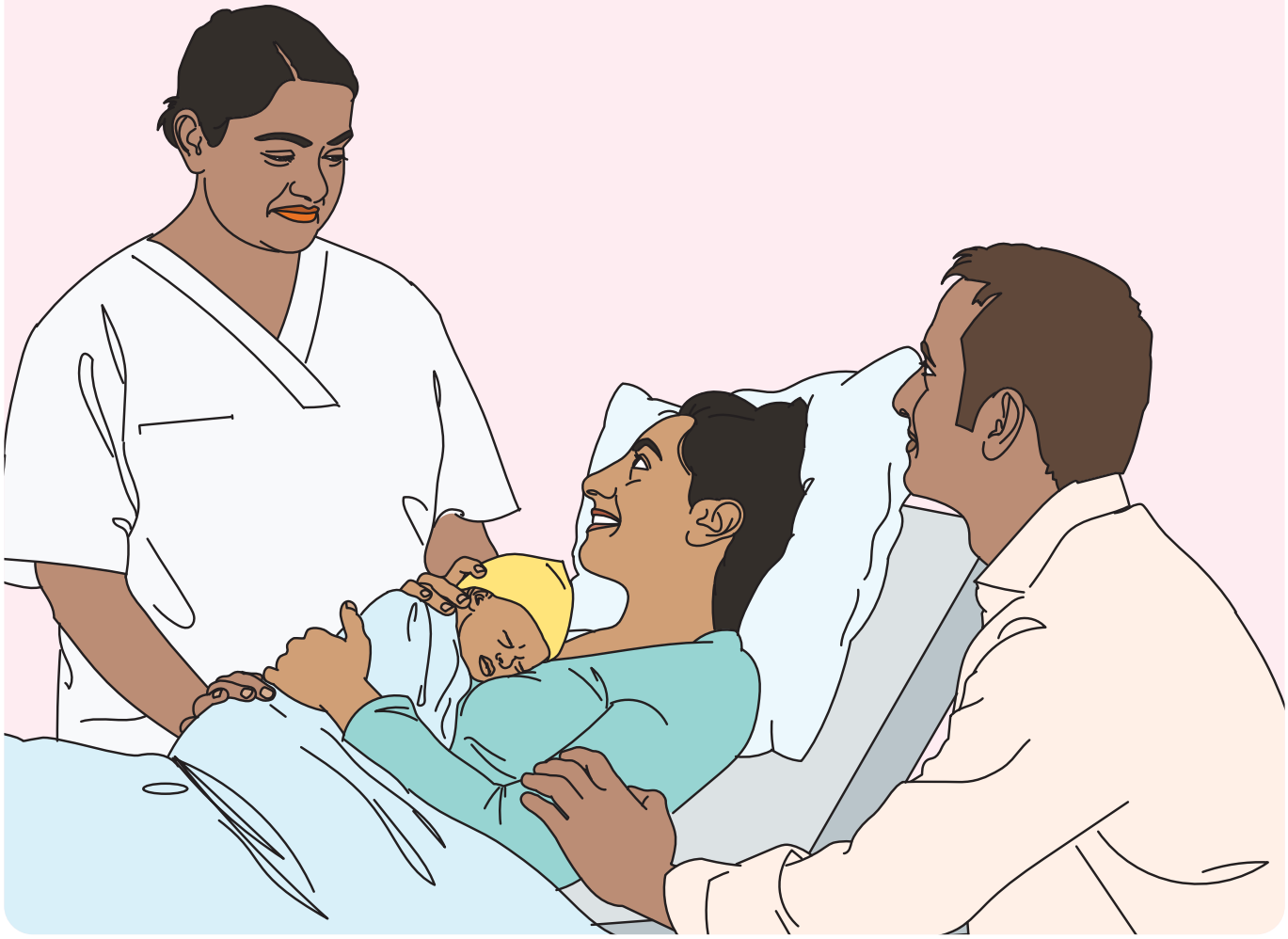
Bleeding after birth

Provider guide for ongoing practice and quality improvement on prevention, diagnosis and treatment of postpartum haemorrhage



jhpiego
Saving lives. Improving health. Transforming futures.

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International Federation of Gynecology and Obstetrics

International Confederation of Midwives

World Health Organization

Laerdal
helping save lives

UNFPA

human reproduction programme hrp
research for impact
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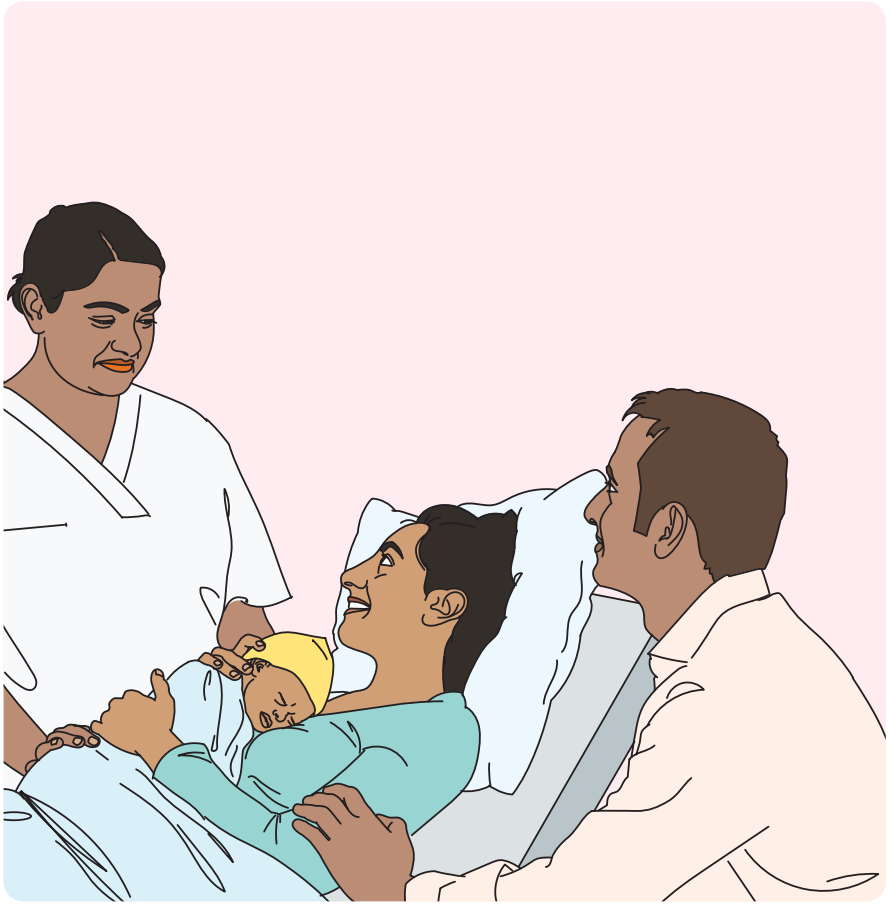


Introduction

Saving lives at birth

The Bleeding after birth course supports all levels of providers who attend births or who are called to respond to emergencies. It equips you and your team with skills and knowledge to promptly diagnose and manage postpartum haemorrhage (PPH).

The BAB Provider Guide

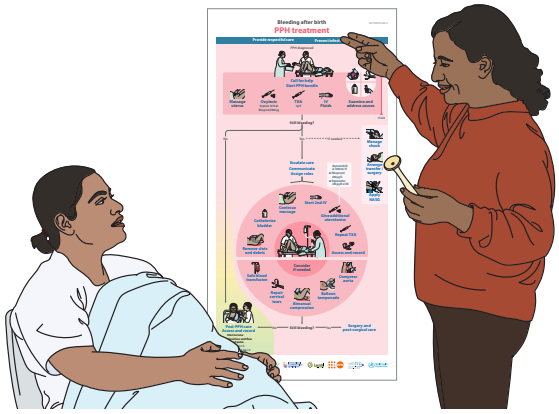
This Provider Guide is for all health care providers caring for women at birth. Use it to support continuous practice and quality improvement in your facility after participating in a facilitated course.

You will find short activities that teams can use frequently to strengthen and maintain competencies at the facility.

You will also find tools and information to further support you during practice and clinical care.

Find Action Plans, videos and other resources at
www.who.int/tools/bleeding-after-birth

Using the Provider Guide



Run short, frequent activities for quality improvement

After attending the initial short course, the **low-dose, high-frequency (LDHF)** approach continues with short activities to ensure better retention of skills and to improve teamwork and communication. This results in sustainable change in clinical care.

What is LDHF?

LDHF is an approach to training that occurs onsite, is hands-on, and includes the whole team.

Key Points of LDHF

- **Competency focused** on mastering clinical decision-making, essential skills and behaviours.
- **Case-based learning** with simulations and hands-on practice.
- **Team and facility-based** to support multidisciplinary teamwork and communication.
- **Brief ongoing activities** including:
  - short practice sessions and drills
  - quality improvement exercises
  - based on activities outlined in this Provider Guide
  - **led by peers** selected from your facility.
- **Measuring** quality of care indicators, clinical performance and outcomes to **identify areas for improvement** guided by local needs and adaptation:
  - uterotonic use for prevention
  - facility use of simulation and drills
  - presence of formal protocols for PPH prevention, treatment, blood transfusion and referral
  - PPH cases, severe PPH cases (>1000 mL) cases treated, and deaths from PPH.

Choose what to practise on based on your needs

Choose from the different activities based on the reflection with your team to address your needs to improve quality of care. Continuously reflect on your clinical practice and consider – **what do you think you could be doing better?**

Review PPH events for quality improvement, in a safe and blame-free environment, using these five principles:

- **Readiness**
  - Adequate staff and supplies?
  - Regular drills?
- **Recognition**
  - Was PPH diagnosed early?
- **Response**
  - Help requested and available?
  - Protocols followed?
  - Situation, background, assessment and recomendation (SBAR) and closed-loop used?
- **Reporting**
  - All care recorded in client record and register?
- **Respect**
  - Whole team respected, informed and heard?

Guided practice

Practice coordinators or mentors will engage you in these weekly activities. They are chosen based on clinical competence and interest. You and peers can practise without a coordinator as well.

Resources in the Provider Guide

The next pages include tools, simulation scenarios, skills practice, and other short activities that you can do regularly to continuously improve care. You will also find information to refresh your knowledge.

Section 1

Tools

In this section you will find

Job aids, templates and other tools, and how to use them:

- Action Plans
- Medication information
- Postpartum Monitoring Form and guidance
- SBAR and closed-loop communication
- SBAR practice activity
- PPH emergency kit checklist
- PPH emergency kit and referral plan activity.

How to use the tools for activities and clinical care

- Practice and scenario sessions will refer you to specific tools to enchance learning and assit with clinical care.
- Familiarize yourself with each tool.

Tips for using the tools

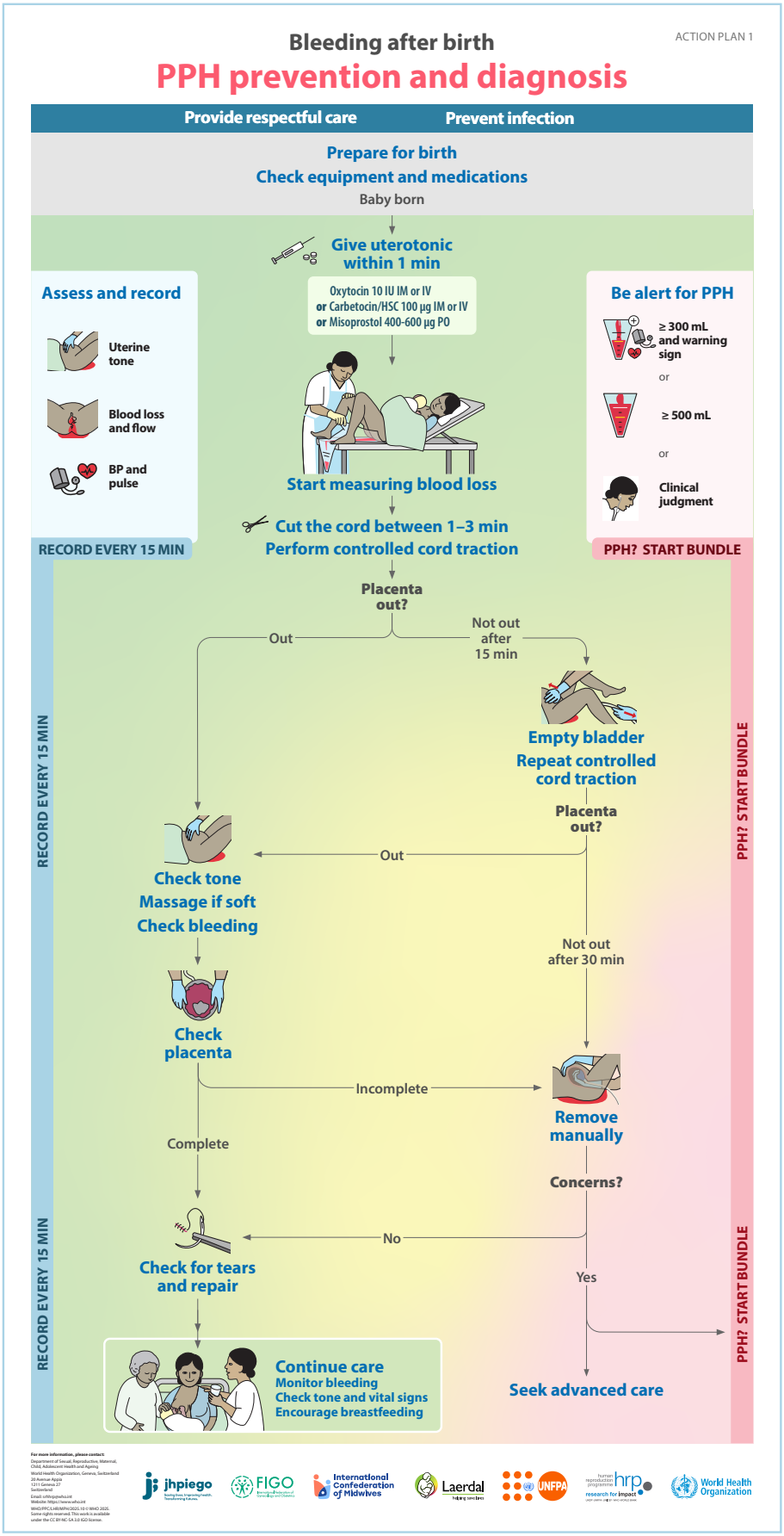
- Make copies to have available.
- Adapt to local protocols as required.

Action Plans

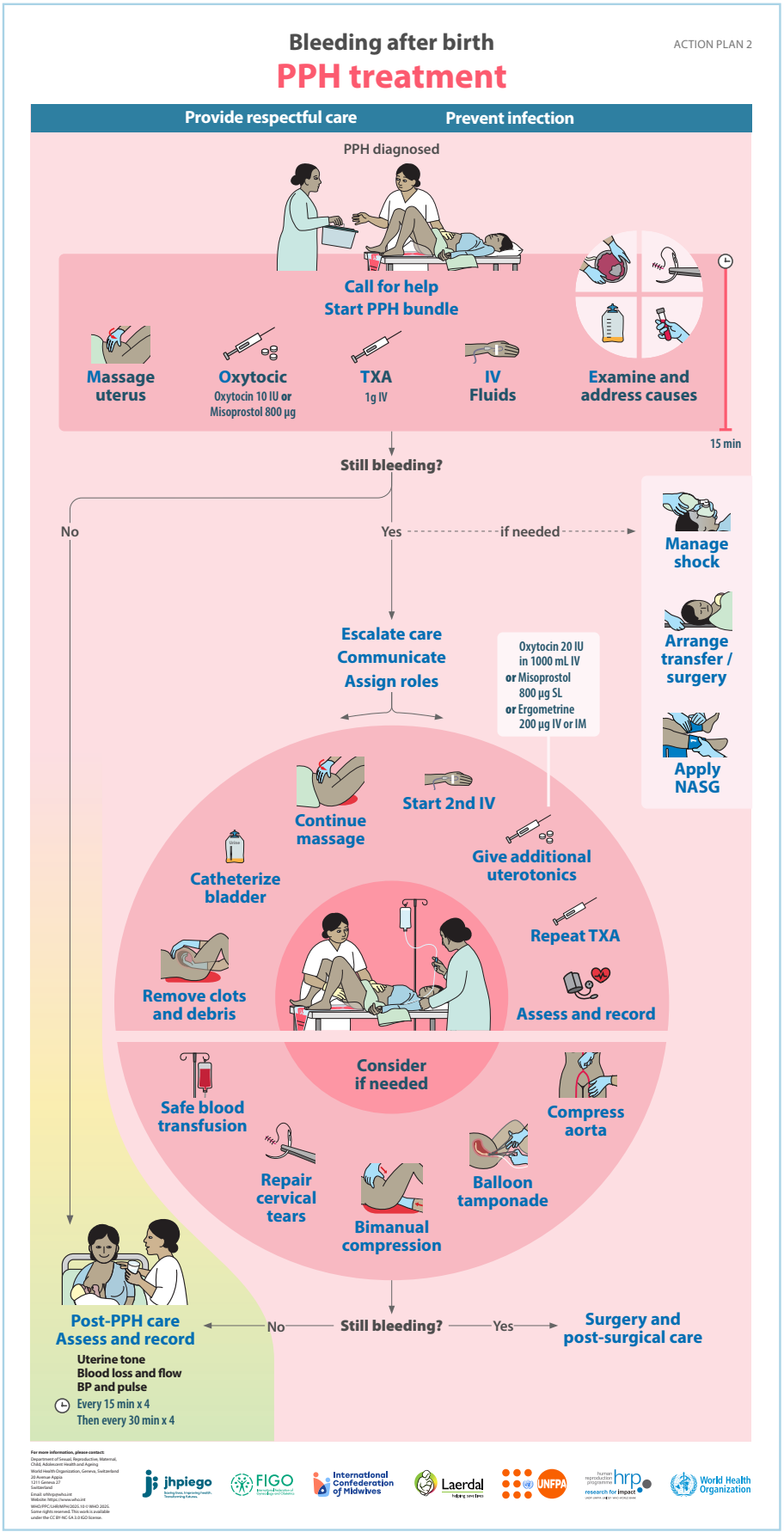
The Action Plans are posters that outline the steps to take during care. You should have them hanging in a visible place in the labour ward, to use both during training and as a job aid for clinical practice.

Available at
www.who.int/tools/bleeding-after-birth

Action Plan 1 – PPH prevention and diagnosis



Action Plan 2 – PPH treatment



Medication information to prevent and treat PPH

Use this information as reference. Check local guidelines and protocols.

	Prevention	Treatment first dose	Additional doses	Max dose
Oxytocin	10 international units (IU) intramuscularly (IM) or slow intravenous (IV) push over 1–2 min.	10 IU diluted bolus over 1–2 min, or diluted in 100–500 mL crystalloid fluids, infused as fast as possible.	20 IU in diluted 1 L crystalloid fluids, infused at a 40 drops/min, over 4 h.	60 IU in 24 h. Do not exceed 3 L IV fluids containing oxytocin.
Carbetocin	100 µg (1 mL) IM or slow IV push over 1 min.	Not for treatment.		Only one dose, do not repeat.
Heat-stable Carbetocin (HSC)	100 µg (1 mL) IM or slow IV push over 1 min.	Not for treatment.		Only one dose, do not repeat.
Misoprostol	400–600 µg orally (PO), sublingual (SL) or rectal (PR) as per woman's preference.	800 µg SL or PR.	200–800 µg SL or PR.	1600 µg in 24 h.
Ergometrine	Not for prevention.	200 µg IV or IM in 15 min.	200 µg IV or IM in 15 min every 4 h.	5 doses in 24 h, 1 mg in total.
Ergometrine/ oxytocin fixed dose	Not for prevention.	500 µg/5 IU IM.	Do not repeat.	
Tranexamic acid (TXA)	Not for prevention.	1 g in 10 mL IV over 10 min.	If still bleeding 30 min after initial dose, repeat 1 g in 10 mL IV over 10 min.	2 doses, 2 g in total.

	Storage	Considerations
Oxytocin	**2–8°C (36–46°F).** If storage conditions cannot be guaranteed, use another uterotonic.	• **Preferred uterotonic** recommended by WHO. • Fewer side effects than misoprostol monotherapy or combination therapy. • May cause headache, tachycardia, bradycardia, nausea, and vomiting.
Carbetocin	**2–8°C (36–46°F)** Do not freeze. Protect from light.	• Use only when oxytocin is unavailable or quality cannot be guaranteed. • May cause nausea, abdominal pain, headache, shivering, and fever. • **Do not use:** — for labour induction or augmentation, or — during pregnancy and labour, or — if serious cardiovascular disorders, epilepsy, liver or kidney disorders.
Heat-stable Carbetocin (HSC)	**No refrigeration needed.**	
Misoprostol	**No refrigeration needed.** Protect from light and humidity.	• Use only if oxytocin or HSC unavailable or quality cannot be guaranteed. • Can be used in combination with oxytocin for prevention, with women at high risk of PPH. • May cause shivering, diarrhea, and fever. • **Warning:** High doses (400–600 µg) during labour cause strong contractions that may rupture the uterus, or reduce oxygen to the fetus. • **Do not use:** — during pregnancy, or — if sensitive to misoprostol.
Ergometrine	**2–8°C (36–46°F)** Do not freeze. Protect from light.	• Use only if oxytocin unavailable or not effective. • May cause hypertension, palpitations, nausea, diarrhea, and dizziness. • **Do not use:** — if suspected retained placenta, or — if hypertension cannot be ruled out, or — for induction or augmentation.
Ergometrine/ oxytocin fixed dose		
Tranexamic acid (TXA)	**No refrigeration needed.**	• Reduces bleeding by inhibiting the breakdown of blood clots. • Can be given in the same line as oxytocin but not mixed in the same IV bag. • May cause nausea, diarrhea, and deep vein thrombosis. • **Do not use:** — if history of thromboembolic events during pregnancy, labour or birth, or — if renal failure or history of convulsions.

Postpartum Monitoring Form

Use this form to guide your assessments, identify risks and record systematically.

Find the form at www.who.int/tools/bleeding-after-birth.

Fill in patient details
Include the mother's name, date of birth, and identification number to ensure accurate identification.

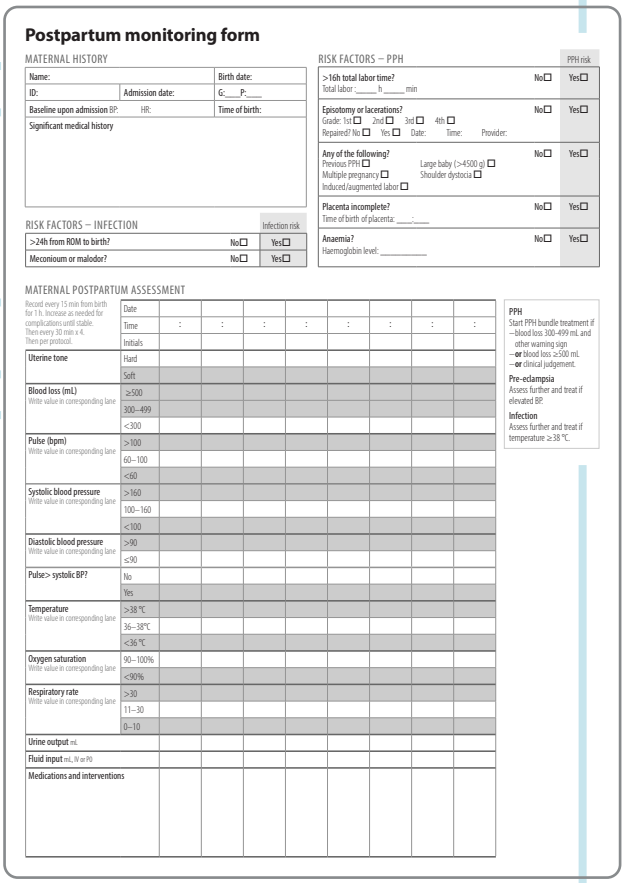
Summarize maternal history
Refer to the Labour Care Guide to document key events during labour and birth.

Record observations frequently.
Check closely during the first hour Monitor and document vital signs every 15 min initially.

Maintain regular monitoring beyond the first hour to ensure the woman is stable – every 30 min x 4.

Asses uterine tone, bleeding, vital signs, temperature, fluid balance, and record any interventions given.

Grey lanes = warning signs.
Watch for signs of instability. Monitor for abnormal vital signs, uterine atony, or excessive bleeding that may indicate deterioration.



Postpartum monitoring form

MATERNAL HISTORY

Name:		Birth date:
ID:	Admission date:	G:___P:___
Baseline upon admission BP:	HR:	Time of birth:
Significant medical history		

RISK FACTORS – INFECTION

		Infection risk
>24h from ROM to birth?	No☐	Yes☐
Meconium or malodor?	No☐	Yes☐

RISK FACTORS – PPH

		PPH risk
>16h total labor time? Total labor: ____ h ____ min	No☐	Yes☐
Episotomy or lacerations? Grade: 1st☐ 2nd☐ 3rd☐ 4th☐ Repaired? No☐ Yes☐ Date: Time: Provider:	No☐	Yes☐
Any of the following? Previous PPH☐ Multiple pregnancy☐ Induced/augmented labor☐ Large baby (>4500 g)☐ Shoulder dystocia☐	No☐	Yes☐
Placenta incomplete? Time of birth of placenta: ___:___	No☐	Yes☐
Anaemia? Haemoglobin level: _____	No☐	Yes☐

MATERNAL POSTPARTUM ASSESSMENT

Record every 15 min from birth for 1 h. Increase as needed for complications until stable. Then every 30 min x 4. Then per protocol.

Date									
Time	:	:	:	:	:	:	:	:	
Initials									
Uterine tone	Hard								
	Soft								
Blood loss (mL) Write value in corresponding lane	≥500								
	300–499								
	<300								
Pulse (bpm) Write value in corresponding lane	>100								
	60–100								
	<60								
Systolic blood pressure Write value in corresponding lane	>160								
	100–160								
	<100								
Diastolic blood pressure Write value in corresponding lane	>90								
	≤90								
Pulse> systolic BP?	No								
	Yes								
Temperature Write value in corresponding lane	>38 °C								
	36–38°C								
	<36 °C								
Oxygen saturation Write value in corresponding lane	90–100%								
	<90%								
Respiratory rate Write value in corresponding lane	>30								
	11–30								
	0–10								
Urine output mL									
Fluid input mL, IV or PO									
Medications and interventions									

PPH
Start PPH bundle treatment if
– blood loss 300–499 mL and other warning sign
– **or** blood loss ≥500 mL
– **or** clinical judgement.

Pre-eclampsia
Assess further and treat if elevated BP.

Infection
Assess further and treat if temperature ≥38 °C.

Start the PPH bundle
Initiate the bundle if blood loss exceeds 500 mL at any time, or 300 mL with other warning signs, or based on clinical judgment.

Postpartum monitoring form

MATERNAL HISTORY

Name:		Birth date:
ID:	Admission date:	G:____P:____
Baseline upon admission BP:	HR:	Time of birth:
Significant medical history		

RISK FACTORS – INFECTION

		Infection risk
>24h from ROM to birth?	No☐	Yes☐
Meconioum or malodor?	No☐	Yes☐

RISK FACTORS – PPH

		PPH risk
>16h total labor time? Total labor :_____ h _____ min	No☐	Yes☐
Episotomy or lacerations? Grade: 1st ☐ 2nd ☐ 3rd ☐ 4th ☐ Repaired? No ☐ Yes ☐ Date: Time: Provider:	No☐	Yes☐
Any of the following? Previous PPH ☐ Large baby (>4500 g) ☐ Multiple pregnancy ☐ Shoulder dystocia ☐ Induced/augmented labor ☐	No☐	Yes☐
Placenta incomplete? Time of birth of placenta: ____:____	No☐	Yes☐
Anaemia? Haemoglobin level: _____	No☐	Yes☐

MATERNAL POSTPARTUM ASSESSMENT

Record every 15 min from birth for 1 h. Increase as needed for complications until stable. Then every 30 min x 4. Then per protocol.

	Date								
	Time	:	:	:	:	:	:	:	:
	Initials								
Uterine tone	Hard								
	Soft								
Blood loss (mL) Write value in corresponding lane	≥500								
	300–499								
	<300								
Pulse (bpm) Write value in corresponding lane	>100								
	60–100								
	<60								
Systolic blood pressure Write value in corresponding lane	>160								
	100–160								
	<100								
Diastolic blood pressure Write value in corresponding lane	>90								
	≤90								
Pulse> systolic BP?	No								
	Yes								
Temperature Write value in corresponding lane	>38 °C								
	36–38°C								
	<36 °C								
Oxygen saturation Write value in corresponding lane	90–100%								
	<90%								
Respiratory rate Write value in corresponding lane	>30								
	11–30								
	0–10								
Urine output mL									
Fluid input mL, IV or PO									
Medications and interventions									

PPH
Start PPH bundle treatment if
—blood loss 300-499 mL and other warning sign
—**or** blood loss ≥500 mL
—**or** clinical judgement.

Pre-eclampsia
Assess further and treat if elevated BP.

Infection
Assess further and treat if temperature ≥38 °C.

SBAR and closed-loop communication

SBAR and closed loop are communication tools that help you clearly share important information and prevent mistakes.

SBAR

SBAR is a simple, structured way to communicate important clinical information so everyone understands the problem and can act together. It stands for Situation, Background, Assessment, and Recommendation. Use SBAR to share information quickly and clearly—especially in emergencies, handovers, or when calling for help.

Closed-loop communication

Closed-loop communication is a structured way of communicating that ensures messages are clearly sent, received, and confirmed. It is particularly important in high-pressure situations as it reduces misunderstanding, prevents errors and improves teamwork and coordination among healthcare providers.

Example:

The sender gives a direct and concise instruction to an individual.

"We need to treat for PPH. Amina, start an IV of 10 IU oxytocin in 500 mL and infuse as fast as possible"

The receiver repeats the message back

"I will start an IV of 10 IU oxytocin in 500 mL and give as fast as possible"

The sender acknowledges the receiver's response to confirm accuracy.

"That is correct. Please proceed."

Once the task is done, the receiver informs the sender.

"An IV is in place with 10 IU oxytocin running quickly"

SBAR practice activity

1. Review the template

- Read throught the SBAR template below.
- Pay close attention to the example.
- Reflect on your own:
  - What is similar to what you already do?
  - What is different?

2. Consider this case

> You are caring for Maria Okello at your facility.
>
> She is a 28-year-old woman (G3P2) who gave birth vaginally without complications about 30 min ago at 39 weeks. She received 10 IU of oxytocin IM after birth.
>
> You measured a blood loss of 350 mL, and Maria is pale, anxious, and complains of feeling dizzy.
>
> Her uterus is soft, not well contracted, and bleeding continues. Her heart rate is 112 bpm, blood pressure (BP) is 95/60 mmHg, giving a shock index of 1.18.
>
> You are concerned she is developing postpartum haemorrhage and need to call for help.

3. How would you use the the SBAR tool?

- With a peer or in a larger group, act out how you would communicate this case to a colleague.
- Be concise, clear, and realistic.

4. Share and discuss

- What was easy or difficult about using the SBAR format?
- How could this help in real emergencies?

SBAR tool		Example
S	**Situation – What is happening now?** Identify yourself and the patient, say where you are. Introduce the concern.	"Please come help me with Mrs. Okello! She is bleeding heavily after giving birth. She's anxious and dizzy."
B	**Background – What led up to this?** Share key details such as: • admission date • reason for admission • relevant history • treatment summary and time • findings.	"She gave birth 30 min ago without complications. She received oxytocin for prophylaxis. But now she has lost 350 mL of blood, her pulse is 112, BP 95/60, giving a shock index of >1 and her uterus is soft."
A	**Assessment – What do you think is going on with the patient?** Explain you concerns, or problems you have identified.	"I think she is having PPH."
R	**Recommendations – What do you think needs to be done?** Ask for specific actions or instructions of what to do.	"I need you to come urgently. We need to start the PPH bundle."

PPH emergency kit and referral plan activity

. Prepare

- If you are facilitating, read the guidance on page 15.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord cut
  - placenta in tray, intact
  - <50 mL blood in measuring tool
  - heavy blood flow and uterus soft
  - Postpartum Monitoring Form ready to fill.

2. Brief

Share the learning objectives

- Use clinical judgement.
- Communicate efficiently with your team.

Assign roles

- Provider 1.
- Provider 2.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

- Note: as soon as you read the case, turn blood tank on.

> You are caring for me, a 33 year old G5P3. I gave birth without problems 5 min ago. You noted on the Postpartum Monitoring Form that I my haemoglobin is 7 g/dl. You gave me 10 IU oxytocin IM within 1 min and my placenta delivered without problems. My pulse is 92 and my blood pressure is 112/68. Please care for me.

3. Run the scenario

Participants proceed as they would in a real scenario.

4. Debrief

- What did you do?
- Did you diagnose PPH?
  - Yes.
- Why?
  - Even though she had less than even 300 mL blood loss, and normal vital signs she is bleeding at a fast rate. She is also severely anaemic.
- What went well?
- What would you do differently?

5. Key takeaways

- Clinical judgement is key to diagnosing PPH in some cases.
- Even if a woman has normal vital signs and has lost less than 500 mL or 300 mL, if she is bleeding at a very fast rate, you must act fast to prevent more blood loss.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

PPH emergency kit checklist

Check at the beginning of every shift and restock after each use. Ensure nothing has expired.

This list is meant to be adapted to local protocols.

Checked by (initials)												
Date												
Medication (Keep oxytocin and ergometrin refrigerated)												
TXA vials x 4												
Misoprostol x 16 tabs (200 µg/tab)												
Supplies to administer meds												
Needles												
Syringes												
IV supplies												
Tourniquet												
Gauze												
Tape												
Labeling stickers												
Alcohol swabs												
IV Cannula												
IV Tubing												
10 mL NaCl												
1000 mL IV fluids RL or NS												
500 mL IV fluids												
Advanced PPH care												
Simms speculum												
UBT												
NASG												
Instruments												
Sterile swabs												
Urinary catheter												
Urine collection tubing and bag												
Additional supplies												
Sterile gloves S|M|L												
Box non-sterile gloves												
Kidney dish												
Small sharps container												
Sterile gown												
Blood collection supplies												
Vacutainer												
Needles												
Blood collection tubes												

Photocopy this page and paste the copied sheet on the box or trolley where you keep the equipment.

Equipment and resources for training

When running simulations and skills practice, make sure you have all the equipment ready, including the simulator. Ensure you will be able to practise uninterrupted in an appropriate space.

Printed materials

- ☐ 1 set of Action Plans

Simulating equipment

- ☐ PPH simulator with placenta and baby
- ☐ Simulated blood

Postpartum equipment

- ☐ Blood loss measurement tool
- ☐ Postpartum Monitoring Form
- ☐ Curved forceps
- ☐ Ring forceps
- ☐ Scissors
- ☐ Ties/haemostats or clamps
- ☐ Cloths and hat for newborn
- ☐ Suction bulb
- ☐ Bag and mask
- ☐ NASG –if using
- ☐ UBT –if using

General equipment

- ☐ Personal Protective Equipment
- ☐ Blood pressure cuff and stethoscope
- ☐ Syringes and needles
- ☐ Blood collection tubes
- ☐ Speculum
- ☐ Urinary catheter and bag

Mock medications/empty vials and IV supplies

- ☐ Oxytocin or other uterotonics
- ☐ TXA
- ☐ Single dose antibiotic
- ☐ Pain medication
- ☐ IV catheter
- ☐ Crystalloid IV fluids
- ☐ Tape

Section 2

Simulation activities

In this section you will find

Five activities with scenarios for simulation practice in teams, covering common cases in prevention, diagnosis and treatment of PPH.

How to use simulation for LDHF

Simulation is a structured, immersive learning method that replicates real-world scenarios in a controlled environment, without the risks associated with real-life consequences.

Use these activities to improve how you work together with your team.

Tips for facilitating a simulation

Briefing

- Begin with a clear introduction to the activity, to prepare participants mentally and emotionally.
- Resolve any doubts and establish a psychologically safe learning environment.

Running the scenario

The simulation should be as realistic as possible. Use realistic equipment and encourage participants to act as they would in their real-life roles.

Debrief

The debrief after the scenario is where most learning happens.

- Start by establishing trust, mutual respect, and a non-judgmental tone. Clarify that the goal is learning, not evaluation.
- Then ask participants to describe what happened during the simulation. Focus on facts and actions, not interpretations.
- Next, encourage reflection of their thought processes, emotions, and decision-making.
- Finally, connect the experience to clinical practice or real-world application. Highlight learnings and correct behaviours. Discuss how the insights gained can be applied in the future.

Simulation activity 1

PPH prevention

1. Prepare

- If you are facilitating, read the guidance on page 15.
- Review related knowledge on page 40.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord not cut
  - placenta not delivered
  - measuring tool in place
  - medium blood flow
  - uterus soft
  - Postpartum Monitoring Form ready to fill.

2. Brief

Share the learning objectives

- Actively prevent PPH immediately after birth.
- Provide respectful care.
- Use the Postpartum Monitoring Form to guide care.

Assign roles

- Provider.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

> "You are caring for me, Mrs N. a G1P1, and I just gave birth to a healthy baby after 6 h of active labour. The placenta is not delivered."

3. Run the scenario

Participants proceed as they would in a real scenario.

4. Debrief

- What did you do?
- Did you give a uterotonic within 1 min?
  - Ensure the correct dose per local protocol was given.
- Did you think she was having PPH? why?
  - No. Blood loss <500 mL and no warning signs.
- Look at the Postpartum Monitoring Form and check if it is filled in appropriately. What is the shock index?
  - The shock index is 0.72 and 0.67 or both <1 so no warning sign.
- What went well?
- What would you do differently?

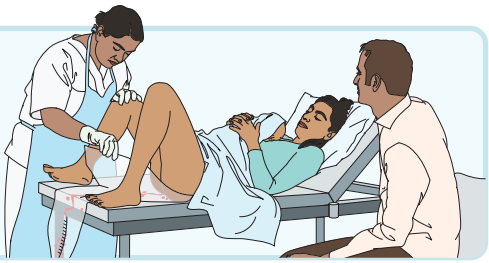
5. Key takeaways

- Give the uterotonic within 1 min of birth of the last baby.
- Always explain to the woman and gain consent when giving the uterotonic for prevention.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

Expected actions	Prompts and info
Immediately after birth ☐ Check for 2nd baby ☐ Give uterotonic within 1 min ☐ Help woman be comfortable in bed. ☐ Place blood loss measurement tool ☐ Clamp and cut cord (1–3 min) ☐ Gentle cord traction during contractions ☐ Placenta in both hands, twist membranes	**Simulator**: Allow placenta to be delivered intact. Keep uterus hard and blood flow very light when placenta delivers. **Example prompt:** Does she need medication? Is the placenta out?
Check tone, placenta and tears ☐ Communicate with mother ☐ Check tone, massage if soft ☐ Check placenta ☐ Check for tears	**Simulator**: Stop bleeding **Example prompt:** Did you remember to check tone, placenta, or tears?
Assess and record ☐ Check for PPH ☐ Check tone, blood loss and flow ☐ Check BP, pulse and shock index ☐ Record	**If assessed:** • Uterine tone: hard • Blood loss: see what is in the tool and ensure less than 500 mL • Blood flow: no bleeding • Pulse: 86 bpm • BP: 120/72 mmHg **Example prompt:** Does she have PPH?
Say: 15 min have passed	
Continue care ☐ Check for PPH ☐ Check tone, blood loss and flow ☐ Check BP, pulse and shock index ☐ Communicate with mother ☐ Continue to monitor	**If assessed:** • Uterine tone: hard • Blood loss: see what is in the tool and ensure less than 500 mL • Blood flow: no bleeding • Pulse: 84 bpm • BP: 126/78 mmHg **Example prompt:** Is she OK? Did you fill in the Postpartum Monitoring Form?

Simulation activity 2

Immediately following birth



1. Prepare

- If you are facilitating, read the guidance on page 15.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord cut
  - placenta in tray, intact
  - 500 mL or more of blood in measuring tool
  - medium blood flow
  - uterus soft
  - Postpartum Monitoring Form ready to fill.

2. Brief

Share the learning objectives

- Assess and interpret findings to identify or rule out PPH.
- Provide respectful care.
- Use the Postpartum Monitoring Form to guide care.

Assign roles

- Provider.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

> You are caring for me, Mrs. R, a 22 year old G1P1. I gave birth to my baby without problems 10 min ago. You gave me 10 IU oxytocin IM within 1 min and delivered the placenta without problems. Please care for me.

3. Run the scenario

Participants proceed as they would in a real scenario.

4. Debrief

- What did you do?
- Did you diagnose PPH?
  - Yes
- Why?
  - Blood loss was >500 mL, even though there were no other warning signs.
- Look at the Postpartum Monitoring Form and check if it is filled in appropriately. What was the shock index?
  - 0.75 so <1 OR pulse < systolic BP and not a warning sign
- What went well?
- What would you do differently?

5. Key takeaways

- If the blood loss is 500 mL or more, diagnose PPH regardless of other clinical signs.
- Always remember to be gentle and communicate with the woman, even in emergencies.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

Expected actions	Prompts and info
Assess and communicate ☐ Assess ☐ Explain your actions and be gentle ☐ Call for help and emergency equipment ☐ Communicate using SBAR ☐ Assign roles in team ☐ Team confirms with closed-loop	**Simulator**: Uterus soft, 500 mL in measurement tool, light blood flow. **Example prompts:** Is her bleeding normal? Do you need help?
Start PPH bundle ☐ Massage uterus ☐ Start IV ☐ Give Oxytocin (10 IU in 100-500 mL IV, as fast as possible) ☐ Give TXA (1 g in 10 mL IV,10 min)	**Simulator**: Uterus soft, medium blood flow. **Example prompt:** Does she need medication?
Continue PPH bundle (Examine) ☐ Explain your actions and be gentle ☐ Check uterus ☐ Check bladder ☐ Check placenta ☐ Check for tears ☐ Check for clots and fragments	**Results** • Uterus soft • Bladder empty • Placenta intact • No tears • No clots or fragments **Simulator**: Uterus soft, medium blood flow. **Example prompt:** Why is she bleeding? Is the placenta intact?
Assess and record ☐ Check tone, blood loss and flow ☐ Check BP and pulse ☐ Calculate shock index ☐ Record	**If assessed:** • Uterine tone: hard • Blood loss: see what is in the tool • Blood flow: stopped • Pulse: 88 bpm • BP: 118/70 mmHg **Example prompt:** How is she now? Did you fill out the Postpartum Monitoring Form?

Simulation activity 3

15 min after birth

1. Prepare

- If you are facilitating, read the guidance on page 15.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord cut
  - placenta in tray, intact
  - 300 mL blood in measuring tool
  - light blood flow and uterus soft
  - Postpartum Monitoring Form ready to fill.

2. Brief

Share the learning objectives

- Use the Postpartum Monitoring Form to support diagnosis and action.
- Communicate efficiently with your team.

Assign roles

- Provider 1.
- Provider 2.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

> You are caring for me, a 29 year old G3P3. I gave birth without problems 15 min ago. You gave me 10 IU oxytocin IM within 1 min. You delivered my placenta without problems. You have come to check on me. Please care for me and fill in the Postpartum Monitoring Form.

3. Run the scenario

Participants proceed as they would in a real scenario.

4. Debrief

- What did you do?
- Did you diagnose PPH?
  - Yes.
- Why?
  - Even though she had less than 500 mL blood loss, she had a SI >1, pulse >100, systolic BP <100.
- Look at Postpartum Monitoring Form and check if it is filled correctly. What was her shock index?
  - 1.28 which is >1 OR pulse > systolic BP = warning sign. Her second shock index was 0.94 which is <1.
- What went well?
- What would you do differently?

5. Key takeaways

- Repeated assessments after birth are important to identify PPH early.
- When the woman has haemodynamic warning signs, diagnose PPH even if blood loss is less than 500 mL.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

Expected actions	Prompts and info
Assess, record and communicate ☐ Check tone, blood loss and flow ☐ Check BP and pulse ☐ Calculate shock index ☐ Record ☐ Call for help and emergency equipment ☐ Communicate using SBAR ☐ Assign roles in team ☐ Team confirms with closed-loop	**If assessed:** • Uterine tone: soft • Blood loss: less than 500 mL • Blood flow: light • Pulse: 118 bpm • BP: 92/64 mmHg • Shock index 1.28 or >1 **Simulator**: Uterus soft, light blood flow. **Example prompts if steps missing:** Does she have a trigger? What is her shock index/is it >1? Can somebody help you?
Start PPH bundle ☐ Massage uterus ☐ Start IV ☐ Give Oxytocin (10 IU in 100-500 mL IV, as fast as possible) ☐ Give TXA (1 g in 10 mL IV,10 min)	**Simulator**: Uterus soft, medium blood flow. **Example prompt:** Does she need medication?
Continue PPH bundle (Examine) ☐ Explain your actions and be gentle ☐ Check uterus ☐ Check bladder ☐ Check placenta ☐ Check for tears ☐ Check for clots and fragments	**Results** • Uterus firm • Bladder empty • Placenta intact • No tears • No clots or fragments **Simulator**: After bundle, uterus hard and stop blood flow. **Example prompt:** Did you check for (tone, tears, placenta?)
Assess and record ☐ Check tone, blood loss and flow ☐ Check BP and pulse ☐ Calculate shock index ☐ Record	**If assessed:** • Uterine tone: hard • Blood loss: (see what is in the tool) • Blood flow: stopped • Pulse: 98 bpm • BP: 104/68 mmHg, shock index 0.94 or <1 **Example prompt:** How is she now? Did you fill out the Postpartum Monitoring Form?

Simulation activity 4

Retained placenta

1. Prepare

- If you are facilitating, read the guidance on page 15.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord cut
  - placenta not out
  - 300 mL blood in measuring tool
  - medium blood flow
  - uterus soft
  - Postpartum Monitoring Form ready to fill.

2. Brief

Share the learning objectives

- Deliver appropriate care in case of retained placenta.
- Communicate efficiently with your team.
- Provide respectful care.

Assign roles

- Provider 1.
- Provider 2.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

> You are caring for me, Ms. M, a 23 year old G2P2. I gave birth 20 min ago. You gave me 10 IU oxytocin IM within 1 min. You attempted controlled cord traction (CCT) but my placenta is not delivered. I am bleeding heavily. Please care for me and use the Postpartum Monitoring Form.

3. Run the scenario

Participants proceed as they would in a real scenario.

4. Debrief

- What did you do?
- Did you diagnose PPH?
  - Yes
- Why?
  - There was retained placenta with >300 mL loss and heavy bleeding.
- Look at the Postpartum Monitoring Form and check if it is filled in appropriately. What was the shock index?
  - 0.75 which is <1 OR pulse < systolic BP = normal.
- What went well?
- What would you do differently?

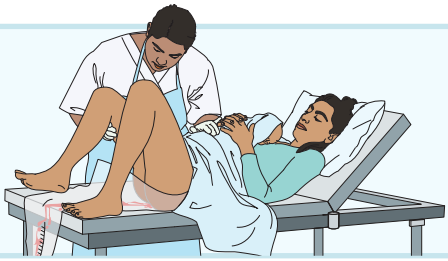
5. Key takeaways

- PPH can happen before the placenta is delivered.
- In these cases, start PPH bundle first, then manually remove the placenta following protocols.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

Expected actions	Prompts and info
Assess and communicate ☐ Assess ☐ Call for help and emergency equipment ☐ Communicate using SBAR ☐ Assign roles in team ☐ Team confirms with closed-loop	**Simulator**: Uterus soft, medium blood flow. Placenta will not deliver. **Example prompt:** Does she have PPH? Can somebody help you?
Start PPH bundle ☐ Massage uterus ☐ Start IV ☐ Give Oxytocin (10 IU in 100-500 mL IV, as fast as possible) ☐ Give TXA (1 g in 10 mL IV,10 min) ☐ Examine	**Simulator**: Uterus soft, medium blood flow. Placenta not delivered. **Example prompt:** Does she need an intervention?
Prepare for manual removal ☐ Obtain consent and ensure privacy ☐ Explain your actions and be gentle ☐ Give premedication and antibiotic ☐ Wash hands, wear long sterile gloves	**Simulator**: Uterus soft, medium blood flow. Placenta not delivered.
Manually remove the placenta ☐ Pull cord gently and follow as guide ☐ Insert cone-shaped hand through cervix ☐ Detach placenta gently ☐ Provide counter traction to the uterus ☐ Remove hand with placenta	**Simulator**: Allow placenta removal. Contract uterus and stop bleeding. **Example prompt:** Do you need to provide counter-traction?
Once placenta is out ☐ Check tone, massage if soft ☐ Check placenta	**Simulator**: Uterus hard, no blood flow. **Example prompt:** Is the placenta complete? Is her uterus contracted?
Assess and record ☐ Check tone, blood loss and flow ☐ Check BP and pulse ☐ Calculate shock index ☐ Record	**If assessed:** • Uterine tone: hard • Blood loss: see what is in the tool • Blood flow: stopped • Pulse: 94 bpm • BP: 126/70 mmHg • Shock index 0.75 or <1 **Example prompt:** How is she now?

Simulation activity 5

Clinical judgement



1. Prepare

- If you are facilitating, read the guidance on page 15.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord cut
  - placenta in tray, intact
  - <50 mL blood in measuring tool
  - very light blood flow to start with
  - uterus soft
  - Postpartum Monitoring Form ready to fill.

2. Brief

Share the learning objectives

- Use clinical judgement.
- Communicate efficiently with your team.
- Provide respectful care.

Assign roles

- Provider 1.
- Provider 2.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

> You are caring for me, Ms. D, a 33 year old G5P3. I gave birth without problems 5 min ago. You noted on the Postpartum Monitoring form that my haemoglobin level is 7 g/dL. You gave me 10 IU oxytocin IM within 1 min and my placenta delivered without problems. My pulse is 92 bpm and my BP is 112/68 mmHg. Please care for me.

3. Run the scenario

Participants proceed as they would in a real scenario.

Note: as soon as the scenario starts, turn the blood flow up to

4. Debrief

- What did you do?
- Did you diagnose PPH?
  - Yes.
- Why?
  - Even though she had less than 300 mL of blood loss, and normal vital signs, she was bleeding at a fast rage. She was also severly anaemic.
- What went well?
- What would you do differently?

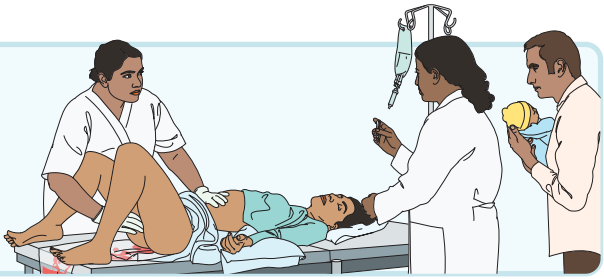
5. Key takeaways

- Clinical judgement is key to diagnosing PPH in some cases.
- Even if a woman has normal vital signs and has lost less than 300 mL, you must act quickly to prevent more blood loss when she is bleeding at a very fast rate.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

Expected actions	Prompts and info
Assess, record and communicate ☐ Check tone, blood loss and flow ☐ Calculate shock index ☐ Record ☐ Call for help and emergency equipment ☐ Communicate using SBAR ☐ Assign roles in team ☐ Team confirms with closed-loop	**If assessed:** • Uterine tone: soft • Blood loss: less than 300 mL • Blood flow: fast • Pulse: 92 • BP: 112/68 • Shock index: < 1 or 0.82 **Simulator**: Uterus soft, fast blood flow. **Example prompts if steps missing:** Is the rate of blood flow concerning?
Start PPH bundle ☐ Massage uterus ☐ Start IV ☐ Give Oxytocin (10 IU in 100–500 mL IV, as fast as possible) ☐ Give TXA (1 g in 10 mL IV,10 min)	**Simulator**: Uterus soft, fast blood flow. **Example prompt:** Is she having a PPH? Does she need medication?
Continue PPH bundle (Examine) ☐ Explain your actions and be gentle ☐ Check uterus ☐ Check bladder ☐ Check placenta ☐ Check for tears ☐ Check for clots and fragments	**Results** • Uterus firm • Bladder empty • Placenta intact • No tears • No clots or fragments **Simulator**: After bundle, uterus hard and stop blood flow. **Example prompt:** Did you check for (tone, tears, placenta?)
Assess and record ☐ Check tone, blood loss and flow ☐ Check BP and pulse ☐ Calculate shock index ☐ Record	**If assessed:** • Uterine tone: firm • Blood loss: whatever is in the tool • Blood flow: stopped • Pulse: 90 • BP: 114/72 • Shock index: 0.79 or <1 **Example prompt:** How is she now?

Simulation activity 6

Assessing after PPH bundle



1. Prepare

- If you are facilitating, read the guidance on page 15.
- Prepare the equipment (page 14) and simulator with:
  - full blood tank
  - baby on chest and cord cut
  - 400 mL blood in measuring tool
  - medium blood flow
  - uterus soft.

2. Brief

Share the learning objectives

- Assess and act accordingly to findings after the PPH bundle.
- Communicate efficiently with your team.
- Provide respectful care.

Assign roles

- Provider 1.
- Provider 2.
- Mother/Facilitator/practice coordinator.

Read the case and resolve doubts

> You are caring for me, Ms. R. a 27 year old G6P5 and I gave birth an hour ago. You gave me 10 IU oxytocin IM within 1 min for prevention and my placenta delivered a few min later. My uterus would not contract and I bled heavily. You completed the PPH bundle 30 min ago. Please continue to care for me and use the Postpartum Monitoring Form.

3. Run the scenario

Participants proceed as they would in a real scenario.

4. Debrief

- What did you do?
- Did you escalate her care?
  - Yes
- Why?
  - Bleeding continued after the bundle.
- Look at the Postpartum Monitoring Form and check if it is filled in appropriately. What was her shock index?
  - 1.24 or >1 or pulse > systolic BP = warning. Then shock index 0.91 or <1.
- What went well?
- What would you do differently?

5. Key takeaways

- After administering the PPH bundle, assess to identify if it has succeeded or failed.
- If the bundle fails, communicate and escalate quickly to treat refractory PPH.
- Consider the learning objectives. Are there any other learnings you would like to take forward into your everyday practice?

Expected actions	Prompts and info
Assess and communicate ☐ Explain your actions and be gentle ☐ Assess and record: — Uterine tone — Blood loss — Blood flow — Pulse and BP ☐ Call for help ☐ Communicate using SBAR ☐ Assign roles in team ☐ Team confirms with closed-loop	**Simulator**: Uterus soft, medium blood flow. **If assessed:** • Pulse: 114 bpm • BP: 92/58 mmHg **Example prompt if steps missing:** • Can you get more help? • Should you use SBAR?
☐ Massage ☐ Catheterize bladder ☐ Clear cervix, sweep uterus, massage ☐ Insert second IV ☐ Give IV fluids ☐ Give additional uterotonic ☐ Assess vital signs ☐ Give 2nd dose of TXA ☐ Closed loop communication ☐ Record	**Simulator**: After vaginal exam, tell participant they cleared clots from cervix. Make uterus firm and stop bleeding. **Example prompt if steps missing:** • Can you do anything else to stop the bleeding? Should you use SBAR? Did you give a 2nd dose of TXA? Did you give additional uterotonics?
Assess and record ☐ Check tone, blood loss and flow ☐ Check BP and pulse ☐ Record	**Prompt:** How is she now? **If assessed:** • Uterine tone: hard • Blood loss: more than 1000 mL • Blood flow: stopped • Pulse: 98 bpm • BP: 108/60 mmHg

Section 3

Skills practice activities

In this section you will find

Guidance with checklists to practise key skills needed to identify, prevent and treat PPH.

Skills proficiency is developed through repetitive practice, particularly in psychomotor tasks. Use the following activities to master specific procedures.

Tips for running skills practice

- Ideally you will practise together with a mentor or peer from your facility.
- Make sure you have the equipment listed on page 14, including a simulator if available.
- If available, watch the demonstration video or ask your mentor for a demonstration.
- Use the checklist for support.

Skills practice 1

Prevent and diagnose PPH

Review knowledge

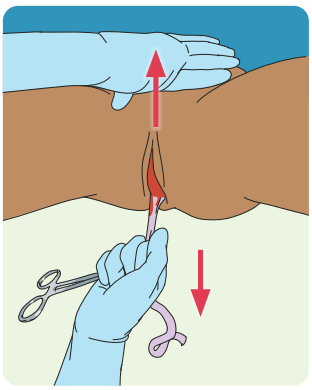
- Read page 40.

Share the learning objectives

- Actively prevent PPH immediately after birth.
- Use Postpartum Monitoring Form to guide care.
- Provide respectful care.

Prepare for practise

- Ready equipment on page 14.



Practice checklist

Give uterotonic

- ☐ Explain to the woman what you are doing
- ☐ Give uterotonic, immediately after birth of last baby

Start measuring blood loss

- ☐ Place blood loss measurement tool explaining its purpose
- ☐ Place tool under buttocks
- ☐ From now on, constantly check for triggers

Clamp and cut cord.

- ☐ Wait 1–3 min after birth if both mother and baby are stable
- ☐ Place clamps. Cut cord between clamps

Perform CCT

- ☐ Clamp the cord close to perineum
- ☐ Look for signs of separation
- ☐ During a contraction gently pull down on the cord
- ☐ Provide counter traction abdominally to stabilize the uterus
- ☐ Do not pull suddenly or in other directions
- ☐ Release traction between contractions
- ☐ Stop if you notice resistance

Deliver the placenta

- ☐ When visible at the opening of the vagina, hold placenta with both hands
- ☐ Turn in one direction
- ☐ Continue until placenta and all membranes are delivered
- ☐ Place placenta in bowl/basin

Check tone and massage

- ☐ Check uterine tone and bleeding immediately
- ☐ Massage if uterus is soft
- ☐ Examine placenta and membranes for completeness

Assess vital signs and record on the Postpartum Monitoring Form

- ☐ If taken, pulse 82, BP 132/78
- ☐ Calculate the shock index
- ☐ Record all elements on the Postpartum Monitoring Form

Skills practice 2

Manual removal of the placenta

Review knowledge

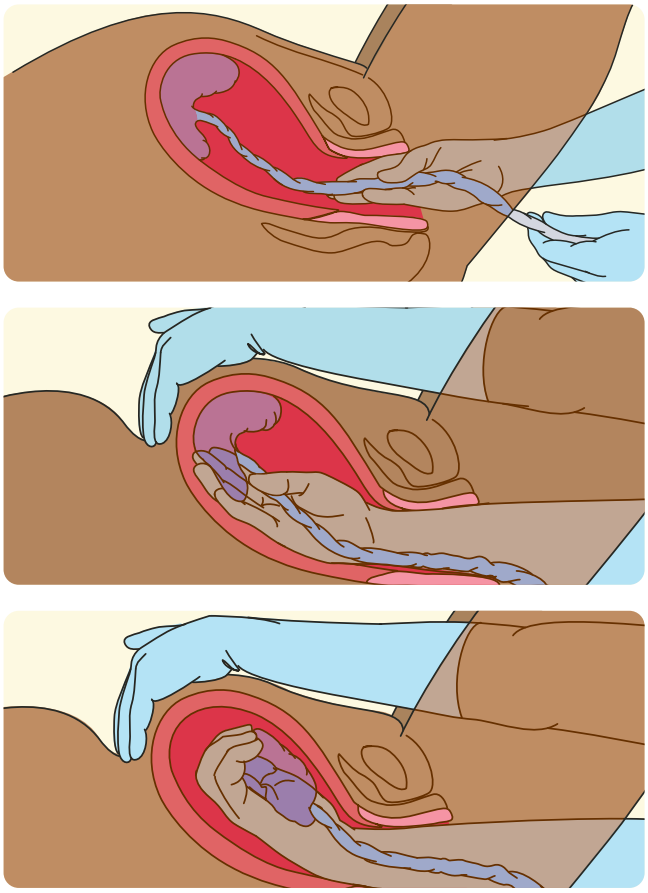
- Read page 44.

Share the learning objectives

- Identify retained placenta.
- Manually remove placenta according to standard.

Prepare to practise

- Ready equipment on page 14.
- Watch video Manual removal of the placenta (5 min)



Practice checklist

Provide respectful care

- ☐ Obtain consent and ensure privacy
- ☐ Explain your actions and be gentle

Prepare

- ☐ Secure IV if not in place
- ☐ Ensure empty bladder
- ☐ Give a single dose of antibiotics and premedication for pain
- ☐ Wash your hands and put on long sterile gloves

Perform manual removal

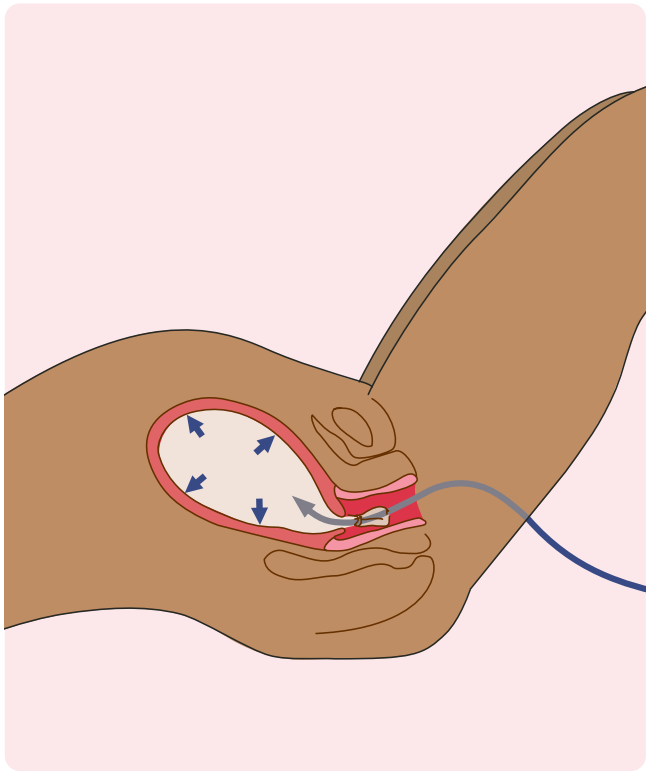
- ☐ Hold umbilical cord with a clamp
- ☐ Pull gently, using the cord as a guide
- ☐ Form the hand into a cone and insert it into the uterus
- ☐ Follow the cord to locate the placenta
- ☐ Feel for the edge of the placenta
- ☐ Identify the rough surface behind it
- ☐ Sweep fingers gently back and forth to separate it from the uterine wall
- ☐ Confirm total separation of placenta
- ☐ Provide counter-traction to the fundus abdominally with your other hand
- ☐ Withdraw your hand bringing the placenta out with it

Check tone and placenta

- ☐ Check uterine tone. Massage if soft
- ☐ Examine placenta for completeness
- ☐ Check for PPH triggers:
  - — If triggers: start PPH bundle
  - — If no triggers: give oxytocin with 20 IU in 1 L ringer's lactate (RL) or normal saline (NS) IV over 4 h.
- ☐ Monitor bleeding, vital signs, and uterine tone.

Skills practice 3

Aortic compression and uterine balloon tamponade



Skip this page if UBT is not in local guidelines, or your facility does not meet WHO recommendations of immediate access to surgery, blood, and PPH bundle components.

Review knowledge

- Insert UBT if PPH bundle fails.
- Keep UBT supplies in PPH emergency kit.
- Use aortic compression before insertion to minimize bleeding for better visualization.

Share the learning objectives

- Use aortic compression to slow bleeding.
- Prepare and insert UBT to standard.

Prepare to practise

- Ready equipment on page 14.
- **Use locally preferred UBT.** Have manufacturer instructions available for use during demonstration and practice.
- Watch video Aortic compression (2:50 min) and UBT manufacturer video if available.

Practice checklist

Aortic compression

- ☐ Ensure the woman is on a firm surface.
- ☐ Explain the procedure to her.
- ☐ With thumb tucked, make a fist and apply downward pressure on the abdominal aorta, just above and to the left of the umbilicus.
- ☐ Palpate the femoral pulse with your other hand – if still palpable, increase pressure.

UBT Insertion prep

- ☐ Check and remove any retained clots and tissue.
- ☐ Ensure deep tears are repaired.
- ☐ Ensure empty bladder.
- ☐ Administer antibiotics (Ampicillin 2 g or Cefazolin 1g IV).
- ☐ Explain the procedure to the woman and ensure privacy.

UBT Insertion

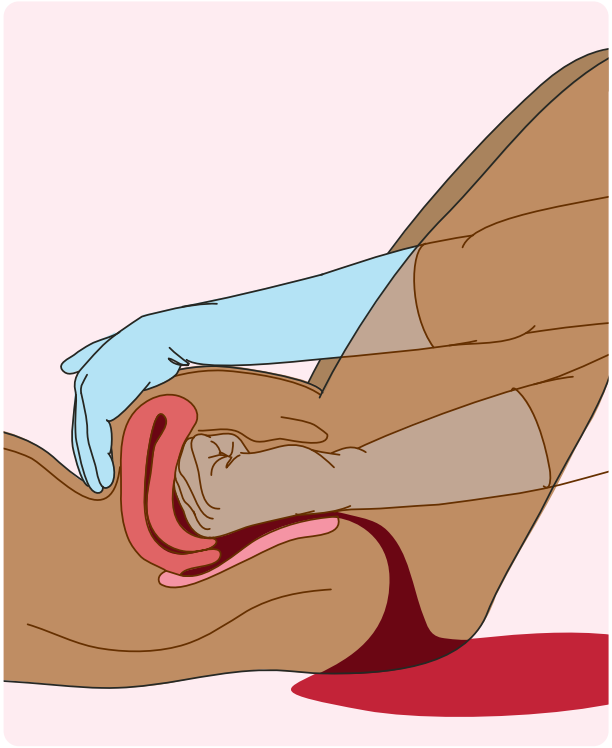
- ☐ Follow manufacturer's checklist for instructions.
- ☐ Monitor blood loss. If still bleeding after 15 min, seek surgical help.
- ☐ Record the procedure in the Postpartum Monitoring Form.
- ☐ Leave the UBT in place per manufacturer's instructions.

UBT Removal

- ☐ Remove per manufacturer's instructions.
- ☐ Monitor closely.
- ☐ Assess and record tone, blood loss and flow, pulse and BP.

Skills practice 4

Bimanual compression



Review knowledge

- Use bimanual uterine compression to squeeze the uterus between your hands to reduce bleeding and buy time for medications to work.
- Bimanual compression can be used while awaiting preparation of UBT or surgery.
- This is painful, but lifesaving. Inform the woman.
- **Act quickly.** Do not wait until the woman is in shock to compress the uterus.
- Do not use vaginal packing. It can restrict optimal assessment of blood loss and cause infection.

Share the learning objectives

- Apply bimanual compression to standard.

Prepare to practise

- Ready equipment on page 14.
- Watch video Uterine compression (5 min) online: globalhealthmedia.org/video/vbabc-03

Practice checklist

Prepare

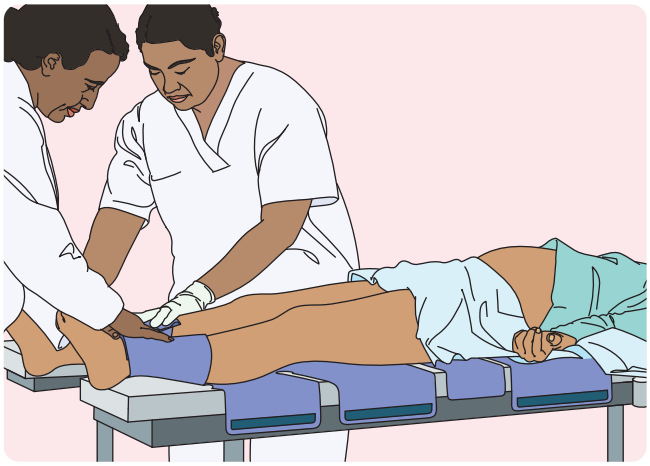
- ☐ Tell the woman what you are about to do, why, and that it will hurt
- ☐ Consider pain medication if the woman is not in shock and if it will not delay bimanual compression.
- ☐ Wash hands and put on long, sterile, gloves.

Bi-manual compression

- ☐ Form the hand into a cone and gently guide it into the vagina.
- ☐ Make a fist against the upper part of the vagina and the uterus.
- ☐ Place the other hand on the abdomen at the fundus.
- ☐ Compress the uterus between your hands for at least 5 min.
- ☐ After 5 min, slowly remove hand and check if bleeding restarts.
- ☐ If bleeding restarts – resume compression.
- ☐ If no bleeding – ensure IV infusion with oxytocin continues.
- ☐ Monitor closely.

Skills practice 5

NASG



Review knowledge

- Read page 50.

Share the learning objectives

- Apply and remove NASG to standard.

Prepare to practice

- Ready equipment on page 14.
- You should be at least three people – two acting as providers and one as the mother.
- Watch video Using an Antishock Garment

Practice checklist

Communicate

- ☐ Explain your actions and be gentle
- ☐ Assign roles in team

Place the woman on the NASG

- ☐ Roll her onto her side
- ☐ Align the top of the NASG at her lowest rib
- ☐ Align the pressure ball at the level of umbilicus
- ☐ Align the dotted line with her spine
- ☐ Roll her to the other side and flatten the garment
- ☐ Roll her to her back again
- ☐ Close each segment pair, starting from the ankles and ending with 6th segment
- ☐ Use sufficient strength while ensuring the woman can breathe normally

Check fit

- ☐ Place 1–2 fingers under the top of each closed segment
- ☐ Pull up on the fabric, release and listen for a snapping sound
- ☐ If no snapping sound, tighten the segment
- ☐ Check woman can breathe comfortably
- ☐ Loosen segments 5 and 6 if necessary

Monitoring during use

- ☐ Continue to check tone, blood loss and flow, pulse and BP, per protocol
- ☐ Check for shortness of breath or decreased urine output

Before removal

- ☐ Ensure the following has happened for at least 2 h:
  - — Pulse is 100 bpm or less
  - — Systolic BP is 100 mmHg or greater
  - — Bleeding is reduced to 50 mL/h or less
- ☐ Ensure IV fluids continue

Removing the NASG

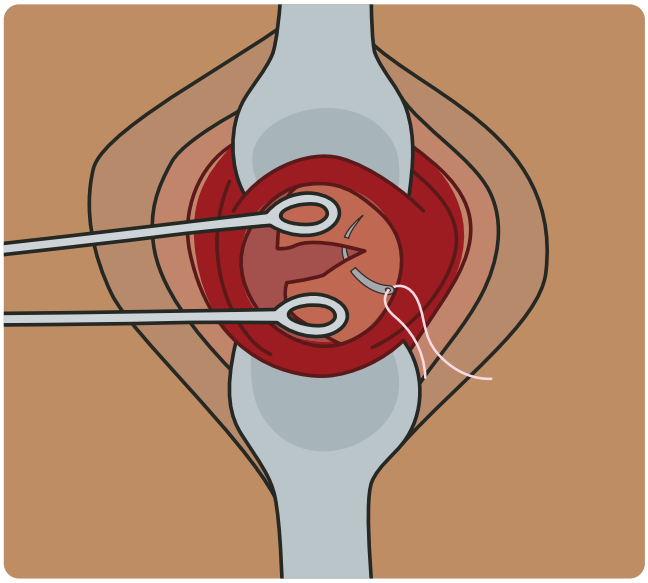
- ☐ Start opening ankle segments only
- ☐ Wait 15 min and check that:
  - — Pulse does not increase more than 20 bpm
  - — Systolic BP does not decrease more than 20 mmHg
- ☐ If vitals stable, open next segment pair in order, wait 15 min, then check vital signs
- ☐ Continue in the same way with remaining segments
- ☐ If any vital signs change beyond limits:
  - — quickly re-secure all segments starting from the last segment opened
  - — check for bleeding source

After removal

- ☐ Record procedure and observations in the Postpartum Monitoring Form
- ☐ Continue to assess and record the woman's vital signs and condition

Skills practice 6

Repair deep tears



Share the learning objectives

- Repair deep vaginal and cervical lacerations to standard.

Prepare to practise

- Ready equipment on page 14.
- Watch video if available.

Practice checklist

Vaginal tears – Identify

- ☐ Ensure privacy and inform the woman
- ☐ Ensure good lighting
- ☐ Give IV sedative per protocol. Do not give if in shock
- ☐ Wash hands and wear sterile gloves
- ☐ Clean perineum, vulva, and vagina with antiseptic solution
- ☐ Gently separate the labia and assess completely
- ☐ Wrap fingers in gauze and press on the vaginal floor to expose the entire sulcus

Vaginal tears – Repair

- ☐ Draw 10 mL of 1% lignocaine into syringe
- ☐ Insert the needle from the bottom to the apex on one side of the tear
- ☐ Withdraw plunger to ensure needle is not in a blood vessel
- ☐ Inject medication as needle is withdrawn
- ☐ Repeat on other side of the tear. Wait 2 min for effect
- ☐ Repair in 2 layers:
  - — Interrupted sutures to close deep layer first
  - — Continuous suturing starting just beyond the apex to close the vaginal mucosa
- ☐ Avoid suturing into rectum
- ☐ Review wound care and hygiene

Cervical tears – Identify

- ☐ Use specula to and have an assistant apply fundal pressure to help visualize the cervix
- ☐ Use a sponge forceps to grasp cervix at 12 o'clock position and another to grasp cervix at 3 o'clock
- ☐ Inspect between the forceps for tears
- ☐ Move the first forceps to 6 o'clock and inspect again
- ☐ Continue to rotate forceps until full cervix is inspected

Cervical tears – Repair

- ☐ When you identify a tear, gently hold both forceps in one hand
- ☐ Use 0 vicryl suture
- ☐ Place first suture above the tear
- ☐ Close tear with continuous suture

Section 4

Knowledge review

In this section you will find

Information to help you recall what you learned during the Bleeding after birth course.

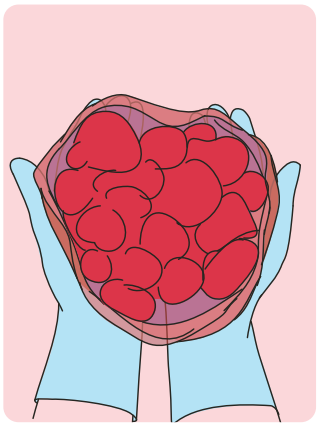
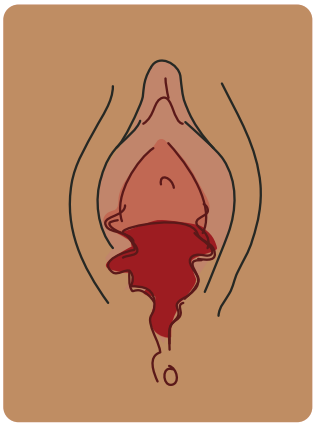
How to use them for ongoing activities after training

Read about specific topics to refresh your memory, whenever you identify gaps in your knowledge.

Additional resources for knowledge review

Visit the WHO Academy to enroll in an online learning course.

Main causes of PPH


All women are at risk for life-threatening bleeding. Bleeding can be a slow, steady stream or a heavy flow. Either can be dangerous. Respond quickly to prevent PPH or treat it quickly if it happens.

What are the main causes of bleeding?

1. Tone

Accounts for about 70% of PPH cases

- If the uterus does not contract, blood continues to pump into the uterus.
- Monitor women closely. A uterus that is contracted can later become atonic.
- A full bladder can prevent the uterus from contracting.
- Risks:
  - large babies >4500 g
  - previous PPH
  - long labours
  - shoulder dystocia
  - anaemia
  - multiple pregnancy.

2. Tissue

Accounts for about 20% of PPH cases

- Tissue left behind can cause atony and infection
- Tissue includes:
  - retained placental tissue
  - amnion
  - blood clots
  - placenta praevia
  - invasive placenta.

3. Trauma

Accounts for about 10% of PPH cases

- Includes laceration, hematoma, uterine inversion and rupture.
- Risks:
  - large babies
  - female genital mutilation
  - episiotomies – should not be done routinely
  - augmented or obstructed labour
  - augmented or obstructed labour
  - vacuum or forceps assissted birth.

4. Thrombin (coagulopathy)

Accounts for about 1% of PPH cases

- Risks:
  - severe pre-eclampsia or eclampsia
  - disseminated intravascular coagulopathy
  - placental abruption
  - invasive placenta
  - history of coagulopathy
  - sepsis.

Antenatal care and preparing for PPH

PPH can happen at any birth. Preparing the woman and the bedside for birth can help you prevent and manage PPH.

During antenatal care

- All women should be counceled during antenatal care about a healthy and diverse diet including foods rich in iron such as meats, seafood, pulses, dried fruit and leafy green vegetables.
- All pregnant women should take 30–60 mg of elemental iron with 400 µg of folic acid to prevent anaemia.
- The equivalent of 60 mg of elemental iron is 300 mg ferrous sulfate, 180 mg ferrous fumarate or 500 mg of ferrous gluconate.
- If a woman cannot tolerate daily iron, she can be given 120 mg of elemental iron and 2800 µg (2.8 mg) of folic acid once weekly, but only in populations where less than 20% of pregnant women are anaemic.
- Assess for and address anaemia to reduce risk of PPH.
  - Full blood count testing is recommended. If not feasible, a haemoglobinometer is preferred to haemoglobin colour scale.
  - If haemoglobin is <11 g/dl in her first or third trimester or if it is below 10.5 g/dl in the second trimester, her elemental iron should be increased to 120 mg per day until her haemoglobin is 11 g/dl or more.
  - If oral iron is not tolerated or rapid response is needed, consider IV iron before labour begins.
- In areas with endemic infections that may cause anaemia such as malaria or hookworm, test for and treat these infections per protocol.

Prepare your PPH emergency kit

- Have an emergency trolley or box to manage complications quickly.
- Ensure supplies and medicines for PPH are in one place in the trolley or box.
- Check daily if it is stocked, readily available and that drugs are not expired.

During labour

- Encourage frequent urination during labour and second stage.
- Reduce perineal trauma based on the woman's preference, using:
  - massage and/or warm compresses to the perineum
  - a hands-on technique to delivery the presenting part.
- Avoid episiotomies. If medically indicated:
  - Use medio-lateral incision to decrease risk of injury to the anal sphincter
  - Continuous suturing repair is preferred to interrupted sutures.
- Use the Labour Care Guide to record and help identify risk factors. Record risk factors on the Postpartum Monitoring Form.

Before every birth

- Ready equipment and medications for birth and newborn at the bedside.
- Draw up uterotonics, or have misoprostol ready to give.
- Prepare blood loss measurement tool.
- Have Postpartum Monitoring Form ready to assess and record.

Respectful care and infection prevention

Providing respectful care and preventing infection are the cornerstones of quality clinical care including for women with PPH.

Provide respectful care

All good relationships begin with **respect and trust**. This is important in healthcare – people trust us to help them. During complications, respectful care also involves being a calming presence.

Key points for respectful care

- Women make their own informed choices, even when unexpected things happen.
- Women feel safe and cared for.
- Women have privacy, even during an emergency.
- Women are enabled to have a companion of their choice.

Respectful communication

- **Introduce yourself** by name, and use the woman's name.
- **Inform the woman** and her family of progress, options, and concerns throughout care.
- **Listen** without interrupting, and confirm you understand her.
- **Explain early** if transfer for advanced care is needed.
- **Always be honest**:
  - Admit if you don't know something
  - Maintaining trust matters more than appearing knowledgeable.

Prevent Infection

- Wash hands and wear sterile gloves.
- Wear apron, mask, and eye shield to protect yourself.
- To protect the baby:
  - wear double gloves before birth
  - remove the soiled pair before clamping and cutting the cord.
- Properly dispose of or process contaminated supplies and equipment. Follow protocols.

Assess and record

From the moment the baby is born, continously assess for any signs for PPH. Assessing and recording repeatedly helps you identify PPH early, communicate efficiently, and act quickly.

Use the Postpartum Monitoring Form

The form is a tool to support you asses, identify, communicate and act.

- **Assess** and record often, as you provide care:
  - Consider all information including history of anaemia, prior complications and other risk factors.
  - Review trends in current care.
- **Identify** possible diagnosis, based on your assessment and records:
  - What is the **most common** diagnosis based on your assessment?
  - What is the **most serious** diagnosis you need to be watching for?
- **Communicate and act**, based on your diagnosis:
  - What care does the woman need?
  - Should a more senior provider be called?
  - Is advanced care or transfer needed?

Review the guidance on page 8 on how to use the Postpartum Monitoring Form

Assess and record repeatedly

Timing

- Before birth, fill in any risk factors for PPH.
- From the birth onwards, check regularly for signs of PPH.
- Assess and record **four times in the first hour** after birth to diagnose PPH quickly.
- First assessment:
  - when placenta is delivered, or
  - 15 min after birth if placenta is not yet out
  - this is the most critical, most PPH happens in the first 20 min after birth.
- Repeat every 15 min for the first hour, or until stable.

What should you check?

- Uterine tone.
- Blood volume and flow using measurement tool.
- BP and pulse.

Be alert for these warning signs

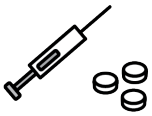
- Pulse >100.
- Systolic BP <100, diastolic BP <60.
- Shock index >1.

What is shock index?

- It is a guick bedside tool to identify early signs of shock.
- Shock index = pulse divided by systolic BP
- **Quick rule of thumb:** If pulse is greater than the systolic BP, then shock index is greater than 1 and a warning sign. For example:
  - pulse 110/systolic BP 100 = 1.1
  - or pulse is > than systolic BP.

Steps to prevent and identify PPH

Actively preventing PPH ensures a shorter third stage of labour, less blood loss, and fewer cases of PPH



1. Give uterotonic within 1 min

- **Always prepare a uterotonic before birth.**
- Give uterotonic within 1 min after the last baby is born.
- **Never** give a uterotonic before last baby is born. Always check for another baby

Uterotonics for prevention

See page 6 of the Provider Guide for medication details.

- Oxytocin 10 IU IM or IV
- Carbetocin/HSC 100 µg IM or IV
- Misoprostol 400–600 µg PO, SL, PR based on womens preferneces.
- For women at high risk of PPH (anaemia, prior PPH, caesarean birth, female genital mutilation, sepsis, multiple pregnancy, placenta praevia, macrosomia with a birthweight of more than 4500 g, or shoulder dystocia) you may use a combination of oxytocin 10 IU IM or IV and misoprostol 400–600 µg PO.

Do not use for prevention of PPH: TXA, injectable prostaglandins, or ergometrine alone or in combination with oxytocin.

2. Place blood loss measurement tool

- Immediately after the baby is born and you have given the uterotonic, **for all women** and for both vaginal and caesarean births.

What tool should you use?

- Use a measurement tool that avoids spillage, ensures the woman's comfort and choice of birth position and lets you monitor in real time.
- For example drapes with a calibrated funnel, trays with calibrated lines, or other innovations.

Measure blood loss accurately

- Sweep blood and clots into the funnel.
- When using a drape:
  - hang the funnel over the edge of the bed, or
  - lift the funnel when checking volume so blood collects at the bottom.

If PPH, start treatment bundle immediately.

3. Cut the cord and deliver the placenta

When to cut the cord?

- Wait 1–3 min to cut the cord to give the baby increased blood volume to support lung expansion and more red blood cells to avoid anemia.
- Cut immediately and get help if the woman is bleeding heavily or the baby is not breathing well.

Prevent Infection

- Use sterile instruments.
- Change gloves or remove outer pair if double-gloved, before cutting the cord.

CCT

- CCT should only be done by skilled providers.
- Begin CCT after signs of placental separation – gush of blood or lengthening of the cord.
- Apply CCT only during contractions.
- Never pull hard on the cord. Stop if you feel resistance to avoid tearing off the cord or inverting the uterus.

If heavy bleeding, but placenta is not out.
Start PPH bundle immediately, then proceed to manual removal of the placenta.

4. Check tone and massage if soft

- Always check tone immediately after the placenta is delivered.
- Monitor and massage the uterus when soft to help prevent PPH.
- **Check the uterus at least every 15 min** for the first hour after birth, together with vital signs and bleeding. Uterine tone can change quickly.

Assessing tone

- A hard uterus feels like your forehead and does not need massage.
- A soft uterus feels like the tip of your nose and needs massage.
- The uterus should be firm at midline, and approximately level or below the umbilicus.

If the uterus is soft

- If the fundus rises, is off to the side or becomes soft again:
  - it may be full of clots
  - the bladder may be full.
- Massaging helps contract and expels blood clots.
- Encourage frequent urination. A full bladder may slow uterine contraction.

Care for both woman and baby

- The time after birth is critical for both.
- Continue to observe the baby as you care for the woman.
- Ensure the baby is breathing well and kept warm.
- Keep mother and baby together and skin-to-skin, for the first hour if possible.
- If the baby needs resuscitation and you are alone:
  - Care for the baby.
  - Give the uterotonic and check tone as soon as possible.

Identify PPH

Diagnose PPH and start treatment bundle if any of these are true:

1) 300 mL or more of blood loss and a warning sign

- Atonic uterus, heavy blood flow, large clots, or constant trickle of blood.
- Change in vital signs:
  - pulse >100 bpm
  - systolic BP <100 mmHg
  - diastolic BP <60 mmHg
  - shock index >1.

2) 500 mL or more of blood loss

Start the PPH bundle immediately anytime blood loss reaches 500 mL, even is the woman has no other concerning signs.

3) Your clinical judgment

Any amount of blood loss but you are concerned because:

- Rate of blood loss and high risk for PPH:
  - previous PPH
  - twins
  - prolonged labour
  - pre-eclampsia
  - infection
  - retained placenta
  - augmented labour
  - history – e.g. severe anaemia.
- The woman was transferred to you after PPH.

Treatment with the PPH bundle

The PPH bundle is the first line of treatment for PPH. It is a set of interventions that, together, improve outcomes from PPH. Learn more on page 45.

How can you diagnose PPH if a blood loss measurement tool is not available?

If you do not have a tool such as a calibrated drape to objectively measure blood loss, you will diagnose PPH as you have always done with visual estimation. Remember that we tend to underestimate blood loss so be very alert to how the woman is feeling and her vital signs.

Check placenta, check for tears and continue care

Once the woman is stable

Check placenta

- **First ensure good uterine tone and no PPH.**
- Then check the placenta and membranes for completeness – identify missing lobes or fragments.
- Any retained tissue can cause haemorrhage and infection – even a small piece of membrane.
- If the placenta is not complete, missing lobes must be removed manually. See page 30.

Check for tears and repair

- If there is bleeding but the uterus is firm and the placenta complete, tears are likely the cause.
- Assess gently and thoroughly – tears can be difficult to see.
- The risk of bleeding from tears increases in case of:
  - female genital mutilation
  - episiotomy
  - large baby
  - augmented or obstructed labour
  - assisted vaginal birth.

Act within your scope of practice. Refer to more experienced providers when tears are beyond your scope.

Continue monitoring both woman and baby

Assess the baby

- Check color, temperature, breathing and cord.
- Record on the newborn chart.
- Start skin-to-skin and encourage breastfeeding.

Assess the woman

- Check uterine tone, blood loss, flow, pulse and BP.
- Record on the Postpartum Monitoring Form.

Repeat your assessments and record

- Every 15 min for the first hour.
- Then every 30 min for the next 2 h.

After one hour

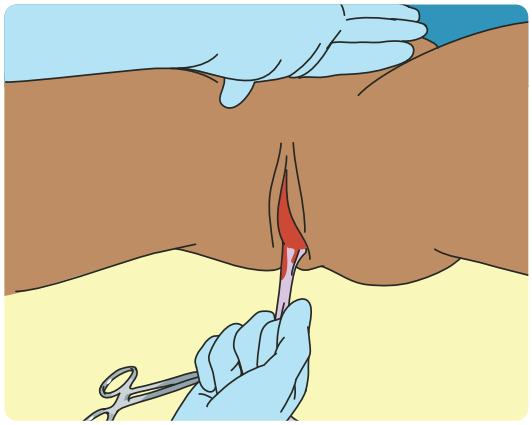
- If stable and no bleeding:
  - remove blood loss measurement tool
  - move her to postpartum.
- Women and babies should stay together in the facility for 24 h after a normal birth.

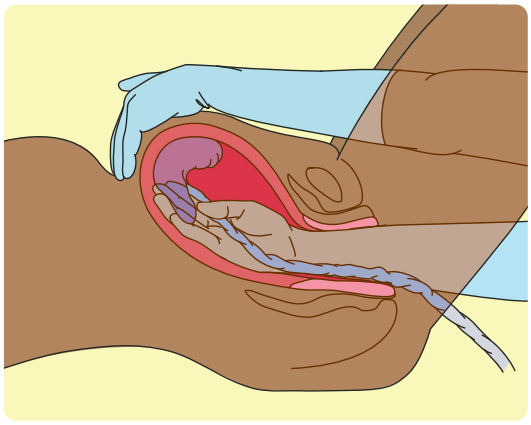
Engage women to prevent PPH

- Teach every woman how to check and massage her uterus.
- Encourage frequent urination.
- Ask her to tell you right away if she notices bleeding.

If PPH, start treatment bundle immediately.

If placenta not out after 15 and after 30 min





The placenta will usually deliver within 15 min when a uterotonic is given for prevention.

If it takes longer, act to prevent PPH.

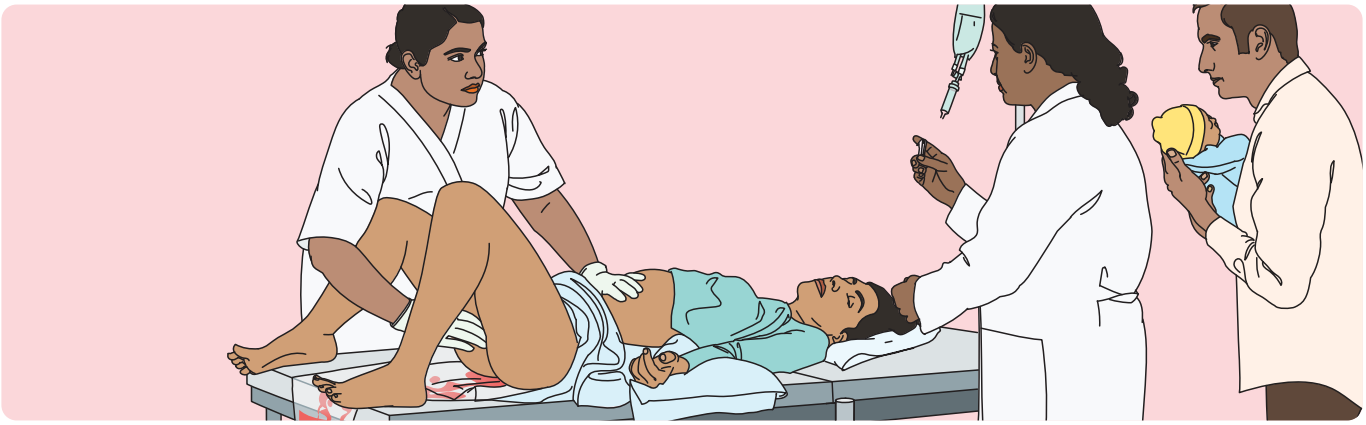
- If the placenta is not out after **15 min**
  - Encourage an empty bladder
  - Repeat CCT.
- If the placenta is not out after **30 min** or there are **retained** lobes or fragments
  - Perform manual removal.

If unable remove the placenta or tissue is very adherent, suspect placenta accreta. Call for help and advanced care. Proceed to laparotomy and possible subtotal hysterectomy.

If PPH, but placenta is not out start PPH bundle immediately, then move to manual removal.

See page 30 to practise manual removal of the placenta.

If PPH, call for help and start treatment bundle



Call for help

- Shout for help, emergency equipment and medication.
- Do a rapid assessment for shock.
- Explain your actions to the woman and family.
- Communicate with the team and establish roles using SBAR and closed loop communication. See page 11.

Treat with the PPH bundle

- The PPH treatment bundle is a set of interventions that when given together, improves outcomes. You will recall the mnemonic "MOTIVE" from the training day.
  - **massage** the uterus to stimulate contractions
  - **oxytocic** (uterotonic) drugs to stimulate contractions
  - **TXA** prevents clots from breaking down
  - **IV** access/fluids
  - **examine** to find the cause of bleeding.
- Administer all interventions, even if the woman improves after only one or two.
- The order does not matter.
- Aim to finish all interventions in 15 min.

See next page for more detailed information about the PPH bundle components.

Assess and record

- Assess often as you provide care:
  - uterine tone,
  - blood loss and flow,
  - BP, pulse and shock index.
- Continue to record these and actions on Postpartum Monitoring Form.

Advanced Care Note

If within your scope of practice and training, provide additional care per local protocols. If beyond your scope of practice, seek advanced care immediately.

Special consideration for TXA

In many settings, TXA ampoules look very similar to anaesthetic ampoules used in regional anaesthesia. If TXA is accidentally admistered intrathecally, it can be fatal. TXA is a neurotoxin and if injected intrathecally will cause seizures and death. These deaths can be mistaken for eclampsia. Ensure TXA is stored away from anaesthetics and that operating theater staff are aware of this risk.

During PPH at caesarean birth (CS)

Most bundle components are already being delivered. For example, IV fluids with oxytocin are often already infusing, and the uterus is exteriorized for repair so can easily be massaged if atonic. Because the average blood loss at CS is almost 500 mL, do you believe it is feasible and acceptable to administer TXA at 500 mL at CS?

PPH bundle components

Massage the uterus

- Massage to expel blood and clots, assess for distended bladder.
- If alone, massage first, then move on.

Give oxytocin/uterotonic

- Give Oxytocin 10 IU in 100–500 mL IV, fast as possible
- If no IV access give:
  - 10 IU oxytocin IM, or
  - 800 µg Misoprostol SL - or per rectum (PR) if concerned about pyrexia or under anaesthesia.
- See page 6 for more medication information.

Give TXA

- 1g IV over 10 min. Faster administration can cause hypotension.
- TXA and oxytocin can be given in the same line, but not in the same bag.
- **Do not initiate TXA** if more than 3 h since birth. See page 6 for more medication information.

Start IV

- Use 18 gauge or largest available.
- Collect blood for bedside haemoglobinometer, or lab testing for haemoglobin , cross-match, and clotting studies if available.
- Insert 2nd IV line for crystalloid fluids (NS or RL) as clinically indicated.

Examine and address causes

- **Tone**
  - Re-check frequently if it remains firm.
  - Check if fundus is firm, below umbilicus and midline.
  - Massage to improve tone and expel clots.
  - Check clots in uterus and expel if needed.
  - Assess for full bladder. Encourage frequent urination.
  - Catheterize the bladder if she cannot pass urine **or** the bleeding is heavy.
- **Tissue**
  - Inspect the placenta carefully for missing lobes, fragments or membranes.
  - Inspect vagina, cervix and uterus to remove clots and tissue.
  - If the placenta is adherent, suspect accreta – surgery is needed.
- **Trauma**
  - Check for perineal vaginal and cervical tears, and repair.
  - Refer if you are unable to do the repair.
  - If inverted uterus, replace and follow local protocols.
  - If you suspect uterine rupture, seek advanced care.
- **Thrombin / coagulopathies.** If possible, collect blood for bedside or lab testing for:
  - haemoglobin
  - type and cross match
  - prothrombin time, partial
  - thromboplastin time and platelets
  - clotting disorders.

If bleeding continues after the bundle

When to escalate care after the PPH bundle?

- If bleeding:
  - is heavy while giving the bundle, or
  - continues after bundle is complete, or
  - is more than 1000 mL at any time.
- If a woman has extensive trauma, uterine inversion or is hypotensive or unresponsive.
- If you are unable to identify or manage the cause.

Act fast. If bleeding continues, she may go into shock and die. Delays are a common reason women die from PPH.

Call for more help and communicate

- Request the most senior provider to urgently attend the woman.
- Continue monitoring and give what treatment you can while waiting for help or transfer.
- Communicate using SBAR and closed loop (see page 10).
- Assign roles.

What should you do now?

- Insert a 2nd IV.
- Give additional uterotonics and second dose TXA.
- Massage uterus, expel clots and remove tissue as needed.
- If available, apply NASG (see page 50).

Consider additional causes

- Uterine rupture, especially if she had a prior cesarean or had induced or augmented labour.
- Deep sulcus or cervical laceration.
- Remember – atony is the most common cause of PPH.

Pause and reflect
If additional uterotonics and TXA fail, move quickly to transfer/surgery.

Actions for provider 1

Provider 1 focuses on hands on care, including:

- **Communicate** with the woman, family and team:
  - explain what you are doing, and why
  - let her know that she may feel discomfort.
- **Massage as needed**, and continue to monitor and report uterine tone and bleeding.
- **Catheterize the bladder:**
  - use sterile technique and place a urinary catheter to empty the bladder
  - ensure no urine goes into the blood loss measurement tool.
- **Clear the cervix and uterus:**
  - ensure cervix is not blocked first before clearing the uterus.
  - remove clots and tissue to aid contraction and prevent infection.

Actions for provider 2

Provider 2 focuses on medications, IV, vital signs and recording, including:

- **Assess and record** every 15 min or more often until stable:
  - tone, blood loss and flow, as reported by provider
  - pulse and BP.
- **Place a second IV** line:
  - for additional IV fluid.
  - to administer other medications.
  - to allow for blood transfusion.
- **Give additional uterotonics** and **second dose of TXA**. See medication information on page 6.

If bleeding continues, consider additional care such as:

Start safe blood transfusion

- If the woman has severe or ongoing PPH and there is a clinical need.
- Or if the woman is severely anemic:
  - haemoglobin <7 g/dl, or
  - she looks anaemic clinically.

Repair deep sulcus, and extensive or cervical tears

- Recheck for vaginal and cervical lacerations that might have been missed.
- Repair if within your scope or refer.

Apply bimanual compression as a temporizing measure

- Squeeze the uterus to compress vessels, decrease blood flow and express clots.
- See page 32 to practise.

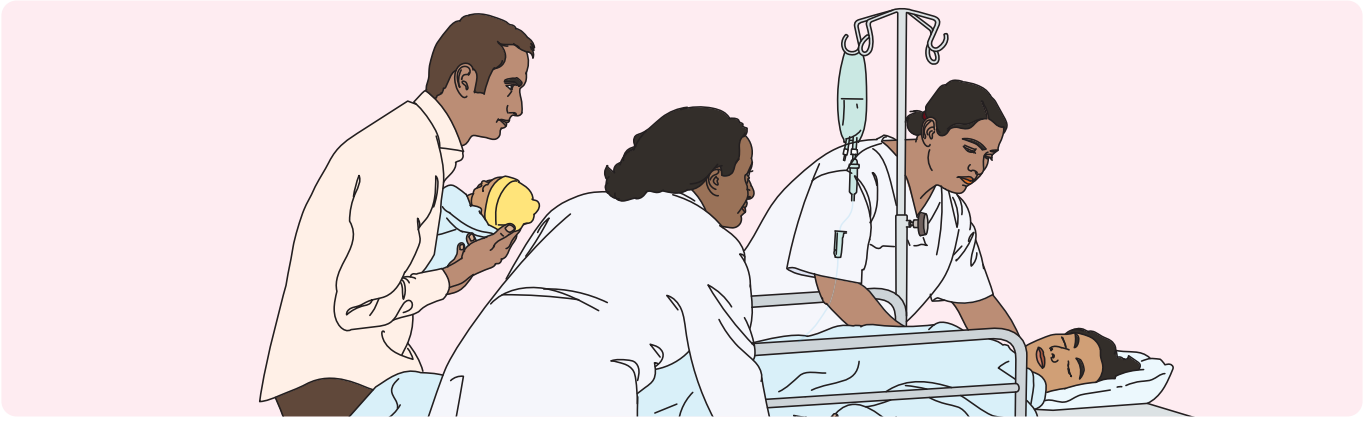
Insert UBT

- To compress blood vessels from the inside of the uterus.
- See page 31 to practise.

Apply aortic compression as a temporizing measure

- Often done for better visualization when repairing a laceration or inserting a UBT.
- See page 31 to practise.

Arrange transfer or surgery



All facilities should have a formal referral protocol, including for internal referrals. The woman may need to be transferred to another facility or to the surgical unit in your facility.

Act fast. Delay in care is a common reason for PPH deaths. Don't wait until she is in shock to initiate transfer.

Prepare in advance

- Transfers may be complicated and delay care.
- Visibly post contact information for providers, facilities, surgical and transport teams.
- Communicate the need for transport or surgery to your team and woman as soon as possible.
- Explain to the woman and her family, what is happening.

Communicate with referral facility or surgical team

- Notify the referral facility or surgical team of the transfer.
- Use SBAR to communicate with the referral provider.
- Write a note for the receiving facility following national guidelines. Include:
  - assessment
  - diagnosis
  - care provided
  - last vital signs.

Care before and during transport

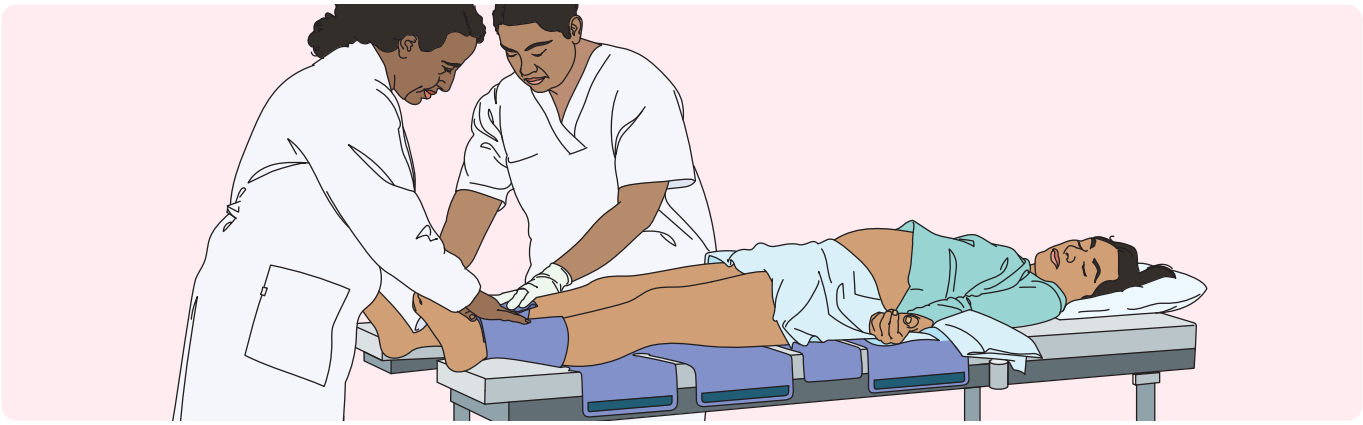
- If available, place NASG before transport.
- **Never** leave the woman alone.
- Continue care during referral and transport.
- **Ensure all elements of the PPH bundle were given, plus the 2nd dose TXA.**
- Continue the oxytocin and crystalloid IV infusion.
- Consider additional uterotonics.
- Monitor and record uterine tone, blood flow and blood loss, pulse and BP.
- Always transfer the baby with the mother. Keep them warm.

Minimize bleeding during transfer

- Insert indwelling catheter to keep the bladder empty.
- For bleeding tears you cannot repair: continue to apply firm, steady pressure with a sterile cloth.
- Continue to massage the uterus.
- Use bimanual or aortic compression, as needed.

Advanced Care Note
If participants have additional training and authorization to provide more advanced care, they should do so prior to and during transport.

Shock and NASG



Continually assess for shock

- **Early signs of shock:**
  - fast or weak pulse of 100 bpm or more
  - systolic BP less than 100 mmHg
  - shock index >1 (BP > pulse).
- **Late signs of shock:**
  - very low BP and weak pulse
  - rapid breathing > 30 breaths/min
  - pale skin, including eyelids, mouth, palms
  - sweating
  - change in mental status – anxiety, confusion, unconsciousness
  - low urine output (<30 mL/h).

If shock – Check ABCs and manage

- Open airway and ensure breathing.
- If not breathing or in cardiac arrest, begin resuscitation.
- Start oxygen at 6–88 L/min.
- Assess circulation – BP and heart rate.
- Insert second IV for crystalloid fluids and blood transfusion.
- Support/increase blood volume.
- Apply NASG if shock or risk of shock.
- Prepare for blood transfusion.

If NASG is available at your facility

- The NASG applies pressure to the lower body and abdomen.
- It forces blood to the heart, lungs, and brain to prevent shock, or stabilize a woman in shock.
- NASG does not treat PPH, but adds time to seek treatment.

When to use NASG

- Any time there is a delay in care – transfer, waiting for blood, surgery, or procedures.
- Keep it on during all procedures, transport and surgery.
- Remove per protocol, only when bleeding stops and the woman is stable.

Usage tips

- Apply segments with strong pressure, but allow breathing in the abdominal area.
- It is faster with two people, but only one should handle segments 4, 5, and 6 to avoid overtightening.
- Leave the knees exposed for bending.
- For short women, fold segment 1 into segment 2 and start from segment 2.
- Apply the NASG even If the woman is unconscious.

Procedures and treatment while NASG is in place

- The NASG stretches for checking uterine tone and massage.
- It can remain on during vaginal procedures and toileting – slide segment 4 if needed.
- Leave it on during surgery, but remove segments 4, 5, and 6 before incision, replacing them afterward.

Surgical interventions for PPH

When all other methods fail, the woman will need surgical interventions to stop the bleeding. They are crucial to manage refractory PPH and prevent death – addressing the causes of PPH directly to stop the bleeding.

These interventions should only be conducted by trained providers.

Uterine compression sutures

Sutures are placed around the uterus to:

- compress and stabilise the uterus
- reduce bleeding from the blood vessels
- prevent further blood loss.

Uterine or uteroovarian artery ligation

Tying off or sealing the uterine or uteroovarian arteries to

- restrict blood flow to the uterus and ovaries
- reduce bleeding
- stabilises the woman's condition.

Subtotal or total hysterectomy

May be needed if other interventions fail, or in case of uterine rupture.

- **Subtotal hysterectomy** – removes part of the uterus.
- **Total hysterectomy –** removes uterus entirely.

Delaying a necessary hysterectomy can lead to death

Care after PPH

Special care after PPH

- Monitor closely until stable.
- Assess and record tone, blood loss and flow, pulse and BP
  - at least every 15 min until stable
  - then every 30 min for 2 h
  - then per routine.
- A maintenance infusion of oxytocin 10–20 IU in 500–1000 mL may be needed in the 4 h after treatment to prevent recurrence.
- Adjust IV rate to 1 L over 6 h.
- Increase PO hydration and remove urinary catheter.
- Decrease oxygen per protocol.
- Support breastfeeding.

When stable

- Repeat lab tests – full blood count/haemoglobin per protocol.
- Gradually increase physical activity.

Home readiness

- Ensure the following before discharge:
  - normal vital signs, urine output, and mental state
  - no dizziness with walking
  - ability to care for herself and her baby
  - no sign of infection.
- Continue or begin antibiotics per protocol.

Discharge instructions

Counsel the woman and her family

- Ensure rest and good nutrition for 2–4 weeks to support breastfeeding and recovery.
- Teach signs of anaemia, bleeding, and infection, and to seek care with any signs.
- Provide routine postpartum care including family planning.
- Counsel on the risk of PPH in future and importance of a facility birth.
- Recommend nonsteroidal anti-inflammatory drugs or paracetamol for pain relief.
- Plan follow up for care at 48 h, 10 days, and 6 weeks.

In case of anaemia

- If haemoglobin was less than 7 g/dl:
  - Provide blood transfusion
  - Do not discharge until more than 7 g/dl
- If haemoglobin was 7–11 g/dl discharge with:
  - iron supplement 120 mg and
  - folic acid 400 µg daily
  - for at least 3 months.

In case of perineal tears

- Instruct her to wash the perineum gently:
  - twice daily, and
  - after bowel movements, front to back.
- Change pads frequently.
- Wash hands before and after self-care.

Reflect and support each other

PPH can result in emotional trauma for the woman, family and providers. They may feel anger, anxiety, stress, sadness, detachment, depression, guilt or experience flashbacks.

- Women may need additional support at home and mental health counseling.
- Get care immediately if a person considers harming themself or others. This is a medical emergency.

Debriefing after PPH

- Debriefing is a process of listening and validating others experiences to provide support after trauma.
- It should be done correctly and carefully to avoid additional emotional harm.

Debriefing woman and family

- Sit with the woman and her family.
- Ask how they felt during the PPH and how they feel now. They may say:
  - "I was so scared/mad/grateful".
- Reflect their feelings back to validate their emotions. You may say:
  - "Yes, that is scary".
- Be curious about how they feel, let them speak without judging
  - "Tell me more about that".
- Ask if they want to learn the details about what happened and explain.
- Explain increased risk for postpartum depression, and how to identify it.

Debriefing with team

- Debriefing can help address trauma and prevent burnout.
- Create a safe space for everyone can reflect and share emotions, without blame.
- Encourage self-care.

Quality improvement

Review PPH events with for quality improvement in a safe and blame-free environment.

Use these five principles

- **Readiness**
  - Adequate staff and supplies?
  - Regular drills?
- **Recognition**
  - Was PPH diagnosed early?
- **Response**
  - Help requested and available?
  - Protocols followed?
  - SBAR and closed-loop used?
- **Reporting**
  - All care recorded in client record and register?
- **Respect**
  - Whole team respected, informed and heard?

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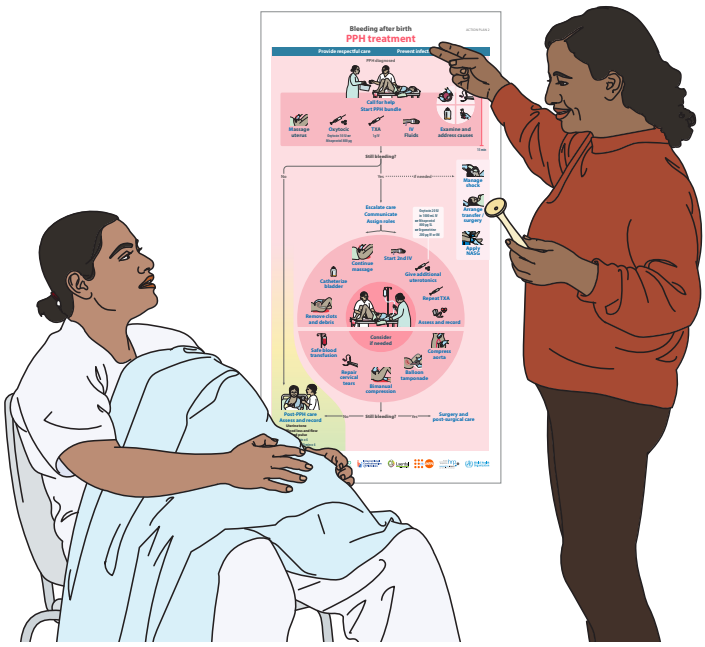
The Bleeding after birth training course aims to translate standards into care. It incorporates the latest WHO recommendations related to PPH and includes links to key references and resources for training.

www.who.int/tools/bleeding-after-birth



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