

Integrated Management Of Pregnancy And Childbirth

Managing Complications in Pregnancy and Childbirth:

A guide for midwives and doctors



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Department of Reproductive Health and Research

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INFECTION PREVENTION

- Infection prevention (IP) has two primary objectives:
 - prevent major infections when providing services;
 - minimize the risk of transmitting serious diseases such as hepatitis B and HIV/AIDS to the woman and to service providers and staff, including cleaning and housekeeping personnel.
- The recommended IP practices are based on the following principles:
 - Every person (patient or staff) must be considered potentially infectious;
 - Handwashing is the most practical procedure for preventing cross-contamination;
 - Wear gloves before touching anything wet—broken skin, mucous membranes, blood or other body fluids (secretions or excretions);
 - Use barriers (protective goggles, face masks or aprons) if splashes and spills of any body fluids (secretions or excretions) are anticipated;
 - Use safe work practices, such as not recapping or bending needles, proper instrument processing and proper disposal of medical waste.

HANDWASHING

- Vigorously rub together all surfaces of the hands lathered with plain or antimicrobial soap. Wash for 15–30 seconds and rinse with a stream of running or poured water.
- Wash hands:
 - before and after examining the woman (or having any direct contact);
 - after exposure to blood or any body fluids (secretions or excretions), even if gloves were worn;
 - after removing gloves because the gloves may have holes in them.

- To encourage handwashing, programme managers should make every effort to provide soap and a continuous supply of clean water, either from the tap or a bucket, and single-use towels. Do not use shared towels to dry hands.
- To wash hands for surgical procedures, see **page C-48**.

GLOVES AND GOWNS

- Wear gloves:
 - when performing a procedure (**Table C-2, page C-19**);
 - when handling soiled instruments, gloves and other items;
 - when disposing of contaminated waste items (cotton, gauze or dressings).
- A separate pair of gloves must be used for each woman to avoid cross-contamination.
- Disposable gloves are preferred, but where resources are limited, surgical gloves can be reused if they are:
 - decontaminated by soaking in 0.5% chlorine solution for 10 minutes;
 - washed and rinsed;
 - sterilized by autoclaving (eliminates all microorganisms) or high-level disinfected by steaming or boiling (eliminates all microorganisms except some bacterial endospores).

Note: If single-use disposable surgical gloves are reused, they should not be processed more than three times because invisible tears may occur.

Do not use gloves that are cracked, peeling or have detectable holes or tears.

- A clean, but not necessarily sterile, gown should be worn during all delivery procedures:
 - If the gown has long sleeves, the gloves should be put over the gown sleeve to avoid contamination of the gloves;
 - Ensure that gloved hands (high-level disinfected or sterile) are held above the level of the waist and do not come into contact with the gown.

TABLE C-2 Glove and gown requirements for common obstetric procedures

Procedure	Preferred Gloves ^a	Alternative Gloves ^b	Gown
Blood drawing, starting IV infusion	Exam ^c	High-level disinfected surgical ^d	None
Pelvic examination	Exam	High-level disinfected surgical	None
Manual vacuum aspiration, dilatation and curettage, colpotomy, culdocentesis	High-level disinfected surgical	Sterile surgical	None
Laparotomy and intra-abdominal procedures, artificial rupture of membranes, delivery, instrumental delivery, symphysiotomy, episiotomy, repair of cervical or perineal tears, craniotomy, craniocentesis, bimanual compression of uterus, manual removal of placenta, correcting uterine inversion	High-level disinfected surgical	Sterile surgical	Clean, high-level disinfected or sterile
Handling and cleaning instruments	Utility ^e	Exam or surgical	None
Handling contaminated waste	Utility	Exam or surgical	None
Cleaning blood or body fluid spills	Utility	Exam or surgical	None

^a Gloves and gowns are not required to be worn to check blood pressure or temperature, or to give injections.

^b Alternative gloves are generally more expensive and require more preparation than preferred gloves.

^c Exam gloves are single-use disposable latex gloves. If gloves are reusable, they should be decontaminated, cleaned and either sterilized or high-level disinfected before use.

^d Surgical gloves are latex gloves that are sized to fit the hand.

^e Utility gloves are thick household gloves.

HANDLING SHARP INSTRUMENTS AND NEEDLES

OPERATING THEATRE AND LABOUR WARD

- Do not leave sharp instruments or needles (“sharps”) in places other than “safe zones” (page C-51).
- Tell other workers before passing sharps.

HYPODERMIC NEEDLES AND SYRINGES

- Use each needle and syringe only once.
- Do not disassemble needle and syringe after use.
- Do not recap, bend or break needles prior to disposal.
- Dispose of needles and syringes in a puncture-proof container.
- Make hypodermic needles unusable by burning them.

Note: Where disposable needles are not available and recapping is practised, use the “one-handed” recap method:

- Place the cap on a hard, flat surface;
- Hold the syringe with one hand and use the needle to “scoop up” the cap;
- When the cap covers the needle completely, hold the base of the needle and use the other hand to secure the cap.

WASTE DISPOSAL

- The purpose of waste disposal is to:
 - prevent the spread of infection to hospital personnel who handle the waste;
 - prevent the spread of infection to the local community;
 - protect those who handle waste from accidental injury.
- Noncontaminated waste (e.g. paper from offices, boxes) poses no infectious risk and can be disposed of according to local guidelines.
- Proper handling of contaminated waste (blood- or body fluid-contaminated items) is required to minimize the spread of infection to hospital personnel and the community. Proper handling means:
 - wearing utility gloves;

- transporting solid contaminated waste to the disposal site in covered containers;
- disposing of all sharp items in puncture-proof 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.

STARTING AN IV INFUSION

- Start an IV infusion (two if the woman is in shock) using a large-bore (16-gauge or largest available) cannula or needle.
- Infuse IV fluids (normal saline or Ringer's lactate) at a rate appropriate for the woman's condition.

Note: If the **woman is in shock**, avoid using plasma substitutes (e.g. dextran). There is no evidence that plasma substitutes are superior to normal saline in the resuscitation of a shocked woman and dextran can be harmful in large doses.

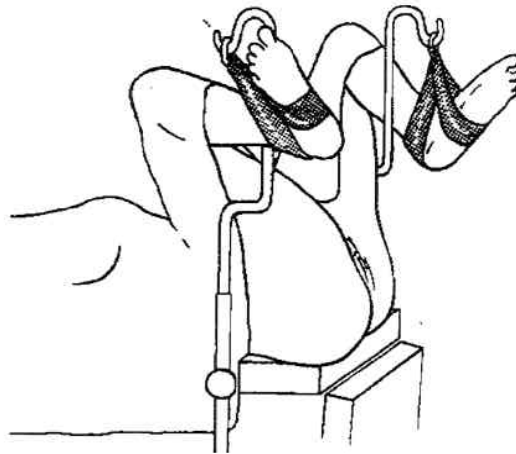
- If a **peripheral vein cannot be cannulated**, perform a venous cut-down (**Fig S-1, page S-3**).

BASIC PRINCIPLES FOR PROCEDURES

Before any simple (nonoperative) procedure, it is necessary to:

- Gather and prepare all supplies. Missing supplies can disrupt a procedure.
- Explain the procedure and the need for it to the woman and obtain consent.
- Provide adequate pain medication according to the extent of the procedure planned. Estimate the length of time for the procedure and provide pain medication accordingly (**page C-37**).
- Place the patient in a position appropriate for the procedure being performed. The most common position used for obstetric procedures (e.g. manual vacuum aspiration) is the lithotomy position (**Fig C-1, page C-22**).

FIGURE C-1 The lithotomy position



- Wash hands with soap and water (**page C-17**) and put on gloves appropriate for the procedure (**Table C-2, page C-19**).
- If the **vagina and cervix need to be prepared with an antiseptic** for the procedure (e.g. manual vacuum aspiration):
 - Wash the woman's lower abdomen and perineal area with soap and water, if necessary;
 - Gently insert a high-level disinfected or sterile speculum or retractor(s) into the vagina;
 - Apply antiseptic solution (e.g. iodophors, chlorhexidine) three times to the vagina and cervix using a high-level disinfected or sterile ring forceps and a cotton or gauze swab.
- If the **skin needs to be prepared with an antiseptic** for the procedure (e.g. symphysiotomy):
 - Wash the area with soap and water, if necessary;
 - Apply antiseptic solution (e.g. iodophors, chlorhexidine) three times to the area using a high-level disinfected or sterile ring forceps and a cotton or gauze swab. If the **swab is held with a gloved hand**, do not contaminate the glove by touching unprepared skin;
 - Begin at the centre of the area and work outward in a circular motion away from the area;
 - At the edge of the sterile field discard the swab.
- Never go back to the middle of the prepared area with the same swab. Keep your arms and elbows high and surgical dress away from the surgical field.

TABLE P-1 Indications and precautions for paracervical block

Indications	Precautions
<ul style="list-style-type: none"> • Dilatation and curettage • Manual vacuum aspiration 	<ul style="list-style-type: none"> • Make sure there are no known allergies to lignocaine or related drugs • Do not inject into a vessel • Maternal complications are rare but may include haematoma

- Review general care principles (**page C-17**).
- Prepare 20 mL 0.5% lignocaine solution without adrenaline (BOX P-1).
- Use a 3.5-cm, 22-gauge or 25-gauge needle to inject the lignocaine solution.
- **If using a tenaculum to grasp the cervix**, first inject 1 mL of 0.5% lignocaine solution into the anterior or posterior lip of the cervix which has been exposed by the speculum.

Note: With incomplete abortion, a ring (sponge) forceps is preferable, as it is less likely than the tenaculum to tear the cervix with traction and does not require the use of lignocaine for placement.

- With the tenaculum or ring forceps on the cervix vertically (one tooth in the external os, the other on the face of the cervix), use slight traction and movement to help identify the area between the smooth cervical epithelium and the vaginal tissue. This is the site for insertion of the needle around the cervix.
- Insert the needle just under the epithelium.

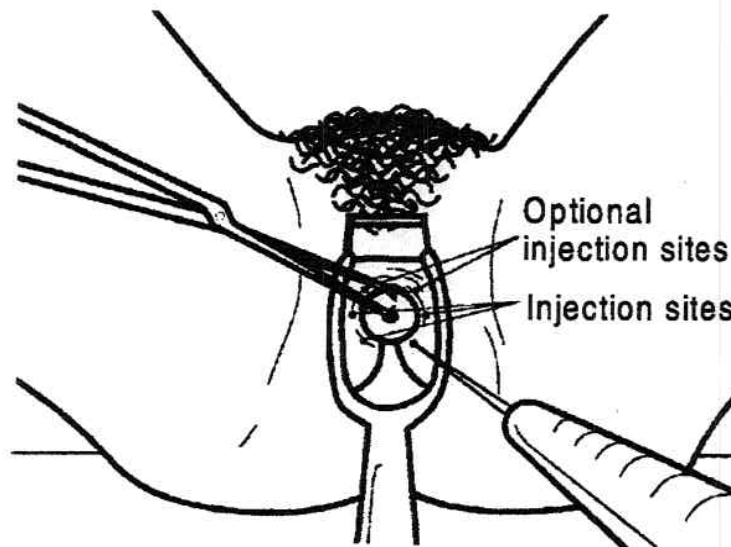
Tip: Some practitioners have suggested the following step to divert the woman's attention from the insertion of the needle: Place the tip of the needle just over the site selected for insertion and ask the woman to cough. This will "pop" the needle just under the surface of the tissue.

Note: Aspirate (pull back on the plunger) to be sure that no vessel has been penetrated. If **blood is returned in the syringe with aspiration**, remove the needle. Recheck the position carefully and try again. Never inject if blood is aspirated. **The woman can suffer convulsions and death if IV injection of lignocaine occurs.**

- Inject 2 mL of lignocaine solution just under the epithelium, not deeper than 3 mm, at 3, 5, 7 and 9 o'clock (**Fig P-1**). Optional injection sites are at 2 and 10 o'clock. When correctly placed, a swelling and blanching of the tissue can be noted.
- At the conclusion of the set of injections, wait two minutes and then pinch the cervix with forceps. If the **woman can feel the pinch**, wait two more minutes and then retest.

Anaesthetize early to provide sufficient time for effect.

FIGURE P-1 Paracervical block injection sites



Box P-1 Preparation of lignocaine 0.5% solution

Combine:

- lignocaine 1%, one part
- normal saline or sterile distilled water, one part

- Review for indications for manual vacuum aspiration (MVA; inevitable abortion before 16 weeks, incomplete abortion, molar pregnancy or delayed PPH due to retained placental fragments).
- Review general care principles (**page C-17**).
- Provide emotional support and encouragement and give paracetamol 30 minutes before the procedure. Use a paracervical block may if necessary (**page P-1**).
- Prepare the MVA syringe:
 - Assemble the syringe;
 - Close the pinch valve;
 - Pull back on the plunger until the plunger arms lock.

Note: For molar pregnancy, when the uterine contents are likely to be copious, have three syringes ready for use.

- Even if bleeding is slight, give oxytocin 10 units IM or ergometrine 0.2 mg IM before the procedure to make the myometrium firmer and reduce the risk of perforation.
- Perform a bimanual pelvic examination to assess the size and position of the uterus and the condition of the fornices.
- Insert a speculum or vaginal retractor into the vagina.
- Apply antiseptic solution to the vagina and cervix (especially the os) (**page C-22**).
- Check the cervix for tears or protruding products of conception. If **products of conception are present in the vagina or cervix**, remove them using ring or sponge forceps.
- Gently grasp the anterior or posterior lip of the cervix with a vulsellum or single-toothed tenaculum.

Note: With incomplete abortion, a ring or sponge forceps is preferable as it is less likely than the tenaculum to tear the cervix with traction and does not require the use of lignocaine for placement.

- If **using a tenaculum to grasp the cervix**, first inject 1 mL of 0.5% lignocaine solution into the anterior or posterior lip of the cervix which has been exposed by the speculum.
- Dilatation is needed only in cases of missed abortion or when products of conception have remained in the uterus for several days:

FIGURE P-32 **Inserting a retractor and holding the anterior lip of the cervix**

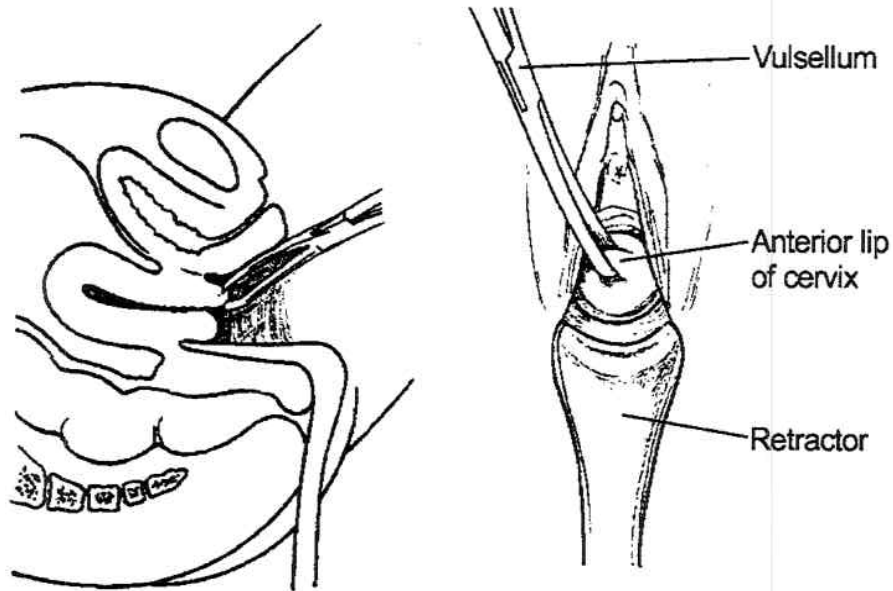
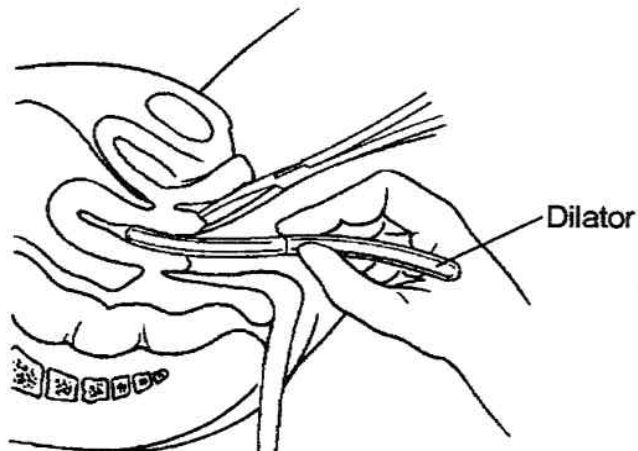


FIGURE P-33 **Dilating the cervix**

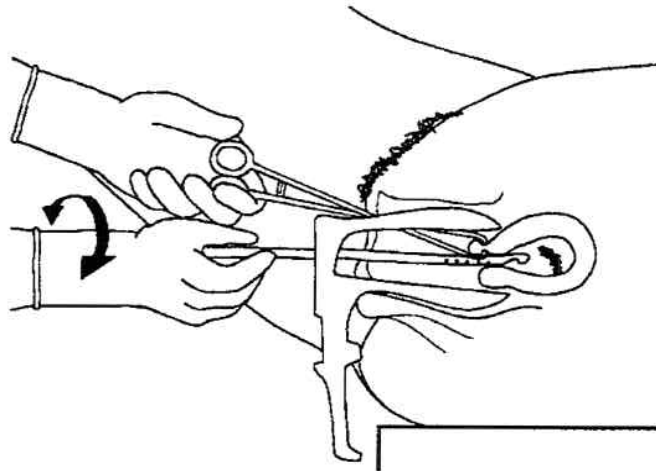


- Gently pass a uterine sound through the cervix to assess the length and direction of the uterus.

The uterus is very soft in pregnancy and can be easily injured during this procedure.

- Gently introduce the widest gauge suction cannula;
- Use graduated dilators only if the cannula will not pass. Begin with the smallest dilator and end with the largest dilator that ensures adequate dilatation (usually 10–12 mm) (Fig P-33.)
- Take care not to tear the cervix or to create a false opening.
- While gently applying traction to the cervix, insert the cannula through the cervix into the uterine cavity just past the internal os (Fig P-35). (Rotating the cannula while gently applying pressure often helps the tip of the cannula pass through the cervical canal.)

FIGURE P-35 Inserting the cannula

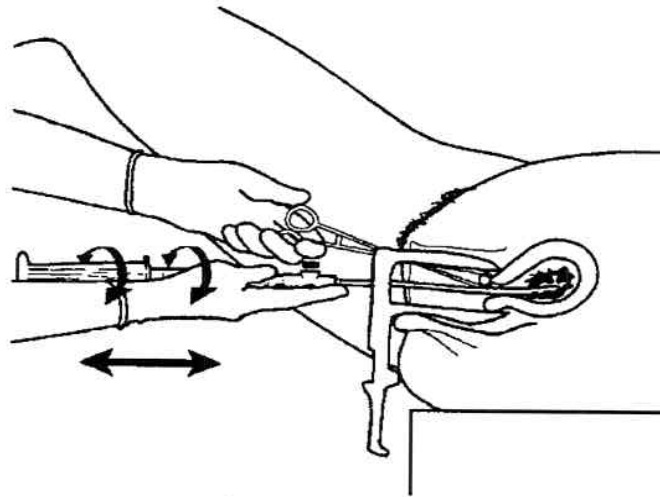


- Slowly push the cannula into the uterine cavity until it touches the fundus, but not more than 10 cm. Measure the depth of the uterus by dots visible on the cannula and then withdraw the cannula slightly.
- Attach the prepared MVA syringe to the cannula by holding the vulsellum (or tenaculum) and the end of the cannula in one hand and the syringe in the other.
- Release the pinch valve(s) on the syringe to transfer the vacuum through the cannula to the uterine cavity.
- Evacuate remaining uterine contents by gently rotating the syringe from side to side (10 to 12 o'clock) and then moving the cannula gently and slowly back and forth within the uterine cavity (Fig P-36, page P-67).

Note: To avoid losing the vacuum, do not withdraw the cannula opening past the cervical os. If the **vacuum is lost** or if the **syringe is more than half full**, empty it and then re-establish the vacuum.

Note: Avoid grasping the syringe by the plunger arms while the vacuum is established and the cannula is in the uterus. If the plunger arms become unlocked, the plunger may accidentally slip back into the syringe, pushing material back into the uterus.

FIGURE P-36 **Evacuating the contents of the uterus**



- Check for signs of completion:
 - Red or pink foam but no more tissue is seen in the cannula;
 - A grating sensation is felt as the cannula passes over the surface of the evacuated uterus;
 - The uterus contracts around (grips) the cannula.
- Withdraw the cannula. Detach the syringe and place the cannula in decontamination solution.
- With the valve open, empty the contents of the MVA syringe into a strainer by pushing on the plunger.

Note: Place the empty syringe on a high-level disinfected or sterile tray or container until you are certain the procedure is complete.

- Remove the speculum or retractors and perform a bimanual examination to check the size and firmness of the uterus.
- Quickly inspect the tissue removed from the uterus:
 - for quantity and presence of products of conception;
 - to assure complete evacuation;
 - to check for a molar pregnancy (rare).

If necessary, strain and rinse the tissue to remove excess blood clots, then place in a container of clean water, saline or weak acetic

acid (vinegar) to examine. Tissue specimens may also be sent for histopathologic examination, if required.

- **If no products of conception** are seen:
 - All of the products of conception may have been passed before the MVA was performed (complete abortion);
 - The uterine cavity may appear to be empty but may not have been emptied completely. Repeat the evacuation;
 - The vaginal bleeding may not have been due to an incomplete abortion (e.g. breakthrough bleeding, as may be seen with hormonal contraceptives or uterine fibroids);
 - The uterus may be abnormal (i.e. cannula may have been inserted in the nonpregnant side of a double uterus).

Note: Absence of products of conception in a woman with symptoms of pregnancy raises the strong possibility of ectopic pregnancy (**page S-13**).

- Gently insert a speculum into the vagina and examine for bleeding. If the **uterus is still soft and not smaller** or if there is **persistent, brisk bleeding**, repeat the evacuation.

POST-PROCEDURE CARE

- Give paracetamol 500 mg by mouth as needed.
- Encourage the woman to eat, drink and walk about as she wishes.
- Offer other health services, if possible, including tetanus prophylaxis, counselling or a family planning method (**page S-12**).
- Discharge uncomplicated cases in one to two hours.
- Advise the woman to watch for symptoms and signs requiring immediate attention:
 - prolonged cramping (more than a few days);
 - prolonged bleeding (more than two weeks);
 - bleeding more than normal menstrual bleeding;
 - severe or increased pain;
 - fever, chills or malaise;
 - fainting.