



Prevention of Postpartum Hemorrhage: Implementing Active Management of the Third Stage of Labor (AMTSL)

**A Reference Manual for
Health Care Providers**

**Causes and prevention
of postpartum
hemorrhage**



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PPH causes and prevention

Key definitions

Immediate PPH: Vaginal bleeding in excess of 500 mL, occurring **less than** 24 hours after childbirth.

Delayed PPH: Excessive vaginal bleeding (vaginal bleeding increases rather than decreases after delivery), occurring **more than** 24 hours after childbirth.

Uterine rupture: A tear in the wall of the uterus. In a complete rupture, the tear goes through all layers of the uterine wall and the consequences can be dire for mother and baby. In an incomplete rupture the peritoneum is still intact. A uterine rupture is a life-threatening event for mother and baby. A uterine rupture typically occurs during early labor, but may already develop during late pregnancy.

Uterine inversion: A turning of the uterus inside out, whereby the uterine fundus is forced through the cervix and protrudes into or outside of the vagina.

Disseminated intravascular coagulopathy (DIC): A pathological process in the body where the blood starts to coagulate throughout the whole body. This depletes the body of its platelets and coagulation factors, and there is an increased risk of hemorrhage.

Introduction

The loss of some blood during childbirth and postpartum is normal and cannot be avoided. However, losing any amount of blood beyond normal limits can cause serious problems even for the woman with normal hemoglobin levels.

Note: The importance of a given volume of blood loss varies with the woman's health status.

A woman with a normal haemoglobin level may tolerate blood loss that would be fatal for an anaemic woman.

—WHO 2007¹

For many anemic women, even the normal amount of blood loss might be catastrophic. Fortunately, providers can take action to prevent unnecessary blood loss.

PPH is defined as vaginal bleeding in excess of 500 mL; severe PPH is blood loss exceeding 1,000 mL. Because it is difficult to measure blood loss accurately, research shows that blood loss is frequently underestimated. For instance, nearly half of women who deliver vaginally often lose at least 500 mL of blood, and those who give birth by cesarean delivery normally lose 1,000 mL or more. For many women, this amount of blood loss does not lead to problems; however, outcomes are different for each woman.

For severely anemic women, blood loss of as little as 200 to 250 mL can be fatal. This is especially important for women living in developing countries, where significant numbers of women have severe anemia. For these reasons, a more accurate definition of PPH might be *any amount of bleeding that causes a change for the worse in the woman's condition* (e.g., low systolic blood pressure, rapid pulse, signs of shock).

Predicting who will have PPH based on risk factors is difficult because **two-thirds of women who have PPH have no risk factors.**² Therefore, all women are considered at risk, and hemorrhage prevention must be incorporated into care provided at every birth.

Note: Every woman is at risk for PPH.

Causes of PPH

There are several possible reasons for severe bleeding during and after the third stage of labor. The most important causes of PPH include:

- **Uterine atony**, or inadequate uterine contraction, is the most common cause of severe PPH in the first 24 hours after childbirth. Contractions of the uterine muscle fibers help to compress maternal blood vessels. Bleeding may continue from the placental site if contractions are not adequate.

Many factors can contribute to the loss of uterine muscle tone, including:

- Retained placenta or placental fragments.
 - Overdistention of the uterus due to multiple gestation, excess amniotic fluid, large baby, or multiparity.
 - Prolonged labor.
 - Induction or augmentation of labor.
 - Precipitous labor (labor lasting less than 3 hours).
 - Full bladder.
- **Cervical, vaginal, or perineal lacerations and episiotomy.** Undetected or untreated lacerations are the second most common cause of PPH. Episiotomy causes loss of blood and can lead to lacerations. Lacerations can also be caused by deliveries that are poorly controlled, difficult, or managed with instruments (e.g., large baby, twins, or non-cephalic presentation). When the woman has genital lacerations, it is still important to check for and treat uterine atony because these conditions may occur together.
 - **Retained placenta or placental fragments.** If the uterus is not empty, it cannot contract adequately. This can occur if even a small part of the placenta or membranes is retained. A partially separated placenta may also cause bleeding.
 - **Uterine rupture and uterine inversion.** Although rare, these conditions also cause PPH.
 - **DIC.** Although uncommon, this clotting disorder—associated with pre-eclampsia, eclampsia, prolonged labor, abruption placentae, and infections—is a significant and serious cause of PPH.

Preventing PPH and careful monitoring during the first hours after birth are critical for every woman at every birth. Despite the best strategies to prevent blood loss, approximately three percent of women will still lose blood in excess of 1,000 mL. Preparing for early treatment of PPH (e.g., additional uterotonic drugs) is critical to women's health.



PPH prevention and early detection

It is impossible to predict which women are more likely to have a PPH. Many factors may contribute to uterine atony or lacerations. Addressing these factors may help **prevent** PPH and reduce the amount of bleeding a woman may have. Taking a preventive approach can save women's lives.

Despite the best efforts of health providers, women may still suffer from PPH. If PPH does occur, positive outcomes depend on how healthy the woman is when she has PPH (particularly her hemoglobin level), how soon a diagnosis is made, and how quickly effective treatment is provided after PPH begins.

To prevent PPH and reduce the risk of death, routine preventive actions should be offered to all women from pregnancy through the immediate postpartum period.

During antenatal care

Health care providers should take the following steps during antenatal care:

- Develop a birth preparedness plan. Women should plan to give birth with a skilled attendant who can **provide interventions to prevent PPH** (including AMTSL), and can **identify and manage PPH, and refer the woman for additional treatment if needed.**
- Develop a complication readiness plan that includes recognition of danger signs and what to do if they occur, where to get help and how to get there, and how to save money for transport and emergency care. For more information, see Additional Topic 2: Birth preparedness and complication readiness.
- Routinely screen to prevent and treat anemia during pre-conceptual, antenatal, and postpartum visits. Counsel women on nutrition, focusing on available iron and folic acid-rich foods, and provide iron/folate supplementation during pregnancy.
- Help prevent anemia by addressing major causes, such as malaria and hookworm:
 - For malaria, encourage use of insecticide-treated bednets, provide intermittent preventive treatment during pregnancy to prevent asymptomatic infections among pregnant women living in areas of moderate or high transmission of *Plasmodium falciparum*, and ensure effective case management for malaria illness and anemia.
 - For hookworm, provide treatment at least once after the first trimester.
- In cases where the woman cannot give birth with a skilled attendant, prevent prolonged/obstructed labor by providing information about the signs of labor, when labor is too long, and when to come to the facility or contact the birth attendant.
- Prevent harmful practices by helping women and their families to recognize harmful customs practiced during labor (e.g., providing herbal remedies to increase contractions, health workers giving oxytocin by intramuscular [IM] injection during labor).

- Take culturally sensitive actions to involve men and encourage understanding about the urgency of labor and need for immediate assistance.

During labor and second stage

Health care providers should take the following steps during the first and second stages of labor:

- Use a partograph to monitor and guide management of labor and quickly detect unsatisfactory progress.
- Ensure early referral when progress of labor is unsatisfactory.
- Encourage the woman to keep her bladder empty.
- Limit induction or augmentation use for medical and obstetric reasons.
- Limit induction or augmentation of labor to facilities equipped to perform a cesarean delivery.
- Do not encourage pushing before the cervix is fully dilated.
- Do not use fundal pressure to assist the birth of the baby.
- Do not perform routine episiotomy. Consider episiotomy only with complicated vaginal delivery (e.g., breech, shoulder dystocia, forceps, vacuum, scarring from female genital cutting or poorly healed third- or fourth-degree tears, and fetal distress).
- Assist the woman in the controlled delivery of the baby's head and shoulders to help prevent tears. Place the fingers of one hand against the baby's head to keep it flexed (bent), support the perineum, and instruct the woman to use breathing techniques to push or stop pushing.

During third stage

Health care providers should take the following steps during the third stage:

- Provide AMTSL—the single most effective way to prevent PPH.
- Do not use fundal pressure (apply pressure on a woman's abdomen to help expel the placenta) to assist the delivery of the placenta.
- Do not perform CCT without administering a uterotonic drug.
- Do not perform CCT without providing countertraction to support the uterus.

After delivery of the placenta

Health care providers should provide the following care during the immediate postpartum period (the first six hours after childbirth):

- Routinely inspect the vulva, vagina, perineum, and anus to identify genital lacerations. Cervical examination is only recommended when the cause of PPH has not been diagnosed and uterine atony, lower genital lacerations, and retained placenta are ruled out.
- Inspect the placenta and membranes.
- Evaluate if the uterus is well contracted and massage the uterus at regular intervals after placental delivery to keep the uterus well-contracted and firm (at least every 15 minutes for the first two hours after birth).
- Teach the woman to massage her own uterus to keep it firm. Instruct her on how to check her uterus and to call for assistance if her uterus is soft or if she experiences increased vaginal bleeding.



- Monitor the woman for vaginal bleeding and uterine hardness every 15 minutes for the first two hours, every 30 minutes during the third hour, and then every 60 minutes for the next three hours.
- Encourage the woman to keep her bladder empty during the immediate postpartum period.
- Plan to do a complete assessment of the woman one and six hours after childbirth.

Teach the woman and her family about postpartum and newborn danger signs. Help the family develop a complication-readiness plan before the woman is discharged from the health care facility.



References

¹ World Health Organization (WHO) Department of Making Pregnancy Safer. Prevention of Postpartum Haemorrhage by Active Management of the Third Stage of Labour. *MPS Technical Update*. Geneva, Switzerland: WHO; October 2007. Available at: http://www.who.int/making_pregnancy_safer/publications/PPH_TechUpdate2.pdf. Accessed April 2, 2007.

² JHPIEGO. Preventing Postpartum Hemorrhage: Active Management of the Third Stage of Labor—A Maternal And Neonatal Health Program Best Practice. *JHPIEGO TrainerNews*. Washington, DC: JHPIEGO; November 2001. Available at: <http://www.reproline.jhu.edu/english/6read/6issues/6jtn/v4/tn110hemor.htm>. Accessed September 28, 2007.