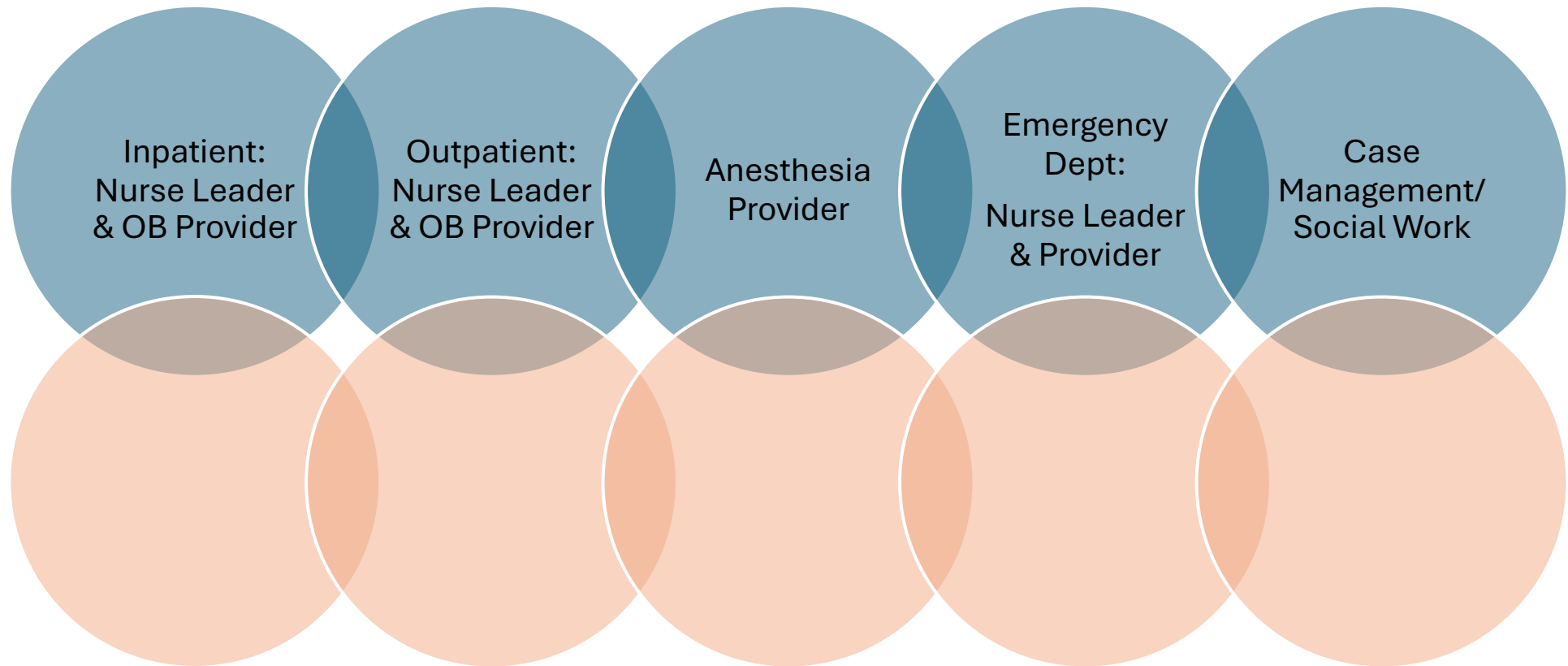


ALLIANCE FOR INNOVATION
ON MATERNAL HEALTH

Obstetric Unit & Emergency Dept. Collaborations on AIM Bundles - 2024

[insert Institution's name]

AIM Implementation Team Players



Checklist Guidelines & Examples

- Use this as a guide in your discussions between the Obstetric Unit Leaders and Emergency Department Leaders
- We've provided direct links to resources that are well-established and ready to use
- If you prefer to customize documents you can email Kayla for editable versions (originally created for UVMMC) and/or get her assistance with customizing for your site

ED Triage Process

- **Identification of pregnant or recently pregnant persons:**

- ☐ How can this be added into triage process?
- ☐ What needs to be done in EMR to assist/document this process?
- ☐ When to consult OB colleagues?
- ☐ When to transfer to L/D?

Example of Triage Process - Hypertension

As part of Triage 1:

For female with an initial BP of 140 (systolic) OR 90 (diastolic) and is between the ages of 10-50 ask the question: **Are you pregnant or have you been in the past 6 weeks?**

4/18/2023 visit for Hospital Encounter

CARE EVERYWHERE
Care Everywhere

PRIMARY TRIAGE

Arrival Info
Comm Aids
Comm Assistance
Chief Complaint
Triage Isolation
BEFAST Stroke...
ED Triage Notes
Vitals
LMP
Allergies
Travel Screening
Triage Plan
Waiting Room Call
Suicide Screen

LMP

Time taken: 4/20/2023 1438 Responsible Create Note Show Last Filed Value Show Details Show All Choices

Last Menstrual Period

Last Menstrual Period

Having Periods?

Yes No

Are you pregnant or have you delivered a baby in the last 6 weeks?

Yes No

THIS QUESTION REQUIRED FOR ALL PATIENTS WITH BP GREATER THAN OR EQUAL TO 140/90.

Create Note

Restore Close Cancel Previous Next



The answer "yes" to this question plus an elevated BP **will trigger a BPA (Best Practice Alert)**

Example of Best Practice Alert - BPA

Action Items:

1. Place IV
2. Draw Rainbow labs
3. Alert Attending Immediately

The Provider eval will include asking for the following signs/symptoms but nursing should be aware of these as well:

- Epigastric pain
- Headache
- Visual Changes

The ED Provider will initiate an OB consult for further management either with in-house team or through the paging system

The screenshot shows a 'Patient Safety (1)' alert window. At the top, a yellow banner states: '① This patient meets criteria for possible pre-eclampsia'. Below this, the 'University of Vermont HEALTH NETWORK' logo is on the left, and the text 'This patient meets criteria for pre-eclampsia' is on the right. Under the logo, it says 'Sponsor: ED Quality'. To the right of the logo, it says 'Blood pressure: @FLOW(5)@'. Below the logo, 'Recommended actions:' are listed: 'Place IV', 'Draw rainbow labs', and 'Alert attending immediately'. At the bottom left, there are two buttons: 'Order' (highlighted in blue) and 'Do Not Order'. To the right of these buttons is a text box containing 'INSERT IV START WITH BLOOD DRAW (RAINBOW AND BLOOD BANK)'. Below the buttons, there is an 'Acknowledge Reason' section with two options: 'Patient Unresponsive' and 'Not pregnant/delivered in last 6 weeks'. At the bottom right, there is a button with a checkmark and the word 'Accept'.

Example of Triage Process – Hemorrhage

Per Institutional Policy:

1. The Emergency Department triage will identify women with active, heavy, vaginal bleeding within 6 weeks of delivery.
2. The patient will be assessed and stabilized per Emergency Department protocols
3. Any patient with heavy, active, vaginal bleeding:
 - If at a site with OB services: Call OB or activate your OB Emergency team for co-management assistance.
 - For sites without OB services: call the regional transfer center for OB consultation and potential transfer

Added to PPH
guidelines

Activation of Emergency Response Teams

☐ Identify current Code/Rapid Response/OB Emergency teams already in place

- Are all the correct stakeholders included on these teams?
- Is it clear to staff how to “activate” these teams?

Education of Staff and Providers

Role-specific education that includes warning signs of PPH and HTN on orientation, when changes occur, and at least every 2 years

- *Topics to include:* warning signs, acknowledging biases and not making assumptions based on other factors, QBL, treatment algorithms
- Global topics also included in the AIM bundles: Trauma-informed care, equitable care

❑ How will this be executed?

- One option is to work with Kayla to tailor modules to be site-specific

Example of ED-specific Education Modules

HTN: https://rise.articulate.com/share/UETquDQjtdBBP_iHWYyTUhR7CdNeLbeB

PPH: <https://rise.articulate.com/share/axvexfpOuPQzRQbxRWNDcFAGyn6ieFlC>

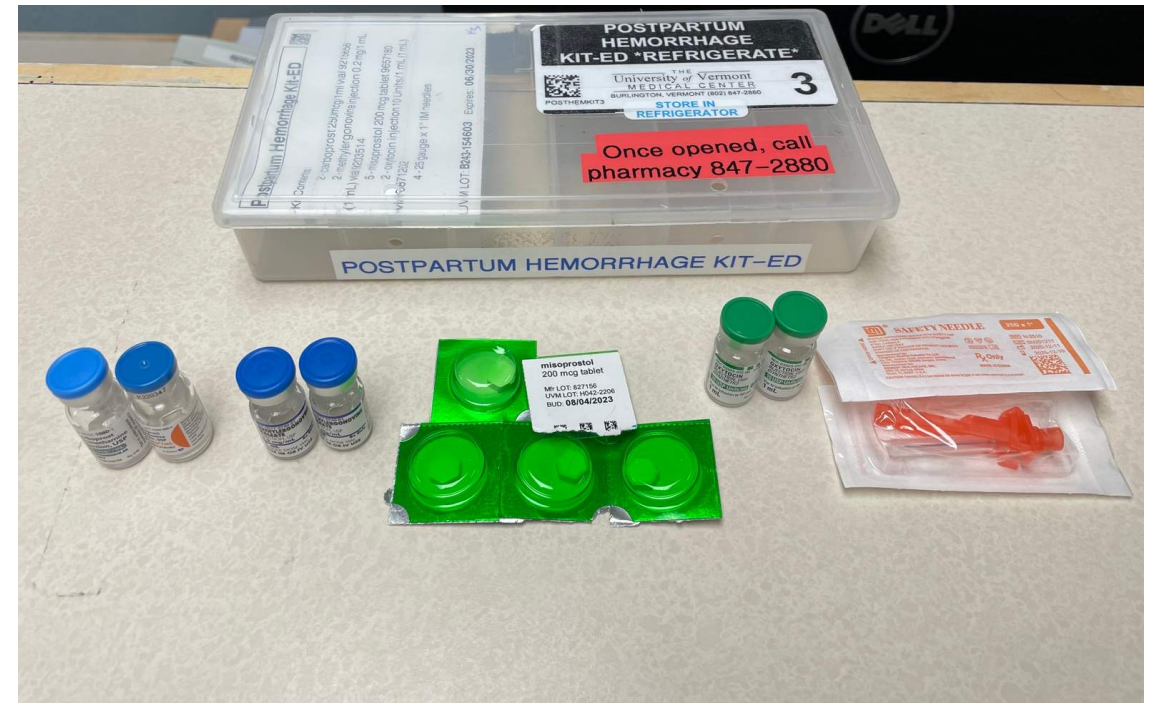
These can be tailored to each individual site to include your institution's specific practices, algorithms, documents, etc.

Then can be uploaded into your learning platform to be accessed by staff and tracked for completion/compliance.

Resource Needs

❑ Equipment:

- PPH: equipment and medication access
 - PPH Cart or Kit to include: scale, medication guide, uterine devices & instructions for use [Bakri or Jada]
 - *If cart won't be kept in ED determine the process for getting supplies to the ED in an Emergency*
 - *Consider at minimum having medication kit and uterine devices stocked in ED*
- HTN: medication access
 - *Ensure all three medications for treatment of Hypertensive Crisis are available*



Example of ED PPH Medication Kit

Resource Needs

☐ Algorithms:

- What assessment and treatment algorithms will be used and available to staff?

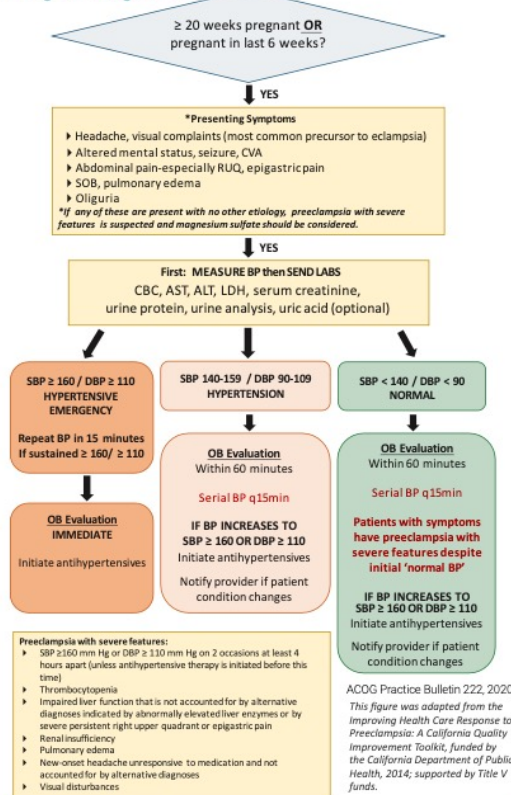
☐ Checklists:

- What checklists are available to staff for emergencies?

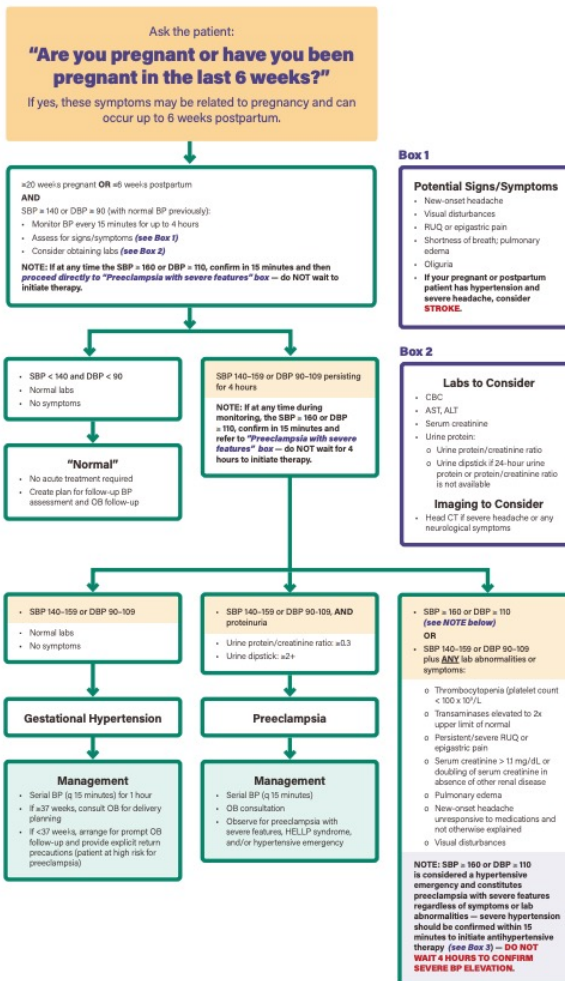
Examples of Assessment Algorithms - Hypertension

Appendix E: Acute Treatment Algorithm

Part 1: Diagnostic Algorithm



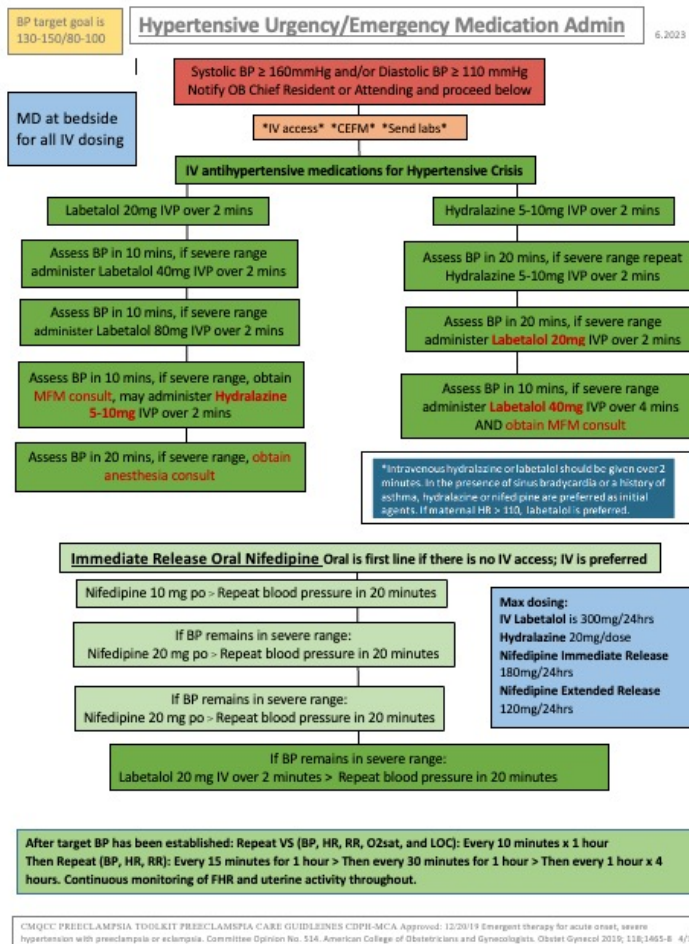
Acute Hypertension in Pregnancy & Postpartum Algorithm



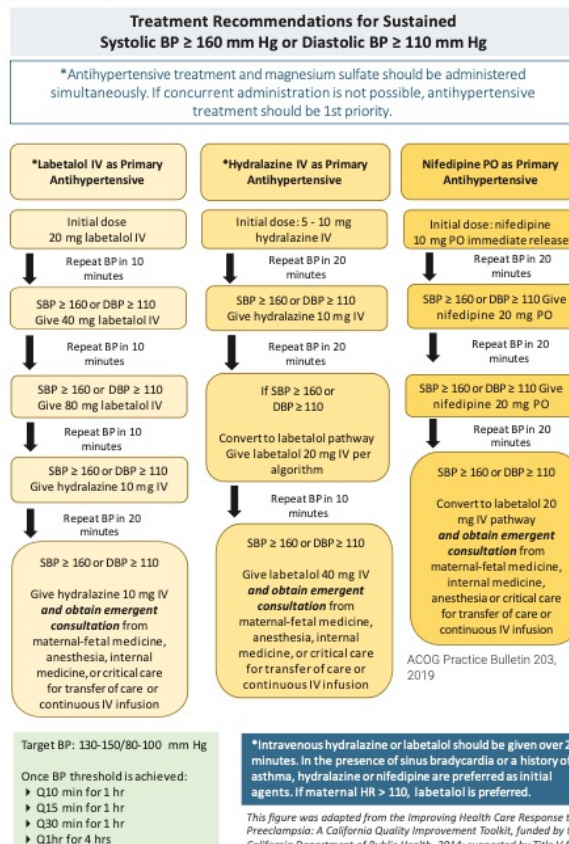
These can be tailored to each individual site to include your institution's specific practices, or you can use already-established resources.

https://www.acog.org/-/media/project/acog/acogorg/files/pdfs/programs/ob-emergencies/hypertension_algorithm.pdf

Examples of Medication Algorithms - Hypertension



Part 2: Antihypertensive Treatment Algorithm for Hypertensive Emergencies



These can be tailored to each individual site to include your institution's specific practices, or you can use already-established resources.

[https://www.cmqcc.org/sites/default/files/HDP_FI_NAL_Appendix E 2022.pdf](https://www.cmqcc.org/sites/default/files/HDP_FI_NAL_Appendix_E_2022.pdf)

Examples of Checklists - Hypertension

Hypertensive Emergency Checklist

THE
University of Vermont
MEDICAL CENTER

Hypertensive Emergency:

- Two severe BP values ($\geq 160/110$) taken 15-60 minutes apart. Values do not need to be consecutive.
- May treat within 15 minutes if clinically indicated

RECOGNITION:

- ☐ Call for assistance (Obstetrics Team)

Documentation:

PULL MEDICATION ALGORITHM

Designate:

- ☐ Team Leader
- ☐ Check list reader/Recorder
- ☐ Primary RN

ACTION:

- ☐ Ensure side rails are up
- ☐ **Place IV; draw preeclampsia labs**
- ☐ **If Antepartum begin continuous fetal monitoring**
- ☐ **Send STAT labs and urine sample**
- ☐ Ensure medications appropriate given patient history
(Pull meds from Pyxis Virtual Kit)
- ☐ Antihypertensive therapy within 1 hour for persistent severe range BP
- ☐ Following medication algorithms for VS monitoring and timing of additional medication dosing

Birth Center

- ☐ Administer seizure prophylaxis (magnesium sulfate first line agent, unless contraindicated)
- ☐ Antenatal corticosteroids (if <34 weeks gestation)
- ☐ Re-address VTE prophylaxis requirement
- ☐ Place indwelling urinary catheter
- ☐ Brain imaging if unremitting headache or neurological symptoms

- ☐ Debrief patient, family, obstetric team

- Magnesium: 4 gm bolus then 2gm/hr IV
- Labetalol: 20 mg IV; escalate to 40 mgx1 then 80 mgx1, add hydralazine
- Hydralazine: 5 mg IV; escalate to 10 mgIVx1; add labetalol
- Nifedipine (immediate release): 10 mg pox1, escalate to 20 mg pox2; add labetalol 20 mg IV

EMERGENCY DEPARTMENT

Postpartum Preeclampsia Checklist

If PATIENT < 6 WEEKS POSTPARTUM WITH:

- BP $\geq 160/110$ or
- BP $\geq 140/90$ with unremitting headache, visual disturbances, epigastric pain
- ☐ Call for Assistance
- ☐ Designate:
 - ☐ Team leader
 - ☐ Checklist reader/recorder
 - ☐ Primary RN
- ☐ Ensure side rails up
- ☐ Call obstetric consult; Document call
- ☐ Place IV; Draw preeclampsia labs
 - ☐ CBC ☐ Chemistry Panel
 - ☐ PT ☐ Uric Acid
 - ☐ PTT ☐ Hepatic Function
 - ☐ Fibrinogen ☐ Type and Screen
- ☐ Ensure medications appropriate given patient history
- ☐ Administer seizure prophylaxis
- ☐ Administer antihypertensive therapy
 - ☐ Contact MFM or Critical Care for refractory blood pressure
- ☐ Consider indwelling urinary catheter
 - ☐ Maintain strict I&O — patient at risk for pulmonary edema
- ☐ Brain imaging if unremitting headache or neurological symptoms

* "Active asthma" is defined as:

- Ⓐ symptoms at least once a week, or
- Ⓑ use of an inhaler, corticosteroids for asthma during the pregnancy, or
- Ⓒ any history of intubation or hospitalization for asthma.

Magnesium Sulfate

Contraindications: Myasthenia gravis; avoid with pulmonary edema, use caution with renal failure

IV access:

- ☐ Load 4-6 grams 10% magnesium sulfate in 100 mL solution over 20 min
- ☐ Label magnesium sulfate; Connect to labeled infusion pump
- ☐ Magnesium sulfate maintenance 1-2 grams/hour

No IV access:

- ☐ 10 grams of 50% solution IM (5 g in each buttock)

Antihypertensive Medications

For SBP ≥ 160 or DBP ≥ 110
(See SMI algorithms for complete management when necessary to move to another agent after 2 doses.)

- ☐ **Labetalol** (initial dose: 20mg); **Avoid parenteral labetalol with active asthma, heart disease, or congestive heart failure; use with caution with history of asthma**
- ☐ **Hydralazine** (5-10 mg IV* over 2 min); **May increase risk of maternal hypotension**
- ☐ **Oral Nifedipine** (10 mg capsules); Capsules should be administered orally, not punctured or otherwise administered sublingually

* Maximum cumulative IV-administered doses should not exceed 220 mg labetalol or 25 mg hydralazine in 24 hours

Note: If first line agents unsuccessful, emergency consult with specialist (MFM, internal medicine, OB anesthesiology, critical care) is recommended

Anticonvulsant Medications

For recurrent seizures or when magnesium sulfate contraindicated

- ☐ **Lorazepam (Ativan):** 2-4 mg IV x 1, may repeat once after 10-15 min
- ☐ **Diazepam (Valium):** 5-10 mg IV q 5-10 min

Safe Motherhood Initiative

Revised January 2019



These can be tailored to each individual site to include your institution's specific practices, or you can use already-established resources.

<https://www.acog.org/-/media/project/acog/acogorg/files/forms/districts/smi-hypertension-bundle-postpartum-preeclampsia-checklist.pdf>

Examples of Medication Charts – Hemorrhage

Appendix R: Medications for Postpartum Hemorrhage

Medications for Postpartum Hemorrhage						
Drug	Dose	Route	Frequency	Side Effects	Contraindications	Special Storage Considerations
Oxytocin (Pitocin™) 10 units/mL	10-40 units per 500-1000 mL, rate titrated to uterine tone	IV infusion	Continuous	Usually none Nausea, vomiting, hyponatremia ("water intoxication") with prolonged IV admin. ↓ BP and ↑ HR with high doses, especially IV push	Hypersensitivity to drug	None
Methylergonovine (Methergine®) 0.2 mg/mL	0.2 mg	IM (not given IV)	-q2-4 hours -If no response after first dose, it is unlikely that additional doses will be of benefit	Nausea, vomiting, severe hypertension, especially with rapid administration or in patients with HTN	Hypertension, Preeclampsia, Heart disease Hypersensitivity to drug Caution if multiple doses of ephedrine have been used, may exaggerate hypertensive response w/ possible cerebral hemorrhage	Refrigerate Protect from light
Carboprost (Hemabate®) (15-methyl PG F2a) 250 mcg/mL	250 mcg	IM or intra-myometrial (not given IV)	-q15-90 min -If no response after 3 doses, it is unlikely that additional doses will be of benefit	Nausea, vomiting, diarrhea, fever (transient), headache, chills, shivering, hypertension, bronchospasm	Caution in women with hepatic disease, asthma, hypertension, active cardiac or pulmonary disease Hypersensitivity to drug	Refrigerate
Misoprostol (Cytotec®) 100 or 200 mcg tablets	600-800 mcg	SL or PO	One time	Nausea, vomiting, diarrhea, shivering, fever (transient), headache	Rare Known allergy to prostaglandin Hypersensitivity to drug	None
Tranexamic Acid (TXA)	1 gram	IV infusion (over 10 min)	-One dose within 3 hrs of hemorrhage recognition -A 2nd dose may be administered if bleeding continues after 30 min or if bleeding stops and then restarts within 24 hrs of completing the 1st dose	Nausea, vomiting, diarrhea, hypotension if given too rapidly	A known thromboembolic event in pregnancy History of coagulopathy Active intravascular clotting	None

Improving Health Care Response to Obstetric Hemorrhage, a CMQCC Quality Improvement Toolkit, 2022

Page 234

These can be tailored to each individual site to include your institution's specific practices, or you can use already-established resources.

<https://www.cmqcc.org/content/ob-hemorrhage-toolkit-v30-appendix-r-medications-postpartum-hemorrhage>

Examples of Checklists - Hemorrhage

Obstetric Hemorrhage Checklist		THE University of Vermont MEDICAL CENTER
Postpartum hemorrhage is defined as cumulative blood loss of greater than or equal to 1000ml 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:	<u>Documentation:</u>	
<input type="checkbox"/> Call for assistance (Obstetrics Hemorrhage Team)		
Designate:	Announce:	
<input type="checkbox"/> Team Leader	<input type="checkbox"/> Blood Loss	
<input type="checkbox"/> Check list reader/Recorder	<input type="checkbox"/> Vital Signs	
<input type="checkbox"/> Primary RN	<input type="checkbox"/> Determine Stage	
STAGE 1: Blood loss>1000ml after delivery with normal vital signs and lab values. Vaginal delivery 500-999ml should be treated as Stage 1.		
INITIAL STEPS:	<u>Documentation:</u>	
<input type="checkbox"/> Ensure 16G or 18G IV Access		
<input type="checkbox"/> Increase IV Fluids (crystalloid without oxytocin)		
<input type="checkbox"/> Insert Indwelling catheter		
<input type="checkbox"/> Fundal massage		
MEDICATIONS: (Pyxis Virtual Kit)		
<input type="checkbox"/> Ensure appropriate medications given patient history		
<input type="checkbox"/> Increase oxytocin, additional uterotonics		
BLOOD BANK:		
<input type="checkbox"/> Confirm active type and screen and consider crossmatch of 2units PRBCs		
ACTION: (obtain debrief from Charge RN)		
<input type="checkbox"/> Determine etiology and treat		
<input type="checkbox"/> Prepare OR, if clinically indicated		
<div><ul style="list-style-type: none">• Methylergonivine (methergine): 0.2 mg IM q2-4 hr prn (Avoid: any HTN disease) Max: 2 doses not likely effective• 15-methyl PGF2 alpha (Hemabate): 250 micrograms IM, q 15 min prn x3 doses (Avoid: asthma); Max: 8 doses/24 hrs• Misoprostol (Cytotech): 800 micrograms per rectum or SLx1• Tranexamic acid (TXA): 1 gm IV over 10 minutes; repeat in 30 min x1 prn</div>		
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 uteronic")		
INITIAL STEPS:	ACTION:	
<input type="checkbox"/> Mobilize additional help	<input type="checkbox"/> For uterine atony: Consider bakri, packing, surgical interventions	
<input type="checkbox"/> Place 2nd IV (16G or 18G)	<input type="checkbox"/> Consider transfer to M7/OR	
<input type="checkbox"/> Draw STAT labs (CBC, Coags, Fibrinogen)	<input type="checkbox"/> Escalate therapy with goal of hemostasis	
MEDICATIONS:	<input type="checkbox"/> Obtain Debrief Form from Charge RN	
<input type="checkbox"/> Continue Stage 1 medications; consider TXA	<u>Documentation:</u>	
BLOOD BANK:		
<input type="checkbox"/> Obtain 2 units PRBCs (do not wait for labs; transfuse per clinical signs/symptoms)		
<input type="checkbox"/> Thaw 2 units FFP		

Appendix B: Obstetric Hemorrhage Care Guidelines: Checklist Format

Prenatal Assessment & Planning
<input type="checkbox"/> Evaluate for risk factors prenatally and identify/prepare for patients with special considerations: Placenta previa/accreta, bleeding disorder, or those who decline blood products <ul style="list-style-type: none"><input type="checkbox"/> Screen and aggressively treat severe anemia: if oral iron fails, initiate "IV Iron Protocol" to reach optimal Hgb/Hct, especially for at risk patients<input type="checkbox"/> Provide counseling/education<input type="checkbox"/> Consider site of delivery<input type="checkbox"/> Plan for blood salvage if appropriate
Admission Assessment & Planning
Admission Hemorrhage Risk Factor Assessment
<input type="checkbox"/> Evaluate for risk factors on admission
<input type="checkbox"/> Verify type & antibody screen from prenatal record <ul style="list-style-type: none"><input type="checkbox"/> If not available: Order type and screen (lab will notify if 2nd specimen needed for confirmation)<input type="checkbox"/> Send specimen to blood bank as indicated by institutional practices. Blood bank recommendations should be highly localized. Many institutions no longer hold a specimen in the blood bank; others utilize automated technology to type and screen all obstetric patients.<input type="checkbox"/> If prenatal or current antibody screen positive (not low-level anti-D from RhoGam)<ul style="list-style-type: none"><input type="checkbox"/> Type and crossmatch 2 units PRBCs
<input type="checkbox"/> Identify patients who may decline blood products <ul style="list-style-type: none"><input type="checkbox"/> Notify OB provider for plan of care<input type="checkbox"/> Early consult with OB anesthesia<input type="checkbox"/> Review consent form
<input type="checkbox"/> Ensure readiness

These can be tailored to each individual site to include your institution's specific practices, or you can use already-established resources.

→ <https://www.cmqcc.org/content/ob-hemorrhage-toolkit-v30-appendix-b-obstetric-hemorrhage-care-guidelines-checklist-format>

In-situ drills

- ☐ How can these two topics be added into Professional development days as multi-disciplinary drills?
- ☐ What structure needs to be in place to coordinate 1 annual drill that tests systems [call system, blood bank, etc.]

Examples of Obstetric Drill in ED

Will add resource when completed

Integration into Guideline/Policy

☐ How does the above actions integrate into your guidelines?

Examples of Obstetric Policies

Documents Status: **Approved**

IDENT	NOBG65
Type of Document	Guideline
Applicability Type	Cross-Organizational
Title of Owner	Nursing Dir: Women's Care & Peds
Title of Approving Official	Chief Nursing Officer
Date Effective	1/20/2021
Date of Next Review	1/20/2022



TITLE: Obstetric Hemorrhage Guideline

PURPOSE: Obstetric hemorrhage is a leading cause of maternal morbidity and mortality in the United States. The overall rate of postpartum hemorrhage increased 26% between 1994 and 2006, primarily driven by a 50% increase in cases of uterine atony (CMQCC, 2015). Rapid recognition and treatment are necessary to prevent progression of hemorrhage as women can lose large volumes of blood very quickly due to the physiologic changes of pregnancy. A systematic approach and standardized protocol leads to improved outcomes as a result of early recognition, effective communication, and appropriate application of interventions.

POLICY STATEMENT: The UVMC OB Hemorrhage guideline includes readiness, recognition, response, and reporting for obstetric hemorrhage within our institution. Activation of appropriate resources and personnel may be necessary for patients within the Birthing Center, Mother Baby Unit, or other areas of the institution.

Readiness:

- System Level: Use of Simulation/Drills and Standardized Hemorrhage Carts.
- Patient Level: Use of admission and ongoing risk assessment for all OB patients.

Recognition:

- Prevention with active management of the third stage, & early recognition of hemorrhage, assessment of blood loss every delivery, quantitative assessment when indicated, use of huddles in high risk patients

Response:

- Standardized approach for each stage of hemorrhage including activation of additional resources, checklists, and personnel. Support for patient, families, staff during and after event.

Reporting:

- Use of SAFE system for reporting of events, multidisciplinary review of severe cases at QAI; education every 2 years and M&M as indicated

PERSONNEL: All providers (RN, physician, CNM) oriented to the Birthing Center, and Mother/Baby Unit including anesthesiology, providers (physician, nurse anesthetists, anesthesia assistants); & Emergency Department providers (RN, physician, physician assistants) and blood bank personnel involved in massive transfusion requests (MTP activation). Pharmacy will review and sign off on this guideline.

Readiness:

- (1) A Hemorrhage cart is immediately available on McClure 7 (Birthing) and Baird 7 (Ante/Postpartum) units (contents; Appendix A). Providers should know where carts are located; the RN that opens the cart restocks immediately after use; the labor and delivery assistants will be responsible for checking and restocking monthly (if not used and for expired materials). Bakri balloons and sutures are immediately available in the OR and OB Hemorrhage Cart, drawer 3. The Emergency Department protocol will STAT page McClure 7 in the rare event of a postpartum hemorrhage and the cart can be brought to the ED by the responding OBGYN team. Medications are available in the Emergency Kit in Pyxis on McClure 7, Baird 7, and the anesthesiology medication cart. The Hemorrhage cart will contain guidelines by hemorrhage stage, instruction cards for balloon and compression sutures, how to access blood products instructions, and the checklist for treatment and debrief (see Appendix B).
- (2) Immediate access to medications are in the Pyxis or refrigerator (if indicated) as an emergency kit. McClure 7, Baird 7, and the operating room have access to these medications. When the emergency department calls the team for postpartum hemorrhage, those medications (and the cart) will be brought by the responding OBGYN team (available 24/7/365).
- (3) The Postpartum Hemorrhage response team includes the OBGYN resident, the attending provider, the attending physician (if not the provider), the emergency OBGYN attending (708 beeper, available 24/7/365 in house) if the

Email Kayla for editable version of guidelines utilized by UVMC to adapt to your site

Please do not reinvent the wheel.

Email Kayla @ Kayla.Panko@uvmhealth.org to receive editable versions or to have her edit documents to customize to your site if needed.

Kayla is available to join meetings to answer questions, help clarify the asks, or offer support in other ways.

Share your progress and/or needs with the AIM team. We are here to support you in this work.