Integrating active management of the third stage of labor (AMTSL) and immediate postnatal care

A Reference Manual for Health Care Providers
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2009

Prevention of Postpartum Hemorrhage Initiative (POPPHI)

BASICS

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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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About the learning materials

This learning package for integrating active management of the third stage of labor (AMTSL) and immediate postnatal care (IPNC) consists of a reference manual, a participant’s notebook, and a facilitator’s guide. This learning package was developed for use by nurses, midwives, and doctors providing childbirth and immediate postpartum care for the woman and newborn in peripheral health care facilities.

These documents comprise a set and should be used together.

- The **Reference Manual** contains the theoretical content for the training course. It is intended to serve as the “textbook” or reference for participants and facilitators.

- The **Facilitator’s Guide** includes lesson plans, knowledge evaluation tests (pre-test, mid-course test, and post-test) and their suggested answers, answers for learning exercises, and guidelines for conducting a clinical training program.

- The **Participant’s Notebook** assists participants throughout the training program. The notebook has the following components: overview of and agenda for the training program, learning objectives, learning exercises, practice and evaluation checklists for competencies to be evaluated, and additional printed materials.

These resources are distinguished within the series by an identifying icon located on the top of the odd-numbered pages:
# List of Abbreviations

<table>
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<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>AMTSL</td>
<td>active management of the third stage of labor</td>
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<tr>
<td>CCT</td>
<td>controlled cord traction</td>
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<tr>
<td>DIC</td>
<td>disseminated intravascular coagulopathy</td>
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<tr>
<td>FIGO</td>
<td>International Federation of Gynaecology and Obstetrics</td>
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<tr>
<td>HLD</td>
<td>high-level disinfected</td>
</tr>
<tr>
<td>ICM</td>
<td>International Confederation of Midwives</td>
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<tr>
<td>IM</td>
<td>intramuscular</td>
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<tr>
<td>IPNC</td>
<td>immediate postnatal care</td>
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<tr>
<td>IU</td>
<td>international units</td>
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<tr>
<td>MTCT</td>
<td>mother to child transmission of HIV/AIDS</td>
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<tr>
<td>PMTCT</td>
<td>prevention of mother to child transmission of HIV/AIDS</td>
</tr>
<tr>
<td>POPPHI</td>
<td>Prevention of Postpartum Hemorrhage Initiative</td>
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<tr>
<td>PPH</td>
<td>postpartum hemorrhage</td>
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<tr>
<td>PPPH</td>
<td>prevention of postpartum hemorrhage</td>
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<tr>
<td>TTI</td>
<td>time-temperature indicator</td>
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<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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<tr>
<td>VVM</td>
<td>vaccine vial monitor</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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Introduction

Efforts such as the Safe Motherhood Initiative and the World Health Organization (WHO) Making Pregnancy Safer Division and strategies to meet the United Nations Millennium Development Goals are supporting worldwide activities to reduce maternal and newborn mortality. Despite these efforts, hundreds of thousands of women and babies die or become disabled due to complications of pregnancy and childbirth every year.

Half of the maternal deaths occur within 24 hours of childbirth with postpartum hemorrhage (PPH) being the leading direct cause of maternal death in most developing countries. Many of the cases of PPH result from problems during and immediately after the third stage of labor. PPH is an unpredictable and rapid cause of maternal death worldwide, with two-thirds of women with PPH having no identifiable risk factors. Seventy to ninety percent of immediate PPH is attributed to uterine atony (failure of the uterus to properly contract after birth). Fortunately, current evidence indicates that active management of the third stage of labor (administration of uterotonic drugs, controlled cord traction, and fundal massage after delivery of the placenta) can reduce the incidence of postpartum hemorrhage by up to 60 percent.

75 percent of all neonatal deaths take place in the first week and 50 percent within 24 hours after birth. The postpartum/postnatal period, especially the early phase, is also the most neglected part of the pregnancy, delivery, and postpartum continuum of care. It stands to reason, therefore, that newborns may stand a better chance of surviving if they receive care during the period when they are at the greatest risk of dying.

Since the health and survival of the newborn are closely tied to that of the mother, it is important to integrate maternal and newborn health care into training programs, wherever possible. Although it is not feasible to integrate all aspects of maternal and newborn care, this set of materials links selected aspects, including active management of the third stage of labor with care of the baby at birth, and immediate postnatal care of the woman and the baby.

Ongoing research in various settings continues to identify the best approaches for preventing and managing postpartum bleeding and its complications as well as caring for the newborn and woman in the immediate postpartum period. By developing national guidelines, training skilled birth attendants, improving work environments of skilled providers, ensuring the application of infection prevention principles, and supporting the development of improved access to care, more women will have access to these interventions.
CHAPTER 1: Preventing Infection

This section provides guidelines on infection prevention practices to use when providing maternal and newborn services and is adapted from materials developed by JHPIEGO, EngenderHealth, and WHO. 6, 7, 8

Principles of infection prevention

Infection prevention practices are based on the following five principles/actions:

• Every person (client or staff) is considered potentially infectious.
• Hand washing is the single most important practice for preventing cross-contamination.
• Wear gloves before touching anything wet—broken skin, mucous membranes, blood, or other body fluids.
• Use protective gear (aprons, face masks, eye goggles, and caps) when splashes or spills of body fluids are expected.
• Use safe work practices (e.g., do not recap or bend needles), following guidelines for handling and cleaning instruments and disposal of sharps and medical waste.

Hand Washing

Hand washing significantly reduces the number of potentially infection-causing organisms on health workers’ hands and decreases the incidence of client sickness and death due to clinic-acquired infections. It also protects the health worker from contact with blood and other body fluids.

Wash hands on the following occasions:

• immediately when you arrive at work.
• before examining each client (mother or baby).
• after examining each client (mother or baby).
• before putting on gloves for clinical procedures (such as a pelvic exam or an IUD insertion).
• after touching any instrument or object that might be contaminated with blood or other body fluids, or after touching mucous membranes.
• after removing any kind of gloves (hands can become contaminated if gloves contain tiny holes or tears).
• after using the toilet or latrine.
• before leaving work.

Materials required for hand washing include:

• clean running water
• liquid soap (preferably in a receptacle fixed to the wall) or small pieces of soap, ideally used only once. Where feasible, liquid antiseptic soap would be better for places such as the delivery room and operating theater.
• sink or bowls
• veronica bucket (bucket with a tap)
• individual towels
The steps in hand washing are:

1. Remove watches, bracelets, and rings.
2. Nails should be short and without nail polish; artificial nails should not be worn.
3. Wet hands with running water.
4. Rub hands together with soap and lather well up to the elbows, covering all surfaces for 15-30 seconds. When attending deliveries, carrying out procedures, and where the hands are visibly soiled, wash longer, for about two minutes.
5. Weave fingers and thumbs together and slide them back and forth, taking care to rub well between the fingers and the back of the hand.
6. Rinse hands under a stream of clean, running water until all soap is gone.
7. If there is no running water, hands should not be dipped inside the bowl of water; instead, the water should be poured over the hands from another container.
8. Blot hands dry with a clean, dry towel or air-dry them; air-drying is the best, especially when sterile gloves have to be worn.

These steps are illustrated in Figure 1-1.
Handwashing Technique with Soap and Water

Figure 1-1. Hand washing.
(WHO Guidelines on Hand Hygiene, 2006).
The Hand Rub

When hand washing is not possible, hand rubbing is recommended. But so long as running water is available the hand rub should not be used as a substitute for attending deliveries or when the hands are visibly soiled. The materials required are alcohol and a glycerine solution. The steps in hand rubbing are:

1. Add 2 mL of glycerine, propylene glycol, or sorbitol to 100 mL of 60-90% alcohol.
2. Pour 1 teaspoon of the rub in the palm of the hand.
3. Rub hands together, including in between the fingers and under the nails, until dry.
4. Wash hands with soap and water after using the hand-rub 5 times.

The technique using the alcohol-based formulation is shown in Figure 1-2.

Hand Hygiene Technique with Alcohol-Based Formulation

![Hand Hygiene Technique with Alcohol-Based Formulation](image)

**Figure 1-2. Hand rubbing.**
(Who Guidelines on Hand Hygiene, 2006.)
Use of Gloves

Gloves protect the client from contact with micro-organisms on the health worker’s hands, and the health worker from contact with blood and other body fluids.

Three types of gloves are commonly used:

- examination gloves (for contact with skin and intact mucus membranes and wherever there is risk of exposure for the health worker).
- sterile/disposable surgical gloves (for contact with tissues under the skin or with the bloodstream, and preferably for conducting deliveries).
- utility or heavy-duty household gloves, reusable after cleaning (for handling dirty linen, instruments, and waste, for housekeeping and cleaning contaminated surfaces).

Wear gloves when:

- performing a procedure.
- there will be contact with intact mucous membranes.
- there will be contact with the tissues under the skin or with the bloodstream.
- handling soiled items (e.g., instruments and gloves).
- disposing of contaminated waste.

When gloves are required, a separate pair of gloves must be used with each woman or baby to avoid cross-contamination. Disposable gloves are preferred, but when resources are limited, surgical gloves can be reused if they are:

- decontaminated by soaking in 0.5% chlorine for 10 minutes.
- washed and rinsed.
- sterilized by autoclaving or high-level disinfected by boiling or steaming.

Single-use or disposable surgical gloves should not be reused more than three times, even after the above steps, because invisible tears may occur.

**Note:** Do not use gloves that are cracked, peeling, visibly torn, or that contain holes.
Putting gloves on

Follow the steps below in putting gloves on.

Step 1. Preparation for putting on surgical gloves. “Gloves are cuffed to make it easier to put them on without contaminating them. When putting on sterile gloves, remember that the first glove should be picked up by the cuff only (see drawing below). The second glove should then be touched only by the other sterile glove.” Follow steps 2-6 as illustrated below.

![Figure 1-3. Putting gloves on.](http://www.engenderhealth.org/ip/surgical/sum4.html)

Step 7. “Adjust the glove fingers until the glove fits comfortably.”

Taking gloves off

![Figure 1-4. Taking gloves off.](http://www.engenderhealth.org/ip/surgical/sum4.htm)
Additional Protective Clothing

Other kinds of protective clothing are listed and discussed below:

- coats/gowns
- waterproof aprons
- masks
- caps
- eye covers-face shields
- boots/slippers

Gowns and waterproof aprons protect clients against micro-organisms and protect the provider’s skin and clothes from contact with blood and other fluids.

- Always wear a clean, preferably sterile gown during delivery.
- If the gown has long sleeves, place gloves over the gown sleeve to avoid contaminating the gloves.
- Ensure that gloved hands are held high above the level of the waist and do not come into contact with the gown.

Masks protect clients against micro-organisms expelled during talking, coughing, and breathing, provided they are worn and used correctly, covering the mouth and nose. They also protect the provider’s nose and mouth from splashes of blood and other fluids.

Caps protect clients against micro-organisms in hair and skin shed from the provider's head. No protection has been documented for providers.

Eye covers/face shields protect the provider’s eyes from splashes of blood and other fluids. No protection has been documented for clients.

Changing slippers at entry into the delivery room prevents bringing in the dirt from outside.

Treatment of Soiled Linen

Correct handling of linen prevents the spread of infections to hospital personnel who transport, sort, and clean the linen. It also prevents accidental injuries to hospital personnel who transport, sort, and clean the linen. Linen for delivery rooms, surgery, and neonatal units should be sterilized.

The materials required to treat soiled linen include:

- utility gloves
- heavy duty plastic bags or buckets with covers
- detergent
- water
- washing machine (ideal and far better than washing by hand)

No additional precautions (e.g., pre-rinsing, labeling, separating, or double bagging) are necessary, regardless of the patient diagnosis, if standard precautions are used in all situations.
The steps for treating soiled linen are as follows:

1. Housekeeping and laundry personnel should wear gloves and other personal protective equipment as indicated when collecting, handling, transporting, sorting, and washing soiled linen.

2. When collecting and transporting soiled linen, handle it as little as possible and with minimum contact to avoid accidental injury and spreading of micro-organisms.

3. Consider all cloth items (e.g., surgical drapes, gowns, wrappers) used during a procedure as infectious; even if there is no visible contamination, the item must be laundered.

4. Carry soiled linen in covered containers or plastic bags to prevent spills and splashes, and confine the soiled linen to designated areas (interim storage area) until transported to the laundry.

5. Carefully sort all linen in the laundry area before washing. Do not presort or wash linen at the point of use.

6. Pre-soak heavily soiled linen in soap, water, and bleach; wash separately from non-soiled linen.

7. Hand- or machine-wash (the latter is preferred).

8. Air- or machine-dry completely (latter preferred). If air-drying, keep linen off the ground and away from animals and dirt.

9. Sterilize linen for delivery rooms, operation theaters, and neonatal units by autoclaving that avoids burning. The linens should be in packs of not more than 5 kg.; they may be in suitable drums.

10. After autoclaving, store in a clean, dry, preferably closed storage area.

Handling Sharp Instruments

Careful handling of “sharps” protects the client, health worker, and housekeeping staff from accidental injuries and exposure to blood and body fluids. Guidelines:

- Do not leave sharp instruments or needles (“sharps”) in places other than “safe” zones.
- Use a tray or basin to carry and pass sharp items.
- Pass instruments with the handle (not the sharp end) pointing toward the receiver.
- Announce to others before passing sharps.

Needles and syringes

Follow these guidelines to ensure safe handling of needles and syringes:

- Use each needle and syringe only once.
- Do not take needle and syringe apart after use.
- Do not recap, bend, or break needles before disposal.
- Dispose of needles and syringes in a puncture-proof container.

It is not recommended to recap needles. Where it is unavoidable, as in a situation where the needle cannot be placed in an appropriate, safe receptacle for “sharps,” then recap the needle, using the “one-hand technique” for recapping (Figure 1-5).

Step 1: Place the cap on a hard, flat surface.
Step 2: Hold the syringe with one hand and use the needle to “scoop up” the cap.
Step 3: When the cap covers the needle completely, hold the base of the needle and use the other hand to make sure the cap is firmly in place.

Figure 1-5. One-hand technique for needle recapping.

(WHO and CDC, 2007)
Dispose of hypodermic needles and other sharps properly in a puncture-proof (heavy cardboard, glass, metal, or thick plastic) container (sharps container shown below).

Make hypodermic needles unusable by burning them or, when the above container is ¾ full, seal the opening and burn the container or fill the container with decontaminating solution, seal the opening, and bury the container.

Preventing Splashes

Wear appropriate protective goggles, gloves, and gown during delivery. Preventing splashes protects the client, health worker, and housekeeping staff from accidental injuries and exposure to blood and body fluids.

Prevent splashes from blood or amniotic fluid by following these guidelines:

- Avoid snapping the gloves when removing, as this may cause contaminants to splash into the eyes, mouth, or on to the skin or others.
- Hold instruments and other items under the surface of the water while scrubbing and cleaning to avoid splashing.
- Place items gently into the decontamination bucket to avoid splashes.
- Avoid rupturing membranes during a uterine contraction.
- Stand to the side when rupturing membranes to avoid splashes from amniotic fluid.
- Cut the cord, using sterile scissors or a scalpel blade, under cover of a gauze swab to prevent blood spurting.
- Always wear gloves when handling a placenta and handle it carefully. Keep it in a leak-proof plastic bag or other container until it can be disposed of by burning or burying. The placenta should not be disposed of in a river or open garbage pit.

Note: If blood or body fluids get in the mouth or on skin, wash liberally with soap and water as soon as it is safe for the
woman and baby. If blood or body fluids splash in your eyes, irrigate well with water.

The Steps of Processing Instruments

Proper processing involves several steps that reduce the risk of transmitting infections from used instruments and other items to health care workers and clients. These steps are: 1) decontamination, 2) cleaning, 3) either sterilization or high-level disinfection, and 4) storage. For proper processing, it is essential to perform the steps in the correct order.

1. **Decontamination** kills viruses (hepatitis B and C, HCV, HIV) and many other germs and makes items safer to handle during cleaning and easier to clean (hence, decontamination should always be done before cleaning).

2. **Cleaning** removes blood, other body fluids, tissue, and dirt. It also reduces the number of germs and makes sterilization or HLD effective. If a blood clot remains on an instrument, germs in the clot may not be completely killed by sterilization or HLD.

   **Note:** Instruments that will be further processed with chemical solutions must dry completely to avoid diluting the chemicals; items that will be boiled or steamed do not need to be dried first.

3A. **High-level disinfection (HLD)** kills viruses (hepatitis B and C, HCV, HIV) and many other germs, but does not reliably kill all bacterial endospores. It is the only acceptable alternative when sterilization is not available. Methods of high-level disinfection include boiling, steaming, and chemical HLD.

3B. **Sterilization** kills all germs, including endospores, but is not possible in all settings.

Sterilization can be done by dry (oven), wet heat (autoclave), or with chemicals, depending on the materials and supplies to be sterilized. For example, glass items can be kept in the hot air oven, but some items such as those made of rubber and cloth need to be autoclaved.

4. **Storage/Usage.** If items are stored properly they will not become contaminated after processing. Proper storage is as important as proper processing. Items processed through the first three steps can be stored up to one week in an HLD/sterilized container.

Making a Chlorine Decontamination Solution

The ability to decontaminate instruments is a critical step in preventing infection. The most common decontamination process is to soak instruments in a 0.5% chlorine solution for 10 minutes. Chlorine solutions made from sodium hypochlorite are usually the most inexpensive, fast-acting, and effective for decontamination. A chlorine solution can be made from:

- liquid household bleach (sodium hypochlorite)
- bleach powder or chlorine compounds available in powder form (calcium hypochlorite or chlorinated lime)
- chlorine-releasing tablets (sodium dichloroisocyanurate)

Chlorine-containing compounds contain a certain percentage of "active" (or available) chlorine. Active chlorine in these products kills microorganisms. The amount of active chlorine is usually stated as a percentage and differs among products, an important fact to ensure preparation of a chlorine solution with 0.5 percent "active" chlorine that can be used to decontaminate gloves, instruments.
With regard to chlorine products, note the following:

Different products may contain different concentrations of available chlorine, and the concentration should be checked before use.

- In countries where French products are available, the amount of active chlorine is usually expressed in "degrees chlorum." One degree chlorum is equivalent to 0.3% active chlorine.
- Household bleach preparations can lose some of their chlorine over time. Use newly manufactured bleach if possible. If the bleach does not smell strongly of chlorine, it may not be satisfactory for the purpose and should not be used.
- Thick bleach solutions should never be used for disinfection purposes (other than in toilet bowls), as they contain potentially poisonous additives.

When preparing chlorine solutions for use note that:

- Because of their low cost and wide availability, chlorine solutions prepared from liquid or powdered bleach are recommended.
- Organic matter destroys chlorine, and freshly diluted solutions must therefore be prepared whenever the solution looks as though it needs to be changed (such as when it becomes cloudy or heavily contaminated with blood or other body fluids).
- Chlorine solutions gradually lose strength, and freshly diluted solutions must therefore be prepared daily.
- Calculate the ratio of water to liquid bleach, bleach powder, or chlorine-releasing tablets (see the calculations below).
- Clean, clear water should be used to make the solution because organic matter destroys chlorine.
- Use plastic containers for mixing and storing bleach solutions as metal containers are corroded rapidly and also affect the bleach.
- Prepare bleach solutions in a well-ventilated area because they give off chlorine.
- Label the container with percentage of the diluted decontamination solution prepared and note the day and time prepared.
- A 0.5% bleach solution is caustic. Avoid direct contact with skin and eyes.

**Calculating the water-to-liquid-household-bleach ratio to make a 0.5% chlorine solution**

Chlorine content in liquid bleach is available in different concentrations. You can use any concentration to make a 0.5% chlorine solution by using the following formula:

\[
\text{parts of water for each part bleach} = \frac{\% \text{ chlorine in liquid bleach}}{0.5}\% - 1
\]

**Note:** "Parts" can be used for any unit of measure (e.g., ounce, liter, or gallon) and do not have to represent a defined unit of measure (e.g., pitcher or container).

For example: To make a 0.5% chlorine solution from a 3.5% chlorine concentrate, use one part chlorine and six parts water:
[3.5% divided by 0.5%] minus 1 = [7] minus 1 = 6 parts water for each part chlorine

**Calculating the water-to-bleach-powder ratio to make a 0.5% chlorine solution**

When using bleach powder to make a decontamination solution, calculate the ratio of bleach to water using the following formula:

\[
\left(\frac{\% \text{ chlorine desired}}{\% \text{ chlorine in bleach powder}}\right) \times 1,000 = \text{grams of powder for each liter of water.}
\]

**Note:** When bleach powder is used, the chlorine solution will likely appear cloudy or milky.

For example: To make a 0.5% chlorine solution from calcium hypochlorite powder containing 35% available chlorine, use the following formula:

\[
\left(\frac{0.5\%}{35\%}\right) \times 1,000 = 0.0143 \times 1,000 = 14.3
\]

Therefore, dissolve 14.3 grams of calcium hypochlorite powder in one liter of water in order to get a 0.5% chlorine solution.

**Calculating the water-to-chlorine-releasing-tablet ratio to make a 0.5% chlorine solution**

Follow the manufacturer’s instructions when using chlorine-releasing tablets because the percentage of active chlorine in these products varies. If instructions are not available with the tablets, ask for the product instruction sheet or contact the manufacturer. Table 1-1 provides details on how to mix a decontamination solution with chlorine.

**Table 1-1. Mixing A 0.5% Chlorine Decontamination Solution**

<table>
<thead>
<tr>
<th>Liquid bleach (sodium hypochlorite solution)</th>
<th>% or grams active chlorine</th>
<th>Water-to-chlorine = 0.5% solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type or brand (by country)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8° Chlorum*</td>
<td>2.4%</td>
<td>10 mL bleach in 40 mL water</td>
</tr>
<tr>
<td>JIK (Kenya, Zambia), Robin Bleach (Nepal)</td>
<td>3.5%</td>
<td>10 mL bleach in 60 mL water</td>
</tr>
<tr>
<td>12° Chlorum</td>
<td>3.6%</td>
<td>1 part bleach to 6 parts water</td>
</tr>
<tr>
<td>Household Bleach (Indonesia, USA), ACE (Turkey), Eau de Javel (France)</td>
<td>5%</td>
<td>10 mL bleach in 90 mL water</td>
</tr>
<tr>
<td>15° Chlorum, Lejia (Peru), Blanquedor, Cloro (Mexico)</td>
<td>6%</td>
<td>10 mL bleach in 110 mL water</td>
</tr>
<tr>
<td>Lavandina (Bolivia)</td>
<td>8%</td>
<td>10 mL bleach in 150 mL water</td>
</tr>
</tbody>
</table>
### Types of Disinfectants

<table>
<thead>
<tr>
<th>Type or brand (by country)</th>
<th>% or grams active chlorine</th>
<th>Water-to-chlorine = 0.5% solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloros (United Kingdom)</td>
<td>10%</td>
<td>10 mL bleach in 190 mL water 1 part bleach to 19 parts water</td>
</tr>
<tr>
<td>Chloros (United Kingdom), Extrait de Javel (France), 48º Chlorum</td>
<td>15%</td>
<td>10 mL bleach in 290 mL water 1 part bleach to 29 parts water</td>
</tr>
<tr>
<td><strong>Dry powders</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium hypochlorite</td>
<td>70%</td>
<td>7.1 grams per liter</td>
</tr>
<tr>
<td>Calcium hypochlorite</td>
<td>35%</td>
<td>14.2 grams per liter</td>
</tr>
<tr>
<td>Sodium dichloroisocyanurate (NaDCC)</td>
<td>60%</td>
<td>8.3 grams per liter</td>
</tr>
<tr>
<td><strong>Tablets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloramine tablets*</td>
<td>1 gram chlorine per tablet</td>
<td>20 grams per liter 20 tablets per liter</td>
</tr>
<tr>
<td>Sodium dichloroisocyanurate (NaDCC-based tablets)</td>
<td>1.5 grams chlorine per tablet</td>
<td>4 tablets per liter</td>
</tr>
</tbody>
</table>

*Chloramine releases chlorine slower than hypochlorite. Before using the solution, be sure the tablet is completely dissolved.

### Waste Disposal

Proper waste disposal:
- minimizes the spread of infections and reduces the risk of accidental injury to staff who handle the waste.
- prevents the spread of infection to clients, visitors, and the local community.
- helps provide an aesthetically pleasing atmosphere.
- reduces odors.
- attracts fewer insects and does not attract animals.
- reduces the likelihood of contamination of the soil or ground water with chemicals or micro-organisms.

There is no risk from uncontaminated waste such as office paper, boxes, packages, plastic containers, and food-related trash which can be disposed of according to local guidelines.

Materials needed to dispose of waste include:
- separate waste containers for medical and nonmedical waste
- "sharps" containers
- an interim storage area
- incinerator, on-site burial pit
- protective gear, including utility gloves
Proper handling of contaminated waste, such as items with blood or body fluid, is required to minimize the spread of infection to other staff and the community. Proper handling includes:

- wearing heavy-duty gloves.
- transporting solid contaminated waste to the disposal site in covered containers.
- disposing of all sharp items in puncture-resistant containers.
- carefully pouring liquid waste down a drain or flushable toilet.
- burning or burying contaminated solid waste.
- washing hands, gloves, and containers after disposal of infectious waste.

**Housekeeping**

Good housekeeping reduces micro-organisms, reduces the risk of accidents, and provides an appealing work and service-delivery space.

Materials required for good housekeeping include:

- detergent and water (for cleaning of walls, windows, ceilings, doors, floors and equipment such as stethoscopes and weighing scales)
- disinfectant solution (0.5% chlorine solution for decontamination of soiled area before cleaning with detergent and water)
- disinfectant cleaning solution (0.5% chlorine solution with detergent):
  - Add detergent until the solution is slightly foamy.
  - Use for cleaning contaminated areas (examination and delivery rooms, operation theaters, floors, sinks, toilets/latrines, waste containers, beds, mattresses, etc.).
  
  Do not mix chlorine solution with cleaning solutions such as ammonia or phosphoric acid.

Recommended cleaning procedures are as follows:

- Cleaning procedures will depend upon the potential risk of contamination. Low-risk areas include waiting rooms and administrative areas. High-risk areas are toilets, latrines, and sluice rooms, and client-care areas such as operating theaters, procedure rooms, and laboratories, areas where instruments are cleaned and processed.
- Develop and post cleaning schedules where all housekeeping staff can see them. Make sure that cleaning schedules are closely maintained.
- Clean immediately: after spills, procedures, and deliveries.
- Clean daily (at each shift if work load is excessive): delivery, operation, and examination/procedure rooms, floors, furniture, toilets/latrines, waste containers; and wipe incubators and radiant warmers with disinfectant solutions.
- Always wear gloves (preferably thick utility gloves) when cleaning.
- Use a damp or wet mop or cloth for walls, floors, and surfaces, instead of dry-dusting or sweeping, to reduce the spread of dust and micro-organisms.
- Scrubbing is the most effective way to remove dirt and micro-organisms. Scrubbing should be a part of every cleaning procedure.
- Wash surfaces from top to bottom so that debris falls to the floor and is cleaned up last. Clean the highest fixtures first and work downward; for example, clean ceiling lamps, then shelves, then tables, and then the floor.
• Change cleaning solutions whenever they appear to be dirty. A solution is less likely to kill infectious micro-organisms if it is heavily soiled.

• Clean up spills of potentially infectious fluids immediately. When cleaning up spills:
  o Always wear gloves.
  o If the spill is small, wipe it with a cloth that has been saturated with a disinfectant (0.5% chlorine) solution.
  o If the spill is large, cover (flood) the area with a disinfectant (0.5% chlorine) solution, mop up the solution, and then clean the area with a disinfectant cleaning solution.
CHAPTER 2: Preventing Postpartum 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 a 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 hemoglobin level may tolerate blood loss that would be fatal for an anemic woman. —WHO 2007 |

For many anemic women, even a normal amount of blood loss could 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. Research shows that because it is difficult to measure blood loss accurately, it 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. 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.

- **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, abruptio placentae, and infections—is a significant and serious cause of PPH.

Preventing PPH and careful monitoring during the first hours after birth to ensure timely detection and management of PPH are critical for every woman at every birth. Despite the best strategies to prevent blood loss, a small minority 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 and survival.

**Factors contributing to uterine atony**

Uterine atony causes PPH because the uterine muscles are neither contracting nor retracting. Uterine contractions are essential for closing up maternal vessels where the placenta separated from the uterine wall. Blood can continue flowing from the placental site if the uterus does not contract adequately.

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

- **Full bladder:** If the bladder is full, this may prevent the uterus from contracting adequately.

- **Retained placenta or placental fragments:** The placenta may be partially or completely retained. In either case, the uterus cannot contract adequately when it is not empty.

- **Precipitous labor:** When a woman’s labor is less than six hours, her uterus will have worked extremely hard even if for a short time. When this happens, the uterus can sometimes be tired and be slower to contract and retract, resulting in uterine atony.

- **Prolonged or obstructed labor:** When a woman’s labor is too long, her uterus will have worked hard for a long time. When this happens, the uterus can sometimes be tired and be slower to contract and retract, resulting in uterine atony.

- **Overdistention of the uterus due to multiple gestation, excess amniotic fluid, large baby, or multiparity:** The uterine muscle may become too tired after having been overdistended for whatever reason, making it slower to contract and retract, resulting in uterine atony.

- **Augmentation of labor:** Whenever a woman’s labor requires uterotonic drugs to stimulate contractions, this means that the uterus is not contracting adequately. If her labor was augmented with a uterotonic drug, the woman’s uterus may be tired after childbirth and consequently will not contract well enough to prevent PPH.

- **Induction of labor:** As above, if the uterus is exposed to a uterotonic drug during labor, it may be too tired after childbirth to contract adequately and result in uterine atony.
PPH prevention and early detection

It is impossible to predict which women are more likely to have PPH. However, 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. Unsatisfactory progress in labor can lead to prolonged labor.

Ensure early referral when progress of labor is unsatisfactory.

Limit induction or augmentation use for medical and obstetric reasons.

Limit induction or augmentation of labor to facilities equipped to perform a cesarean delivery.

Encourage the woman to keep her bladder empty.

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. Episiotomy increases blood loss, is traumatic, can potentially increase the baby’s exposure to maternal blood during birth, and heals much more slowly than spontaneous tears. Episiotomy is also associated with increased risk of third and fourth degree tears and, if not done correctly, may sever the nerve leading to the clitoris.

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.
- Do not perform CCT if you have not been trained and/or are not competent to do so.

Findings which suggest satisfactory progress in the first stage of labor are:

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

Findings which suggest unsatisfactory progress in first stage of labor 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 labor (cervical dilatation to the right of alert line).
- or cervix poorly applied to the presenting part.
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.
CHAPTER 3: Preparing for birth

Introduction
Developing a birth preparedness plan during pregnancy will help ensure that the woman in labor arrives at the health care facility in a timely manner and can be assisted by a skilled birth attendant. Ideally there should be at least two qualified providers at each birth to ensure that both the woman and her newborn receive the quality care they need. Having two qualified providers is especially important if either the woman or her newborn require additional care.

Preparing the Delivery Room
The following guidelines will be helpful in preparing the delivery room.

- Ensure that the client care area is adequately prepared by:
  - placing waste products and contaminated objects (from the previous birth) into the appropriate containers.
  - wiping down surfaces with 0.5% chlorine solution.
  - tidying the area.
  - checking that the injection safety box is accessible and does not require changing.
  - making sure that buckets with 0.5% chlorine are available for decontamination and that the solution does not need to be changed.
- Make sure that the woman’s bodily privacy is protected (curtains, doors that close, etc.); if permitted, 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, and in good working order and readily 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. This is especially true for the area in the room where newborns receive special care, such as resuscitation. Make sure that all of the windows are closed.
- If the temperature of the room is less than optimal, a heater should be available to warm the room. In some circumstances, it might be easier to warm a small area of a room rather than the whole room. In hot weather, air conditioning or fans should be turned off or adjusted in the delivery room.
- Make sure that supplies needed to keep the newborn baby warm are prepared. The supplies should include as a minimum: two absorbent pieces of cloth/towels large enough to cover a newborn baby’s whole body and head, a cap, a sheet or blanket for covering mother and baby, and suitable baby clothes if feasible/acceptable. In cool weather, a source of heat should be available to pre-warm the clothes and towels.
• Even though the care of a normal baby can be carried out while he/she is in skin-to-skin contact with the mother’s chest, it is important to have a “corner for the newborn” in the delivery room where all the equipment and supplies can be collected and kept together. Ideally there should be a heater/source of warmth under or near which the linen and blanket for the baby can be kept for pre-warming before the delivery, and where resuscitation can be carried out.

• 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.

• Review and complete the woman’s medical records (if available):
  o the antenatal care card (take special care to check the woman’s HIV status, and if she is infected with HIV, ask about her antiretroviral (ARV) regimen and if she has brought ARV drugs for her baby)
  o partograph
  o any other records she may have with her

• Maintain cleanliness of the woman and her environment:
  o Encourage the woman to wash herself or bathe or shower at the onset of labor.
  o Put a clean, waterproof sheet under the woman’s bottom.
  o Clean the vulval and perineal areas before each examination.
  o Wash hands with soap before and after each examination.
  o Ensure cleanliness of laboring and birthing area(s).
  o Clean up all spills immediately.

• Follow infection prevention practices to reduce exposure to blood and other body fluids during labor and delivery, and thereby help protect the woman and providers from infection:
  o Wash hands with soap and water and dry with a clean, dry cloth before examining each client; after examining each client; before putting on gloves for clinical procedures (such as a vaginal exam or examination of the placenta); after touching any instrument or object that might be contaminated with blood or other body fluids, or after touching mucous membranes; after handling blood, urine, or other specimens; after removing any kind of gloves; after using the toilet or latrine.
  o Wear protective clothing: sterile/HLD gloves, masks, gowns, and waterproof aprons, caps, eye covers/face shields.

• During the first stage of labor, preferably in between contractions and before contractions are very intense:
  o Explain and offer AMTSL to the woman and obtain her permission to apply it.
    While AMTSL is an evidence-based practice that has been shown to reduce PPH and blood loss during third stage of labor, it is a medical intervention and, as such, needs to be explained to the woman in such a way that she can give her informed consent for the procedure. It is best to do this during antenatal care but can also be done during first stage of labor.
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 this. Close contact between the mother and baby after birth will promote temperature maintenance and breastfeeding. Hence, where the mother and baby are normal, it is good for the baby to be kept with the mother in skin-to-skin contact. In fact, most of the care that a normal baby requires can be carried out while he/she is with the mother, initially on her abdomen and later, after the cord is cut, on her chest. Because some centers may not have been following this practice, mothers may not be aware of these steps or be prepared for them. To get the mother's acceptance and cooperation, it is essential that these plans are discussed with the mother before delivery so that she is prepared for them; otherwise, there may be some challenges in implementing these steps.

Explain that essential newborn care will be provided while the baby is in skin-to-skin contact with her and obtain her permission; care includes placing an identification bracelet on the baby, eye and cord care, vitamin K1 injection, and early initiation of breastfeeding (if the woman has chosen to breastfeed).

**Preparation for care of the baby at birth**

The mother and her baby must, as far as possible, remain together. It is only when special care is required for one of them, where it is not safe to have the two together, that the baby should be looked after in a separate place.

It is ideal to have a two qualified persons attending the delivery so that both the mother and baby can receive adequate care. This is particularly useful if either or both develop problems needing care. However, this is usually not feasible, especially at peripheral centers. However, with some advance planning one can explore training another staff member, even a less qualified person, to assist the skilled birth attendant to facilitate the latter in dealing with the key problems.

**Preparation of the newborn corner in the delivery room**

Ideally all items necessary for the baby should be kept in a designated area, the “newborn baby corner.” This corner can also be used to resuscitate an asphyxiated baby or provide any special care as required. This area should have a table and ideally an overhead heater/warmer. For normal babies not requiring special care, most routine care can be carried out on the baby placed on the mother’s chest.

It is absolutely essential that the delivery room, including items for resuscitation, is ready all times. In addition it is mandatory that the staff on duty verify that this is so at the beginning of each day, every shift, and when called to attend a delivery.

Make sure that all equipment, including those for resuscitation, is available, in functioning order, and clean or sterile as needed.

**Checklist to prepare for the care of the baby at birth**

Display the checklist of all required items on the wall near the table at eye level, framed with a glass cover or within a display or notice board to protect the paper. The checklist should contain the following items:

- A warm room with no drafts or open windows.
• A table with a firm mattress covered with a washable surface such as a plastic or rubber sheet. Over this a clean, preferably sterile cloth/linen should be placed just before delivery. The clean/sterile equipment and supplies can be placed on it, leaving enough room for special care for the baby, such as resuscitation.

• A source of heat. Ideally this should be an overhead heater (the heat source being a heating rod or a set of bulbs). A hot water bottle is not recommended as it may result in burns. If its use is unavoidable, make sure that the water is warm, not hot, and the bottle is wrapped in several layers of cloth. In addition, for extra safety check the skin of the baby in contact with the bottle frequently for excessive heat or redness.

• Three to five pieces of clean, preferably sterile cloths to dry and wrap the baby (cap where available) and blanket where required.

• A wall thermometer to monitor the room temperature.

• A clinical thermometer to measure the axillary temperature.

• Suction equipment:
  o DeLee mucous extractor or
  o Suction machine (electrical/foot operated) with simple suction catheters 8F and 10F. In the absence of a suction machine, a 10 mL syringe attached to the catheter can be used to remove the secretions.
  o If a rubber bulb is used for suction, it should be sterilized. It is not recommended to use the same bulb for multiple infants due to the risk of the transmitting major infections.

• Newborn resuscitation bag (240-500 mL) with two baby face masks (#1 for normal size babies, #0 for LBW babies). In general, where resources are limited, the 500 mL bag is preferable as it can be used for the normal weight and the larger proportion of low birth weight infants.

• A supplemental oxygen source, if available. If cylinders are used, check that they have adequate oxygen. **Note, however, that supplemental oxygen is not required in most cases.**

• A wall clock with second hand for noting the time of birth and where necessary to count the respiratory and heart rate if there is no timer or watch. In case of an emergency situation such as asphyxia, it is easy to lose track of time. It is important to note the time of birth and the time spent in the procedure, since there is a time limit to active resuscitation. If no respiration is noted after twenty minutes, it is necessary to stop all action.

• Stethoscope where available

• Miscellaneous
  o sterile gauze/pieces of sterile cloth
  o gloves, either sterile or high level disinfected

All equipment has to be disinfected and cleaned after use. The manufacturer gives specific instructions for cleaning, disinfection, and sterilization of equipment. Follow these instructions carefully.
Advance preparation for AMTSL

Before or during the second stage of labor:

- Ask the woman to empty her bladder when the second stage is near.
- Assist the woman into her preferred position for giving birth (e.g., squatting, semi-sitting).

- Prepare the injectable uterotonic (10 IU of oxytocin is the preferred injectable uterotonic) in a sterile syringe before second stage (Figure 3-1) or have oxytocin in the Uniject available. (NOTE: If oxytocin is not available, then use ergometrine 0.2 mg IM, or Syntometrine 1 mL IM. If injectable uterotonic drugs are not available or the birth attendant’s skills are limited, use misoprostol 600 mcg orally.)

Table 3-1 compares dosage, route of administration, drug action and effectiveness, side effects, and cautions for the most common uterotonic drugs used for AMTSL.

**Figure 3-1. Preparing oxytocin injection. (Gomez et al., 2005)**

**Table 3-1. Uterotonic drugs for AMTSL**

<table>
<thead>
<tr>
<th>Name of drug/preparation</th>
<th>Dosage and route</th>
<th>Drug action and effectiveness</th>
<th>Side effects and cautions</th>
</tr>
</thead>
</table>
| **Oxytocin**<br>Posterior pituitary extract. Commonly used brand names include Pitocin or Syntocinon. | Give 10 units IM injection.* | • Acts within 2 to 3 minutes.  
• Effect lasts about 15 to 30 minutes. | • First choice.  
• No known contraindications for postpartum use.**  
• Minimal or no side effects. |
| **Misoprostol**<br>Synthetic prostaglandin E₁ (PGE₁) analogue. Commonly used brand names include Cytotec, Gymiso, Prostokos, Vagiprost, U-Miso | Give 600 mcg (three 200 mcg tablets) orally. | Orally:  
• Acts within 3-5 minutes  
• Peak serum concentration between 18 – 34 minutes  
• Effect lasts 75 minutes | • No known contraindications for postpartum use.**  
• Common side effects: shivering and elevated temperature. |
<table>
<thead>
<tr>
<th>Name of drug/preparation</th>
<th>Dosage and route</th>
<th>Drug action and effectiveness</th>
<th>Side effects and cautions</th>
</tr>
</thead>
</table>
| Ergometrine (methylergometrine), also known as ergonovine (methylergonovine) | Give 0.2 mg IM injection. | **Acts within 6 to 7 minutes IM.**  
**Effect lasts 2 to 4 hours.** | **Contraindicated in women with a history of hypertension, heart disease, retained placenta, pre-eclampsia, or eclampsia.***  
**Causes tonic contractions (may increase risk of retained placenta).**  
**Side effects: nausea, vomiting, headaches, and hypertension.**  
**Note:** Do not use if drug is cloudy. This means it has been exposed to excess heat or light and is no longer effective. |

<table>
<thead>
<tr>
<th>Name of drug/preparation</th>
<th>Dosage and route</th>
<th>Drug action and effectiveness</th>
<th>Side effects and cautions</th>
</tr>
</thead>
</table>
| Syntometrine Combination of 5 IU oxytocin plus 0.5 mg ergometrine. | Give 1 ml IM injection. | Combined rapid action of oxytocin and sustained action of ergometrine. | **Same cautions and contraindications as ergometrine.**  
**Side effects: nausea, vomiting, headaches, and hypertension.** |

---

*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.  
IM - intramuscular; IV - intravenous

**Recommendations for storing uterotonic drugs used for AMTSL**

The stability of a drug is defined by how well it maintains active ingredient potency (and other measures such as pH) when stored over time. Pharmaceutical companies conduct stability studies to determine the appropriate shelf-life, storage conditions, and expiration dating for safe storage of the oxytocin they produce. A manufacturer will recommend storage conditions based on the conditions under which he has performed stability studies, and will set the expiry date to be consistent with this. It is therefore important to read storage recommendations made by the manufacturer.

Since ergometrine and Syntometrine are sensitive to heat and light, and oxytocin is sensitive to heat, following storage guidelines is critical to ensure the optimal effectiveness of injectable uterotonic drugs. When drugs are inadequately stored, drug effectiveness can diminish, posing serious consequences for the postpartum woman.  

Storage practices in health care facilities vary widely and may not follow guidelines for correct storage. For example, vials of uterotonic drugs might be kept on open trays or containers in the labor ward, leaving them exposed to heat and light. Pharmacists, pharmacy managers, and birth attendants using the oxytocin need to carefully read and follow recommended guidelines for transporting and storing uterotonic drugs. Recommended guidelines for transporting and storing specific uterotonic drugs are noted in Table 3-2.
## Table 3-2. Recommended guidelines for transport and storage of uterotonic drugs

<table>
<thead>
<tr>
<th>Drug</th>
<th>Transport</th>
<th>Storage</th>
</tr>
</thead>
</table>
| Oxytocin | Unrefrigerated transport is possible if no more than one month at 30°C or two weeks at 40°C. | ▪ Check manufacturer’s recommendations – some manufacturers are producing oxytocin that is more heat stable than previously available  
▪ Temporary storage outside the refrigerator at a maximum of 30°C is acceptable for no more than three months.  
▪ If possible, keep refrigerated at 2–8°C. |
| Misoprostol | Protect from humidity. | ▪ Store at room temperature in closed container and protected from humidity. |
| Syntometrine | Unrefrigerated transport in the dark is possible if no more than one month at 30°C C or two weeks at 40°C. Protect from freezing. | ▪ Store in the dark.  
▪ Keep refrigerated at 2–8°C.  
▪ Store in closed container.  
▪ Protect from freezing. |
| Ergometrine | Unrefrigerated transport in the dark is possible if no more than one month at 30°C C or two weeks at 40°C. Protect from freezing. | ▪ Store in the dark.  
▪ Keep refrigerated at 2–8°C.  
▪ Store in closed container.  
▪ Protect from freezing. |

### Recommendations for selecting a uterotonic drug to prevent PPH

In the context of active management of the third stage of labor, if all injectable uterotonic drugs are available:

- Skilled attendants should offer oxytocin to all women for prevention of PPH in preference to ergometrine/methylergometrine. *This recommendation places a high value on avoiding adverse effects of ergometrine and assumes similar benefit for oxytocin and ergometrine for preventing PPH.*

- Skilled attendants should offer oxytocin for prevention of PPH in preference to oral misoprostol (600 mcg). *This recommendation places a high value on the relative benefits of oxytocin in preventing blood loss compared to misoprostol, as well as the increased adverse effects of misoprostol compared to oxytocin.*

In the context of active management of the third stage of labor, **if oxytocin is not available** but other injectable uterotonics are available:
• Skilled attendants should offer ergometrine/methylergometrine or the fixed drug combination of oxytocin and ergometrine to women without hypertension or heart disease for prevention of PPH.

• Skilled attendants should offer 600 mcg misoprostol orally for prevention of PPH to women with hypertension or heart disease for prevention of PPH.

In the context of prevention of PPH, if oxytocin is not available or the birth attendants’ skills are limited, misoprostol should be administered soon after the birth of the baby\(^\text{13}\). The usual components of giving misoprostol include:

• administration of 600 mcg misoprostol orally after the birth of the baby.

• controlled cord traction only when a skilled attendant is present at the birth.

• uterine massage after the delivery of the placenta as appropriate.

Oxytocin 10 IU IM is the uterotonic drug of choice because:

- It is fast acting – acts within 2-3 minutes after IM injection.
- It is relatively inexpensive.
- In most cases, it has no side effects or contraindications for use during the third stage of labor.
- It is more stable than ergometrine in hot climates and light if cold/dark storage is not possible.
CHAPTER 4: Providing active management of the third stage of labor

The third stage of labor is usually uneventful, with delivery of the placenta taking place without complications. During this stage of labor, however, the woman may encounter complications that could lead to maternal morbidity and mortality. The most common complication is postpartum hemorrhage or vaginal bleeding in excess of 500 mL that occurs less than 24 hours after childbirth.

PPH may cause or worsen anemia or deplete iron stores in women, causing weakness and fatigue. If severe, PPH may result in shock or maternal death. A blood transfusion may help improve anemia in women and shorten hospital stays, but transfusion carries risks of reaction and infection and is not universally available. Because many health facilities lack an adequate supply of safe blood, PPH can often strain the resources of the best blood banks.

PPH may increase the likelihood of other issues:

- the need for emergency anesthetic services.
- manual exploration or use of instruments inside the uterus (increasing the risk of sepsis).
- prolonged hospitalization. New studies show that extended hospitalizations can cause significant and long-term financial hardships for the woman and her family.
- delayed breastfeeding.

Additionally, women who have severe PPH and survive (“near misses”) are significantly more likely to die in the year following the PPH.¹⁴

Length of the Third Stage

Considerable research has examined how active management affects the third stage of labor. Investigations found that 50 percent of placental deliveries occur within 5 minutes, and 90 percent are delivered within 15 minutes.¹⁵ Other large studies confirm the rapid delivery of the placenta; a WHO study found a mean delivery time of 8.3 minutes.¹² A third stage of labor lasting longer that 18 minutes is associated with a significant risk of PPH.¹⁶ When the third stage of labor lasts longer than 30 minutes, PPH occurs six times more often than it does among women whose third stage lasted less than 30 minutes.¹²

Description of Active Management of the Third Stage of Labor (AMTSL)

The majority of PPH occurs during the third stage of labor. During this stage, the muscles of the uterus contract, helping the placenta to separate from the uterine wall. The amount of blood lost depends on how quickly this happens, since the uterus can contract more effectively after the placenta is expelled. The third stage of labor lasts between 5 and 15 minutes. If the third stage lasts longer than 30 minutes, it is considered to be prolonged and is associated with complications. If the uterus does not contract normally (such as in uterine atony) after the placenta is delivered, the blood vessels at the placental site stay open and hemorrhage results. Because the estimated blood flow to the uterus is 500 to 800 mL/minute at term, most of which passes through the placenta, severe postpartum hemorrhage can happen within just a few minutes.
Active management of the third stage of labor is a combination of actions performed during the third stage to speed delivery of the placenta and prevent uterine atony by increasing uterine contractions. The components of AMTSL are:

- administration of a uterotonic drug within one minute after the baby is born (oxytocin is the uterotonic of choice) and a second baby has been ruled out.
- controlled cord traction (CCT) with simultaneous countertraction to the uterus.
- uterine massage immediately after delivery of the placenta.

Current evidence indicates active management of the third stage of labor (AMTSL) (administration of uterotonic drugs, controlled cord traction, and fundal massage after delivery of the placenta) can reduce the incidence of postpartum hemorrhage by up to 60 percent in situations where:

- national guidelines support the use of AMTSL.
- health workers receive training in using AMTSL and administering uterotonic drugs.
- injection safety is ensured.
- necessary resources (uterotonic drugs and cold chain for storage of uterotonic drugs; equipment, supplies, and consumables for infection prevention and injection safety) are available.

Skilled birth attendants all over the world can play an important role in preventing unnecessary maternal deaths by applying this simple, low cost, evidence-based intervention.

**Approaches for Managing the Third Stage**

There are two main approaches for managing the third stage of labor: the physiologic (or expectant) approach and the active approach. Table 5-1 compares how the third stage is managed using each of these approaches.

**Table 5-1. Comparison of Physiologic and Active Management of the Third Stage of Labor (AMTSL)**

<table>
<thead>
<tr>
<th></th>
<th>Physiologic (expectant) management</th>
<th>Active management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uterotonic</strong></td>
<td>Uterotonic is not given before the placenta is delivered.</td>
<td>Uterotonic is given within one minute of the baby’s birth (after ruling out the presence of a second baby).</td>
</tr>
<tr>
<td><strong>Signs of placental separation</strong></td>
<td>Wait for signs of separation: • gush of blood • lengthening of cord • uterus becomes rounder and smaller as the placenta descends</td>
<td>Do not wait for signs of placental separation. Instead: • Palpate the uterus for a contraction. • Wait for the uterus to contract. • Apply CCT with countertraction.</td>
</tr>
<tr>
<td><strong>Delivery of the placenta</strong></td>
<td>Placenta delivered by gravity assisted by maternal effort.</td>
<td>Placenta delivered by controlled cord traction (CCT) while supporting and stabilizing the uterus by applying countertraction.</td>
</tr>
<tr>
<td><strong>Uterine massage</strong></td>
<td>Massage the uterus after the placenta is delivered.</td>
<td>Massage the uterus after the placenta is delivered.</td>
</tr>
</tbody>
</table>
Physiologic (expectant) management | Active management
---|---
**Advantages** | • Decreases the length of the third stage.
• Decreases the likelihood of prolonged third stage.
• Decreases average blood loss.
• Decreases the number of PPH cases.
• Decreases the need for blood transfusion.
- Does not interfere with normal labor process.
- Does not require special drugs/supplies.
- May be appropriate when immediate care is needed for the baby (such as resuscitation) and no trained assistant is available.
- May not require a birth attendant with injection skills.

**Disadvantages** | • Requires uterotonic drugs and items needed for injection/injection safety.
• Requires a birth attendant with experience and skills giving injections and using CCT.
- The length of the third stage is longer compared to AMTSL.
- Blood loss is greater compared to AMTSL.
- Increased risk of PPH.

(The definition of active management as described in this table differs from the original research protocol in the Bristol\(^5\) and Hinchingbrooke\(^\text{\textsuperscript{18}}\) trials because the original protocols included immediate cord clamping and did not include massage of the uterus. In the Hinchingbrooke trial, midwives used either CCT or maternal effort to deliver the placenta.)

**Scientific evidence supporting AMTSL**

Giving a uterotonic drug to prevent PPH promotes strong uterine contractions and leads to faster retraction and placental separation and delivery. Several large, randomized controlled trials have investigated whether physiologic management or active management is more effective in preventing PPH. These trials have consistently shown that active management provides several benefits for the mother compared to physiologic management. Table 1-2 provides detailed results from two important studies, the Bristol\(^5\) and Hinchingbrooke\(^\text{\textsuperscript{15}}\) studies, comparing active and physiologic management of the third stage of labor.

These results show that only 12 women need to receive AMTSL to prevent one case of PPH. This means that AMTSL is a very effective and cost-efficient public health intervention. These studies also confirm that AMTSL decreases:

- Incidence of PPH.
- Length of third stage of labor.
- Percentage of third stages of labor lasting longer than 30 minutes.
- Need for blood transfusion.
- Need for uterotonic drugs to manage PPH.
Table 5-2. Bristol and Hinchingbrooke study results comparing active and physiologic management of the third stage of labor

<table>
<thead>
<tr>
<th>Factors</th>
<th>Study</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Active</td>
</tr>
<tr>
<td>PPH</td>
<td>Bristol</td>
<td>5.9%</td>
</tr>
<tr>
<td></td>
<td>Hinchingbrooke</td>
<td>6.8%</td>
</tr>
<tr>
<td>Average length of the third stage of labor</td>
<td>Bristol</td>
<td>5 minutes</td>
</tr>
<tr>
<td></td>
<td>Hinchingbrooke</td>
<td>8 minutes</td>
</tr>
<tr>
<td>Third stage of labor longer than 30 minutes</td>
<td>Bristol</td>
<td>2.9%</td>
</tr>
<tr>
<td></td>
<td>Hinchingbrooke</td>
<td>3.3%</td>
</tr>
<tr>
<td>Blood transfusion needed</td>
<td>Bristol</td>
<td>2.1%</td>
</tr>
<tr>
<td></td>
<td>Hinchingbrooke</td>
<td>0.5%</td>
</tr>
<tr>
<td>Additional uterotonic drugs needed to manage PPH</td>
<td>Bristol</td>
<td>6.4%</td>
</tr>
<tr>
<td></td>
<td>Hinchingbrooke</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Steps for AMTSL

There are three main components or steps of AMTSL—administering a uterotonic drug, CCT, and massaging the uterus—which should be implemented along with the provision of immediate newborn care.

1. Thoroughly dry the baby, assess the baby’s breathing and perform resuscitation if needed, and place the baby in skin-to-skin contact with the mother

After delivery, immediately dry the infant and assess the baby’s breathing. Then place the reactive infant, prone, on the mother’s abdomen. Remove the cloth used to dry the baby and keep the infant, including her head, covered with a dry cloth or towel to prevent heat loss.

Note: If the infant is pale, limp, or not breathing, it is best to keep the infant at the level of the perineum to allow optimal blood flow and oxygenation while resuscitative measures are performed. Early cord clamping may be necessary if immediate attention cannot be provided without clamping and cutting the cord.

Figure 5-1. Put the baby on the mother’s abdomen.
2. Administer a uterotonic drug within one minute of the baby’s birth

Administering a uterotonic drug within one minute of the baby’s birth stimulates uterine contractions that will facilitate separation of the placenta from the uterine wall and ensure that the uterus remains contracted after the placenta has been delivered. Before giving the uterotonic drug, it is important to rule out the presence of another baby (Figure 5-2). If the uterotonic drug is administered when there is a second baby, there is a small risk that the second baby could be trapped in the uterus.

The steps for administering a uterotonic drug include:

1. Before performing AMTSL, gently palpate the woman’s abdomen to rule out the presence of another baby. At this point, do not massage the uterus.

2. If there is not another baby, begin the procedure by giving the woman 10 IU of oxytocin IM in the upper thigh (Figure 5-3). This should be done within one minute of childbirth. If available, a qualified assistant should give the injection.
3. Cut the umbilical cord

1. Wait for cord pulsations to cease or approximately two to three minutes after birth of the baby, whichever comes first, and then place one clamp 4 cm from the baby’s abdomen (Figure 5-4).

   **Note:** Delaying cord clamping allows for transfer of red blood cells from the placenta to the baby that can decrease the incidence of anemia during infancy.

2. Gently milk the cord towards the woman’s perineum and place a second clamp on the cord approximately 2 cm from the first clamp.

3. Cut the cord using sterile scissors under cover of a gauze swab to prevent blood spatter. After mother and baby are safely cared for, tie the cord.

![Figure 5-4. Pulsating and nonpulsating umbilical cord.](image)
4. Keep the baby warm

Place the infant directly on the mother’s chest, prone, with the newborn’s skin touching the mother’s skin (Figure 5-5). While the mother’s skin will help regulate the infant’s temperature, cover both the mother and infant with a dry, warm cloth or towel to prevent heat loss. Cover the baby’s head with a cap or cloth.

Figure 5-5. Keep the baby in skin-to-skin contact with the mother.

5. Perform controlled cord traction

CCT helps the placenta descend into the vagina after it has separated from the uterine wall and facilitates its delivery. It is important that the placenta be removed quickly once it has separated from the uterine wall because the uterus cannot contract efficiently if the placenta is still inside. CCT includes supporting the uterus by applying pressure on the lower segment of the uterus in an upward direction towards the woman’s head, while at the same time pulling with a firm, steady tension on the cord in a downward direction during contractions. Supporting or guarding the uterus (called “counter-pressure” or “counter-traction”) helps prevent uterine inversion during CCT. CCT should only be done during a contraction.

**Note:** CCT is not designed to separate the placenta from the uterine wall but to facilitate its expulsion only. If the birth attendant keeps pulling on an unseparated placenta, inversion of the uterus may occur.

The steps for CCT include:

1. Place the clamp near the woman’s perineum to make CCT easier (Figure 5-6).
2. Hold the cord close to the perineum using a clamp (Figure 5-7).

3. Place the palm of the other hand on the lower abdomen just above the woman’s pubic bone to assess for uterine contractions (Figure 5-7). If a clamp is not available, controlled cord traction can be applied by encircling the cord around the hand.

**Figure 5-7. Wait for the next contraction.**

4. Wait for a uterine contraction. Only do CCT when there is a contraction.

5. With the hand just above the pubic bone, apply external pressure on the uterus in an upward direction (toward the woman’s head) (Figure 5-8).

6. At the same time with your other hand, pull with firm and steady tension on the cord in a downward direction (follow the direction of the birth canal). Avoid jerky or forceful pulling.

**Figure 5-8. Applying CCT with countertraction to support the uterus.**
7. Do not release support on the uterus until the placenta is visible at the vulva. Deliver the placenta slowly and support it with both hands (Figure 5-9).

NOTE: If the placenta does not descend after 4 attempts, consider placenta accreta and seek assistance from another provider.

8. As the placenta is delivered, hold and gently turn it with both hands until the membranes are twisted (Figure 5-10).

9. Slowly pull to complete the delivery. Gently move membranes up and down until delivered (Figure 5-10).

Figure 5-9. Supporting the placenta with both hands.

NOTE: If the placenta does not descend during 30 to 40 seconds of CCT (i.e., there are no signs of placental separation), do not continue to pull on the cord and follow these steps:

- Gently hold the cord and wait until the uterus is well-contracted again. If necessary, use a sponge forceps to clamp the cord closer to the perineum as it lengthens.
- With the next contraction, repeat CCT with counter traction.

Figure 5-10. Delivering the placenta with a turning and up-and-down motion.
NOTE: If the membranes tear, gently examine the upper vagina and cervix wearing high-level disinfected or sterile gloves and use a sponge forceps to remove any pieces of remaining membrane.

NOTE: If there are no signs of placental separation (lengthening cord) after four attempts at CCT, consider placenta accreta and call for help.

### 6. Massage the uterus

Massage the uterus immediately after delivery of the placenta and membranes until it is firm (Figure 5-11). Massaging the uterus stimulates uterine contractions and helps to prevent PPH. Sometimes blood and clots will be expelled during this process. After stopping massage, it is important that the uterus does not relax again.

**Figure 5-11. Massaging the uterus immediately after the placenta delivers.**

Instruct the woman how to massage her own uterus, and ask her to call if her uterus becomes soft (Figure 5-12).

**Figure 5-12. Teach the woman how to massage her own uterus.**
Care after delivery of the placenta

7. Examine the placenta

Examine the fetal and maternal sides of the placenta and membranes to ensure they are complete. A small amount of placental tissue or membranes remaining in the woman can prevent uterine contractions and cause PPH.

**Note:** Follow infection prevention guidelines when handling contaminated equipment, supplies, and sharps.

To examine the placenta for completeness:

1. Hold the placenta in the palms of the hands with the maternal side facing upward and make sure that all lobules are present and fit together (Figure 5-13).

2. Hold the cord with one hand, allowing the placenta and membranes to hang down. Place the other hand inside the membranes, spreading your fingers to ensure that membranes are complete (Figure 5-14).

3. Dispose of the placenta as appropriate.

**Figure 5-13. Examining the maternal side of the placenta. (Gomez et al., 2005)**

**Figure 5-14. Checking the membranes. (Gomez et al., 2005)**
1. Gently separate the labia and inspect the lower vagina and perineum for lacerations that may need to be repaired to prevent further blood loss (Figure 5-15).
2. Repair lacerations or episiotomy.

3. Gently cleanse the vulva, perineum, buttocks, and back with warm water and a clean compress.
4. Apply a clean pad or cloth to the vulva.
5. Evaluate blood loss.
6. Explain all examination findings to the woman and, if she desires, her family.

9. Provide immediate care

After examining the placenta and external genitals, continue caring for the mother and newborn. The first six hours after delivery is the period when many preventable maternal deaths occur. The woman and newborn should be kept in the labor and delivery ward and closely monitored for at least the first hour after childbirth. She and the newborn may be transferred to the postpartum ward one hour after childbirth but they should continue to be closely monitored during at least the first 6 hours on the ward and should not be discharged before 12 hours after childbirth. A comprehensive exam of the woman and newborn should be performed at one and six hours after delivery.

This is a very critical time to be sure that complications, such as postpartum hemorrhage and hypothermia, do not occur.

- Provide the woman with information about how she and her baby will be cared for during the next few hours.
• Keep the woman and the newborn in the delivery room for at least one hour after childbirth – do not separate them.
• Ensure the room and any surface the baby is put on are warm; maintain skin-to-skin contact with the mother.
• Never leave the woman and newborn alone. Keep the baby in the room with the mother, in skin-to-skin contact.
• If the woman still does not know her HIV status, then offer HIV testing and counseling.
• Monitor the woman and baby every 15 minutes during the first two hours, then every 30 minutes during the third hour, and then every hour for three hours. Record findings on the postpartum record.

If the woman has chosen to breastfeed, the mother and baby may need assistance to breastfeed within the first hour after the birth and before transferring them out of the delivery room (Figure 5-16). Assess readiness of the woman and newborn to breastfeed before initiating breastfeeding; do not force the mother and baby to breastfeed if they are not ready.

Figure 5-16. Encourage breastfeeding within the first hour after birth.

Provide counsel and care for the woman and newborn

Just prior to transfer out of the delivery room or at least one hour after childbirth, the provider will perform a comprehensive exam of the woman.

Document findings and care provided

Record the following information in the maternal care record:
• Findings
• Treatments and prophylaxis provided during labor and in the first hour after delivery of the placenta
• Care provided to the newborn, newborn weight, etc.
• Procedures
Managing the third stage when the birth attendant is alone and the baby needs resuscitation

There is a potential "conflict of interest" in care for the mother and baby when the baby needs resuscitation. How the provider cares for each one will depend upon several factors: if the birth attendant is alone or has an assistant and what type of resuscitative efforts are required for the baby.

If the birth attendant is alone and the baby is not breathing or is gasping at birth, the birth attendant will manage the third stage of labor as follows: If the baby begins breathing after stimulation, active management of the third stage of labor will most likely be possible. Place the baby in such a position that you can observe him/her during implementation of AMSTL:

1. Administer a uterotonic drug within one minute after the baby is born (oxytocin is the uterotonic of choice) and a second twin has been ruled out.
2. Apply controlled cord traction with simultaneous countertraction to the uterus.
3. Perform uterine massage immediately after delivery of the placenta.

If the baby requires resuscitation with bag and mask, there are two possible scenarios.

Scenario 1: The provider is alone but is able to administer a uterotonic drug within one minute after birth of the baby:

- Administer a uterotonic drug within one minute after the baby is born (oxytocin 10 IU IM or misoprostol 600 mcg by mouth) and a second twin has been ruled out.
- Deliver the placenta either by maternal effort or with assistance of the provider.
- Perform uterine massage immediately after delivery of the placenta.

Scenario 2: The provider is alone and is not able to administer a uterotonic drug within one minute after birth of the baby:

- Perform physiologic management of the third stage of labor
- Perform uterine massage immediate after delivery of the placenta.

Managing the third stage when the woman is infected with HIV

The practice of AMTSL is the same for all women regardless of their HIV status. However, women who are HIV-infected may choose not to breastfeed, so providers need to respect and support the woman's choice for infant feeding. In addition, providers need to ensure that national guidelines for PMTCT are implemented for the woman and newborn in addition to routine care during labor, childbirth, and in the immediate postpartum.
CHAPTER 5: Providing care for the newborn at birth

The initial steps in the care of the baby at birth, such as drying, wrapping, and evaluation of breathing, are similar for all babies. Subsequent care, however, may be different if there are problems such as birth asphyxia.

Dry the infant

- Place the infant on the abdomen of the mother.
- Wipe the face and dry the baby thoroughly immediately after birth and discard the wet cloth. Do not let the baby remain wet, as this will cool the body and make him/her hypothermic.
- Let the baby stay prone in skin-to-skin contact on the abdomen and cover the baby quickly, including the head, with a fresh dry cloth.

![Figure 6-1. Initial steps in the care of the baby at birth.](image)

Evaluate breathing

- Check if the baby is crying while drying him/her.
- If the baby does not cry, see if the baby is breathing properly.
- If the baby is not breathing and or is gasping:
  - Call for help. The assistant can provide basic care for the mother while you provide the more specialized care for the baby who is not breathing.
  - Cut the cord rapidly and start resuscitation.
- If the baby breathes well, continue routine essential newborn care.
- Do not do suction of the mouth and nose as a routine. Do it only if there is meconium, thick mucus, or blood.
- Announce the time of birth and the sex of the infant after you have made certain that the baby is breathing well.

Prevent hypothermia

As most cooling of the newborn occurs during the first minutes after birth, it is important to act quickly to prevent heat loss.

- Keep the baby warm by placing him/her in skin-to-skin contact on the mother’s abdomen. Cover the baby’s body and head with a cloth.
- If the room is cool (<25 ºC), use a blanket to cover the baby over the mother. Keep the room where the newborn stays warm and free from drafts day and night.
• The baby can be kept in skin-to-skin contact whether or not the woman has chosen to breastfeed her baby. Use a warm cloth or blanket to cover them both together. Be sure not to cover the baby’s face so he can breathe freely.
• Keep the baby’s head covered with a hat or cloth.
• Put the newborn in bed with the mother for warmth and breastfeeding.

**Teach the family how to keep the newborn warm**

Thermal protection of newborns is very important and not difficult. The basic principles are the same whether the baby is born at home or in an institution. Keep the room where the newborn stays warm and free from drafts day and night.

• Dress the baby in warm clothing (the newborn needs at least 1-2 more layers than an adult).
• Keep the baby’s head covered with a hat or cloth.
• Use loose clothing and covers. Tight clothing and coverings do not keep the baby as warm.

**Provide cord care**

Good cord care consists of the following:

• Clamping the cord: If the baby does not need resuscitation, wait for cord pulsations to cease or approximately 2-3 minutes after birth of the baby, whichever comes first, and then place one metal clamp several centimeters from the baby’s abdomen so that there is at least 4-5 cm of the cord to apply the ligature or small disposable clamp. Cutting the cord soon after birth can decrease the amount of blood that is transfused to the baby from the placenta and, in preterm babies, it is likely to result in subsequent anemia and increased chances of needing a blood transfusion.

• Cutting the cord: Squeeze the cord at the site where it is to be cut to flatten it, but do not milk the cord, especially towards the baby. Cut the cord with sterile scissors or a scalpel blade, under a piece of gauze in order to avoid splashing of blood. At every delivery, a pair of scissors or a scalpel with blade should be designated for this purpose. If an episiotomy is performed, use a different pair of scissors for cutting the cord.
• Tying the cord: Tie the cord firmly with sterile ligatures after the mother and baby are stable and after implementation of AMSTL. In finally tying the cord, make sure that it is tied tightly with 2-3 knots, about two fingers (about 2-3 cm) from the baby’s abdomen and cut the cord 2 cm from the ligature. Check for bleeding/oozing and retie if necessary. The cord may be tied by using sterile cotton ties, elastic bands, or pre-sterilized disposable cord clamps (see Figure 6-3).

• If recommended by the Ministry of Health, apply an antiseptic on the umbilical stump after washing hands with soap and water. In such cases, demonstrate to the mother before she leaves the facility how to apply the antiseptic on the cord, including the base.

![Figure 6-4. Use of a pre-sterilized disposable cord clamp.](image)

Providers should promote the following practices that may reduce the risk of cord infection while the mother and newborn are in the facility:

• The use of 24-hour rooming-in instead of nurseries.

• Skin-to-skin contact with the mother at birth to promote colonization of the newborn with non-pathogenic bacteria from the mother’s skin flora

• Early and frequent breastfeeding to provide the newborn with antibodies.

**Teach the family how to prevent and recognize cord infection**

Counsel the mother/parents on clean cord care in the postnatal period. Advise them to do the following to reduce the risk of cord infection:

• Wash hands with soap and clean water before and after touching the cord.

• Avoid putting anything on the cord (diaper, medication or dressing), including harmful substances such as clay, herb mixtures, or butter on the cord.

• Keep the cord clean and dry.

• Make sure that urine or stools do not touch the cord. If they do, wash the cord with soap and water and dry it with a clean cloth or air-dry it.

• Check for infection in the cord.
  
  o Advise the mother/parents that the cord normally falls off 5-10 days after birth, leaving the umbilicus to heal.
  
  o They should look at the cord and umbilicus for signs of infection every day until it is dry and healed.
  
  o Signs of infection are: delay in separation, pus discharge, foul smell, and redness and swelling of the skin around the umbilicus. They should seek medical help right away if they see any of these danger signs.
**Provide eye care**

- Apply prophylactic eye drops as recommended by the Ministry of Health (tetracycline ophthalmic drops or ointment).
- Apply prophylactic drops or ointment as follows:
  - Wash your hands with soap and water if not washed earlier.
  - Place the infant on the back.
  - Clean the baby’s eyes by swabbing each eye separately with a sterilized cotton swab or cloth (boiled for 10 minutes and then cooled).
  - Hold one eye open or depress the lower eyelid, allow one drop of medication to fall into the eye. If using ointment, put a ribbon of ointment along the inside of the lower eyelid. Repeat the procedure on the other eye.
  - Make sure the tip of the dropper or the tube does not touch the baby’s eyes or other objects.

**Assess for major defects**

The following defects may need special inputs at birth:

- Cleft lip and palate. The mother will need additional support for feeding; she may need to give expressed breast milk with a small cup.
- Esophageal atresia (usually associated with excessive secretion in the mouth)
- “Open” spinal defects
- Imperforate anus

The last three conditions need urgent referral to appropriate hospitals for surgery.

**Give Vitamin K1**

Give vitamin K1 intramuscularly (1 mg for term infant and 0.5 mg for the very low birth weight infant <1500 grams). The technique for giving an intramuscular injection in the newborn is as follows:

- Explain the procedure to the mother.
- Wash your hands thoroughly with soap and water, air-dry or dry with clean paper towels (use gloves in areas of HIV prevalence).
- Gather the necessary equipment: disposable syringe, needle, medication, alcohol/antiseptic solution, and clean, preferably sterile gauze/cotton.
- Examine carefully the medication’s label to verify the name, expiration date, instructions for dilution, if any, or any other special notes.
- Calculate the amount to be given where required.
- Draw out the medication:
  - Clean the rubber stopper with alcohol swab/cut the ampoule at its neck.
  - Push the needle into the bottle/ampoule.
• Draw the calculated amount and pull the needle out.
• Remove the air while holding the syringe with the needle pointing up and tapping on the syringe barrel.
• Expose the baby’s thigh and gently hold the knee so the baby is unable to kick.
• Grasp the muscle of the antero-lateral part of the upper thigh, clean the skin with the alcohol/antiseptic, and let it dry for a few seconds.
• In one quick movement put the needle in the muscle straight in, pull back on the plunger a little bit to make sure that the tip of the needle is not in a blood vessel.
• If blood comes to the syringe, take the needle out and re-inject in a fresh spot nearby.
• Inject the drug slowly, remove the needle, and apply gentle pressure for a short while and ensure that there is no oozing of blood upon removal of the swab.
• Discard the needle and syringe immediately in a “sharps” disposal container.

Identify the baby

Place the identification tag /label on the wrist and ankle (as recommended by the Ministry of Health). If a ready-made disposable identification is not available, prepare one locally using sticking plaster and gauze strips. Note, at a minimum, the names of the mother and, if available, the father and the date and time of birth.

Initiate infant feeding

• Ensure that the woman has made an informed choice for infant feeding. Wherever possible, promote breastfeeding and inform the mother about the importance of colostrum.
• Assist the mother to initiate breastfeeding early, within the first hour after birth, without giving the baby any other milks, fluids, or foods. If the woman has chosen not to breastfeed her baby, initiate and assist the woman with exclusive formula feeding within the first hour after birth. Wherever possible, initiate infant feeding before transferring the woman and her newborn out of the delivery room.
• Tell the mother to feed the baby frequently and on demand, day and night (about 8-10 times in 24 hours).
• Advise the mother not to use pacifiers or baby bottles.
• If the woman has chosen to breastfeed her infant, help the mother to find as comfortable a position as feasible. Some of the steps noted below may need to be modified depending on the type of table available in the delivery room. Make sure that:
  o the baby’s whole body is fully supported and held close at the level of the breast and turned toward the mother.
  o the mother, if possible, holds the breast with thumb on top and other fingers at the bottom without touching the nipple.
  o when the baby opens his/her mouth widely, the nipple and most of the surrounding areola are introduced into the mouth.
  o the baby’s nose is not blocked by the breast tissue.
  o the mother does not feel pain in the nipple when the baby sucks. If she does, show her how to release the nipple from the baby’s mouth (by gently depressing the baby’s chin) and reintroduce the nipple after the pain subsides.
  o that attachment at the nipple is appropriate (see Figure 6-4 below).
  o unrestricted time is allowed for the feeding.
Signs of a proper attachment:

- The baby’s chin is touching or nearly touching the breast.
- The mouth is wide open.
- The lower lip is everted (turned outward).
- Most of the areola is inside the mouth, especially the part below so that the areola is visible more above the mouth than below.
- The sucking is slow and deep and swallowing is audible.

Figure 6-6. Signs of proper attachment at the breast.
(OMS, 1993)

• If the woman has chosen to formula feed her infant, teach correct position for formula feeding:
  o Show the woman how to hold the baby sitting semi-upright on her lap
  o Show the woman how to hold the cup of milk to the baby’s lips:
    - rest cup lightly on lower lip
    - touch edge of cup to outer part of upper lip
    - tip cup so that milk just reaches the baby’s lips
    - but do not pour the milk into the baby’s mouth.

Figure 6-7. Three methods of feeding: A. by cup. B. paladai. Or C. by a cup and spoon.
(WHO/IMPAC, 2003)

Explain signs of good feeding including the following:

- baby becomes alert, opens mouth and eyes, and starts to feed.
- the baby will suck the milk, spilling some.
- small babies will start to take milk into their mouth using the tongue.
- baby swallows the milk.
Weigh the baby and record the weight

- Take the weight when the baby is stable and warm.
- Place a clean cloth or paper on the pan of the weighing scale.
- Adjust the weight so it reads “zero” with the paper/cloth on it.
- Place the baby over the pan. If a cloth was used, fold it to cover the body of the baby.
- Note the weight when the baby and pan are not moving.
- Never leave the baby unattended on the scale.
- Write down the weight of the baby in the partograph/maternal/baby charts and in the delivery room registers as recommended by the Ministry of Health.
- Return the baby to skin-to-skin contact with the mother.

Keep the mother and baby together.

If no emergency care is required, keep the baby warm by putting her/him in skin-to-skin contact with the mother and covering both with a clean cloth/blanket as required. If the baby cannot be in skin-to-skin contact with the mother due to issues such as a Cesarean operation, an ill mother, or an ill baby, then wrap her/him with a clean dry cloth and/or blanket, taking care to cover the head, and keep the baby away from drafts.

**Note:** Never leave the woman and newborn alone soon after delivery. And avoid separating the mother and the baby.

Counsel the mother and family

Counsel the mother before she leaves the delivery room. However, if she is very tired after delivery, only talk to her about the key points noted below.

- Keep the baby warm.
- Continue feeding the baby frequently on demand, day and night.
- Do not give any other fluids/food to the baby.
- Do not apply any harmful substances on the cord, such as ash or herbal preparations.

More detailed counseling can be done in the postnatal period in the facility before the mother is discharged and at subsequent postnatal visits (see chapter 8).

Provide additional care to the baby exposed to HIV

- Take particular care not to suction the mouth and the nose unless it is absolutely necessary.
- Consider swabbing the whole body of baby with chlorhexidine (0.25%) swabs/wipes as recommended by the Ministry of Health.
- Administer ARV prophylaxis (niverapine and AZT or others as recommended by the Ministry of Health).
- Infant feeding options for mothers whose HIV status is positive include the following:
  - exclusive breastfeeding, taking care to avoid problems such as engorged breasts and sore nipples, until six months, followed by rapid switch to formula feeds and complementary feeding with semi-solids.
use of expressed breast milk (EBM) rendered safe by flash heating of the milk, continued with complementary feeds with semisolids from the age of six months.

- use of formula feeds with complementary feeds from birth with semi-solids from the age of six months. Formula feeds are applicable when replacement feeding is acceptable, feasible, affordable, sustainable, and safe (AFASS); avoidance of all breastfeeding by HIV-infected women is recommended. (WHO, 2009)

- The actual type of feeding will depend on the mother’s choice. You as the health care provider should ensure that she is given the counseling and support she needs.

- It is important to stress the dangers of "mixed" feeding (breast milk and formula).

<table>
<thead>
<tr>
<th>Table 6-1. Key Steps for Immediate Care of the Newborn</th>
</tr>
</thead>
<tbody>
<tr>
<td>(The order may be changed according to the local needs, except for steps 1-3.)</td>
</tr>
</tbody>
</table>

| Step 1 | Dry the baby and keep him/her warm by placing the baby on the mother’s abdomen. |
| Step 2 | Assess breathing. Make sure the baby is breathing well. |
| Step 3 | If the baby does not breathe, clamp/tie and cut the cord immediately and start resuscitation. If the baby does cry/breathes well, clamp/tie and cut the cord after pulsations stop or after 2-3 minutes. |
| Step 4 | Place the infant in skin-to-skin on the mother's chest and cover both with clean linen and blanket as required. Carry out all the steps noted below up to #9 with the baby on the mother’s chest. |
| Step 5 | Administer eye drops/eye ointment. |
| Step 6 | Administer vitamin K1. |
| Step 7 | Place the baby identification bands on the wrist and ankle. |
| Step 8 | Initiate breastfeeding within the first hour. Select the appropriate method of feeding for the HIV-infected mother, based on informed choice. |
| Step 9 | Weigh the infant when he/she is stable. |
| Step 10 | Record observations and treatment provided in the registers/appropriate chart/cards. |

Note: Defer the bath for at least six hours. Clean the newborn of an HIV-infected mother as recommended by the Ministry of Health.
CHAPTER 6: Monitoring the woman and newborn during the first six hours postpartum

The first 6 hours after childbirth is a critical period for maternal and newborn health and survival and providers need to carefully monitor the woman and her newborn to detect and appropriately manage complications in a timely manner. Early recognition of danger signs by providers, women, and families and timely, appropriate management of complications could significantly reduce the incidence of maternal and newborn death and disability.

The woman and her newborn should remain in the delivery room for at least one hour after delivery of the placenta, and for longer periods as necessary. After this, they should be transferred to an area where they can continue to be closely monitored for at least an additional five hours. If at all possible, women and newborns should not be discharged from the facility before 12 hours after delivery of the placenta.

Monitoring the woman

PPH is the most important single cause of maternal death in the world, and the majority of these deaths (88 percent) occur within four hours of delivery, indicating that they are a consequence of events in the third stage of labor. It is therefore imperative that the provider carefully monitor the woman to assess if the uterus is well contracted and how much the woman is bleeding during the hours following childbirth.

During the first hour after delivery of the placenta, while the woman is still in the delivery room, the provider should monitor the following parameters at least every 15 minutes (more often if needed):

- Uterine contractedness
  - Palpate the uterus to check for firmness.
  - Massage the uterus until firm. (Ask the woman to call for help if bleeding increases or her uterus gets soft.)
  - Ensure the uterus does not become soft after massage is stopped.
  - Instruct the woman how the uterus should feel and how she can massage it herself.
- Vaginal bleeding
- Blood pressure and pulse.

Note: Action should be taken immediately to evaluate and treat PPH if excessive bleeding is detected.

During this time the provider will also:

- ensure the woman has sanitary napkins or clean material to collect vaginal blood.
- encourage the woman to eat, drink, and rest.
- facilitate the infant feeding choice of the mother.
• encourage the woman to empty her bladder and ensure that she has passed urine.
• ensure the room is warm (25 °C).
• ask the woman’s companion to watch her and call for help if bleeding or pain increases, if the woman feels dizzy or has severe headaches, visual disturbance, or epigastric distress.
• keep the mother and baby together.
• never leave the woman and newborn alone.
• document all findings and care provided.

Just prior to transfer out of the delivery room or at least one hour after childbirth, the provider will perform a comprehensive exam of the woman.

**Monitoring the woman 1-6 Hours after delivery of the placenta**

During the next five hours the woman and newborn should be placed in an area where providers can easily continue to monitor their condition. During hours 1 to 5 after delivery of the placenta, the provider will monitor the woman as follows:

<table>
<thead>
<tr>
<th>Danger Signs: BP, pulse, vaginal bleeding, and uterus</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Diastolic BP ≥90 mmHg / Systolic BP &lt;60 mmHg</td>
</tr>
<tr>
<td>• Pulse &gt;110 beats/min</td>
</tr>
<tr>
<td>• Sweaty or cold, clammy skin; cold extremities</td>
</tr>
<tr>
<td>• Anxiety, confusion, loss of consciousness</td>
</tr>
<tr>
<td>• More than one sanitary napkin soaked in five minutes</td>
</tr>
<tr>
<td>• Slow, continuous bleeding or a sudden increase in vaginal bleeding</td>
</tr>
<tr>
<td>• Uterus is neither hard nor round</td>
</tr>
<tr>
<td>• Genital laceration extending to the anus or rectum.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Danger Signs: Temperature and Respiration</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Temperature &gt; 38 °C</td>
</tr>
<tr>
<td>• Rapid breathing</td>
</tr>
<tr>
<td>• Palmar or conjunctival pallor associated with 30 respirations per minute or more (the woman is quickly fatigued or has rapid breathing at rest)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Danger Signs: Bladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The woman cannot void on her own and her bladder is distended and the woman is uncomfortable</td>
</tr>
<tr>
<td>• Urinary incontinence</td>
</tr>
</tbody>
</table>

• uterine contractedness, vaginal bleeding, blood pressure, and pulse:
  o every 15 minutes for 1 hour
  o then every 30 minutes for the third hour
  o then every hour for three hours

• temperature and respiration every four hours.

• urinary bladder (assist the woman to empty her bladder, if distended/full, every hour).
• Breastfeeding 2 to 3 times in the 6 hours

<table>
<thead>
<tr>
<th>Danger Signs: Breastfeeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Breastfeeding has not yet been initiated.</td>
</tr>
<tr>
<td>• The baby is not taking the breast well.</td>
</tr>
<tr>
<td>• Other fluids/foods being given to the newborn.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Danger Sign: Bonding</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Negative feelings about herself or the baby</td>
</tr>
<tr>
<td>• Psychological reactions every hour</td>
</tr>
</tbody>
</table>

**Counsel and care for the woman after delivery of the placenta**

During this time, the provider should:
• Never leave the woman and newborn alone.
• Keep the mother and baby together.
• Ask the woman’s companion to watch her and call for help if bleeding or pain increases, if mother feels dizzy or has severe headaches, visual disturbance or epigastric distress.
• Ensure the room is warm (25 °C).
• Ensure the woman has sanitary napkins or clean material to collect vaginal blood.
• Encourage the woman to empty her bladder and ensure that she has passed urine. Only catheterize the woman if she is unable to urinate and her bladder is distended.
• Monitor the mother and baby frequently as noted.
• Perform a comprehensive exam of the woman one hour and six hours after childbirth and prior to discharge from the facility.
• Provide additional care if the woman is infected with HIV:
  - Instruct her on how to take her ARV drugs.
  - Instruct her on how to administer ARV drugs to her newborn baby.
  - Tell her that lochia can cause infection in other people and therefore she should dispose of blood stained sanitary pads safely (list local options).
  - Counsel her on family planning.
  - If not breastfeeding, advise her on breast care.
• Document all findings and care provided.

Taking care to respect the family’s culture and customs, congratulate the family and discuss how they can help the woman care for herself.
• Her body, clothing, bedding, and environment should be kept clean to prevent infection.
• She needs to eat well. Ask the family what foods they have available. Encourage them to offer her plenty of the foods she wants. Keep cultural beliefs and practices in mind.
• She needs to drink frequently because fluids help her body produce milk and replace lost fluids. A simple way to remember is to try and have something to drink at the baby’s feed times.

• She needs to get enough rest. She has just worked very hard so she needs to rest after this job. Getting enough rest is one of the most important things she can do to help herself and her baby. It will help her uterus stay hard and get smaller sooner, so she bleeds less.

• She can move around as much as she feels able. She shouldn’t do any hard work or lift any heavy objects. Someone should help her with laundry.

• If she experiences pain after delivery, she can take some paracetamol/acetaminophen to help relieve the discomfort.

**Monitoring the newborn**

The mother and the baby should be kept together as far as possible and separation must be avoided. Evaluate the baby when the mother is examined. In these early hours the key elements to be monitored include breathing, color, temperature, the cord, and evaluation for danger signs.

Before the evaluation, explain to the mother what will be done. Check the baby whenever the mother is evaluated:

• Every 15 minutes during the first 2 hours after birth.

• Every 30 minutes during the third hour after delivery.

• Every hour during the next 3 hours.

Monitoring of the baby in the first six hours is summarized in the chart below.

*Note:* Wash hands with soap and water before touching the baby. Ensure when using items such as the thermometer that it is washed with soap and water and swabbed with alcohol before every use.

<table>
<thead>
<tr>
<th>Monitoring of the Baby in the First Six Hours after Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parameter</strong></td>
</tr>
<tr>
<td>Respiration (count the rate 3-4 times hourly)</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Temperature (record axillary temperature at least once in the first 6 hours. At other times, touch the baby’s hands and feet and check axillary temperature if they are cold.)</td>
</tr>
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<td></td>
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<td></td>
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</tbody>
</table>
Monitoring of the Baby in the First Six Hours after Birth

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency of assessment</th>
<th>Danger signs</th>
</tr>
</thead>
</table>
| • First voiding of urine (within 48 hours) | • Check anal opening after birth
• Ask about urine and stools;
o every day
o before discharge from the health care facility | • Hypothermia: body feeling cold (temperature < 36.5 °C.)
• Fever: usually later in the postnatal period (while it is usually temperature > 38 °C, some feel that in the newborn it’s better to be on guard when the temperature is even 37.5 °C).
• Umbilical cord bleeding usually in the first day or two; needs retying of the cord; referral not required if that is the only sign.
• Absence of stool or urine after the 24 hrs and 48 hrs, respectively |
| • First stool (within 24 hours)         |                          | • Convulsions.                                                              |

As part of newborn monitoring, the following guidelines are standard:

- Look first for the **general status** of the baby to see that he/she is active and has a good pink color in the lips, palms, and soles.
- Count the **respiratory rate** which is normally between 30-60/minute without flaring of the nostrils and severe substernal retraction.
- **Temperature**: Take the axillary temperature of the baby with a digital thermometer cleaned with an alcohol swab (normal = 36.5-37.5 °C) at least once in the six hours. At other times, at least verify the body temperature by touching the abdomen, palms, and soles and ensure that they are all warm. If they are cold, recheck axillary temperature.
  
If the palms and soles are cold or blue, it suggests that the baby is not warm enough. If the abdomen is cold, it suggests an even more severe hypothermia. Re-warm the baby, preferably by placing in skin-to-skin contact with the mother’s chest and covering the baby with layers of clean cloth and a blanket. If, however, this does not warm the baby, it represents a serious danger sign that necessitates urgent referral.

**Danger Signs**

- Sucking poor or weak or not sucking at all
- Inactivity/lethargy
- Fever/body too hot or hypothermia/body too cold
- Rapid breathing/difficulty in breathing
- Convulsions
- Persistent vomiting/abdominal distension
- Major umbilical infections (redness/swelling surrounding the umbilicus and/or foul smell with or without pus)

*The first five signs are the most important. Although all the danger signs have been listed for completeness, the last three more often appear later in the postnatal period. Related to the cord, on the first day or two look particularly for oozing of blood/bleeding for which the cord must be retied properly.*
• Monitor for **danger signs**: These signs adapted from research studies are noted in the adjacent box and described in greater detail in the session on major neonatal infections or “sepsis.”

• Assess for **major defects** that need special inputs. Assess for these defects if they have not been monitored soon after birth:
  - Cleft lip and palate (needs additional support for feeding and may need feeding of expressed breast milk with a cup/spoon)
  - Esophageal atresia (usually associated with excessive secretion in the mouth)
  - ‘Open’ spinal defects
  - Imperforate anus

If the baby is normal and no danger signs are noted, provide any routine care due and reassure the mother. If there are any problems/danger signs take the necessary steps promptly.

In this period the baby continues to need basic care such as temperature maintenance, cord care, cleanliness, steps for prevention of infection, and exclusive, frequent breastfeeding on demand. Administer the first vaccines such as a dose of oral polio vaccine, BCG and hepatitis B based on the recommendations of the Ministry of Health.
CHAPTER 7: Providing routine postpartum care for the woman

Note: Examination and care of the postpartum woman are beyond the scope of this course. A brief review of components of the examination and care will be provided, but the emphasis in this course will be on counseling the woman for self-care.

Introduction

It is usually a joyful event when a woman gives birth to a baby she wants. Despite the pain and discomfort, birth is the long-awaited culmination of pregnancy and the start of a new life. However, birth is also a critical time for the health of the mother and her baby. Problems may arise that, if not treated promptly and effectively, can lead to ill health and even death for one or both of them. Nonetheless, the postpartum period is often neglected by maternity care. The lack of postpartum care ignores the fact that the majority of maternal deaths and disabilities occur during the postpartum period and that early neonatal mortality remains high.

Postpartum care needs to be a collaborative effort between the woman, her family, community health workers, facility health care providers, health care managers, community groups, and policy makers. All members need to be informed of the components of quality postpartum care.

In spite of the fact that so many deaths occur in the postpartum, very few women seek care and very few providers offer early postpartum services. Providers must offer quality services to ensure that women use these essential services that can substantially improve their chance of survival.

Male involvement

In most communities, it is not traditional for men to be included in postpartum and newborn care, but where men have been encouraged to attend they have shown that they are willing to do so. It may take several years before this becomes routine, but vaccination and home-based child health records also took several years to establish. Even small or busy clinics can be encouraged to identify a space (even the porch) where men can feel comfortable to wait and receive information from a trained male staff member about sex in the postpartum and the risk that unprotected sex outside the marriage holds for their baby, their wife, and themselves.

Both men and women should be aware of the following facts:

- Sexual relations may be resumed as soon as it is comfortable for the woman and she is ready for it. The couple should use condoms when having sex, particularly if the woman still has lochia.
- The early weeks of breastfeeding are times when women are at particular risk of becoming infected with HIV for the following reasons:
  - Men may have sex with partners other than their spouse(s) during the period of pregnancy and childbirth-related abstinence at home.
Women are more susceptible to HIV for a range of biological reasons at this time.

- The risk of MTCT is much higher when the woman is newly infected with a very high viral load.
- Mixed feeding carries particular risks for MTCT of HIV and other newborn infections.

**Postpartum care**

Perform a comprehensive examination of the woman at one hour and six hours after delivery and before discharge from the health care facility. For women who are not having any problems, the following schedule for routine post-discharge postpartum visits may be sufficient:

<table>
<thead>
<tr>
<th>Visits</th>
<th>Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Visit</td>
<td>Within the first week postpartum, preferably within 2 or 3 days</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Visit</td>
<td>4–6 weeks</td>
</tr>
</tbody>
</table>

During a routine postpartum visit, a skilled provider will:

- Perform a rapid assessment to recognize danger signs and signs/symptoms of complications or problems and respond immediately and appropriately.
- Detect pregnancy-related complications, hemorrhage, medical conditions, and infections (see Table 7-1)
  - Take a detailed history to identify any problems/potential problems; social problems, medical problems, problems during the most recent pregnancy and birth; and reported symptoms/problems.
  - Perform a physical, obstetrical, and gynecological exam.
  - If the woman’s HIV status is positive, carry out clinical staging and assess for opportunistic infections.
Table 7-1. How to decide where the postpartum woman needs to receive care

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Findings that are normal, and care can be provided by the midwife</th>
<th>Findings that require consultation with a doctor</th>
<th>Problems that are life-threatening and require urgent care</th>
</tr>
</thead>
</table>
| **General appearance** | − The woman is happy  
− The woman may be tired, but not excessively so  
− The woman looks good  
− The woman does not have skin abscesses or sores | − The woman is in bad health  
− The woman is very sad and unable to cope  
− The woman is depressed  
− The woman is not interested in her baby  
− The woman is lethargic and fatigued  
− The woman has skin abscesses, sores, rashes or bruises | − Women with severe postpartum depression may become suicidal or be unable to take care of herself or her baby, so should be referred in a timely fashion |
| **Temperature and pulse** | − Temperature <38°C  
− Pulse is about 60-80 beats per minute when the woman is resting.  
− No signs/symptoms of infection | − Temperature ≥ 38°C  
− Pulse is ≥ 100 beats per minute when the woman is resting.  
− Any signs/symptoms of infection | − Fever (temperature ≥ 38°C) with signs of shock |
| **BP** | − Systolic BP between 90 and 140  
− Diastolic BP between 60 and 90 | − Diastolic BP ≤ 60 or ≥ 90 | − Systolic BP ≤ 90 with signs of shock  
− Diastolic BP ≥ 110 with or without other signs or symptoms of pre-eclampsia |
| **Signs / symptoms of anemia** | − Pink conjunctiva, nailbeds, gums, and palms  
− Respiratory rate 16-24 respirations/minute  
− Woman tolerates exercise and work without being short of breath | − The conjunctiva, nailbeds, gums, and palms are pale  
− Respiratory rate >24 respirations/minute  
− Woman does not tolerate exercise and work without being short of breath | − Pallor with extreme shortness of breath, generalized edema, or cardiac symptoms |
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Findings that are normal, and care can be provided by the midwife</th>
<th>Findings that require consultation with a doctor</th>
<th>Problems that are life-threatening and require urgent care</th>
</tr>
</thead>
</table>
| **Breasts**             | - Engorgement may occur between days 2 and 4, causing the breast to become hard and tense and the nipples to become taut, shiny, and hard; this usually resolves spontaneously in 24 to 48 hours  
- Normal breasts will be soft and non-tender, without lesions, masses, or inflamed areas                      | - Fever, general malaise  
- Breast pain and tenderness  
- Reddened, wedge-shaped area on breast  
- Only one breast affected  
- Firm, very tender breast  
- Redness, marked tenderness, or even abscess formation  
- Cracked, fissured nipples  
- Palpable mass                                                    | - Breast infection with fever and signs of shock                                                                                       |
| **Height of fundus**    | - The uterus is firm and round  
- The uterus decreases by about 1 cm/day until 9-10 days postpartum                                                            | - The uterus is larger than expected for normal involution and the woman is complaining of:  
  - Lower abdominal pain  
  - Vaginal bleeding  
  - Blood or discharge that smells bad or has an unusual color  
  - The woman feels ill, is hot-to-touch (or has a temperature above 38°C), or has chills                         | - The uterus is larger than expected and the woman is experiencing vaginal bleeding and signs of shock  
- The uterus is larger than expected and the woman's vaginal blood or discharge smells foul or has an unusual color, and the woman has fever and signs of shock |
| **Abdomen**             | - Diastasis <2 fingerbreadths                                                                                                   | - Diastasis >2 fingerbreadths                                                                                                              | - None                                                                                                                    |
| **Bowel function**      | - Normal bowel movements                                                                                                         | - Fecal incontinence  
- Fecal matter in the vagina  
- Severe constipation  
- Pain when defecating                                                                                                   | - None of the problems are life-threatening                                                                                     |
| **Bladder function**    | - Passing urine without difficulty                                                                                              | - Urinary incontinence  
- Blood in the urine  
- Signs/symptoms of UTI (fever, dysuria, lower abdominal tenderness, loin pain)  
- Urinary retention                                                                                                         | - Signs/symptoms of infection (fever, dysuria, lower abdominal tenderness, loin pain) accompanied by signs of shock |
### Signs of thrombo-phlebitis
- Absence of calf tenderness and heat
- Elevated temperature, pulse faster than 100 beats/minute, calf tenderness and heat, leg pain, edema of the ankle, leg, and thigh
- Thrombophlebitis is a medical emergency!!

### Genital health
- The skin in this area is smooth without sores
- There is no itching, swelling, sores, or warts
- Normal vaginal discharge in the postpartum
- Local dryness and discomfort during intercourse may persist until ovulation and menses resume
- Laceration or episiotomy is not healing
- Vaginal discharge that is malodorous or yellow/green/grey
- Itching, sores, or warts
- Vaginal bleeding heavier than a period, or lasting more than 5-7 days
- Blood or discharge that smells bad or has an unusual color, and the woman has fever and signs of shock

### Lochia
- Bleeding gradually slows (although it may increase when the woman gets up or is more active)
- For the first 2 to 4 days, the discharge will be dark red or brownish (lochia rubra), will have sort of a fleshy odor, and the woman will probably need 1 peripad every 2 to 4 hours.
- Discharge will then become pinkish-brown (lochia serosa) with a musty, stale odor, and will last about 5 to 9 days.
- The final stage of healing is when the discharge becomes whitish-yellow (lochia alba). Lochia should not have an unpleasant odor and may last up to 6 weeks after the birth.
- Vaginal bleeding that is more than expected without signs/symptoms of shock
- Return to lochia rubra or persistence of lochia rubra or serosa
- Lower abdominal pain
- Continuous vaginal bleeding
- Blood or discharge that smells foul or has an unusual color, and the woman feels ill, is hot-to-touch (or has a temperature above 38°C), or has chills
- Vaginal bleeding heavier than a period, or lasting more than 5-7 days, with signs/symptoms of shock
- Blood or discharge that smells foul or has an unusual color, and the woman has fever and signs of shock

### Signs of domestic violence
- No unexplained bruises or injuries
- Unexplained bruises or injuries
• Evaluate findings from history and physical examination and:
  o Identify problems and complications.
  o Identify plans for family planning.
  o Decide where and by whom the woman should receive care. Refer all women who need specialized care for any reason.
  o Decide if there is need for further laboratory tests or investigations.
  o Make a plan of care with the woman.
  o Make a plan for counseling the woman on self-care and follow-up of any identified problems.
• Perform the following laboratory tests to evaluate the woman’s health and screen for selected medical conditions and infections:
  o Anemia: Check hemoglobin levels (as needed).
  o Sexually transmitted infections: RPR (or VDRL) - The test should be done if the woman’s status is not known; gram-stain and cultures for gonorrhea / chlamydia and wet mount of vaginal secretions for trichomoniasis if signs/symptoms are present or there is a suspected infection.
  o HIV (first visit/if last test >3 months ago/as needed): If the woman does not know her status and volunteers for testing, a test should be conducted. A positive HIV status affects many aspects of care for the woman and her newborn.
  o Urinary tract infection: Check with dipstick or urinalysis as needed.
  o Malaria: Check for malarial parasites in blood as needed.
  o Intestinal parasites: Check stool for ova and parasites as needed.
• Provide treatment for any medical conditions, illnesses, and infections detected.
• Manage any pregnancy-related complications.
• Provide prophylaxis for health promotion and disease prevention: TT, long lasting insecticidal nets (LLINs), iron/folate tablets, Vitamin A, broad-spectrum anti-helminthics, and other nutritional supplements as needed.
• Provide client-centered counseling for women and partners/supporters.
  o Malaria prevention.
  o Nutrition.
  o Postpartum care.
  o Hygiene.
  o Need for rest and sleep.
  o Family planning.
  o Sexual activity in the postpartum period.
  o Safer sexual practices.
• Provide additional care if the woman’s HIV status is positive:
  o Check CD4 count according to national protocols.
  o Perform or refer the woman for clinical assessment and evaluation of the need for ARV treatment if eligible.
  o Provide cotrimoxazole prophylaxis therapy (CPT), according to national guidelines.
  o Provide psychosocial support and link the mother to community support for HIV care and services.
  o Provide an appointment for the next visit for HIV care according to national guidelines.
  o Place the family in contact with an available community health worker/volunteer where available and feasible.

• Help the woman and her partner/support person develop a complication readiness plan.

• Record all information, including:
  o Findings of the history, examination, and laboratory investigations.
  o Treatment given.
  o Counseling provided.
  o Date of return visit.

**Importance of routine couple visits**

A routine couple visit prior to discharge from the facility enables discussion with the partner/father about warning signs of complications in the woman and newborn and the need to make a plan for urgent transport and referral. He can also learn what he can do to protect his wife's and newborn’s health and understand the importance of exclusive breastfeeding. In these ways a couple discharge visit can contribute to maternal and perinatal health.

The couple visit also provides an opportunity for both partners to be educated about treatment and prevention of sexually transmitted infections, the importance of family planning, and the availability of different family planning methods, including vasectomy.

If the male partner has not yet been tested for HIV, the couple can be counseled and encouraged to be tested without the danger of blame being put on the woman because she has been tested first. Where appropriate, condoms can be demonstrated, promoted, and provided. A couple visit acknowledges the usual gender role of men in protecting their family and in making decisions.
Health promotion and disease prevention

Certain medications or simple health care measures can prevent or reduce the risk of suffering from specific health problems. The following measures should be explained and offered to all women.

Prevent malaria

- Ask whether the woman and newborn will be sleeping under a bednet. If yes:
  - Ask if it has it been dipped in insecticide.
  - Advise her to dip it every six months.
- If not, advise her to use an insecticide-treated bednet, and provide information to help her do this.
  Note that WHO/GMP (Global Malaria Program) now recommends use of long lasting insecticidal nets (LLINs) that maintain efficacy for at least 3 years.

Prevent vitamin A deficiency

- Give 200,000 IU vitamin A capsules after delivery.
- Explain to the woman that the capsule with vitamin A will help her to recover better and that the baby will receive the vitamin through her breast milk.
- Ask her to swallow the capsule in your presence.
- Explain to her that if she feels nauseated or has a headache, it should pass in a couple of days.
- Do not give capsules with high dose of vitamin A during pregnancy.

Prevent iron-deficiency anemia

- For intermittent preventive treatment of hookworm to prevent anemia, provide doses of a broad antihelminthic (to be taken every six months) to women living in hookworm endemic areas.
- Iron/folate supplementation to prevent anemia.

Prevent tetanus

- Tetanus toxoid (TT). Provide TT if a dose is due and remind women to keep the TT cards and vaccinations up to date.
**Nutrition**

- Advise the woman to eat a greater amount and variety of healthy foods, such as meat, fish, oils, nuts, seeds, cereals, beans, vegetables, cheese, milk, to help her feel well and strong (give examples of types of food and how much to eat).
- Reassure the mother that she can eat any normal foods; these will not harm the breastfeeding baby.
- Spend more time on nutrition counseling with very thin women and adolescents.
- Determine if there are important taboos about foods which are nutritionally healthy. Advise the woman against these taboos.

In low-resource settings in developing countries where women eat less frequently, she should take at least one extra meal a day.

- Talk to family members, such as the partner and mother-in-law, to encourage them to help ensure the woman eats enough and avoids hard physical work.
- Remind the woman and her family that a breastfeeding woman needs to eat extra. In order to eat enough for herself and to produce enough milk, she should ideally eat five to seven times a day. If possible, she should try to eat smaller quantities of food at more frequent intervals during the day.

- Remind the breastfeeding woman to drink a lot. She should try to drink something after every time her baby breastfeeds.
Postpartum care and hygiene

Advise the woman:

- to always have someone near her for the first 24 hours to respond to any change in her condition.
- not to insert anything into the vagina.
- to avoid sexual intercourse until the perineal wound heals and it is comfortable for her.
- to have enough rest and sleep.
- about the importance of washing to prevent infection of the mother and her baby:
  - Wash perineum daily and after fecal excretion.
  - Change perineal pads every 4 to 6 hours, or more frequently if there is heavy lochia.
  - Wash used pads or dispose of them safely.
  - Wash the body daily once during bathing with soap and water.
  - Wash hands before handling the baby, at least after changing the diaper/napkin, after using the toilet herself, and after cleaning the house. Wash hands every time before handling a low birth weight baby.

Need for rest and sleep during the postpartum

Explain to the woman:

- that she can try to negotiate with family members to help with household chores so that she can take more time to rest.
- that she can ask a health care provider to help her explain her needs in the postpartum to her partner and family members.

Importance of family planning

- If appropriate, ask the woman if she would like her partner or another family member to be included in the counseling session.
- Explain that after birth, if she has sex and is not exclusively breastfeeding, she can become pregnant as soon as four weeks after delivery. Therefore it is important to start thinking early about what family planning method she and her partner will use.
- Her fertility can return even before she commences menstruation after childbirth.
- Ask about plans for having more children. If she (and her partner) want more children, advise that waiting at least 3-5 years between pregnancies is healthier for the mother and child.
• After a live birth, couples can use an effective family planning (FP) method of their choice consistently for at least two years before trying to become pregnant again and not more than five years after the last birth. After a miscarriage or abortion, couples can use an effective FP method of their choice consistently for at least six months before trying to become pregnant again.

• Counsel on safe sex, including use of condoms for dual protection from sexually transmitted infections (STI) or HIV and pregnancy. Promote their use, especially if there is a risk of sexually transmitted infections or HIV.

• For women whose HIV status is positive, follow guidelines for family planning considerations.

• Her partner can decide to have a vasectomy (male sterilization) at any time.

**Family planning methods**

Information on when to start family planning methods after delivery and the actual method to be used will vary depending on whether a woman is breastfeeding or not. Make arrangements for the woman to see a family planning counselor or counsel her directly.

• Family planning options for the **non-breastfeeding woman** that can be used immediately postpartum include: condoms, Progesterone-only oral contraceptives, Progesterone-only injectables, implant, spermicide, female sterilization (within 7 days or delay 6 weeks), copper IUD (immediately following expulsion of placenta or within 48 hours). Options for the non-breastfeeding woman that should be delayed for 3 weeks include: combined oral contraceptives, combined injectables, and fertility awareness methods.

• A **breastfeeding woman** may choose the lactational amenorrhoea method (LAM), but she will be protected from pregnancy only if she is no more than 6 months postpartum and she is breastfeeding exclusively (8 or more times a day, including at least once at night: no daytime feedings more than 4 hours apart; and no night feedings more than 6 hours apart; no complementary foods or fluids), and her menstrual cycle has not returned.

• A breastfeeding woman can also choose any other family planning method, either to use alone or together with LAM.

• Method options for the breastfeeding woman that can be used immediately postpartum include: lactational amenorrhoea method, condoms, spermicide, female sterilization (within 7 days or delay 6 weeks), copper IUD (within 48 hours or delay 4 weeks).

• Method options for the breastfeeding woman that should be delayed for 6 weeks include: Progesterone-only oral contraceptives, Progesterone-only injectables, implants, and diaphragm.

• Method options for the breastfeeding woman that should be delayed for 6 months include: combined oral contraceptives, combined injectables, fertility awareness methods.
Sexual intercourse during the postpartum period

Explain to the woman that:

- She can have sex as soon as she is ready and it is comfortable, but she should use a condom if she still has lochia discharge to prevent an ascending infection. The condom is to protect the woman!!!
- Unless partners have sex only with each other and are sure that they are both uninfected, they should practice safer sex. Safer sex means non-penetrative sex (where the penis does not enter the mouth, vagina, or rectum) or the use of a new latex condom for every act of intercourse. (Latex condoms are less likely to break or leak than animal-skin condoms or the thinner more “sensitive” condoms.) Condoms should never be reused.

Complication readiness

- Advise the woman to always have someone near for at least 24 hours after delivery to respond to any change in her condition.
- Discuss with the woman and her partner and family about emergency issues:
  - where to go if there are danger signs
  - how to reach the hospital
  - how to meet the costs involved
  - options for family and community support
- Advise the woman to ask for help from the community, if needed.
- Advise the woman to bring her home-based maternal record to the health center, even for an emergency visit.

Danger signs

Advise the woman to go to a hospital or health center immediately, day or night without waiting, if she experiences any of the following signs:

- Vaginal bleeding
  - More than 2 or 3 pads soaked in 20-30 minutes after delivery or
  - Bleeding increases rather than decreases after delivery.
- Convulsions.
- Fast or difficult breathing.
- Fever and too weak to get out of bed.
- Severe abdominal pain.
- Feels ill.
- Breasts swollen, red or tender breasts, or sore nipple.
- Urine dribbling or pain on micturition.
- Pain in the perineum or draining pus.
- Foul-smelling lochia.

Note: If the woman has even one of these signs / symptoms, she should seek care immediately.
Vaginal bleeding
• more than 2 or 3 pads soaked in 20-30 minutes after delivery or
• bleeding increases rather than decreases after delivery.

Fast or difficult breathing

Convulsions

Fever and too weak to get out of bed

Severe abdominal pain

Urine dribbling or pain when urinating

Swollen, red or tender breasts, or sore nipple

Feels ill

Pain in the perineum or draining pus / foul smelling lochia
Return visits

- Encourage the woman to bring her partner or family member to at least one visit.
- Explain the timing of routine post-discharge postpartum visits. When the mother and baby are normal:
  - the first visit should be within the first week, preferably within 2-3 days.
  - the second visit should be 4–6 weeks postpartum.
CHAPTER 8: Postnatal care of the newborn, at the facility and during postnatal visits

Note: Examination and care of the newborn are beyond the scope of this course. A brief review of components of the examination and care will be provided, but the emphasis in this course will be on counseling the mother / father about caring for the newborn.

Introduction

At birth the newborn must adapt quickly to life outside the uterus. The newborn’s body must make many changes, which begin at birth and continue throughout the newborn period. The first and most important change is to start breathing. Other changes are: regulating his own body temperature, feeding, and developing the ability to fight infections (immune system).

The first week and month of the newborn’s life are a time of risk. More than half of all newborn deaths happen in the first seven days, and although the risk of death decreases as time passes, every newborn needs careful attention during the first month of life.

When the newborn has recovered from birth and is warm and breathing normally, the mother and family start to take over the baby’s care. If the place of birth was the home, make sure the mother is able to care for and feed the baby before you leave them. If birth took place in a health care facility, do the same teaching and counseling before the mother and baby go home.

Newborn care – Overview

Most babies are born healthy and at term. The care they receive during the first hours, days, and weeks of life can determine whether they remain healthy. Although some babies may require special attention (for example, those who are sick or premature), all babies need basic care to help ensure their survival and well-being. This basic care is called essential newborn care (ENC) and includes:

• Immediate care at birth
• Care during the first day
• Care up to 28 days

The main purpose of essential newborn care is to keep every baby healthy. This means:

• Helping the mother meet the baby’s basic needs (warmth, normal breathing, feeding, infection prevention)
• Making sure the baby feeds within the first hour
• Advising/encouraging the mother to breastfeed / formula feed exclusively
• Detecting signs of problems so that early action can be taken
• Advising the mother and family about baby care and danger signs
• Making plans for continuing care (immunizations, growth monitoring)

Some use the words postpartum and postnatal synonymously. Others use the word postpartum (after delivery) for the mother and the word postnatal (after birth) for the baby.
In this session the word postpartum will be used in relation to the mother and the word postnatal relevant to the baby just for easy differentiation.

**Timing of most neonatal deaths**

Fifty percent of deaths in the newborn period take place within 24 hours of birth and 75 percent by the end of the first week of life. The first six hours after delivery constitute the time interval of maximum change. WHO recommends visits/evaluation at six hours, six days, and six weeks after the childbirth.

There are currently no specific recommendations based on evidence for the timing and numbers of contacts in the postnatal period at the facility and in the community. There is some evidence to suggest that home visits by community health workers on day two have been correlated with a decrease in neonatal mortality. However, in view of the high mortality during the first week, it is clear that these recommendations for the postnatal period need to focus on this period, especially the first 48-72 hours.

**Components of postnatal care**

Perform a comprehensive examination of the newborn at one hour and six hours after birth and before discharge from the health care facility. For newborns that are not having any problems, the following schedule for routine post-discharge postnatal visits may be sufficient:

<table>
<thead>
<tr>
<th>Scenario</th>
<th>1st postnatal visit</th>
<th>2d postnatal visit</th>
<th>3d postnatal visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility delivery, normal baby, discharge within 24 hrs</td>
<td>In the first 2-3, ideally 2 days after birth</td>
<td>5-7 days (may be adjusted accommodate special family events)</td>
<td>4-6 weeks</td>
</tr>
<tr>
<td>Facility delivery, normal baby, discharge day 2 or 3</td>
<td>4-7 days</td>
<td>4-6 weeks</td>
<td></td>
</tr>
<tr>
<td>Delivery by cesarean section, normal baby</td>
<td>2 weeks</td>
<td>4-6 weeks</td>
<td></td>
</tr>
<tr>
<td>Home delivery</td>
<td>Ideally on day of birth and within day 48-72 hrs.; If not feasible, at least one visit within 48 hrs</td>
<td>5-7 days (may be adjusted accommodate special family events)</td>
<td>4-6 weeks</td>
</tr>
<tr>
<td>LBW should ideally stay at least 3-7 days at facility. Refer very small babies and those with problems to higher center</td>
<td>Visit every week until weight gain adequate, e.g., 1800-2000 gram and baby doing well</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The number and timing of home visits by the CHW can vary based on feasibility and the recommendations of the program implementing agency/MOH and on existing problems.
Preparation for the examination:

- Prepare to maintain the baby’s temperature during the examination.
  - Prevent heat loss/hypothermia. Select a draft-free area, keep the baby warm during examination with a heat source, or, if not available, keep the baby covered, close to the mother, and expose only the part(s) to be examined.
- Promote cleanliness of the site where the baby is examined.
- Arrange to have adequate light.
- Wash hands with soap and water; if these are unavailable, use alcohol/glycerine hand rub.
- Greet the mother and her family/companion, install them comfortably in a draft-free area, and explain what you are going to do.

During a routine postnatal visit, a skilled provider will:

- Perform a rapid assessment to recognize danger signs and signs/symptoms of complications or problems and respond immediately and appropriately.
  Before examining the baby, assess for emergency signs (i.e. not breathing, gasping, respiratory rate less than 20 breaths per minute, bleeding, or shock) and provide immediate management according to national protocols.
- After assessing for emergency signs, continue to assess the baby and make a list of findings.
- Obtain the history of the baby and the mother.

Look for information related to:

- Pregnancy: Note any care received by the mother and risk factors for infection in the baby (chorioamnionitis, HIV, STIs, etc.).
- Regarding the delivery, note:
  - condition at birth, when the baby cried after birth and if it was spontaneous; if not, what actions were taken to initiate the cry
  - birth weight
  - care given at birth (eye and cord care, vitamin K1 injection)
  - immunizations
- Inquire about danger signs (see below).
- Ask about any other problems the newborn may have.
- Ask about the passage of stools and urine, specifically the approximate number per day (urine being passed more than six times a day is reasonable evidence of adequate breastfeeding).
- Examine the baby completely to evaluate for danger signs.
- See available records of the mother and baby.

The following three adaptations may be necessary during an examination of a newborn:

- Count the respiratory rate whenever the baby is quiet.
- If the baby cries, take advantage to examine the mouth to look for cleft palate or thrush.
- If feeding is necessary to calm the baby, take advantage to observe attachment at the breast and quality and adequacy of the sucking.
- Ask and look for danger signs and other problems.
  - **Difficulty in sucking.** The danger signs related to sucking/feeding can be assessed by asking the mother and verified by direct observation.
  - **Lethargy, diminished activity, moving only when stimulated.** Except in deep sleep, babies move frequently, both spontaneously and on stimulation. The arms and legs are flexed. If a limb is consistently kept straight, evaluate for paralysis. Note also if the limbs seem very limp or flaccid.
  - **Fever or hypothermia.** Assess the body temperature by at least touching the baby’s abdomen, hands, and feet and ensuring that all are warm. Where possible, note the axillary temperature with a thermometer leaving it in place for four minutes or as recommended by the manufacturer for axillary temperature recording. The normal temperature is 36.5-37.5 °C. The thermometer should be clean, preferably washed with soap and clean water, and wiped with an alcohol swab to prevent cross infection. Storing in liquid antiseptics should be done only if they are changed frequently. Otherwise there is risk of infections with Pseudomonas sps which may be highly resistant organisms. It is not recommended to take a rectal temperature as it is associated with a higher risk of infection and trauma. In the newborn infant, both fever and low body temperature outside the normal range of 36.5-37.5 °C are danger signs, especially if they are not reversed rapidly with simple steps, such as warming through skin-to-skin contact, or through removal of excess clothes, or covering in the hot weather.
  - **Rapid breathing/difficulty in breathing.** Assess respiration: the normal respiratory rate is 30-60 breaths/minute. There should be no flaring of the nostrils, grunting, or subcostal retractions. Although breathing can be somewhat irregular with short pauses, there should be no apnea, which is defined as cessation of breathing lasting for more than 20 seconds or of a shorter duration associated with cyanosis, pallor, or bradycardia with a heart rate less than 110/minute. The normal heart rate ranges between 110-160 beats/minute, with the lower rates when the baby is asleep and the higher rates when the baby is active or crying.
  - **Convulsions.** Features of convulsions are often atypical in the newborn, such as a “staring” look, blinking of eyelids, “chapping” movements of the lips, and clonic/tonic movements of the limbs.
  - **Persistent vomiting and/or abdominal fullness.** Vomiting is determined from the history taken from the mother. Occasional vomiting is normal, but persistent vomiting or green-colored vomitus are abnormal.
  - **Severe umbilical infection.** Lift the cord to see the base; check for pus discharge, redness, swelling, and foul smell. In the first day or two also check the cord for bleeding or oozing of blood.

Table 8-2. Guidelines for Identifying Danger Signs at Peripheral Centers

<table>
<thead>
<tr>
<th>Danger signs</th>
<th>Identification (Ask and look for)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucking less or not sucking at all</td>
<td>Not sucking at all; sucking less than usual; not opening the mouth when offered feeds; not demanding feeds.</td>
</tr>
<tr>
<td>Lethargy / inactivity</td>
<td>Not as active as usual, sleeping excessively, difficult to arouse, not waking up for feeds, lying limp, “loose-limbed,” excessively quiet or “too good.”</td>
</tr>
<tr>
<td>Danger signs</td>
<td>Identification (Ask and look for)</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Fever / low body temperature| **Fever:** Body hot to touch, history of the mouth feeling excessively hot during breastfeeding; temperature 38 °C or more. (While the temperature is usually >38 °C, some feel that in the newborn it is better to be on more watchful when the temperature is even 37.5 °C.)  
**Low body temperature/hypothermia:** body feels colder than normal; temperature less than 36.5 °C. |
| Fast breathing / respiratory difficulty | Respirations more than 60/minute (count a second to verify), flaring of the nostrils, groaning or grunting, substernal retraction.                                                                                                           |
| Convulsions                 | Features of convulsions are often atypical in the newborn such as a “staring” look, blinking of eyelids, “chapping” movements of the lips, clonic/tonic movements of the limbs.                                                                 |
| Persistent vomiting and / or abdominal distension | Occasional vomiting is common, but persistent vomiting or green-colored vomitus are abnormal. Abdominal distension or fullness may be present.                                                                                                                     |
| Severe umbilical infection  | Lift the cord to see the base. Look for spreading redness or swelling around the umbilicus and/foul smell with or without pus discharge.                                                                                     |

- Look for jaundice.

Unlike in older infants, it is not easy to see jaundice in the early phase in the eyes of the newborn. It is best assessed in the skin. Jaundice starts in the face and spreads down to the hands and feet. Gently press the tip of the nose, release the pressure, and observe the blanched area for any yellow tinge/color. It can also be seen in the grooves of the skin when the baby frowns or cries.

This is the only time in life that some jaundice is normal, and this used to be termed physiologic jaundice of the newborn. It starts after the first 24 hours on the face and does not spread to the palms and soles and disappears by two weeks. When the color reaches the palms or soles, it correlates with a serum bilirubin of about 15 mg/100mL (or 256.5µmols/L). Such babies require referral for assessment and treatment, such as phototherapy.

These guidelines apply only to full-term normal weight babies. Preterm and low birth weight babies require treatment at far lower levels of bilirubin. Hence, such babies with any jaundice need to be referred to a competent person/center for assessment and treatment. They should not be considered to have “physiological jaundice.”

Here is a summary of referral criteria for jaundice:
- starting early, within 24 hours of birth
- present on the palms and soles
- associated with a danger sign
- occurring in a low preterm/birth weight baby
- persisting beyond the second week of life

- Look for minor infections.
- Conjunctivitis: Subconjunctival hemorrhage can be a normal finding following the delivery.
- Check for conjunctivitis, seen as redness and/or discharge.
- Thrush: Examine the tongue and the inner side of the mouth for oral thrush, seen as irregular, dirty, white patches on the tongue and inner sides of the cheeks. Thrush is different from the normal smooth white coating which may be seen over the middle of the tongue in some babies.

It is best to look into the mouth when the baby cries or yawns. Avoid introducing a spatula or spoon into the mouth to open it. If doing this is unavoidable, then it must be done very gently, as vagal stimulation may result in bradycardia or even cardiac arrest.

- Skin infection including pustules on the skin: The lesions may be seen as yellowish pustules or as areas of peeling with underlying redness. Examine the skin from head to toe.

Look particularly in the neck folds and elbow, behind the ears, in the axilla and groin. Turn the baby over and examine the back.

- Minor infections of the umbilicus: Look for pus discharge from the umbilicus or base of the cord (lift the cord to see the base) without redness or swelling over the surrounding skin and/or a foul smell.

Evaluate infant feeding.

This can be done at any convenient time as noted above, especially after excluding danger signs, such as the inability to suck, that need immediate attention.

- If the baby is breastfeeding and can suck well, evaluate the latching or attachment of the baby’s mouth at the breast. Note that:
  - The baby’s chin is touching or nearly touching the breast.
  - The mouth is wide open.
  - The lower lip is everted.
  - Most of the areola is inside the mouth, especially the part below, so that the areola is visible more above the mouth than below.
  - The sucking is slow and deep and swallowing is audible.

- If the baby is formula feeding, check for signs of good feeding including the following:
  - baby becomes alert, opens mouth and eyes, and starts to feed.
  - the baby will suck the milk, spilling some.
  - small babies will start to take milk into their mouth using the tongue.
  - baby swallows the milk.

- Weigh the baby:
  - Compare weight to previous weights.

Evaluate findings on history and physical examination (see Table 8-3).

Document all findings.
### Table 8-3. Findings in the newborn that are normal and abnormal

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal findings</th>
<th>Abnormal findings</th>
</tr>
</thead>
</table>
| **Color**       | • Face, chest, tongue, and lips are pink.                                        | • Yellow or jaundiced skin or eyes  
  **Cause:** Possible infection or a blood problem  
  • Paleness (pallor)  
  **Cause:** Bleeding, poor circulation of blood, baby is cold, low blood sugar, or not enough oxygen  
  • Blue tongue and lips (cyanosis)  
  **Cause:** Baby may not be getting enough oxygen. |
| **Breathing**    | • Quiet breathing.  
  • There should be no indrawing of the chest or flaring of the nostrils.  
  • Chest and abdomen move with each breath.  
  • The chest moves equally with breathing.  
  • The abdomen pushes out with each breath.  
  **Count the baby’s breathing for 1 full minute:**  
  • 30-60 breaths in 1 minute (when the baby is not crying).  
  • May be irregular, i.e., hard breathing, then up to 20 seconds without a breath.  
  • Grunting (sound made with breathing out)  
  • More than 60 breaths in 1 minute  
  • Flaring nostrils  
  • Indrawing of chest between ribs  
  **Causes:** Air tubes may be blocked, infection or fluid in the lungs, low blood sugar  
  • Less than 30 breaths in 1 minute  
  • Periods of no breathing (apnea) for more than 20 seconds  
  • Gasp ing  
  **Causes:** Asphyxia, lung infection, fluid in the lungs, premature baby, abnormal temperature, low blood sugar, blood infection |
| **Posture and tone** | • Arms and legs are bent (flexed).  
  • Preterm babies have less flexion. | • Lack of flexion, limp, floppy  
  **Causes:** Prematurity, birth injury, asphyxia  
  • Rigid, stiffness, or arching of back, clenched jaw  
  • Rhythmic movements of one limb  
  **Causes:** Tetanus, birth injury, meningitis, convulsions |
| **Heart rate**   | Count the baby’s heart beats for 1 full minute:  
  • 100-160 beats in 1 minute.  
  • Short periods of change in heart rate are normal (such as with sleeping, crying, or breastfeeding).  
  | • Heart rate below 100  
  **Causes:** May not be getting enough oxygen, heart problems, breathing problems  
  • Heart rate above 180  
  **Causes:** Infection, baby may be too hot, dehydration, crying, congenital heart problem |
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal findings</th>
<th>Abnormal findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity</strong></td>
<td>• The baby moves both legs and arms equally. • The baby opens his mouth and turns his head to search for the nipple when his cheek is stroked gently.</td>
<td>• Seizures or convulsions of body • Moves only one arm or leg or unequal movement of one arm or leg <em>Causes:</em> May be due to nerve injury during birth, tetanus, or infection • Lethargic, drowsy, sluggish • Excessive and high-pitched cry; irritable • Not sucking • Vomiting <em>Causes:</em> May be bleeding or swelling in the brain, low blood sugar, asphyxia, infection</td>
</tr>
<tr>
<td><strong>Skin</strong></td>
<td>• There may be tiny white bumps on the face (milia). • There may be a bluish area over the lower back. • There may be some peeling of the skin.</td>
<td>• Pustules, blisters, red or purple spots <em>Cause:</em> Possible infection while in the uterus</td>
</tr>
<tr>
<td><strong>Head</strong></td>
<td>• Elongated or uneven (asymmetrical) shape due to molding from pressure of the birth canal is normal. It usually goes away by 2-3 days after birth • Caput succedaneum, a soft swelling over the part of the head that came out first through the birth canal, may be present at birth. It goes away by 48 hours. • The anterior fontanelle (a diamond-shaped soft spot just above the forehead) is flat and may swell when the baby cries</td>
<td>• Firm swelling on only one side of the skull (cephalhematoma) <em>Cause:</em> Blood between the skull bone and skin due to a blood vessel breaking during birth. It starts a few hours after birth and increases in size. • Anterior fontanelle swollen or bulging outward when the baby is not crying <em>Cause:</em> Increased pressure in the head</td>
</tr>
<tr>
<td><strong>Eyes</strong></td>
<td>• No discharge and the eyes are not sticky.</td>
<td>• Discharging pus • Sticky eyes • Swollen eyelids <em>Cause:</em> Eye infection, especially from gonorrhea or chlamydia</td>
</tr>
<tr>
<td><strong>Mouth</strong></td>
<td>• When the baby cries look into his mouth and put one gloved finger into the mouth and feel the palate for any opening. • Lips, gums, and palate are intact and the same on both sides. • The baby sucks vigorously on your finger.</td>
<td>• Cleft or opening in the lip • Cleft or hole in the soft or hard palate <em>Cause:</em> Congenital abnormality</td>
</tr>
<tr>
<td>Parameter</td>
<td>Normal findings</td>
<td>Abnormal findings</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Abdomen                    | • Rounded, soft.  
• Umbilical cord is tied tightly, dry, not bleeding.  
• A small umbilical hernia is normal during the first year.                                                                                           | • Very swollen and hard abdomen  
*Cause:* Possible blockage of intestines  
• Sunken-in abdomen with rapid breathing  
*Cause:* Possible hernia of the diaphragm  
• Bleeding from the umbilical cord  
*Cause:* The cord tie may have loosened.                                                                                                                 |
| Back and spine             | • The skin over the spine has no openings.  
• The spine has no defects.                                                                                                                                                                                      | • Defects of the spine include small to large holes in the skin with a bubble of tissue on the outside (open neural tube defect).                                                                              |
| Anus                       | Do not insert instruments or finger to inspect the anus.  
• The newborn passes stool by 24 hours.                                                                                                                                                                         | • No passage of stool by 24 hours and a swollen abdomen  
*Cause:* May be blockage in the baby’s intestines or anus, or absence of an anal opening                                                                                             |
| Girl’s external genital organs | Gently separate the legs.  
• A white vaginal discharge is normal.  
• A bloody vaginal discharge that starts on day 2-3 and continues up to day 7 is normal.                                                                                                                  | • Unable to identify gender  
• No urine or wet diaper by 24 hours                                                                                                               |
| Boy’s external genital organs | • The foreskin can be retracted (unless circumcision has been performed).  
• The urethra opens at the end of the penis.  
• One or two testes are felt in the scrotum.  
• If the baby has been circumcised, there is no sign of infection or bleeding.                                                                          | • Urethra does not open at the end of the penis, but in some other place, such as under the penis; foreskin is not retractable  
• Scrotum is empty (no testes can be felt)                                                                                                               |
| Temperature                | • Baby’s abdomen or back feels warm. (If the baby’s temperature is low, do the examination later after rewarming.)  
• 36.5-37.5 ºC axillary (under the baby’s arm).  
• If a thermometer is not available: feel the chest or back with the back of your hand; the temperature should feel the same as that of a healthy person. | • Axillary temperature below 36.5 ºC or above 37.5 ºC  
• Baby’s chest or back feels cooler or hotter than the skin of a healthy person                                                                                                                                    |
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal findings</th>
<th>Abnormal findings</th>
</tr>
</thead>
</table>
| Weight    | • 2.5 up to 3.99 kg is the normal range for birth weight.  
• Newborns normally lose 5% to 10% of their birth weight in the first few days of life, and then begin to gain weight.  
• By the 14th day, a baby should have regained his birth weight. | • Weight less than 2.5 kg  
*Cause:* Low birth weight can be due to preterm birth (before 37th week) or poor growth in the womb. Risk of low blood sugar.  
• Weight 4 kg or more  
*Cause:* Mother may be diabetic. Risk of low blood sugar. |
• Use the findings from the history and examination to:
  o Identify problems and complications.
  o Decide where and by whom the newborn should receive care. Refer all newborns that need specialized care for any reason.
  o Decide if there is need for further laboratory tests or investigations.
  o Make a plan of care with the mother / father (see table 8-4):
    - Refer all newborns that need specialized care for any reason.
    - If a danger sign exists (even just one), administer the first dose of antibiotics and refer the baby.
    - Administer treatment for minor infections.
    - Administer immunizations, OPV, BCG, hepatitis B, if not already done.
    - Provide PMTCT interventions according to national guidelines.
  o Make a plan for counseling the mother / father about caring for the newborn and follow-up of any identified problems.

• Perform appropriate laboratory investigations, and treat the baby (and/or the mother or her partner(s), if necessary).

• Provide client-centered counseling for mothers, fathers, and support persons:
  o Prevention of hypo- and hyper-thermia.
  o Cord care.
  o Loving care.
  o Sleep.
  o Infant feeding.
  o Immunizations.
  o Routine care visits.
  o Care for the infant exposed to HIV.

• Help the mother and father develop a complication readiness plan.

• Plan for the next postnatal visit:
  o See table 8-1 for recommended timing for postnatal visits.
  o For newborns with minor infection, schedule a visit after two days.
  o For low birth weight babies review once a week until baby is at least 2500 grams.
  o Where feasible and available, place the mother/family in contact with a trained community health worker or volunteer.

• Record all information, including:
  o Findings of the history, examination, and laboratory investigations.
  o Treatment given.
  o Counseling provided.
  o Date of return visit.
Table 8-4. Care of the newborn during the 4-6 Weeks after birth

<table>
<thead>
<tr>
<th>Action</th>
<th>At birth</th>
<th>Before leaving the delivery room</th>
<th>At least once a day during stay in the facility</th>
<th>Postnatal visits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1st visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2nd visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3rd visit at 4-6 weeks</td>
</tr>
<tr>
<td>Observe / look for</td>
<td>Brief examination, look for danger signs and congenital abnormalities</td>
<td></td>
<td>Full basic systematic examination</td>
<td></td>
</tr>
<tr>
<td>Provide counseling</td>
<td>Targeted counseling, i.e., breastfeeding, protection against hypothermia, danger signs.</td>
<td></td>
<td>Full counseling</td>
<td></td>
</tr>
<tr>
<td>Give specific care</td>
<td>Eye care</td>
<td></td>
<td>BCG, OPV and hepatitis B any time in the postpartum period according to the recommendations of the Ministry of Health</td>
<td>DPT, oral Polio and BCG if not administered earlier</td>
</tr>
<tr>
<td></td>
<td>Cord care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vitamin K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identification band</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Breastfeeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weigh</td>
<td>Weigh baby when temperature is stable, then every day while in the facility, and at every visit to the health center</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Provide counseling for caring for the newborn**

An important part of the help you give to the newborn, mother, and family is teaching and counseling about newborn care. You should explain:

- **What care to give**
- **Why to give the care**

Even if a woman has had a baby before, there may be new information that can help her. When speaking with her, include other family members such as the grandmother, mother-in-law, aunt, sister, and/or husband. This gives everyone a chance to hear the same things the mother hears. It also gives the mother and family time to ask questions. Below is information to talk about when you teach and counsel. The mother and family may have other baby care questions not included below. Take time to discuss all the family’s concerns and questions.

**Cord care**

See the section on counseling the parents about cord care in the chapter on essential newborn care at birth.

**Preventing hypothermia**

See the section on counseling the parents about prevention of hypothermia in the chapter on essential newborn care at birth.

**Preventing hyperthermia**

When the newborn is in an environment that is too hot the baby’s temperature rises above 37.5°C and it develops hyperthermia. Although less common, hyperthermia can occur just as easily as hypothermia, and is equally dangerous.

Hyperthermia should not be confused with fever, which is a raised body temperature in response to infection with microorganisms or other sources of inflammation. However, it is not possible to distinguish between fever and hyperthermia by measuring the body temperature or by clinical signs. When the newborn has a raised temperature it is important
to consider both causes. Infection should always be suspected first, unless there are very obvious external reasons for the baby becoming overheated.

Some of the commonest causes of hyperthermia are:
- Wrapping the baby in too many layers of clothes, especially in hot, humid climates
- Leaving a baby in direct sunlight or in a parked car in hot weather
- Putting a newborn baby too close to a fire or heater
- Putting the baby close to a hot water bottle
- Leaving a baby under a radiant warmer or in an incubator that is not functioning properly and/or checked regularly, or is exposed to the sun’s rays.

All these practices should be avoided in order to prevent hyperthermia.

**Sleep**

Newborns need sleep. If they are healthy, they sleep most of the time between feedings (up to 18 hours out of 24). They wake up every 2-3 hours to feed. During the night the baby may sleep up to 4 hours between feeds.

Newborns wake up a lot at night. Because of this a mother needs to rest or sleep during the day when her baby is asleep. This pattern changes with time and the baby will begin to sleep more at night and stay awake more during the day.

A baby who is hard to wake up or who sleeps too much may be sick.

**Loving Care**

A newborn cannot survive without loving care. At birth, he is unable to meet any of his own basic needs. When a newborn is hungry, wet, cold, uncomfortable, in pain or sick, he can only cry or send out other cues.

Every newborn is different. He may be easily irritated or calm and sleepy. He may be fussy and hard to satisfy, or happy and easy going. He may have a loud piercing cry, or a soft, quiet one. A mother must get to know her baby’s personality. His survival depends on her understanding and responding appropriately to the signals he sends.

When the baby cries and his needs are met, he learns that the world is a safe and loving place. He also learns confidence and trust: confidence that he can communicate his needs to others and trust that someone will care for him when he needs it. The newborn’s crying should not be ignored.

Newborns should always be handled gently. Mothers learn to do what they see you doing. Handle the baby gently, talk to him in a quiet voice, and observe him carefully so that you can respond appropriately to his needs.

**Protection from Infection**

The system to fight infections is not mature in a newborn. This means that a newborn can get infections more easily than an older child or adult. As the baby grows, the infection fighting system becomes stronger. The mother and family need to protect the newborn from infection at birth and in the early months of life.

How the family should protect the newborn from infection
- Wash hands with soap and water before and after touching the newborn.
- Keep fingernails short (germs can live under the fingernails).
- Do not put anything (dressing or herbal or medicinal products) on the umbilical cord.
- Keep the cord clean and dry.
• Wash anything in the home that will touch the baby: clothing, bedding, covers.
• Keep sick children and adults away from the baby.
• Protect the newborn from smoke in the air (from cigarettes or a cooking fire) because this can cause breathing problems.
• Breastfeed the newborn exclusively. A mother’s milk gives infection protection to her newborn.
• Make sure the baby gets all his immunizations on time.

**Immunization**

• Immunization protects against several dangerous diseases. A child who is not immunized may suffer from any one of the diseases they are supposed to protect the children from. If they suffer from the diseases, they are more likely to become undernourished, to become disabled, and to die.
• Immunization is urgent. Refer to national guidelines for which immunizations should be provided.

Mothers and fathers need to know when, where, and how to get their babies immunized in a timely manner.

**Hygiene**

Cleanliness is extremely important. Keeping the baby clean can prevent infection. If the mother follows the following hygiene rules, she can probably prevent infection in her newborn:

• Hands should always be washed before and after handling the baby
• The basin, dipper or any other equipment, and the water used for the baby should be kept clean
• The baby may be given a daily bath. Be sure that the water is neither too cold or too hot and that the room is warm to prevent chilling
• The baby’s napkin should be changed as soon as it is wet or soiled and the baby’s bottom should be washed with water (and soap, if possible). A baby’s stool may cause infection so it should be cleaned up and disposed of safely and appropriately.
• The baby’s clothes and napkins should be washed separately from the family’s clothes, ironed or dried in the hot sun, and kept in a clean place.

**Support for infant feeding**

Refer to resources for assistance on how to support mothers in their chosen infant feeding option. In general:

• Support the mother on her feeding choice at each visit – encourage her to stick to her choice.
• Encourage exclusive breast or formula feeding for the first 6 months of the baby’s life. Discourage blended feeding.
• Explain signs that the baby is receiving an adequate amount of milk:
  - Baby is satisfied with the feed.
  - Weight loss is less than 10% in the first week of life.
  - Baby gains at least 160g in the following weeks or a minimum 300g in the first month.
  - Baby wets every day as frequently as baby is feeding.
• Provide information and advice on complementary foods and when and how to introduce these into the infant’s diet.
• Monitor growth at every infant visit.

If the woman’s HIV status is negative and she chooses to breastfeed:
• Encourage negative prevention.
• Educate about the elevated risks of MTCT of HIV if the mother has a new infection of HIV when breastfeeding.
• Encourage exclusive breastfeeding.
• Counsel on the risks of blended feeding.

If the woman’s HIV status is positive and she chooses to breastfeed:
• Encourage positive prevention.
• Provide information on risks of MTCT of HIV when breastfeeding:
  HIV in breast milk does not transfer as easily to the baby as HIV in blood or other body fluids. Only about 1 out of 7 mothers infected with HIV who breastfeed will infect their babies through breastfeeding.
  The risk of HIV transmission is less:
  - If the baby breastfeeds exclusively
  - If the mother seeks immediate care for cracked nipples or breast infections
  - If the baby is breastfed for only a few months
  - If the mother and baby are given antiretroviral medications
  The risk of HIV transmission is more:
  - The longer a baby breastfeeds
  - If a mother becomes infected while breastfeeding (transmission to the baby doubles)
  - If there are problems or infections such as mastitis or cracked nipples in the mother or oral thrush or intestinal infections in the baby
  - If the mother shows signs of AIDS

Infants who do not receive breast milk have a much greater risk of dying from other infections in the first 2 months than infants who do receive breast milk.

• Encourage exclusive breastfeeding.
• Counsel on the risks of blended feeding.
• Advise on the changing risks to the baby over time.
• Counsel on prevention and early/immediate treatment of mastitis, breast infections, nipple soreness in the mother and mouth infections in the baby.
• Counsel on appropriate switch to formula feeding when she meets the AFASS criteria.

If the woman chooses to formula feed:
• Counsel on safe and appropriate formula feeding practices
• Advise on how/where to purchase own formula/equipment and sustain the practice.
• Counsel on simple ways to practice good hygiene:
  - Wash hands with soap and water before preparing formula or before feeding the baby and also after going to the toilet.
  - Wash the baby’s cup or bowl thoroughly with soap and clean water or boil it.
- Keep food preparation surfaces clean using water and soap or detergent to clean them every day.
- Boil water that will be used to make formula vigorously for 1–2 seconds.
- Give unfinished formula to an older child instead of keeping it until the next feed.
- Do not leave cooked food at room temperature for more than 2 hours.
- Refrigerate prepared formula and all cooked and perishable foods promptly (preferably below 5 °C).

• Provide tips for feeding a baby with formula:
  - The baby will not need anything but formula until he/she is 6 months old. Do not breastfeed or give him/her food, water, or any other types of liquids.
  - The baby can become sick or malnourished if he/she does not drink enough formula or if the formula is not prepared correctly.
  - If running low on formula, do NOT add more water to make it last longer. Feed the baby modified animal milk with added water, sugar and a micronutrient supplement until you can buy more formula.
  - Prepare the formula only a short time before giving it to the baby so that it has time to cool. (Formula should be given within one hour of preparation).
  - Only make enough formula for one feed at a time, because formula that is not appropriately stored may spoil and make the baby sick.
  - Do not keep milk in a thermos flask, because it will become contaminated quickly. Instead, keep hot water in the thermos to make formula for each feed.
  - An open tin of formula should be used within 4 weeks.

• Counsel on how to take care of her breasts:
  - If a woman does not wish to breastfeed or stops breastfeeding, apply a breast binder (and ice packs if available) for several days to minimize engorgement.
  - Analgesics may relieve the pain
  - Reassure the woman that breast engorgement and pain will gradually decrease.
  - Counsel the woman on danger signs that indicate she is experiencing an infection and needs immediate care and treatment.
  - Counsel on family planning

**Care for babies exposed to HIV**

For the baby, ask the following questions:

• Was ARV medication for prophylaxis administered to the baby (according to the recommendation of the Ministry of Health)? If possible verify from any available records.

• Is the baby currently on any ARV prophylaxis?

• Check infant feeding options:
  o Provide support for chosen the infant feeding choice.
  o Reinforce the importance of exclusive breast or formula feeding.
  o If breastfeeding:
    ✓ Reinforce messages on care of the breast and prevention of problems.
    ✓ Address any questions, concerns, and problems related to breastfeeding.
Counsel the mother / parents on:

• symptoms of opportunistic infections in the baby, such as fever, cough, night sweats, weight loss, and thrush.
• symptoms of opportunistic infections in herself, such as fever, cough, night sweats, weight loss, diarrhea.
• when to bring the child for HIV testing and cotrimoxazole prophylaxis.
• If no clinical HIV services are immediately available for referral of mother and infant, counsel the mother about HIV in infants and the need to get testing and treatment as soon as possible.

At every visit, check infant for the following:

• inadequate weight gain
• skin rashes
• oral thrush

Complication readiness

• Advise the mother to always have someone near for at least 24 hours after birth to help her respond to any change in the baby’s condition.
• Discuss with the mother and family about emergency issues:
  - where to go if there are danger signs
  - how to reach the hospital
  - how to meet the costs involved
  - options for family and community support
• Advise the woman to ask for help from the community, if needed.
• Advise the woman to bring her home-based maternal record to the health center, even for an emergency visit.

Danger signs

Advise the mother/father to take the newborn to a hospital or health center immediately, **day or night without waiting**, if the baby experiences any of the following signs:
90  Integrating AMTSL and immediate postnatal care

Return visits

- Encourage the woman to bring her partner or family member to at least one visit.
- Explain the timing of routine post-discharge postnatal visits.
References


17 From USAID’s *Call to Action: USAID’s Postpartum Hemorrhage Prevention Special Initiative*. October, 2002.


