

Prevention and initial management of postpartum haemorrhage

Rational use of uterotonic drugs during labour and childbirth



Editors

Prevention of postpartum hemorrhage
initiative (POPPHI)

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POPPHI
Prevention of Postpartum
Hemorrhage Initiative

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Preface

Complications during pregnancy and childbirth are the most significant causes of death among women of reproductive health age. Less than one percent of these deaths occur in more developed countries, showing that the large majority of these deaths can be prevented if there are sufficient resources and health services available.

More than half of these maternal deaths occur in the first 24 hours after childbirth, and most of these deaths are due to postpartum haemorrhage. Postpartum haemorrhage (PPH) or excessive bleeding after childbirth is the single most important direct cause of maternal deaths in developing countries. Approximately 25 percent of all maternal deaths globally are due to haemorrhage; with percentages varying from less than 10 percent to almost 60 percent in different countries. A 2006 WHO systematic review found 34% of maternal deaths in Africa were due to hemorrhage (Khalid S. Khan, Daniel Wojdyla, Lale Say, A. Metin Gulmezoglu, Paul FA van Look, WHO analysis of causes of maternal death: a systematic review, *Lancet* 2006; 367:1066-74). Even if a woman survives a PPH, she could be severely anaemic and suffer chronic health problems. Where maternal mortality is high, and resources are limited, the introduction of active management of the third stage of labour (AMTSL), a feasible, low-cost, and evidence-based intervention to prevent PPH, can greatly improve survival of women and, consequently, their infants.

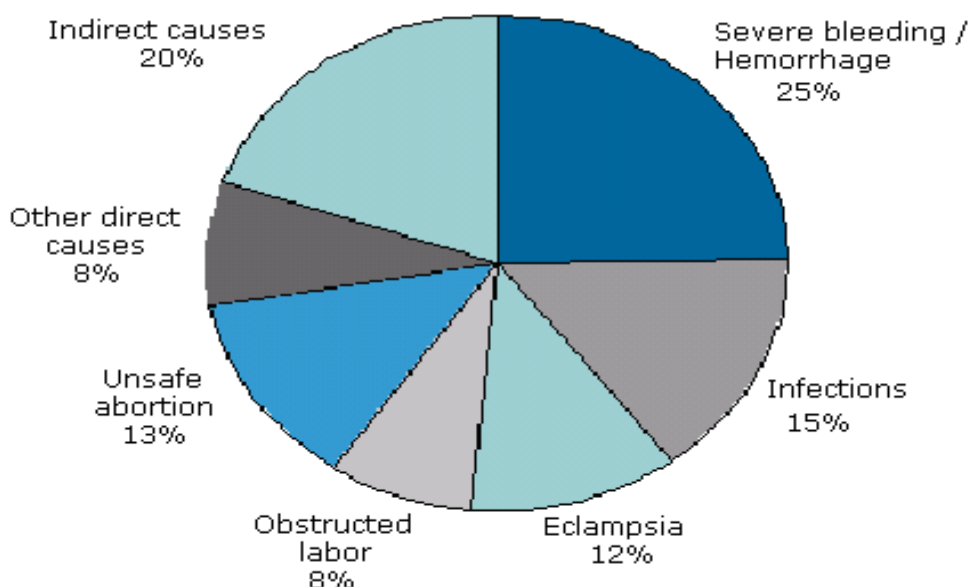


Figure 1. Global Data: Causes of Maternal Death

Other direct causes include ectopic pregnancy, embolism, anaesthesia-related
Indirect causes include: anaemia, malaria, heart disease, HIV/AIDS.

Skilled birth attendants are well placed to make a difference in maternal and newborn outcomes, to prevent PPH by providing quality midwifery care and applying AMTSL for all vaginal births, and to prevent death from PPH by responding quickly and appropriately when it occurs. Skilled birth attendants, let us fight together to make a difference—one woman, one birth, one newborn at a time.....

The components of AMTSL are: (1) Administration of a uterotonic drug within one minute after the baby is born (oxytocin is the uterotonic of choice), (2) Controlled cord traction (CCT) with counter traction to support the uterus; and (3) Uterine massage immediately after delivery of the placenta.

<http://www.who.int/whr/2005/chapter4/en/>

Supportive care during labour and childbirth

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

- Encourage the woman to have personal support from a person of her choice throughout labour and birth.
- Ensure mobility:
 - Encourage the woman to move about freely;
 - Support the woman's choice of position for birth.
- Encourage the woman to empty her bladder regularly.

Note: Do not routinely catheterize women in labour.

Note: Do not routinely give an enema to women in labour.
- Encourage the woman to eat and drink as she wishes. If the **woman has visible severe wasting or tires during labour**, make sure she is fed. Nutritious liquid drinks are important, even in late labour.
- Help the woman in labour who is anxious, fearful or in pain:
 - Give her praise, encouragement and reassurance;
 - Give her information on the process and progress of her labour;
 - Listen to the woman and be sensitive to her feelings.
- If the **woman is distressed by pain**:
 - Suggest changes of position ;
 - Encourage mobility;
 - Encourage her companion to massage her back or hold her hand and sponge her face between contractions;
 - Encourage breathing techniques;
 - Encourage warm bath or shower;
 - If necessary, give pethidine 1 mg/kg body weight (but not more than 100 mg) IM or IV slowly.



Positions that a woman may adopt during labour

Monitor progress of first stage of labour using the partograph

Findings suggestive of **satisfactory progress** in first stage of labour are:

- regular contractions of progressively increasing frequency and duration;
- rate of cervical dilatation at least 1 cm per hour during the active phase of labour (cervical dilatation on or to the left of alert line);
- cervix well applied to the presenting part.

Findings suggestive of **unsatisfactory progress** in first stage of labour are:

- irregular and infrequent contractions after the latent phase;
- OR rate of cervical dilatation slower than 1 cm per hour during the active phase of labour (cervical dilatation to the right of alert line);
- OR cervix poorly applied to the presenting part.

Name		Gravida	Para	Hospital number
Date of admission	Time of admission	Ruptured membranes	hours	
Fetal condition 200 180 160 140 120 100 80 60 40 20 0 Fetal Pulse Heart rate 100 90 80 70 60 50 40 30 20 10 0 Uterine Cord Beating/CP 100 90 80 70 60 50 40 30 20 10 0 Cervix (cm) 10 9 8 7 6 5 4 3 2 1 0 Position of head (cm) 10 9 8 7 6 5 4 3 2 1 0 Time				
Progress of labour 10 9 8 7 6 5 4 3 2 1 0 Cervix (cm) 10 9 8 7 6 5 4 3 2 1 0 Position of head (cm) 10 9 8 7 6 5 4 3 2 1 0 Time				
Treatment Oxytocin IU/L Drops / min Drugs and fluids				
Maternal condition 180 160 140 120 100 80 60 40 20 0 Pulse BP Temp °C Urine protein amount volume				

Rational use of uterotonic drugs during labour

Augmentation of labour

Labour augmentation involves the stimulation of uterine contractions to produce delivery after the onset of spontaneous labour. Labour augmentation with uterotonic drugs is officially indicated when the skilled birth attendant diagnoses "hypotonic uterine dysfunction"--a condition in which the contractions of labour become ineffective at producing cervical dilation. Following this rationale, **labour augmentation should be contraindicated in normal labours**. Yet, although obstetric texts warn against its dangers, normal labours are commonly augmented throughout the world and the decision to augment labour is influenced by beliefs of individual health care providers as well as women in labour and their families.

Unsatisfactory progress in labour is diagnosed when:

- The latent phase is longer than 8 hours.
- Cervical dilatation is to the right of the alert line on the partograph.
- The woman has been experiencing labour pains for 12 hours or more without delivery (prolonged labour).

Misdiagnosing false labour or prolonged latent phase leads to unnecessary induction or augmentation, which may fail. This may lead to unnecessary caesarean operation and amnionitis.

Causes of unsatisfactory progress in labour

If the woman is in true labour, consider the following possible causes:

- **Patient** – dehydration, anxiety, pain
- **Passenger** – malposition, malpresentation, macrosomia (big baby)
- **Passage** – pelvis or small tissue
- **Power** – uterine contractions (contractions too weak or too infrequent to cause cervical dilatation) or maternal expulsive efforts (**inadequate uterine activity**)

Dangers of augmenting labour with uterotonic drugs (oxytocin or misoprostol)

When labour is augmented with a uterotonic drug, the quality and quantity of uterine contractions are greatly affected. The contractions tend to be longer, stronger, and with shorter relaxation periods between. While augmentation with uterotonic drugs plays a major role in shortening labour, but there are grave risks associated with it, including:

- the increased pressure of the contractions can, and often does, compress the umbilical cord and cut down the baby's oxygen supply which may lead to foetal distress, asphyxia, and foetal death
- uterine rupture and abruption placentae
- increased pain for the mother of the uterotonic-induced contractions is likely to increase her stress and anxiety levels
- oxytocin is a strong antidiuretic, even at low doses; its combination with the IV fluids can result in water intoxication
- uterine fatigue after childbirth which is associated with uterine atony and postpartum haemorrhage

Indications and precautions for augmentation of labour

Indications for augmenting labour

Before making a decision to augment labour, the provider should make a careful assessment of the woman and foetus and evaluate the partograph.

If **contractions are inefficient** and false labour, **cephalopelvic disproportion and obstruction have been excluded**; the most probable cause of prolonged labour is inadequate uterine activity. When inadequate uterine activity is diagnosed (less than three contractions in 10 minutes, each lasting less than 40 seconds), the woman should be immediately transferred to a health care facility with an operating theatre and personnel that can prescribe and supervise augmentation of labour.

Labour should be augmented only after a thorough examination of the mother and foetus. A physician or skilled birth attendant should perform a cervical examination immediately prior to the initiation of oxytocin infusion or administration of misoprostol. Personnel who are familiar with the effects of uterotonics and who are able to identify both maternal and foetal complications should be present during administration.

Once labour augmentation has begun, the woman should never be left alone. Maternal vital signs, uterine contractions, and foetal heart rate should be monitored at least every 30 minutes to evaluate the effects of the uterotonic drug on labour progress, maternal condition, and foetal condition. The oxytocin drip rate should be adjusted based on labour progress, number of uterine contractions, and maternal and foetal condition.

A physician who can perform caesarean delivery should be readily available in the event that problems arise.

Contraindications to augmentation of labour with uterotonic drugs

Labour augmentation with any uterotonic drug should ***never*** be attempted:

- When labour is progressing normally
- When there is cephalopelvic disproportion, transverse foetal lie, umbilical cord prolapse and the foetus is alive, multiple gestation, vasa praevia or complete placenta praevia, in a woman with previous caesarean operation
- In a facility without an operating theatre and a physician who can perform caesarean delivery
- In a facility without personnel to closely monitor the woman and baby
- In a facility without personnel who can identify both maternal and foetal complications during administration.

If unsatisfactory progress in labour is diagnosed:

- Make a rapid evaluation of the condition of the woman and fetus and provide supportive care.
- Test urine for ketones and treat with IV fluids if dehydrated.
- Review the partograph.
- Manage according to the cause of unsatisfactory progress in labour



Safety concerns

- Never administer oxytocin intramuscularly (IM) during labor.
- When 25 mcg tablets of misoprostol are not available, do not break higher dose tablets (usually 200 mcg) and administer for induction or augmentation.

Preparation for active management of the third stage of labour (AMTSL)

Source: POPPHI. Prevention of Postpartum Hemorrhage: Implementing Active Management of the Third Stage of Labor (AMTSL): A Reference Manual for Health Care Providers. Seattle: PATH; 2007

Prepare for birth and active management of the third stage of labour :

- Complete and review all of the woman's medical records
- Prepare the delivery room:
 - Make sure that the woman's bodily privacy is protected (curtains, doors that close, etc.); ask the woman if she would like a companion with her during childbirth and facilitate that person's presence in the delivery room.
 - Check that all needed equipment and instruments for delivery care, essential maternal and newborn care, newborn resuscitation, and adult resuscitation are available, clean, sterile / HLD, in good working order, ready, and accessible.
 - Make sure that the room is warm (at least 25-28°C/77.0-82.4°F) and free from draughts from open windows and doors, or from fans.
 - Make sure that supplies needed to keep the newborn baby warm are prepared. Make sure that all surfaces the woman and baby will come in contact with are clean, warm, and dry.
 - Make sure the room is well lit.
- Make sure that all necessary equipment and supplies are available for infection prevention practices.
- Load the syringe with oxytocin 10 IU for administration with AMTSL.
- Help the woman empty her bladder when second stage is near (catheterize only if the woman cannot urinate and bladder is full).
- Assist the woman to assume the position of her choice (squatting, semi-sitting) and allow her to change position according to what's most comfortable for her.
- Prepare the woman:
 - Encourage the woman to wash herself or bathe or shower at the onset of labour
 - Explain and offer AMTSL to the woman and obtain her permission to apply it.
 - Explain skin-to-skin contact and that the newborn will be placed first on her abdomen and then on her chest, and obtain her permission to do so.

Essential care for the newborn

Health care providers should follow these guidelines when caring for the newborn:

- Thoroughly dry and stimulate the baby while assessing breathing.
- Place the newborn in skin-to-skin contact with the woman; cover both with a dry warm cloth or blanket. Cover the baby's head to ensure warmth.
- If breastfeeding is the woman's choice for infant feeding, place the baby close to the woman's breast to help encourage the baby to latch on to the breast.
- Wait to clamp and cut the cord until 2 to 3 minutes after the baby's birth. (Even if oxytocin is given within one minute after birth of the baby, clamping does not need to happen until 2 to 3 minutes after the baby's birth.)



Keeping the baby in skin-to-skin contact with the mother

(WHO. Thermal protection of the newborn : A practical guide. WHO:

Steps for AMTSL

1: Place the baby in skin-to-skin contact on the abdomen of the mother, dry the baby, assess the baby's breathing and perform resuscitation if needed. Cover the woman and baby.



2: Administer a uterotonic (the uterotonic of choice is oxytocin 10 IU IM) immediately after birth of the baby, and after ruling out the presence of another baby.



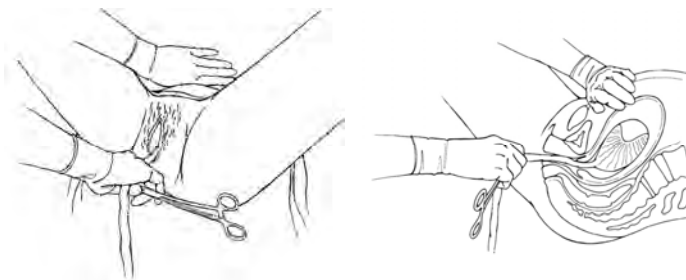
3: Clamp and cut the cord after cord pulsations have ceased or approximately 2-3 minutes after birth of the baby, whichever comes first. Cover the cord with a piece of gauze when cutting the cord to avoid splashing of blood.



4: Place the infant directly on the mother's chest, prone, with the newborn's skin touching the mother's skin. Cover the baby's head with a cap or cloth. Cover the woman and baby.



5: Perform controlled cord traction while, at the same time, supporting the uterus by applying external pressure on the uterus in an upward direction towards the woman's head.



6: Massage the uterus immediately after delivery of the placenta and membranes until it is firm.



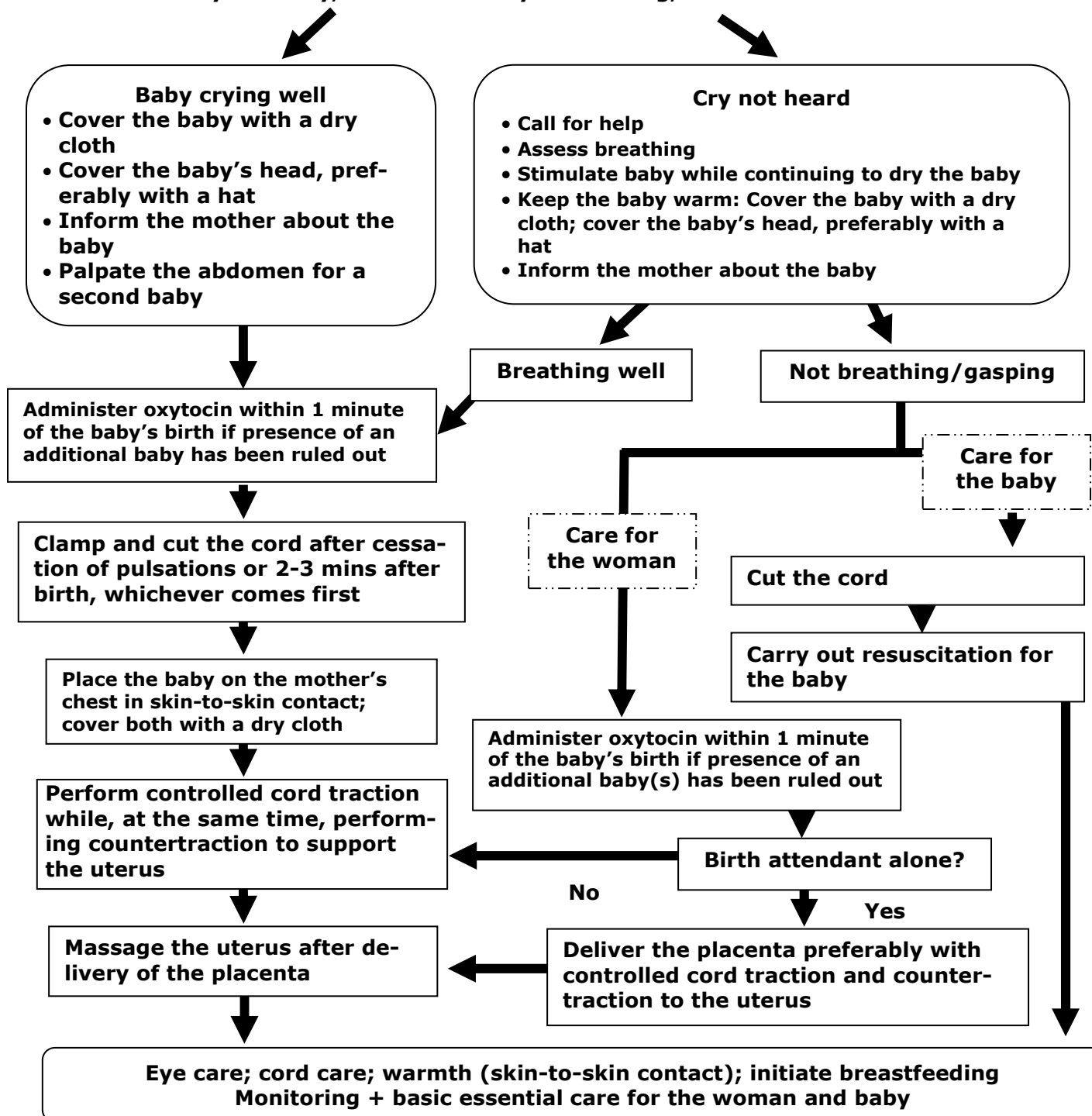
During recovery, assist the woman to breast-feed if this is her choice, monitor the newborn and woman closely, palpate the uterus through the abdomen every 15 minutes for two hours to make sure it is firm and monitor the amount of vaginal bleeding. Provide PMTCT care as needed.



Integration of AMSTL and essential newborn care (ENC)

- 1) Keep required items for mother & baby close by, load oxytocin in syringe
- 2) Inform the woman what is being planned at her level of understanding

Place the baby in skin-to-skin contact on the abdomen of the mother, dry the baby, assess the baby's breathing, discard the wet linen



Source: POPPHI. Prevention of Postpartum Hemorrhage: Implementing Active Management of the Third Stage of Labor (AMTSL): A Reference Manual for Health Care Providers. Seattle: PATH; 2007

Monitoring the woman during the first 6 hours postpartum

Parameter	Frequency	Danger signs
Vital signs Blood pressure Pulse Vaginal bleeding Uterine hardness	<ul style="list-style-type: none"> • Every 15 minutes for 2 hours, then • Every 30 minutes for 1 hour, then • Every hour for three hours 	Diastolic BP ≥ 90 ; systolic BP < 60 .
		Fast, thready pulse : > 110 bts/min. Sweaty or cold, clammy skin ; cold extremities. Anxiety, confusion, loss of consciousness.
		More than one sanitary napkin soaked in 5 minutes. Slow, continuous bleeding or a sudden increase in vaginal bleeding.
		Uterus is soft or too big given the time that has elapsed since delivery. Uterus soft / not contracted. Uterus is neither firm nor round.
		3rd or 4th degree genital laceration.
Temperature Respiration	Every 4 hours	Temperature $> 38^{\circ}\text{C}$.
		Rapid breathing (rate of 30 breaths per minute or more). Palmar or conjunctival pallor associated with 30 or more respirations per minute (the woman tires rapidly or has tachypnea at rest).
Bladder (help the woman empty her bladder if it is distended)	Every hour	The woman can't void on her own and her bladder is distended. Urinary incontinence.
Breastfeeding	Every hour	The newborn isn't breastfeeding satisfactorily. Breastfeeding has not yet begun.
Psychological reaction	Every hour	Negative feelings about herself or her child.

Monitoring the newborn during the first 6 hours postpartum

Parameter	Frequency	Danger signs
<ul style="list-style-type: none"> • Respiration • Color • Temperature (touch the baby's feet and check axillary temperature if they are cold) • Umbilical cord for bleeding • Presence of other danger signs 	<ul style="list-style-type: none"> • Immediately after birth then • Every 15 minutes for 2 hours, then • Every 30 minutes for 1 hour, then • Every hour for three hours 	Rapid respirations (more than 60 respirations per minute). Slow respirations (less than 30 respirations per minute). Grunting.
		Convulsions.
		Generalized cyanosis or pallor. Cyanosis of the extremities (acrocyanosis), pink body.
		Cold feet. Temperature $< 36,5^{\circ}\text{C}$. Temperature $> 38^{\circ}\text{C}$.
		Umbilical cord bleeding

Review of uterotonic drugs used for AMTSL

Source: POPPHI. Prevention of Postpartum Hemorrhage: Implementing Active Management of the Third Stage of Labor (AMTSL): A Reference Manual for Health Care Providers. Seattle: PATH; 2007

Definition of a uterotonic drug

Uterine stimulants (uterotonics) are medications given to stimulate a woman's uterus to contract, or to increase the frequency and intensity of the contractions. These drugs are used to induce (start) or augment (speed) labour; facilitate uterine contractions following a spontaneous abortion; prevent postpartum haemorrhage during active management of the third stage of labour; treat haemorrhage following childbirth or abortion; and for other gynaecological reasons. The three uterotonic drugs used most frequently are the oxytocins, prostaglandins, and ergot alkaloids. Uterotonic drugs may be given intramuscularly (IM), intravenously (IV), and as a tablet that can be given orally, vaginally, rectally, or buccally.

Comparison of uterotonic drugs

Table 1. compares dosage, route of administration, drug action and effectiveness, side effects, and cautions for the most common uterotonic drugs used for AMTSL.

Table 1. Uterotonic drugs used for AMTSL

Name of drug/ preparation	Dosage and route	Drug action and ef- fectiveness	Side effects and cautions
Oxytocin Posterior pituitary ex- tract. Commonly used brand names include Pitocin or Syntocinon.	Give 10 units IM injec- tion.*	<ul style="list-style-type: none"> • Acts within 2 to 3 min- utes. • Effect lasts about 15 to 30 minutes. 	<ul style="list-style-type: none"> • First choice. • No known contraindications for post- partum use.** • Minimal or no side effects.
Misoprostol Synthetic prostaglandin E ₁ (PGE ₁) analogue. Commonly used brand names include Cytotec, Gymiso, Prostokos, Vagiprost, U-Miso	Give 600 mcg (three 200 mcg tablets) orally.	Orally: <ul style="list-style-type: none"> • Acts within 6 minutes. • Peak serum concentration between 18 and 34 min- utes. • Effect lasts 75 minutes. 	<ul style="list-style-type: none"> • No known contraindications for post- partum use.** • Common side effects: shivering and elevated temperature.
Ergometrine (methylethergometrine), also known as ergonovine (methylethergonovine) Preparation of ergot (usually comes in dark brown ampoule). Com- monly used brand names include Meth- ergine, Ergotrate, Er- gotrate Maleate	Give 0.2 mg IM injection	<ul style="list-style-type: none"> • Acts within 6 to 7 min- utes IM. • Effect lasts 2 to 4 hours. 	<ul style="list-style-type: none"> • Contraindicated in women with a history of hypertension, heart dis- ease, retained placenta, pre- eclampsia, or eclampsia.*** • Causes tonic contractions (may in- crease risk of retained placenta). • Side effects: nausea, vomiting, headaches, and hypertension. <p>Note: Do not use if drug is cloudy. This means it has been exposed to excess heat or light and is no longer effective.</p>
Syntometrine Combination of 5 IU oxytocin plus 0.5 mg ergometrine.	Give 1 ml IM injection.	<ul style="list-style-type: none"> • Combined rapid action of oxytocin and sustained action of ergometrine. 	<ul style="list-style-type: none"> • Same cautions, contraindications, and side effects as ergometrine.

*If a woman has an IV, an option may be to give her 5 IU of oxytocin by slow IV push.

**This is intended as a guide for using these uterotonic drugs during the third stage of labor. Different guidelines apply when using these uterotonic drugs at other times or for other reasons.

***Lists of contraindications are not meant to be complete; evaluate each client for sensitivities and appropriateness before use of any uterotonic drug. Only some of the major postpartum contraindications are listed for the above drugs.

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



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

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

1**Call for Help !**

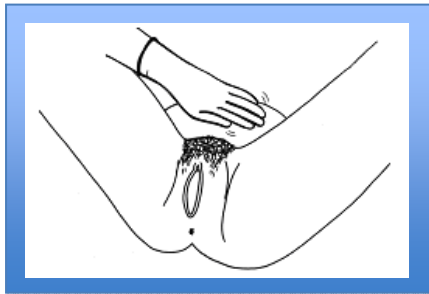
Conduct a rapid evaluation of the woman's general condition including vital signs



Immediate action in case of excessive bleeding after childbirth

2

Massage the uterus

**3**

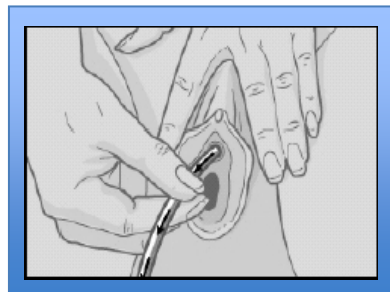
Administer oxytocin 10 IU

**4**

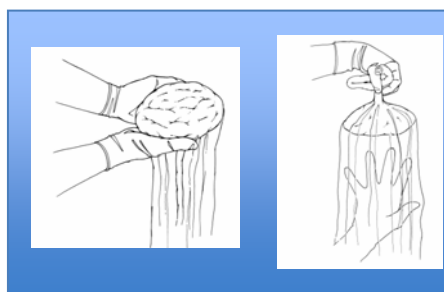
Start IV infusion

**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
<ul style="list-style-type: none"> • Immediate PPH^a • Uterus soft and not contracted 	<ul style="list-style-type: none"> • Shock 	Atonic uterus
<ul style="list-style-type: none"> • Immediate PPH^a 	<ul style="list-style-type: none"> • Complete placenta • Uterus contracted 	Tears of cervix, vagina or perineum
<ul style="list-style-type: none"> • Placenta not delivered within 30 minutes after delivery 	<ul style="list-style-type: none"> • Immediate PPH^a • Uterus contracted 	Retained placenta
<ul style="list-style-type: none"> • Portion of maternal surface of placenta missing or torn membranes with vessels 	<ul style="list-style-type: none"> • Immediate PPH^a • Uterus contracted 	Retained placental fragments
<ul style="list-style-type: none"> • Uterine fundus not felt on abdominal palpation • Slight or intense pain 	<ul style="list-style-type: none"> • 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.

1**Call for Help !**

Specific management for uterine atony after childbirth

2

Continue to massage the uterus

**3**

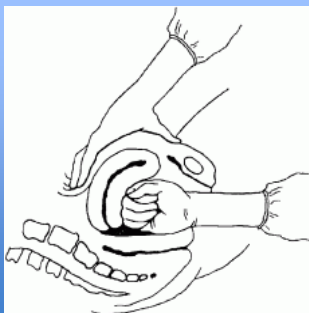
Administer uterotonics together or sequentially

**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

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):

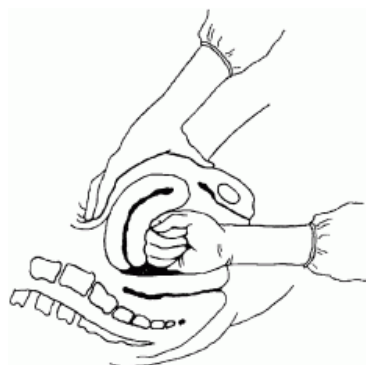


Figure 1. Bimanual compression of the uterus

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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