

Postpartum emergency

A plain-English guide for you and your family

WHAT IS HAPPENING

After birth, the uterus normally squeezes down tight like a fist to clamp off the open blood vessels where the placenta was attached. The placenta separates and comes out, blood clots seal the raw surface, and over days to weeks blood pressure and blood volume return to pre-pregnancy levels. Keep that normal picture in your head, because every dangerous postpartum finding is a break from that sequence. When bleeding does not stop, it is usually because the uterus stays soft and boggy instead of squeezing (called atony, which causes 70 to 80 percent of severe bleeding after birth), or pieces of placenta stay stuck inside, or there is a tear in the cervix or uterus, or the mother's blood cannot clot properly. When infection takes hold, bacteria grow in blood and dead tissue trapped in the uterus and release poisons into the bloodstream, causing fever, foul-smelling discharge, and eventually septic shock (life-threatening low blood pressure from widespread infection). When blood pressure stays dangerously high after delivery (top number ≥ 160 or bottom number ≥ 110), it damages the brain, liver, and kidneys, and can trigger seizures (called eclampsia). When a clot breaks loose from a leg vein or the pelvis and floats to the lungs, it blocks oxygen from getting into the blood, causing sudden shortness of breath and chest pain. None of these breaks stays local—the body responds with a fast heart rate (over 100 beats per minute) first to push the shrinking blood volume harder, then low blood pressure (top number under 90) late when the body's backup systems fail, plus fever, seizures, or gasping for air depending on which system is broken. Every vital sign change and lab number you see is the body trying to protect itself, buying time until the root cause is fixed. Trace it backward: normal uterus squeezes and clots seal bleeding, then one of those steps fails, and the body's alarm system fires in a predictable order.

What you might feel

- Heavy vaginal bleeding that soaks one or more pads in an hour, or passing clots bigger than a golf ball
- Fast heart rate—over 100 to 110 beats per minute—while blood pressure is still normal or just a little low

- Low blood pressure—top number under 90—and confusion, agitation, or loss of consciousness
- Fever of 100.4°F (38°C) or higher, smelly vaginal discharge after birth, and tenderness low in the belly
- Severe headache, vision problems (blurry, flashing lights, or blind spots), and sharp pain under the right ribs
- A full-body seizure (convulsions with stiff muscles then jerking movements) in a woman with high blood pressure after delivery
- Sudden trouble breathing, sharp chest pain that gets worse when you take a deep breath, fast breathing (over 20 breaths per minute), and low oxygen (less than 94% on room air)
- Very little urine—less than 30 milliliters per hour or half a milliliter per kilogram of body weight per hour—and rising creatinine (a waste product measured in blood)

Call the doctor right away if...

- Top blood pressure under 90 or a drop of 40 points or more from your usual, heart rate over 120, or confusion and altered mental status—these mean shock (the body's circulation is failing) and you need emergency IV fluids, blood products, and immediate treatment to find and stop the cause
- Vaginal bleeding over 500 milliliters in the first 24 hours after vaginal birth (or over 1,000 milliliters after cesarean), especially with a soft, boggy uterus you cannot feel at the belly button—this is bleeding (hemorrhage) from uterine atony or hidden bleeding and requires urgent uterine massage, medications to make the uterus contract (oxytocin, misoprostol, carboprost), and possibly a balloon inside the uterus, artery embolization, or emergency hysterectomy
- Blood pressure 160 over 110 or higher on two checks 15 minutes apart, plus severe headache, vision changes, or pain under the right ribs—this is preeclampsia with severe features or HELLP syndrome; you need IV magnesium sulfate to prevent seizures and fast-acting blood pressure medicine (labetalol, hydralazine, or nifedipine) right away
- A new seizure after delivery in a woman with high blood pressure—assume eclampsia until proven otherwise; give IV magnesium sulfate (4 to 6 grams over 15 minutes, then 1 to 2 grams per hour), protect the airway, lower blood pressure, and check for brain bleeding with imaging
- Sudden severe shortness of breath, chest pain, oxygen saturation under 90%, fast heart rate, and low blood pressure—think pulmonary embolism (a clot lodging in a lung artery) (clot in the lung); get an urgent CT scan of the chest arteries (CTPA) or ventilation-blood flow (perfusion) scan, start blood thinners immediately if suspicion is high, and consider clot-busting drugs if the clot is massive and blood pressure is crashing

What the care team will do

- Establish two large-bore IV lines (18-gauge or larger) and draw blood for type and crossmatch, complete blood count, and coagulation studies if not already done.
- Perform fundal massage by placing one hand on the lower abdomen just above the pubic bone and the other hand cupping the uterine fundus, then massaging in a circular motion until the uterus feels firm.
- Administer IV oxytocin 10 units by slow IV push over 1 to 2 minutes or IM injection, then start a continuous infusion of 10 to 40 units oxytocin in 1 liter of normal saline or lactated Ringer's running at 125 to 200 mL per hour.
- Measure vital signs every 5 to 15 minutes, watching for systolic blood pressure under 90, heart rate over 120, or any confusion or decreased responsiveness.
- Quantify blood loss by weighing blood-soaked pads and linens, using the formula that 1 gram equals 1 milliliter of blood, and report cumulative totals to the provider every 15 minutes.
- Give IV tranexamic acid 1 gram diluted in 10 mL normal saline or sterile water, infused over 10 minutes, within 3 hours of bleeding onset if bleeding (hemorrhage) continues despite oxytocin.
- Prepare second-line uterotonic medications and have them at the bedside: methylergonovine 0.2 mg IM every 2 to 4 hours (check blood pressure first, avoid if with high blood pressure (hypertensive)), or carboprost 250 micrograms IM every 15 to 90 minutes up to 8 doses (avoid if patient has asthma).
- Insert a Foley catheter to empty the bladder and monitor urine output hourly, keeping output above 30 mL per hour.

Medicines you may be given — and why

Oxytocin

Oxytocin is a copy of the body's natural hormone that tells the uterus muscle to squeeze tight. After delivery, the uterus must clamp down hard to pinch shut the open blood vessels where the placenta was attached (like closing a fist around garden hoses). If the muscle stays soft and floppy (called atony, meaning no tone), blood pours out. Oxytocin grabs special docking sites (receptors) on the muscle cells that line the uterus and flips the switch for the muscle to contract.

Methylergonovine

Methylergonovine makes uterine muscle squeeze by acting on different docking sites than oxytocin (serotonin and alpha receptors on the muscle cells). It causes a long, sustained

squeeze rather than rhythmic contractions. The muscle stays tight for a longer time, which helps keep blood vessels compressed. Because it also tightens blood vessels everywhere in the body, it can dangerously raise blood pressure.

Carboprost

Carboprost is a man-made copy of a natural body chemical (prostaglandin) that strongly squeezes smooth muscle. It grabs prostaglandin receptors on uterine muscle cells and tells them to contract hard. It also tightens smooth muscle in the lungs (which control airway size), so it can dangerously narrow airways in women with asthma.

Misoprostol

Misoprostol is a prostaglandin pill (or tablet placed under the tongue or in the rectum) that tells the uterus muscle to contract. It is slower and less powerful than the injected drugs but is cheap, stable at room temperature, and easy to give. It binds prostaglandin E receptors on uterine smooth muscle and triggers contraction. Because it can be given by mouth or rectum, it is useful in low-resource settings or when IV access is hard.

Tranexamic acid

When you bleed, your body first forms a clot (a plug made of platelets and fibrin protein threads). Then, to clean up later, your body makes an enzyme called plasmin that dissolves the clot. In postpartum bleeding (hemorrhage), too much plasmin can break down clots before bleeding stops, so blood keeps pouring out. Tranexamic acid blocks plasmin from attacking the clot, letting the plugs stay in place longer and giving the uterus time to squeeze shut and heal.

Magnesium sulfate

Magnesium is a mineral that calms down overexcited nerve cells in the brain. In preeclampsia or eclampsia, the brain becomes irritable (like a circuit overloaded with electricity) and can fire off a seizure. Magnesium blocks calcium from entering nerve cells; without calcium, the nerve cannot send the seizure signal. It also relaxes blood vessel walls slightly, which can help lower very high blood pressure. It does NOT treat bleeding (hemorrhage) itself but prevents life-threatening seizures in women with severe preeclampsia or eclampsia during or after delivery.

Labetalol

Labetalol blocks two kinds of docking sites (receptors) on blood vessel walls and the heart. By blocking beta receptors, it slows the heart and makes it pump less forcefully. By blocking alpha receptors, it relaxes the smooth muscle in artery walls, letting the vessels widen. Together, these actions lower blood pressure quickly. In postpartum women with severe high blood pressure (hypertension) ($\geq 160/110$), this prevents stroke, seizure, and heart failure.

Hydralazine

Hydralazine works directly on the smooth muscle inside artery walls (not through receptors like most drugs). It opens potassium channels in the muscle cells, which causes calcium to leave and the muscle to relax. When arteries relax, they widen and blood pressure drops. Hydralazine is given IV or IM for severe postpartum high blood pressure (hypertension) ($\geq 160/110$) to prevent stroke and organ damage. It is especially useful if labetalol cannot be used (for example, in a woman with asthma).

Heparin (unfractionated) or enoxaparin (low-molecular-weight heparin)

After delivery, some women develop blood clots in the legs (deep vein clot formation (thrombosis)) or lungs (pulmonary a traveling clot lodging in a vessel (embolism)), especially if they had a cesarean section, are overweight, or stayed in bed a long time. Heparin is a sugar molecule that turbocharges a natural anticlotting protein in your blood called antithrombin. Antithrombin usually works slowly to shut down clotting enzymes; heparin makes it work thousands of times faster. This stops existing clots from getting bigger and prevents new clots from forming, giving your body time to dissolve the clot naturally. It does NOT melt the clot directly.

Where this information comes from

- ACOG Practice Bulletin No. 183: Postpartum Hemorrhage (2017, reaffirmed 2023)
- ACOG Practice Bulletin No. 222: Gestational Hypertension and Preeclampsia (2020, reaffirmed 2022)
- American College of Chest Physicians Antithrombotic Therapy for VTE Disease: CHEST Guideline (2021)
- CDC Pregnancy Mortality Surveillance System (2023)

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