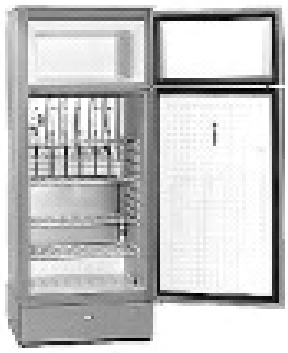
Storage of uterotonic drugs in the Pharmacy

Oxytocin is the uterotonic of choice for the practice of AMTSL



- Make sure that there are adequate stocks of uterotonic drugs, syringes, and injection safety materials
- Check the manufacturer's label for storage recommendations
- Make sure that there is a system in place to monitor the temperature of the refrigerator / cold box - record the temperature in the refrigerator on a regular basis, preferably at the hottest times of the day (put thermometers in different parts of the refrigerator)
- Make sure that there is a back-up system in place in case of frequent electricity cuts - for example, gas or solar refrigerators, placing ice packs in the refrigerator to keep it cool, etc.
- Follow the rule of first expired – first out (or first in – first out) and maintain a log to keep track of expiration dates to reduce wastage of uterotonic drugs
- Store **misoprostol** at room temperature and away from excess heat and moisture
- To ensure the longest life possible of **injectable uterotonics**, keep them refrigerated at 2–8°C
- Protect **ergometrine** and **Syntometrine** from freezing and light

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MSH SPS Strengthening Pharmaceutical Systems

Storage of uterotonic drugs in Delivery Rooms

Oxytocin is the uterotonic of choice for the practice of AMTSL

- Check the manufacturer's label for recommendations on how to store injectable uterotonic drugs outside the refrigerator. In general:
  - Oxytocin may be kept outside the refrigerator at a maximum of 30°C (warm, ambient climate) for up to three months and then discarded
  - Ergometrine and Syntometrine vials may be kept outside the refrigerator in closed boxes and protected from the light for up to one month at 30°C and then discarded
  - Misoprostol should be stored at room temperature away from excess heat and moisture
- Record the temperature in the delivery room on a regular basis, preferably at the hottest times of the day
- Periodically remove ampoules from the refrigerator for use in the delivery room – carefully calculate the number removed from the refrigerator based anticipated need
- Only remove ampoules or vials from their box just before using them
- Make sure that there are adequate stocks of syringes and injection safety materials
- Avoid keeping injectable uterotonics in open kidney dishes, trays, or coat pockets

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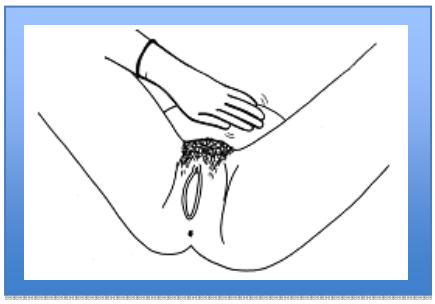
Source: WHO (2003) Managing complications in pregnancy and childbirth. Geneva: WHO; 2003.

Immediate action in case of excessive bleeding after childbirth

1 **Call for Help !**
Conduct a rapid evaluation of the woman's general condition including vital signs

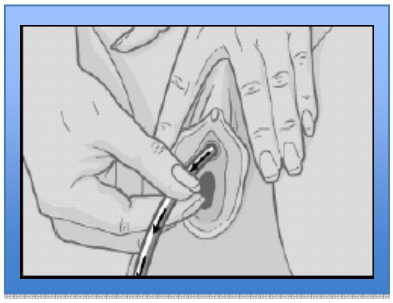
2 Massage the uterus



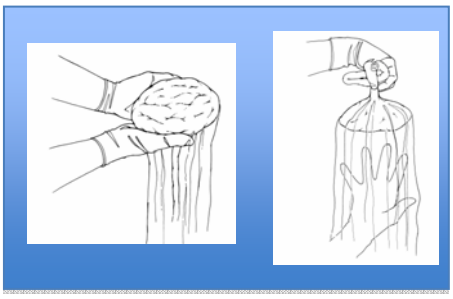
3 Administer oxytocin 10 IU

4 Start IV infusion

5 Ensure the bladder is empty (catheterize if necessary)



6 Check the placenta for completeness



7 Examine the birth canal for tears

! Diagnose cause of PPH and manage accordingly

General management for vaginal bleeding after childbirth

Source: WHO (2003) Managing complications in pregnancy and childbirth. Geneva: WHO; 2003.

Excessive vaginal bleeding is life-threatening and requires immediate action. Follow these steps to manage excessive bleeding:

Note: The steps listed here are only a summary and do not include extensive details about PPH management. Refer to local protocols or a technical reference for detailed management.

- **Shout for help**. Urgently mobilize all available personnel.
- Conduct a rapid evaluation of the woman's general condition including vital signs (pulse, blood pressure, respiration, temperature).
- If **shock is suspected**, immediately begin treatment. If signs of shock are not present, continue evaluating the woman because her status can change or worsen rapidly.
- Massage the uterus to expel blood and blood clots. Blood clots trapped in the uterus will prevent effective uterine contractions.
- Give oxytocin 10 IU IM.
- Start an IV infusion.
  - Just before infusion of fluids, collect blood to test hemoglobin, and do an immediate cross-match and bedside clotting (see below).
  - If blood is available for transfusion, prepare blood (type and cross) before beginning infusion.
- Have the woman empty her bladder or ensure that the bladder is empty (catheterize the bladder only if necessary).
- Check to see if the placenta is expelled, and examine it for completeness.
- Examine the vagina and perineum for tears (examination of the cervix is only warranted if the uterus is firm, the placenta and membranes are complete, no perineal or vaginal lacerations are present, but the woman continues to bleed).
- Provide specific treatment for the cause of PPH (see the table below).

Diagnosis of vaginal bleeding after childbirth

Presenting Symptom and Other Symptoms and Signs Typically Present	Symptoms and Signs Sometimes Present	Probable Diagnosis
• Immediate PPH[a] • Uterus soft and not contracted	• Shock	Atonic uterus
• Immediate PPH[a]	• Complete placenta • Uterus contracted	Tears of cervix, vagina or perineum
• Placenta not delivered within 30 minutes after delivery	• Immediate PPH[a] • Uterus contracted	Retained placenta
• Portion of maternal surface of placenta missing or torn membranes with vessels	• Immediate PPH[a] • Uterus contracted	Retained placental fragments
• Uterine fundus not felt on abdominal palpation • Slight or intense pain	• Inverted uterus apparent at vulva • Immediate PPH[b]	Inverted uterus

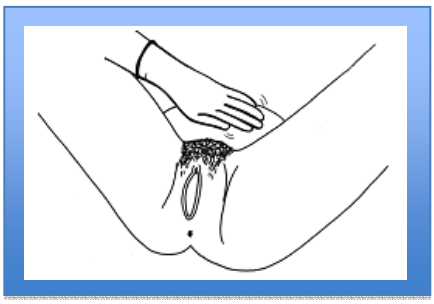
[a] Bleeding may be light if a clot blocks the cervix or if the woman is lying on her back.
[b] There may be no bleeding with complete inversion.

Source: WHO (2003) Managing complications in pregnancy and childbirth. Geneva: WHO; 2003.

Specific management for uterine atony after childbirth

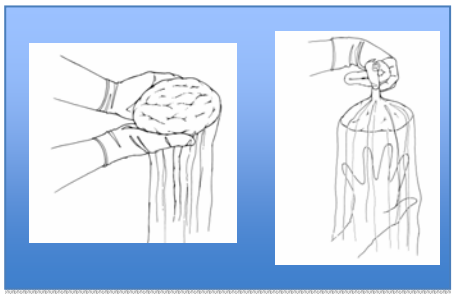
1 Call for Help !

2 Continue to massage the uterus

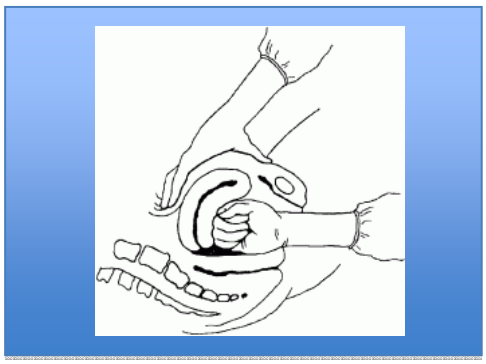


3 Administer uterotonic drugs together or sequentially

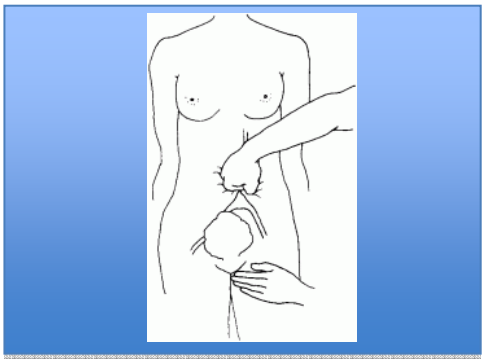
4 If bleeding continues, recheck the placenta for completeness



5 If bleeding continues: Perform bimanual compression of the uterus



6 If bleeding continues: Compress the aorta



! If immediate action fails to stop bleeding: Transfer to a tertiary center

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Source: WHO (2003) Managing complications in pregnancy and childbirth. Geneva: WHO; 2003.

Management of uterine atony

An atonic uterus fails to contract after delivery.

Immediate management of atonic uterus

If the woman is bleeding and her uterus is soft/not contracted:
- Continue to massage the uterus.
- Have the woman empty her bladder or ensure that the bladder is empty (catheterize the bladder only if necessary).
- Administer uterotonic drugs, given together or sequentially (see the table below).
- Anticipate the need for blood as soon as possible, and transfuse as necessary.

Signs and symptoms usually seen in cases of uterine atony:
- Immediate PPH.
- Bleeding may be light if a clot blocks the cervix or if the woman is lying on her back.
- Uterus is soft and does not contract.

Signs and symptoms sometimes present:
- Shock.

Uterotonic drugs for PPH management

	Oxytocin	Ergometrine	Misoprostol
Dose and route	IV: Infuse 20 units in 1 L IV fluids at 60 drops per minute. IM: 10 IU.	IM: give 0.2 mg.	1,000 mcg rectally.
Continuing dose	IV: Infuse 20 units in 1 L IV fluids at 40 drops per minute.	Repeat 0.2 mg IM after 15 minutes. If required, give 0.2 mg IM every 4 hours.	Unknown.
Maximum dose	Not more than 3 L of IV fluids containing oxytocin.	5 doses (total 1.0 mg).	Oral dose should not exceed 600 mcg because of side effects of increased temperature and chills.
Precautions and comments	After 2–3 doses with no result, use alternate treatment.	Contraindicated in cases of pre-eclampsia, hypertension, heart disease.	Contraindicated in cases of asthma.

If bleeding continues:

- Check placenta again for completeness.
- If there are **signs of retained placental fragments** (absence of a portion of maternal surface or torn membranes with vessels), remove remaining placental tissue.

If **bleeding continues in spite of management**, perform bimanual compression of the uterus (Figure 1):

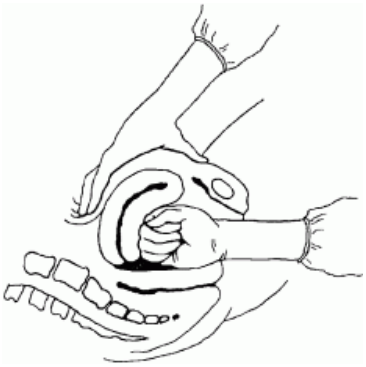

Figure 1. Bimanual compression of the uterus

Alternatively, compress the aorta and prepare for potential surgical management (Figure 2) :

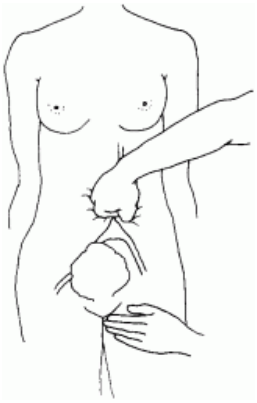

Figure 2. Compression of abdominal aorta and feeling the femoral

About POPPHI

The Prevention of Postpartum Hemorrhage Initiative (POPPHI) is a USAID-funded, five-year project focusing on the reduction of postpartum hemorrhage, the single most important cause of maternal deaths worldwide. The POPPHI project is led by PATH and includes four partners: RTI International, EngenderHealth, the International Federation of Gynaecology and Obstetrics (FIGO), and the International Confederation of Midwives (ICM).

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