

Clinical care and treatment guidelines for postpartum hemorrhage

Copied from: World Health Organization. *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors (MCPC)*. WHO: Geneva, 2003.

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Clinical care and treatment guidelines for postpartum hemorrhage

Introduction

This section includes the clinical care and treatment guidelines for postpartum hemorrhage based on the World Health Organization manual *Managing Complications in Pregnancy and Childbirth: A Guide for Midwives and Doctors (MCPC)* (2003).

http://www.who.int/reproductive-health/impac/Symptoms/Vaginal_bleeding_after_S25_S34.html

(Accessed August 11, 2008)

Emergency obstetric care—vaginal bleeding after childbirth: Diagnosis and immediate management

Vaginal bleeding after childbirth

Vaginal bleeding in excess of 500 mL after childbirth is defined as postpartum hemorrhage (PPH). There are, however, some problems with this definition:

- Estimates of blood loss are notoriously low, often half the actual loss. Blood is mixed with amniotic fluid and sometimes with urine. It is dispersed on sponges, towels and linens, in buckets and on the floor.
- The importance of a given volume of blood loss varies with the woman's hemoglobin level. A woman with a normal hemoglobin level will tolerate blood loss that would be fatal for an anemic woman.

Even healthy, non-anemic women can have catastrophic blood loss.

- Bleeding may occur at a slow rate over several hours and the condition may not be recognized until the woman suddenly enters shock.

Risk assessment in the antenatal period does not effectively predict those women who will have PPH. **Active management of the third stage should be practiced on all women in labor since it reduces the incidence of PPH due to uterine atony.** All postpartum women must be closely monitored to determine those that have PPH.

Problems

- Increased vaginal bleeding within the first 24 hours after childbirth (immediate PPH).
- Increased vaginal bleeding following the first 24 hours after childbirth (delayed PPH).

Continuous slow bleeding or sudden bleeding is an emergency; intervene early and aggressively.

General management

- **SHOUT FOR HELP.** Urgently mobilize all available personnel.
- Make a rapid evaluation of the general condition of the woman including vital signs (pulse, blood pressure, respiration, temperature).
- If **shock is suspected**, immediately begin treatment. Even if signs of shock are not present, keep shock in mind as you evaluate the woman further because her status may worsen rapidly. If **shock develops**, it is important to begin treatment immediately.
- Massage the uterus to expel blood and blood clots. Blood clots trapped in the uterus will inhibit effective uterine contractions.
- Give oxytocin 10 units IM.
- Start an IV infusion and infuse IV fluids.
- Catheterize the bladder.

- Check to see if the placenta has been expelled and examine the placenta to be certain it is complete ([Table 1](#)).
- Examine the cervix, vagina and perineum for tears.
- **After bleeding is controlled** (24 hours after bleeding stops), determine hemoglobin or hematocrit to check for anemia:
 - If **hemoglobin is below 7 g/dL** or **hematocrit is below 20%** (severe anemia):
 - Give ferrous sulfate or ferrous fumarate 120 mg by mouth PLUS folic acid 400 mcg by mouth once daily for 3 months;
 - After 3 months, continue supplementation with ferrous sulfate or ferrous fumarate 60 mg by mouth PLUS folic acid 400 mcg by mouth once daily for 6 months.
 - If **hemoglobin is between 7–11 g/dL**, give ferrous sulfate or ferrous fumarate 60 mg by mouth PLUS folic acid 400 mcg by mouth once daily for 6 months;
 - Where **hookworm is endemic** (prevalence of 20% or more), give one of the following anthelmintic treatments:
 - albendazole 400 mg by mouth once;
 - OR mebendazole 500 mg by mouth once or 100 mg two times per day for 3 days;
 - OR levamisole 2.5 mg/kg body weight by mouth once daily for 3 days;
 - OR pyrantel 10 mg/kg body weight by mouth once daily for 3 days.
 - If **hookworm is highly endemic** (prevalence of 50% or more), repeat the anthelmintic treatment 12 weeks after the first dose.

Diagnosis

TABLE 1
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 	<u>Atonic uterus</u>
<ul style="list-style-type: none"> • Immediate PPH^a 	<ul style="list-style-type: none"> • Complete placenta • Uterus contracted 	<u>Tears of cervix, vagina or perineum</u>
<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 	<u>Retained placenta</u>
<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 	<u>Retained placental fragments</u>
<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 	<u>Inverted uterus</u>
<ul style="list-style-type: none"> • Bleeding occurs more than 24 hours after delivery • Uterus softer and larger than expected for elapsed time since delivery 	<ul style="list-style-type: none"> • Bleeding is variable (light or heavy, continuous or irregular) and foul-smelling • Anemia 	<u>Delayed PPH</u>
<ul style="list-style-type: none"> • Immediate PPH^a (bleeding is intra-abdominal and/or vaginal) • Severe abdominal pain (may decrease after rupture) 	<ul style="list-style-type: none"> • Shock • Tender abdomen • Rapid maternal pulse 	<u>Ruptured uterus</u>

^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.

Emergency obstetric care—vaginal bleeding after childbirth: Atonic uterus

Specific management

An atonic uterus fails to contract after delivery.

- Continue to massage the uterus.
- Use uterotonic drugs which can be given together or sequentially (Table 2).

TABLE 2

Use of uterotonic drugs

	Oxytocin	Ergometrine/ Methyl-ergometrine	15-methyl Prostaglandin F2a
Dose and route	IV: Infuse 20 units in 1 L IV fluids at 60 drops per minute IM: 10 units	IM or IV (slowly): 0.2 mg	IM: 0.25 mg
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 or IV (slowly) every 4 hours	0.25 mg every 15 minutes
Maximum dose	Not more than 3 L of IV fluids containing oxytocin	5 doses (Total 1.0 mg)	8 doses (Total 2 mg)
Precautions/ Contraindications	Do not give as an IV bolus	Pre-eclampsia, hypertension, heart disease	Asthma

Prostaglandins should not be given intravenously. They may be fatal.

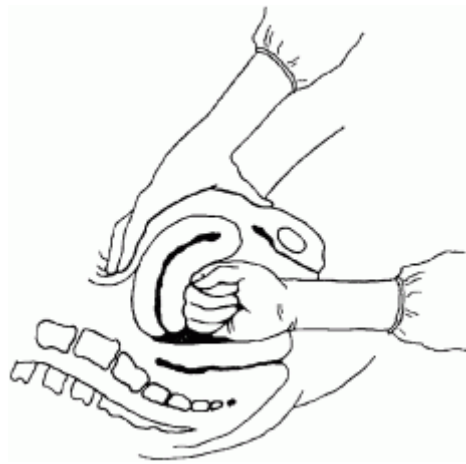
- Anticipate the need for blood early, and transfuse as necessary.
- If **bleeding continues**:
 - Check placenta again for completeness;
 - If there are **signs of retained placental fragments** (absence of a portion of maternal surface or torn membranes with vessels), remove remaining placental tissue;
 - Assess clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.

Bimanual compression of the uterus

- If **bleeding continues** in spite of management above:
 - Perform bimanual compression of the uterus ([Figure 2](#)):
 - Wearing high-level disinfected gloves, insert a hand into the vagina and form a fist;
 - Place the fist into the anterior fornix and apply pressure against the anterior wall of the uterus;
 - With the other hand, press deeply into the abdomen behind the uterus, applying pressure against the posterior wall of the uterus;
 - Maintain compression until bleeding is controlled and the uterus contracts.

Figure 2

Bimanual compression of the uterus



Compression of abdominal aorta

- Alternatively, compress the aorta ([Figure 3](#)):
- Apply downward pressure with a closed fist over the abdominal aorta directly through the abdominal wall:
- The point of compression is just above the umbilicus and slightly to the left;
- Aortic pulsations can be felt easily through the anterior abdominal wall in the immediate postpartum period.
- With the other hand, palpate the femoral pulse to check the adequacy of compression:
- If the **pulse is palpable during compression**, the pressure exerted by the fist is inadequate;
- If the **femoral pulse is not palpable**, the pressure exerted is adequate;
- Maintain compression until bleeding is controlled.

Figure 3

Compression of abdominal aorta and palpation of femoral pulse



Packing the uterus is ineffective and wastes precious time.

- If **bleeding continues** in spite of compression:
 - Perform uterine and utero-ovarian artery ligation;
 - If **life-threatening bleeding continues** after ligation, perform subtotal hysterectomy.

Emergency obstetric care—vaginal bleeding after childbirth: Tears of cervix, vagina, or perineum

Specific management

Tears of the birth canal are the second most frequent cause of PPH. Tears may coexist with atonic uterus. Postpartum bleeding with a contracted uterus is usually due to a cervical or vaginal tear.

- Examine the woman carefully and repair tears to the cervix or vagina and perineum.
- If **bleeding continues**, assess clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.

Emergency obstetric care—vaginal bleeding after childbirth: Retained placenta and placental fragments

Specific management

There may be no bleeding with retained placenta.

- If **you can see the placenta**, ask the woman to push it out. If you can feel the placenta in the vagina, remove it.
- Ensure that the bladder is empty. Catheterize the bladder, if necessary.
- If the **placenta is not expelled**, give oxytocin 10 units IM if not already done for active management of the third stage.

Do not give ergometrine because it causes tonic uterine contraction, which may delay expulsion.

- If the **placenta is undelivered after 30 minutes of oxytocin** stimulation and the **uterus is contracted**, attempt controlled cord traction.

Note: Avoid forceful cord traction and fundal pressure as they may cause uterine inversion.

- If **controlled cord traction is unsuccessful**, attempt manual removal of placenta.

Note: Very adherent tissue may be placenta accreta. Efforts to extract a placenta that does not separate easily may result in heavy bleeding or uterine perforation which usually requires hysterectomy.

- If **bleeding continues**, assess clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.
- If **there are signs of infection** (fever, foul-smelling vaginal discharge), give antibiotics as for metritis.

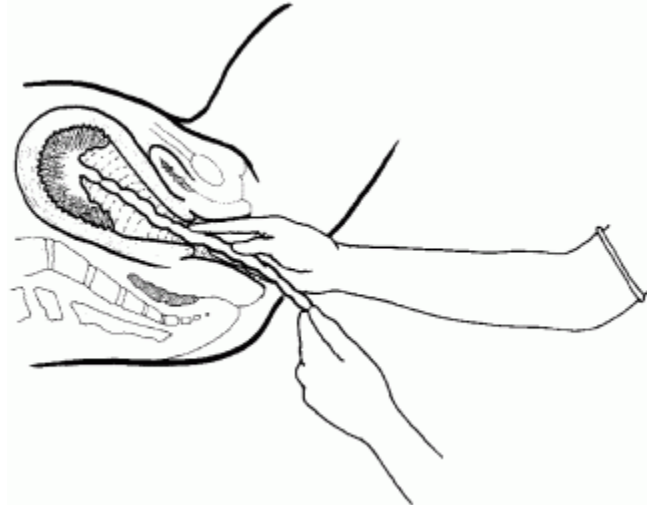
Manual removal of placenta

- Review for indications.
- Review general care principles and start an IV infusion.
- Provide emotional support and encouragement. Give pethidine and diazepam IV slowly (do not mix in the same syringe) or use ketamine.
- Give a single dose of prophylactic antibiotics:
 - ampicillin 2 g IV PLUS metronidazole 500 mg IV;
 - OR cefazolin 1 g IV PLUS metronidazole 500 mg IV.
- Hold the umbilical cord with a clamp. Pull the cord gently until it is parallel to the floor.

- Wearing high-level disinfected gloves, insert a hand into the vagina and up into the uterus (Figure 4).

Figure 4

Introducing one hand into the vagina along cord



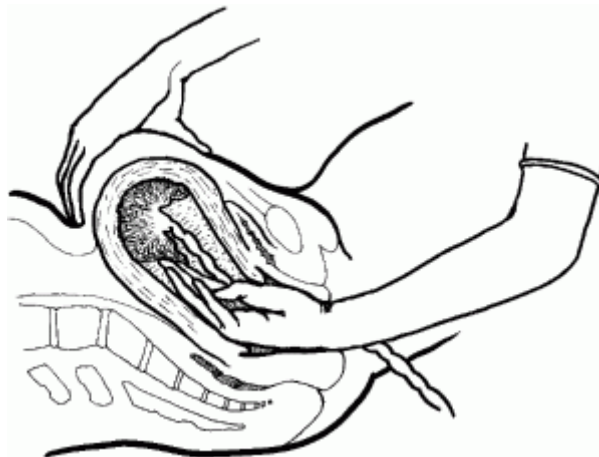
- Let go of the cord and move the hand up over the abdomen in order to support the fundus of the uterus and to provide counter-traction during removal to prevent inversion of the uterus (Figure 5).

Note: If **uterine inversion occurs**, reposition the uterus.

- Move the fingers of the hand laterally until the edge of the placenta is located.
- If the **cord has been detached previously**, insert a hand into the uterine cavity. Explore the entire cavity until a line of cleavage is identified between the placenta and the uterine wall.

Figure 5

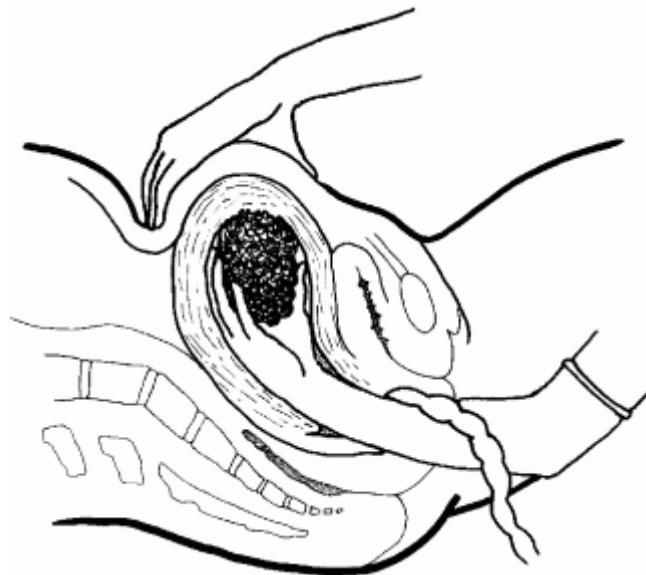
Supporting the fundus while detaching the placenta



- Detach the placenta from the implantation site by keeping the fingers tightly together and using the edge of the hand to gradually make a space between the placenta and the uterine wall.
- Proceed slowly all around the placental bed until the whole placenta is detached from the uterine wall.
- If the **placenta does not separate from the uterine surface** by gentle lateral movement of the fingertips at the line of cleavage, suspect placenta accreta and proceed to laparotomy and possible subtotal hysterectomy.
- Hold the placenta and slowly withdraw the hand from the uterus, bringing the placenta with it (Figure 6).
- With the other hand, continue to provide counter-traction to the fundus by pushing it in the opposite direction of the hand that is being withdrawn.

Figure 6

Withdrawing the hand from the uterus



- Palpate the inside of the uterine cavity to ensure that all placental tissue has been removed.
- Give oxytocin 20 units in 1 L IV fluids (normal saline or Ringer's lactate) at 60 drops per minute.
- Have an assistant massage the fundus of the uterus to encourage a tonic uterine contraction.
- If there is **continued heavy bleeding**, give ergometrine 0.2 mg IM or prostaglandins (Table 2).
- Examine the uterine surface of the placenta to ensure that it is complete. If any **placental lobe or tissue is missing**, explore the uterine cavity to remove it.
- Examine the woman carefully and repair any tears to the cervix or vagina, or repair episiotomy.

Problems

- If the **placenta is retained due to a constriction ring** or if **hours or days have passed since delivery**, it may not be possible to get the entire hand into the uterus. Extract the placenta in fragments using two fingers, ovum forceps or a wide curette.

Post-procedure care

- Observe the woman closely until the effect of IV sedation has worn off.
- Monitor the vital signs (pulse, blood pressure, respiration) every 30 minutes for the next 6 hours or until stable.
- Palpate the uterine fundus to ensure that the uterus remains contracted.
- Check for excessive lochia.
- Continue infusion of IV fluids.
- Transfuse as necessary.

Retained placental fragments

There may be no bleeding with retained placental fragments.

When a portion of the placenta—one or more lobes—is retained, it prevents the uterus from contracting effectively.

- Feel inside the uterus for placental fragments. Manual exploration of the uterus is similar to the technique described for removal of the retained placenta.
- Remove placental fragments by hand, ovum forceps or large curette.

Note: Very adherent tissue may be placenta accreta. Efforts to extract fragments that do not separate easily may result in heavy bleeding or uterine perforation which usually requires hysterectomy.

- If **bleeding continues**, assess clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.

Emergency obstetric care—vaginal bleeding after childbirth: Inverted uterus

Specific management

The uterus is said to be inverted if it turns inside-out during delivery of the placenta. Repositioning the uterus should be performed immediately. With the passage of time the constricting ring around the inverted uterus becomes more rigid and the uterus more engorged with blood.

- If the **woman is in severe pain**, give pethidine 1 mg/kg body weight (but not more than 100 mg) IM or IV slowly or give morphine 0.1 mg/kg body weight IM.

Note: Do not give uterotonic drugs until the inversion is corrected.

- If **bleeding continues**, assess clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy.
- Give a single dose of prophylactic antibiotics after correcting the inverted uterus:
 - ampicillin 2 g IV PLUS metronidazole 500 mg IV;
 - OR cefazolin 1 g IV PLUS metronidazole 500 mg IV.
- If **there are signs of infection** (fever, foul-smelling vaginal discharge), give antibiotics as for metritis.
- If **necrosis is suspected**, perform vaginal hysterectomy. This may require referral to a tertiary care centre.

Emergency obstetric care—vaginal bleeding after childbirth: Delayed (“secondary”) postpartum hemorrhage

Specific management

- If **anemia is severe** (hemoglobin less than 7 g/dL or hematocrit less than 20%), arrange for a transfusion and provide oral iron and folic acid.
- If **there are signs of infection** (fever, foul-smelling vaginal discharge), give antibiotics as for metritis.

Prolonged or delayed PPH may be a sign of metritis.

- Give uterotonic drugs (Table 2).
- If the **cervix is dilated**, explore by hand to remove large clots and placental fragments. Manual exploration of the uterus is similar to the technique described for removal of the retained placenta.
- If the **cervix is not dilated**, evacuate the uterus to remove placental fragments.
- Rarely, if **bleeding continues**, consider uterine and utero-ovarian artery ligation or hysterectomy.
- Perform histologic examination of curettings or hysterectomy specimen, if possible, to rule out trophoblastic tumour.