LIFE-SAVING SKILLS MANUAL FOR MIDWIVES

3rd Edition

A CLINICAL PRACTICE GUIDE

PN-ACF-276

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Acknowledgments

A great number of people have contributed to this third edition of the *Life-Saving Skills Manual for Midwives* It was from the maternal mortality studies funded by Carnegie Corporation of New York and conducted in Ghana West Africa that the idea for this manual was born We would like to thank the Carnegie Corporation of New York for funding the development and field testing of the risk assessment tool and the life saving skills training courses which allowed us to field test this manual and subsequently to refine it

We thank MotherCare a centrally funded United States Agency for International Development[1] project dedicated to improving the health of women and infants worldwide MotherCare has been a strong advocate for using this manual in the implementation of Life-Saving Skills (LSS) training in various country settings It provided the funds to help print the first edition of LSS and to revise subsequent editions MotherCare has funded full scale LSS projects in Uganda Nigeria and Indonesia. We also wish to thank the Population Council Canadian International Development Agency and World Bank for funding LSS programs in Vietnam and Indonesia We give special thanks to LSS trainers whose dedication to the reduction of maternal and newborn mortality and morbidity have made five country programs such a success

We thank the staff of the American College of Nurse-Midwives (ACNM) the Ghana Registered Midwives Association and all external and internal reviewers of the previous editions for their critique and excellent suggestions for improvement Thank you to the all reviewers of LSS 3rd edition for contributing time ideas and encouragement We thank the Journal of Nurse-Midwifery for their generous permission to use the front cover illustration of mother and child

This guide is written with a tremendous respect and admiration for the many thousands of midwives who in spite of difficulties are giving excellent care in their communities It is hoped that those midwives working in relative isolation or difficult circumstances will find this a useful reference book when they meet unfamiliar situations in the course of their daily work and that all midwives will find it helpful as they continue to provide care in order to improve the lives of mothers and babies

Any suggestions or ideas would be gratefully received Please send all comments to

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How to Use Skills Checklists

There is a skills checklist for each procedure taught in LSS Each checklist describes the essential steps for one specific procedure A skills checklist is a learning tool you will use while you are in the LSS training It clearly states all of the important steps in the correct order to do a clinical skill properly It is both a tool for learning and a tool for evaluation

Later when you return to your place of work you can also use the skills checklist to remind you how to do the skill correctly

For most of the important skills you will be reviewing during your training there is a skills checklist

You should use the skills checklist in the following way

1 Always have it with you in the clinical area

2 Read it before doing a clinical skill

3 If "performing a skill use the checklist to do self-evaluation after you finish with the procedure

4 If assisting" with a skill follow the skills checklist while the other team member is performing the skill

5 If "assisting" with a skill use the skills checklist to give evaluation feedback to the person "performing the skill after the procedure is finished

6 Always bring the checklists to meetings with the LSS trainer

A Skills Checklist has two purposes

(1) The midwife uses it as a guide for checking her own skills
(2) The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating of ✓ = satisfactory or ✗ = needs improvement.

Add any comments in the comments sections

Skills Checklist Antenatal Assessment and Treatment

	Date	Date	Date	Date
A Fundal Height Growth Monitoring				
1 Ask if the baby is active and moving normally				
2 Palpate the woman s abdomen and check the fetal growth at each antenatal visit				
3 If the uterus measures more than two centimeters different than expected look for				
Wrong dates				
• Abnormalities of the baby				
Too much amniotic fluid (liquor)				
Twins or triplets				
A large baby				
Abnormal presentation of the baby (breech)				
4 Gestation under 20 weeks estimate gestational age (age of the pregnancy) using your usual method				
5 Gestation 20 weeks or more use your usual method				
For measuring tape				
- cm = weeks of pregnancy (gestational age)				
- if growth is 2 cm less or more than the weeks of pregnancy try to figure out why				
Compare fundal height to umbilicus and sternum				
- halfway (4 fingers above umbilicus) = 28 weeks				

	Date	Date	Date	Date
- at sternum = 36 weeks gestation				
- if growth is less or more for the weeks of pregnancy try to figure out why				
6 Refer her to a doctor/hospital if a problem is found				
• Baby does not feel normal				
• Too much amniotic fluid (liquor)				
• Twins				
• Very large baby				
Baby not cephalic presentation				
• Fundal height not the same as gestational age				
• Baby not growing				
• Other problems				
7 Record all information				
If you can not find an explanation for your finding, have her return in one week and remeasure				
B Checking for Anemia				
1 At the first antenatal visit **ASK and LISTEN** what the woman eats				
• Get a complete diet history how many servings a day?				
ASK if she eats non-foods (pica)?				
• **ASK** if she has fatigue drowsiness headaches sore tongue loss of appetite nausea or vomiting?				

	Date	Date	Date	Date
2 Check the woman's history Find out if this woman is at high risk to develop anemia				
• Have her pregnancies been closely spaced?				
Does she have a history of heavy or long periods?				
• Does she have a history of anemia?				
Does she bruise easily?				
Has she had hemorrhage with any pregnancy or surgery?				
3 At each visit **LOOK** at the woman s				
Eyelids				
Nail beds				
• Gums				
Palms				
4 Check her hemoglobin at her first visit Repeat her hemoglobin every visit if 8 gm or below Check her hemoglobin every two months if above 8 gm				
5 If these problems occur in your area				
• Do a sickle cell screen				
• Check her blood for malaria				
Check her stool				
6 Find out what treatments and medications she is taking Give advice if any of the treatments or medications are harmful				
7 Counsel the woman on				

	Date	Date	Date	Date
• High iron foods				
• High folic acid foods				
• High Vitamin C foods				
• Good protein food sources				
8 Give ferrous sulfate 320 mg (60 mg elemental iron) two times a day Increase her iron to three times a day for a hemoglobin 8 grams or lower				
• If hemoglobin has not improved with treatment repeat her stool specimen looking for hookworm and other parasites				
• At each visit **ASK** if has enough medicines				
• **ASK** how she is taking them to be sure she is taking them correctly and regularly				
9 Give folic acid 500 mcg each day to prevent anemia				
10 Give Vitamin C 250 mg daily or advise 3 daily servings of citrus or leafy green vegetables				
11 Give malaria prophylaxis according to the routine in your area				
12 If her stool is positive for parasites treat for the parasite identified				
13 If the woman is more than 28 weeks gestation at registration (booking) with a hemoglobin of less than 8 gm (55%)				
• Refer her to a doctor for a complete anemia workup and treatment				
14 Give nutrition advice to girls and women who are not pregnant to prepare their bodies for the increased demands of pregnancy				

		Date	Date	Date	Date
C	**Checking for Pregnancy Induced Hypertension (Pre-eclampsia)**				
1	Take a good symptom history **ASK** if she has had				
	• Epigastric pain (heart burn) not related to malaria				
	• Headaches				
	Visual problems (double vision partial vision rings around lights)				
	Edema or swelling of the hands face and feet				
2	Take the blood pressure at every visit				
	• If elevated check again in 20 minutes				
3	If the blood pressure is elevated				
	• Check the biceps and patellar reflexes				
	If the reflexes are brisk (plus 3 or plus 4) refer her to a hospital/doctor				
4	If the blood pressure is elevated				
	• Check a midstream urine sample for protein				
	• If she has +1 or more proteinuria (albuminuria) refer her to a hospital/doctor				
5	Do not give diuretics				
6	In the case of severe pre-eclampsia • Give magnesium sulfate 10 grams OR • Give Valium 10 - 20 mg				
	• Go with her to the hospital/doctor				
7	If the woman has eclampsia (convulsions)				

	Date	Date	Date	Date
• Protect her from choking on her tongue with a padded tongue blade or a rolled pad of cloth				
Do not force the mouth open				
• Protect her from falling or injury from nearby furniture or objects				
• Give magnesium sulfate 10 gm OR Valium 10 - 20 mg				
• Transfer her right away to the nearest hospital/doctor				
• Travel with the woman avoiding stimulation				
• Record all complaints findings and care Take her antenatal card with you				
• Give medical personnel a complete summary of care given				
Give the woman s records to the hospital personnel				

Comments

Skills Checklist - Monitoring Labor Progress on Admission

	Date	Date	Date	Date
When monitoring the progress of a woman in labor **on admission**				
1 Collect all equipment wash your hands				
2 Welcome and prepare the mother				
Explain what you are going to do				
Ask her to sit or lie in a comfortable position				
• ***Decide whether the woman is about to deliver, she may be fully dilated***				
3 **ASK and LISTEN** RECORD				
• Patient information including time of arrival				
• When contractions began how often contractions occur?				
• Whether the woman has gone to antenatal clinic?				
• Whether bag of water has broken any bloody show?				
When the woman last ate?				
When she last passed stool?				
• Whether she had any medications to increase or decrease the labor and whether they worked?				
Name of TBA whether TBA knows woman is in labor where TBA can be reached?				

		Date	Date	Date	Date
4	**LOOK and FEEL. RECORD** Help the woman get ready for examination explain what you are going to do				
5	**ASK** the woman to pass urine so her bladder will be empty				
6	**LOOK** at her general condition and do a general examination including				
	• Vital signs and height				
	• General appearance nutrition illness tired				
	Checking eyes ears nose mouth throat				
	• Checking neck for enlarged veins				
	• Breathing how fast breathing sounds				
	• Heart how fast regular				
	• Breasts				
	• Arms legs back swelling, veins deformities				
7	Tell the woman that you are now going to do an abdominal examination Explain to her that you need to feel the baby and find out how the baby is lying in her abdomen				
8	Stand at the woman's side look at the abdomen and the way the baby is lying				
9	Feel the woman's abdomen				
	• Decide the strength and length of contractions				

	Date	Date	Date	Date
• Count how many contractions in 10 minutes				
• Start at top of abdomen - Feel shape size firmness mobility - Decide what part of baby is at top of uterus				
Put your hands on lower abdomen feel for arms legs back head of baby				
Ask woman to bend her knees				
- Hold the part of baby in lowest part of abdomen				
- Decide what part of the baby you feel				
10 Listen to the heart beat over the chest or back of the baby Count the heart rate				
11 Record your abdominal examination findings on the partograph Explain your findings to the mother				
12 See **vaginal examination** page 3 74				

Comments

Comments

Skills Checklist - Monitoring Labor Progress

	Date	Date	Date	Date
When monitoring the **progress** of a woman in **labor**				
ASK and LISTEN - General well being				
LOOK and FEEL				
1 **Abdominal examination**				
Descent of baby • Latent phase - every 4 hours • Active phase - every 2 hours				
Contractions for 10 minutes • Latent phase - every 1 hour • Active phase - every 30 minutes				
Fetal heart beat, at least every hour • Latent phase - every 1 hour • Active phase - every 30 minutes				
2 **Vaginal exam every 4 hours or as needed**				
• Explain what you are going to do				
Gather equipment wash hands				
• Ask woman to lie on her back with her legs apart and knees bent				
• Explain each step of exam before you do it				
• Wash hands put on gloves				
• **LOOK** for discharge				
• Wash genital area and vulva with soap/water or antiseptic solution				
• Moisten fingers of gloved examining hand				
• Insert fingers into vagina				

	Date	Date	Date	Date
• **FEEL** vaginal wall temperature/moisture				
• **FEEL** for hard scarring/stool				
• **FEEL** cervix:				
- Thickness (effacement)				
- Tight or stretchy				
- Dilatation				
• **FEEL** bag of waters				
- Broken				
- Bulging				
- Prolapsed cord				
• **LOOK** at color of amniotic fluid (liquor)				
• **FEEL** presenting part descent, and position				
- Caput				
- Molding				
- If indicated at first exam, assess pelvic size see page 3 69				
• Remove hand from vagina				
• Help woman get comfortable				
• Explain findings to woman and family				
IDENTIFY PROBLEMS/ NEEDS, TAKE ACTION				
3 **Vital signs every 4 hours**				
• Hydrate at least every hour				

	Date	Date	Date	Date
• Have woman urinate at least 2 - 4 hours				
• Care for mother				
- Change position often				
- Encourage activity				
- Rub her back				
- Reassure/encourage/help				
- Explain progress to mother/family				
• Record findings and actions				
• Interpret partograph				
- Latent stage				
- Active stage				
- Alert line				
- Action line				
• REFER as necessary				

Comments

Skills Checklist for Episiotomy and Laceration Repair

	Date	Date	Date	Date
A Procedure for Giving Local Anesthesia				
Put a 22 gauge, 1 ½ inch needle on a syringe				
1 Fill the syringe with local anesthetic				
2 Place your two fingers between the baby's head and the perineum, if giving anesthetic before delivery				
3 Insert the whole length of the needle from the fourchette, running just below the skin down the direction of episiotomy				
• Pull back on the plunger of the syringe to check for blood				
• Inject evenly **as you withdraw** the needle				
4 Now angle the needle to one side of center				
• Repeat the steps in 3				
• Repeat on the other side				
• Repeat going up the center of the vagina				
5 About 10 cc of anesthetic has been injected				
6 Wait a minute or two for the anesthesia to take effect				
7 During the repair, if the woman is uncomfortable, inject up to 10 cc more of 1% local anesthetic in the area where the woman feels pain				
B Procedure for Cutting an Episiotomy				
1 **LOOK and FEEL**				

	Date	Date	Date	Date
• Is the perineum long or short?				
• Thick or thin?				
• Does it have varicose veins, genital warts, or other problems				
2 If you are not close to a hospital/doctor do a mediolateral episiotomy				
3 Cut an episiotomy when the perineum is thinned and pale or shiny				
4 Take a pair of scissors with one rounded blade or bandage scissors (good condition)				
• Place 2 fingers of your other hand in the vagina between the scissors and baby's head				
• Start at the center of the perineum and angle (slant) your scissors out at a 45 degree angle				
• If you are right handed cut towards the mother's right buttock				
5 Make the episiotomy with one or 2 large cuts				
6 After the perineal cut has been made, turn your scissors around, positioned up the vagina				
• With your other hand protect the baby's head with your fingers				
• Cut up the center of the vagina 5 to 7 5 cm (2 to 3 inches) (This cut allows more space in the vagina and helps to prevent tearing up from the perineal cut)				
7 Press a gauze firmly over the cut area while the woman continues to push with contractions				

	Date	Date	Date	Date
8 Use sterile technique				
C Procedure for Cervical and Vaginal Inspection				
1 Explain to the woman what you are going to do				
2 Quickly and gently wash off the woman's genitals				
• With your gloved hand, separate the labia (vaginal lips)				
• Have your assistant shine a light into her vagina				
3 Look carefully for any tears or hematomas (collection of blood under the tissue)				
• Press firmly on the back wall of the vagina with your fingers				
• Look deep into the vagina				
4 Slowly pressing against the vaginal wall, move your fingers up the side wall of the vagina one side at a time				
LOOK and FEEL				
• Is the surface smooth?				
• Are there any points where you notice bleeding?				
• Did you feel all the way up the vagina to the cervix?				
5 Have your assistant press firmly down on the woman's uterus				
• Press firmly on the back wall of the vagina with one hand Look for bleeding or tears				

		Date	Date	Date	Date
	• If you see bleeding or tears, take the sponge forceps (ring forceps) and clamp them on the anterior lip (top lip) of the cervix.				
	• Clamp the entire rounded part of forceps onto the tissue				
	• Pull gently on the forceps				
	• **LOOK** at the cervix.				
	• **LOOK** at all sides of the cervix carefully				
	• Take a sterile gauze or cloth and wipe the blood away				
	• **LOOK** and find is the bleeding coming from the uterus vaginal laceration or cervical laceration?				
6	If the bleeding is from the uterus give an oxytocic medication and massage the uterus				
	• If the bleeding is from a laceration, repair it				
	• If no lacerations or bleeding are noted remove the sponge forceps, make the woman comfortable continue to monitor her vital signs for 2 hours				
7	If the lacerations seen are very large or deep, or if the patient does not improve with intravenous rehydration pack her vagina with a tampon of sterile gauze or cloth and prepare to transport her immediately				
D	**Preparation for Episiotomy or Laceration Repair**				
1	Get equipment ready				

	Date	Date	Date	Date
2 Position the woman's buttocks at the edge of the bed or table Her legs may be supported by stirrups or held by family members				
3 Remove any soiled cloths from under her and wash her genitals				
4 Put on fresh gloves or wash gloved hands with soap and water				
5 Place a sterile or very clean towel or cloth under the buttocks				
6 Check to see if the local anesthetic is working well				
• Touch the cut areas with the sharp point of a needle				
• If she feels sharp pain, give her some more anesthesia before the repair				
7 If there is no time to give anesthetic before delivery or if it is a laceration you are repairing, give the local anesthesia now				
8 Have your light source adjusted so you can see well into the vagina				
9 Sit down and make yourself comfortable				
10 Perform a complete vaginal, cervical and perineal inspection				
11 Open the suture and gently stretch it out straight				
12 Place the needle in the needle holder at the right angle				
• Clamp the teeth of the holder firmly shut				

	Date	Date	Date	Date
E Procedure for Episiotomy Repair				
1 Run your finger through the whole wound (cut)				
• See clearly where the top of the wound is				
• Place your first suture about 1 cm (½ inch) above the top of the wound in the vagina Pull it through with your thumb forceps				
• Tie it off with a square knot, and trim off the short thread to about 1 cm (½ inch)				
2 Suture the vaginal mucosa using a continuous stitch (continuous suturing), sewing down to the hymenal ring				
3 Put the needle through vaginal mucosa behind the hymenal ring, and bring it out on the wound of the perineum				
4 Continue using the suture sparing continuous method to suture all the way to the bottom of the wound				
5 Once you have reached the very end of the wound, turn the needle over and start to sew again using continuous stitches to close the subcuticular tissue				
• Always use your forceps to pull the needle through				
• This second layer of suture will leave the wound about 0 5 cm (¼ inch) open This will close well by itself as healing occurs				
6 Move the suture again from the perineal part of the wound back into the vagina and secure it				
7 Tie off the suture with a square knot				

	Date	Date	Date	Date
• Cut the 2 ends of suture leaving about 1 cm (½ inch)				
8 Double check to make certain that you have not left any gauze tampon or instruments in the woman's vagina				
• Perform a rectal exam to check that no stitch is in the rectum if this is a midline (medial) episiotomy				
• Wash the genitals with soap and water				
• Make mother dry and comfortable				
F Procedure for Repair of Lacerations				
1 If the laceration is periurethral (around the urethra) place a catheter in the bladder This helps you identify the urethra and keeps you from accidentally sewing the urethra shut or damaging it				
2 Choose the finest (most narrow) suture you have (see the section on how to choose a suture in Learning Aid 1, page 4 26)				
3 Press the tissue together				
• Put the ragged pieces together again so that the tissue looks like before Do not hurry this part				
4 Place interrupted sutures the length of the shallow tear about 1 cm apart Make an interrupted stitch				
• Take a bite of tissue				
• Bring it through to the center of the tear				
• Look for the needle				
• Check that it is not too deep or too shallow				

	Date	Date	Date	Date
• Push it through the other side of the tear with the same size bite of tissue				
• Pull the suture through leaving just enough of an end (5 to 8 cm) so that you can tie the suture with a square knot				
5 Continue making interrupted (individual) sutures for the full length of the laceration Remember the most important thing is to control the bleeding				
• If she continues to ooze blood from the laceration, press a gauze firmly over the wound for 10 minutes, do not look				
• After 10 minutes, carefully take off the gauze				
• If the tear has stopped bleeding, the sutures are enough				
• If she continues to ooze or bleed actively, you will need to add one or more stitches to control the bleeding				
G **Procedure for Repair of Lacerations of the Cervix**				
• Place your sponge forceps on one side of the laceration				
• If you have a second sponge forceps, place it on the other side of the laceration				
• Place the handles from both forceps in one hand				
• Gently bring handles toward you				
• Place interrupted sutures the length of the wound about 1 cm apart				

	Date	Date	Date	Date
• If you do not have sponge forceps to grasp the cervix, have your assistant put on a pair of gloves				
• Have her press on the posterior (back) wall of the vagina This will help hold it out of the way so that you can see the laceration better				
H Record Findings				
• Record progress of vital signs throughout procedure				
• Record type and amount of IV fluids and time started				
• Record estimated blood loss				
• Record location and appearance of laceration or episiotomy (you may wish to make a drawing of the location)				
• Record time type and dose of medications or treatment given				

Comments

Comments

Skills Checklist - Active Management of Third Stage

	Date	Date	Date	Date
When you **actively manage the third stage**				
Prepare oxytocic in syringe before second stage, ensure empty bladder, place mother in a semi-sitting or a squatting position				
1 Ask assistant to give oxytocic with delivery of anterior shoulder or give as soon as possible				
2 Dry and cover baby Clamp and cut cord				
3 Ask assistant if available to put baby to breast				
4 The side of one hand is placed against the lower half of the uterus just above the symphysis pubis				
5 The other hand pulls with firm steady tension on the cord with uterine contraction				
6 Deliver placenta slowly support with both hands, deliver membranes gently with a turning motion				
7 Rub uterus until hard				
8 Expel blood and clots				
9 **LOOK** at placenta and membranes to see that they are complete				
10 Record information				

	Date	Date	Date	Date
11 Store oxytocic in a cool place out of the sun to preserve the potency of the medication				

Comments

Skills Checklist - Manual Removal of Placenta

	Date	Date	Date	Date
Before you manually remove a placenta				
1 Diagnose retained placenta				
• Feel uterus for firmness				
• Check placenta for completeness				
• Inspect genitalia for tears				
2 Collect equipment				
3 Explain to the woman and family what you are going to do				
4 Give medication				
Analgesia				
• Sedative				
• IV infusion				
5 Tell the woman what you are going to do Help her lie on her back with her knees bent Clean genital area				
• If she is unable to void, catheterize to empty the bladder				
6 Rub the uterus, apply firm steady pull (traction) on cord				
• Try to deliver placenta				
7 If placenta not delivered, scrub hands and put on gloves				

	Date	Date	Date	Date
• Lubricate gloves/hands				
When you manually remove a placenta				
8 Insert hand into vagina while holding umbilical cord with other hand				
9 Let go of umbilical cord and hold (steady) uterus through the abdomen				
10 Find the edge of placenta				
11 Separate placenta with slicing motion using the side of your hand				
12 When placenta is separated, rub the uterus to make it contract				
13 Remove placenta and membranes slowly during the contraction				
14 Rub uterus to make sure it is contracted				
15 Give oxytocic medicine to keep uterus contracted Put baby to breast				
16 Examine the placenta and membranes for completeness				
• Refer to hospital if at all possible				
• If unable to refer, continue Step 17				
17 Give broad spectrum antibiotic for 5 days				
18 Monitor the following every hour until normal then 3 times a day for 3 days				

	Date	Date	Date	Date
• Vaginal bleeding				
• Contracted uterus, teach mother to feel her uterus and rub up a contraction				
• Empty bladder				
• Vital signs				
19 Continue IV infusion for 24 hours				
20 Encourage breast feeding				
21 Give analgesic for pain				
22 Give perineal care 3 times a day for 3 days				
• Teach mother perineal care				
23 Encourage 8 glasses of water and adequate food daily				
• Encourage activity as tolerated				
24 If there is fever treat for malaria and refer Give iron tablets Check hemoglobin				
25 Allow mother and baby to go home after 5 days if medicines are completed and the mother is feeling well enough to go home				
26 Give mother an appointment to come for a checkup at 2 weeks after delivery for the mother and the baby Discuss family planning				
27 Send information to TBA				

Comments

Skills Checklist - Bimanual Compression of the Uterus

	Date	Date	Date	Date
Preparation for Emergency with Uterine Atony				
A. Prepare the following				
• 2 liter bottles/bags IV fluids and giving sets/tubing				
• Injectable oxytocic				
• Needles/butterfly needles or intracatheters				
• Arm board to keep arm from moving tape or strips of cloth				
• Gloves sterile or high-level disinfected				
• Blood pressure cuff and stethoscope				
• Pulsometer or watch with second hand				
• Midwife/assistant trained to start IV infusions				
• Alert emergency transport system that you have worked out locally with bus union neighbors or other source				
B Prepare the woman				
• Explain to woman she is bleeding too much so you must rub her womb to stop the bleeding				
• Explain this hurts a bit but you will finish quickly with as little pain as possible				
• Ask her to lie on her back				

	Date	Date	Date	Date
Procedure for External Bimanual Compression				
1 Call to your assistant for help				
2 Rub the uterus to make it contract				
3 Check to see if bladder is full				
• If bladder is full, rub uterus to make it contract				
• Express clots cathetenze if necessary				
4 **If bleeding does not stop, perform external bimanual compression**				
• Place one hand on abdomen behind uterus				
Place other hand flat and low on abdomen				
• Press hands together				
5 Give oxytocic				
• Hold uterus for 20 minutes				
• Put baby to the breast				
• Look to see if bleeding has slowed/stopped				
6 **If bleeding stops**				
• Take vital signs and record in record				
• Estimate blood loss and record				
• Put baby to breast again				

	Date	Date	Date	Date
• Check bleeding every 15 minutes for one hour--every 30 minutes for 2 more hours				
• Continue broad spectrum antibiotic for 5 days				
• Continue IV infusion for 24 hours				
• **Monitor** every hour until normal then 3 times a day for 3 days *vaginal bleeding, contracted uterus, empty bladder vital signs*				
• Encourage breast feeding				
• Give analgesic for pain				
• Give perineal care 3 times a day for 3 days				
• Teach mother perineal care and uterine monitoring				
• Encourage 8 glasses of water, adequate food				
• Encourage activity as tolerated				
• Fever, treat for malaria and refer				
7 Allow mother and baby to go home after 5 days of medicines are completed and the mother is feeling well enough to go home Give iron tablets, check hemoglobin if possible				
8 Give mother an appointment to come for a checkup for the mother and baby at 2 weeks after delivery Initiate family planning discussions				
9 Send information to TBA				

	Date	Date	Date	Date
10 **If bleeding has not stopped**				
• Continue holding uterus				
• Prepare for internal bimanual compression				
Procedure for Internal Bimanual Compression				
1 Start IV infusion with oxytocic				
2 Check vital signs **LOOK** for signs of shock				
3 Rub uterus If no contraction or if bleeding continues, put on fresh gloves or quickly scrub your hands				
4 Place your freshly gloved or freshly scrubbed examining hand into the vagina				
5 Form your hand into a fist				
6 Press your fist firmly against the lower portion of the uterus				
7 Use care to move any loose or floppy cervix out of the way before pressing				
8 Press your abdominal hand and your fist together				
9 Continue pressing your hands together for **20** minutes				
10 Observe vaginal bleeding has it slowed or stopped?				

	Date	Date	Date	Date
11 **If uterus contracts and bleeding slows or stops**				
• Remove hand				
• Take vital signs				
• Estimate blood loss				
• Check bleeding and uterus every 15 minutes for one hour then every 30 minutes for 2 more hours				
• Put baby to breast				
• **REFER** as soon as possible				
12 If **bleeding does not stop**				
• Reapply external bimanual compression				
• Inspect placenta				
• Prepare to transfer mother to hospital with infusion running				
13 Do not stop external bimanual compression until you get to a doctor				
Record Findings				
1 Record progress of vital signs throughout procedure				
2 Record type and amount of IV fluids and time started				

		Date	Date	Date	Date
3	Record appearance and completeness of placenta and membranes				
4	Record estimated blood loss				
5	Record time type and dose of oxytocic given				

Comments

Skills Checklist - Inspection with Vaginal Speculum

	Date	Date	Date	Date
Inspection with Vaginal Speculum				
Prepare the woman explain what you are going to do, ask her to urinate provide privacy, help her lie down and bend her legs back				
Prepare equipment including light				
1 Wash your hands clean the genital area with soap and water				
2 Wash your hands, put on sterile or high-level disinfected gloves, if available				
3 Moisten vaginal speculum to make it easier to put in the vagina				
4 Reassure the woman and explain what you are doing				
5 Gently separate the labia with your thumb and index finger				
6 Ask the woman to take a few deep breaths				
7 Insert the vaginal speculum by holding it with the handle 30 to 45 degrees to the side and with the blades closed				
8 Slide the speculum into the vagina guiding it toward the woman's back				
9 When the speculum is in place, turn the handle to the midline				
10 Slowly open the blades to show the cervix.				
11 Lock the blades in place and ask your assistant to adjust the light so that you can look at the cervix.				

	Date	Date	Date	Date
12 Look for swelling, discharge tears tissue, and clots				
13 When you are finished, unlock the speculum turn the handle to the side and gently remove the speculum				
14 Make the woman comfortable and explain your findings to the woman				
15 Record the findings and your actions				

Comments

Skills Checklist - Digital Evacuation

	Date	Date	Date	Date
Digital Evacuation				
1 Explain to the mother and family				
• What you are going to do				
• That you must remove whatever is in the cervix so that the bleeding will stop				
2 Scrub hands and put on sterile gloves				
3 Clean the genital area				
4 Gently separate the labia				
• Insert your examining hand				
• Hold the uterus with your abdominal hand so that it does not move				
5 Gently slide your vaginal hand past the clots you feel				
6 Gently push 2 fingers into the cervix.				
• Move your fingers around the inside of the lower part of the uterus and cervix.				
7 Remove the clots as you slowly remove your hand				
8 If some of the clots are stuck use sterile gauze				
• Wrap the gauze around your finger				
• Gently put your finger past the clots in the vagina and cervix.				
• Wipe under and around the clots with your gauzed finger until they come loose				
• Remove them with your finger				

		Date	Date	Date	Date
9	Rub the uterus to help it contract				
10	Give oxytocic to help the uterus contract and stop the bleeding				
11	Give broad spectrum antibiotic, such as ampicillin one gm right away and 500 mg every 6 hours for 7 days				
12	**LOOK** at the gauze clots and blood removed				
13	Record action, blood loss outcome medications and condition of woman				

COMMENTS

Skills Checklist - Infant Resuscitation

	Date	Date	Date	Date
When caring for a baby at birth				
1 Have equipment ready for infant resuscitation				
2 Find an assistant to help you				
3 DRY As soon as the head is delivered, wipe fluids from baby's mouth and nose using fingers or cloth				
• Dry with cloth from head to toe				
4 WARM Remove the first wet cloth				
• Cover with another dry cloth or place baby skin to skin with the mother to prevent heat loss				
5 POSITION With head slightly lower than body to drain fluids from air passage,				
• Hold or lay baby on mother or bed,				
• With head slightly extended (sniffing position) to keep the air passage open				
6 SUCTION Clean the mouth, throat and nose with finger/cloth/gauze, use suction bulb if available				
• Before delivery of body				
• After delivery				
• Use suction correctly				
7 STIMULATE **Gently** rub the back with your hand while you are drying the baby				
8 After you **dry, warm, position, suction and stimulate** the baby **LOOK, FEEL, AND LISTEN**				

		Date	Date	Date	Date
	• Breathing				
	• Heart rate				
9	**FINDINGS I** skin color blue, breathing present heart rate above 100				
	ACTIONS I RESUSCITATION				
	• Continue stimulation				
	• Give oxygen, if available				
	• Check breathing and heart rate				
	• When skin color is pink put baby to breast				
10	**FINDINGS II** skin color blue or pale, breathing absent, heart rate below 100				
	ACTIONS II BREATHING RESUSCITATION				
	• Keep the airway open (sniffing position)				
	• Give oxygen, if available				
	• Place gauze over mouth if available and start breathing for the baby				
	- Place your mouth over baby's mouth and nose				
	- Breathe 1 time using air **only** from your mouth and watch to see chest rise				
	- If the chest does not rise, reposition suction again, and try another breath then recheck breathing				
	• When the chest rises **LOOK** to see if baby is trying to breathe on its own				

	Date	Date	Date	Date
• If the baby **is breathing** continue to warm stimulate and give oxygen until the baby is pink and crying				
• If the baby **is not breathing**				
- Breathe 5 times (short, fast and gentle) for the baby				
- **LOOK** for breathing (respirations)				
- **FEEL/LISTEN** for heart beat				
- Continue until baby breathes and heart beats more than 100 times in a minute				
- Continue until baby is pink and crying OR strong enough to REFER				
11 **FINDINGS III** breathing absent, heart rate absent or below 80 beats in a minute				
ACTIONS III FULL CARDIOPULMONARY RESUSCITATION				
• Keep the airway open (sniffing position)				
• Give oxygen, if available				
• Place gauze over baby's mouth if available and start breathing for the baby				
- Place your mouth over baby's mouth and nose				
- Breathe 1 time, using air **only** from your mouth and watch to see chest rise				
- If chest does not rise, reposition, suction again and try another breath **LOOK** to see the chest rise				
• When the chest rises				

	Date	Date	Date	Date
- Place your index and middle fingers over the heart (center of the chest just below the nipple line)				
- Push the chest down 1 5 cm (½ to ¾ inch) counting 1 and 2 and 3 and 4 and 5 and				
- Breathe on the 6th count **Do not lift your fingers off the baby's chest while you breathe**				
- Complete the **CPR CYCLE** of 5 beats and 1 breath 5 times then recheck baby's breathing and heart rate				
• If there is still **no heart beat or breathing** continue full CPR for at least 15 to 30 minutes or until the baby has a heart rate above 80 or is breathing				
• If there is a **heart beat above 80**				
- Stop doing heart compressions				
- Continue breathing until baby is breathing on its own				
- Continue to warm give oxygen stimulate until baby is pink				
• REFER				
12 Do APGAR scoring at 1 and 5 minutes				
• Appearance - LOOK				
• Pulse - FEEL & LISTEN				
• Grimace - FEEL & LOOK				
• Activity - LOOK & FEEL				
• Respirations - LOOK				

	Date	Date	Date	Date
• TOTAL THE SCORE AND RECORD				
13 Care for the cord				
14 LOOK at condition of the baby				
• Keep warm				
- Have the baby sleep with mother				
- Cover baby with a dry cloth				
• Air passages clear				
- Wipe any fluids				
- Place baby on side to sleep				
• Nutrition - colostrum through sucking or expression				

Comments

Skills Checklist - Adult Resuscitation

	Date	Date	Date	Date
Airway - make sure the airway is open				
1 Speak to the person				
• **ASK** "Are you all right?"				
• Call for help				
2 Speak to the person				
• **ASK** Are you all right?" Roll her onto her back				
• Roll her over as a unit so her whole body rolls at the same time				
• Ask for help from anyone who may be close by				
3 Speak to the person				
• **ASK** "Are you all right?" Look into her mouth to make sure the airway is open				
4 Clear the nose and mouth with your fingers of anything you can see or feel				
5 Move the head into a position that will prevent the tongue from falling into the throat				
• Place one hand on the person's forehead and press firmly backward				
• With your other hand press the fingers under the jaw near the chin, lift the chin forward until the teeth are almost closed				
• If the person has loose false teeth, remove them				

	Date	Date	Date	Date
Breathing - make sure the person is breathing				
6 Look at the person's chest Now that the head is in a position where the tongue is not blocking the airway the person may begin to breathe on her own				
7 If she is not breathing, quickly kneel at her side				
• Pinch her nose closed with your fingers and breathe into her mouth				
• If air does not enter adjust the position of her head and try again				
• Does the air enter her chest easily?				
• If not, do the Heimlich maneuver				
• Then clear the mouth and nose again, reposition the head and breathe again				
• Try to breathe into the person again				
• Take a breath after each breath you blow into the person				
Cardiac Function - make sure the heart is beating				
8 After giving 2 quick breaths check to see if the heart is beating Feel for the person's pulse (heartbeat) on her neck at the carotid pulse				
9 **If the person has a pulse, do not do cardiac compressions**				
10 If the person has a pulse, but is **not breathing**, do only respiratory resuscitation Breathe into the person's mouth approximately 12 times per minute (once every 5 seconds)				
11 If the person does not have a pulse, breathe for her **and** help her heart to contract				

	Date	Date	Date	Date
12 Feel on the person's chest for the bottom of her rib cage (bottom of the sternum or xiphoid process)				
Place the palm (heel) of your hand above the bottom of the rib cage				
• The heel of your hand is on the lower half of the sternum				
• Place your other hand (either made into a fist or with fingers stretched) on top of your bottom hand				
• Keep your arms straight with your elbows locked				
• Press straight down over your hands				
13 As you lean forward, press the chest 4-5 cm (1½ to 2 inches)				
• Press down and release for equal time (set a rhythm)				
• Do not stop (pause) between compressions				
• Do not lift your hands up off the chest				
• Compress the heart at 80 to 100 beats per minute				
• Count one and 2 and 3 and 4 and 5 up to 15				
14 After 15 compressions stop and give the person 2 breaths				
• Pinch the nose and keep the head in its slightly tipped back position				
15 After the 2 breaths locate the proper hand position on the chest and give 15 more compressions				

	Date	Date	Date	Date
• Keep repeating the pattern of 15 compressions followed by 2 breaths				
• Do 4 or 5 complete cycles in one minute				
16 After a minute or so stop and recheck the person's carotid pulse				
• If she has a heart beat, look to see if she is breathing on her own				
• **If there is no heart beat and no breathing, continue with the cycle of 15 compressions and 2 breaths**				
• **If there is a heart beat but no breathing, continue with the breathing at the rate of about 12 times per minute**				
17 Get someone around you to help relieve you				
• Get someone around you to organize transportation				
• Travel with her to the hospital for further care				
18 **Shock - make certain the person is kept warm**				
• Wrap her in a blanket or dry cloths while resuscitating her				

Comments

Comments

Skills Checklist - Heimlich Maneuver

	Date	Date	Date	Date
A In a conscious person				
1 Stand behind the person where she sits or stands Keep telling her that you are helping her Help control the person's feeling of panic				
2 Place your arms around the person, holding your hands together on her upper abdomen just below the xiphoid process and above her navel (umbilicus)				
3 Form your hand into a fist against the abdomen				
4 Grasp your fist with your other hand				
5 Press your fists into the victim's abdomen with a quick inward and upward thrust				
6 Continue to make the quick thrusting movements with your fists until you have loosened the object from the throat				
7 If the person loses consciousness help her to the floor or ground and lie her on her back				
B In an unconscious person				
1 Open the person's mouth and see if you can see the obstruction Wipe the mouth to try to take out the object				
2 Position the person's head back to move her tongue out of the way				
3 Kneel at the feet of a small child or over the thighs of an adult				
4 Place your hands over one another Press the heel (palm) of the lower hand in the middle of the person's abdomen a little above the navel (umbilicus)				

		Date	Date	Date	Date
	• Make certain that your hands are not placed too high where you might press on the top of the xiphoid or the ribs				
5	Press quickly into the abdomen and upward toward the head The force of the thrust should be right in the center of the body				
6	Thrust (press inward and upward) 6 to 10 times one after the other Thrust more gently in an infant or child				
7	The person may be coughing or making a crowing sound now Have her spit the object out Look into the mouth again to see if you can help remove the object				
8	If the person continues to crow (partial blockage of the airway), or there is no response repeat the series of thrusts				

Comments

Skills Checklist - Incision and Drainage of Breast Abscess

	Date	Date	Date	Date
When doing an incision and drainage of a breast abscess				
1 Start the woman on a broad spectrum antibiotic				
2 Collect all equipment				
3 Prepare the woman and explain what you are going to do				
• Help her sit on a chair with her breast resting on a table				
4 Gently wash the breast				
5 **LOOK and FEEL** for the soft place on the breast				
6 Give analgesia/anesthesia if available				
7 Wash your hands, put on high-level disinfected (HLD) or sterile gloves				
8 Cut the abscess				
• Use the point of the blade Cut in a straight line towards the nipple				
• Make the cut big enough to put one finger in				
• Cut all at once				

	Date	Date	Date	Date
9 Break up the pockets of the abscess				
• with gloved finger or artery forceps (hemostat)				
• **DO NOT PRESS OR SQUEEZE BREAST**				
10 Keep the cut open to drain pus				
• Open a 4 x 4 gauze square				
• Start with one corner				
• Push gauze into the opening				
• Let a little gauze stick out of opening				
11 Change the dressing every day, until there is no pus drainage				
• Pull the gauze out a little more each day				
• Remove gauze packing on 4th day				
12 Follow up				
• Continue to give antibiotics for 10 days				
• Continue to see the woman until no more pus drains from the cut and the opening is closed				

	Date	Date	Date	Date
• Help the woman with breast feeding if she has stopped				
13 Record what you have done				

Comments

Skills Checklist - Infection Prevention

	Date	Date	Date	Date
1 Use protective clothing and gloves				
• Wear apron/gown for delivery, put on before washing hands				
• Change shoes in delivery area, before washing hands No bare feet or sandals				
2 Wash hands for 3 minutes				
• Have ready soap, clean water, clean and dry towel				
• Remove jewelry from hands and forearms				
• Wet hands forearms Put on soap and wash Clean nails Rinse with running water				
• Soap hands forearms again				
- Use brush if available				
- Wash every side of each finger				
• Rinse hands forearms with running water				
• Repeat wash with soap and water and rinse				
• Remember to keep hands above elbows				
3 Use gloves				

	Date	Date	Date	Date
• When touching anything with blood or body fluids				
• When you have a cut on your hand				
• When washing up after delivery including				
- Equipment				
- Instruments				
- Delivery furniture or floors				
4 Prevent splashes				
• When artificially rupturing membranes				
• Milk (push blood out of section of cord) the baby's cord before cutting				
5 Prevent needle sticks place used needles in appropriate container				
6 Use infection prevention process				
• **Decontamination** - Make solution correctly				
- Open instruments like scissors				
- Fill and flush syringes/tubes with solution				

	Date	Date	Date	Date
- Completely cover and soak for 10 minutes				
• **Clean** - Wash with soap and water				
- Use brush on instruments				
- Clean joints on instruments				
- Flush tubes and syringes				
- Rinse with water				
• **High-level disinfect**				
- **If boiling** cover opened instruments completely with water Cover pot				
Bring water to boiling Boil 20 minutes				
Remove transfer forceps, use transfer forceps to remove instruments				
Place in high-level disinfected covered container				
- **If Steaming**, boil water				
Place opened instruments in steamer with boiling water Cover pot				
Steam for 20 minutes				

	Date	Date	Date	Date
Remove steamer with instruments Open lid slightly				
Allow instruments to air dry				
Remove instruments with HLD transfer forceps				
Place instruments in HLD covered container				
• **Sterilization**				
- Prepare for autoclave				
- Prepare for dry heat				

Comments

Skills Checklist - Care of Surgical Gloves

	Date	Date	Date	Date
1 Before removing gloves put hands in decontamination (0 5% chlorine) solution rinsing all soil from the gloves				
2 Remove gloves by turning inside out soak in chlorine solution 10 minutes				
3 Wear clean gloves to wash used gloves with soap and water				
• Rinse gloves with clean water				
• Test gloves for holes by filling with water				
• Throw away gloves with holes				
• Air dry				
4 **If sterilizing**, fold cuffs				
• Pack gauze or paper inside each glove so the glove does not stick				
• Wrap gloves				
• Sterilize using autoclave for 30 minutes				
5 **If high-level disinfect (HLD)**				
• Fold cuff on gloves				

	Date	Date	Date	Date
• Lay gloves in steamer so they can be easily removed without contamination				
• Place steamer on pot with water boiling				
• Place lid on top of steamer				
• Steam for 20 minutes (rolling boil)				
• Remove steamer rack with the gloves - shake to remove water				
- Cover				
- Allow to cool Use cool wet gloves for postabortion procedures				
- Air dry on both sides Use air dried gloves for pregnancy procedures in low volume maternities and clinics (wash gloved hands before providing care)				
• Store in a HLD covered container				
• Reprocess if not used				
- In one month (pregnancy procedures in low volume maternities and clinics)				
- During a single clinic session (postabortion procedures)				

	Date	Date	Date	Date
• Steam only number of HLD gloves needed for one month (or one clinic session) to avoid repeated steaming of gloves which wears them out				

Comments

Skills Checklist - Starting an Intravenous Fluid in a Peripheral Vein

	Date	Date	Date	Date
Starting an IV fluid in a peripheral vein				
1 Collect equipment				
2 Wash your hands with soap and water				
3 Tell the patient what you are going to do				
4 Help the woman to get comfortable				
5 Attach intravenous fluid set to bottle and hang it from stand/nail				
• Get tape ready				
6 Run fluid through tubing and clamp				
7 Look for vein between wrist and elbow				
• Avoid any vein that crosses a joint				
8 If you have trouble finding a vein tighten the tourniquet				
9 After you find vein, loosen tourniquet				
10 Wash your hands, put on gloves to protect you from germs from the blood				
11 Clean the skin with soap water or antiseptic				
12 Tighten the tourniquet				
13 Hold the needle in the hand you use for injections				
14 Use the other hand to stretch the skin with the thumb push in the needle through the skin and parallel to (beside) the vein				

	Date	Date	Date	Date
15 Push the needle gently and quickly into the vein Blood will flow out of the needle				
16 When you see blood in the needle attach the tubing to the needle and loosen the tourniquet				
17 Let the fluid run into the vein If the area around the needle swells clamp off the tubing remove the needle put pressure on the area until the bleeding stops Restart the IV in another place				
18 When fluid is going in the vein tape the needle to the skin Loop the tubing and attach it to the arm with tape				
19 Tape the arm to an arm board so that it can not bend and move the needle				
20 Regulate the fluid rate and check for infiltration every hour to make sure that the fluid is not running into the skin				
21 Record the type amount and time of infusion				

Comments

Skills Checklist - Giving Fluids in the Rectum

	Date	Date	Date	Date
Giving fluids in the rectum				
1 Gather the equipment				
2 Tell the woman what you are going to do				
3 Wash your hands				
4 Ask the woman to lie on her left side Place cloth pad under buttocks				
5 Lubricate the end of the tubing with water				
6 Put on clean gloves				
7 Run water to the end of the tube and clamp off				
8 Ask the woman to take a deep breath and breathe slowly				
9 Push the rectal tube about 10 cm (4 inches) in the rectum				
10 Hold the enema can just high enough so the water runs in Run 600 ml of water very slowly				
11 Remove the rectal tube				
12 Help the woman breathe and relax.				
13 Remove your gloves				
14 Clean and dry the woman				
15 Clean up the equipment				
16 Wash your hands				
17 Record the fluid amount, time and type				

Comments

Skills Checklist - Giving Fluids into the Peritoneal Cavity

	Date	Date	Date	Date
Starting an intraperitoneal infusion				
1 Gather the equipment				
2 Tell the woman what you are going to do				
3 Wash your hands with soap and water put on gloves				
4 Get the giving set needle and fluid attached				
5 Fill the giving set and needle with fluid				
6 Ask the woman to lie on her back				
7 Cleanse the abdomen with antiseptic or soap and water				
8 Feel the abdomen to make sure it is soft				
9 Pinch the skin just below the navel				
10 Push the needle horizontally through the skin				
11 Ask assistant to unclamp tubing				
12 Push needle vertically into peritoneal cavity				
13 Tape needle to abdomen so it does not move				
14 Run 1000 ml fluid into peritoneal cavity				
15 Remove needle after fluid has run in				
16 Cover puncture site				
17 Help the woman get comfortable				
18 Clean up the equipment				

	Date	Date	Date	Date
19 Remember, only give when a woman **is not pregnant**				
20 Use good aseptic technique				
21 Repeat procedure in 4 hours if the woman is still in shock and you are unable to start IV infusion or to transfer				
22 Transfer as soon as possible				
23 Record the type time and amount of fluid				

Comments

Skills Checklist - Preparation and Giving of Oral Solutions

	Date	Date	Date	Date
Giving fluids by mouth				
1 Gather the equipment				
2 Tell the woman what you are going to do				
3 Wash your hands				
4 Wash the containers, cup, and spoon				
5 Help the woman to get comfortable				
6 Review the recipe				
7 Measure 1000 ml (one liter) of drinking water				
8 Pour the water into a clean mixing container				
9 Add the ORS packet or the 8 level teaspoons of sugar and 1 level teaspoon of salt				
10 If available add citrus juice to improve the taste Mix well with a spoon				
11 Taste the mixture Remember, **the mixture should not taste saltier than tears**				
12 Give to the woman at least 2000 cc (2 liters) to drink in one day				
13 Help the woman take as much ORS or other fluid as she wants in addition to the 2 liters a day				
14 If she is thirsty, give ORS to the woman to drink while she is getting the IV infusion				
15 Throw away any unused solution remaining from the day before				

	Date	Date	Date	Date
16 Mix fresh solution every day				
17 Clean up equipment				
18 Teach the woman and family how to make the rehydration solution				
19 Teach the woman and family to use locally available fluids to prevent dehydration				

Comments

Skills Checklist - Using a Vacuum Extractor

	Date	Date	Date	Date
Using a vacuum extractor				
1 **LOOK and FEEL** for conditions necessary for using a vacuum extractor				
• Term (full size) baby				
• Baby alive or heart stopped during labor				
• Full dilatation				
• Vertex presentation				
• Ruptured membranes				
• No cephalopelvic disproportion no molding or caput descent 1/5 or 0/5				
• Contractions present				
2 Explain to mother and family what you are going to do why you are doing it, and how it will help her				
3 Prepare delivery and vacuum extraction equipment				
• Test vacuum extractor on palm of your hand				
4 Be sure bladder is empty (have mother urinate or catheterize her)				
5 Position mother on her back, at edge of table/bed				
6 Do vaginal examination to decide baby's position again				
7 Dry baby's scalp				
8 Apply the cup				
• Separate labia				

	Date	Date	Date	Date
• Pull perineum down				
• Hold cup				
• Insert cup down and in				
• Press cup against scalp of baby				
• Check for maternal tissue under cup				
9 Raise the pressure				
• Recheck for absence of maternal tissue under cup				
• Never exceed recommended maximum pressure for your type of vacuum extractor				
10 Pull fetal head through pelvis **with contraction Use correct direction of pull depending on level of head**				
• Before head clears symphysis pubis **pull down**				
• When the head is clearing the symphysis pubis **pull straight out**				
• When head crowns, **pull up**				
11 When the contraction stops				
• Reduce pressure (unless using Malmstrom vacuum extractor)				
• **Do not pull**				
• Encourage mother to breathe slowly and relax.				
• Check fetal heart rate				
12 Repeat 10 and 11 above until head crowns				
13 Deliver head of baby				

	Date	Date	Date	Date
14 Release pressure				
15 Complete the delivery				
16 Care for mother and baby				
17 Care for vacuum extractor				
• To wipe off vacuum extractor, use soft clean cloth dampened with decontamination fluid				
• If fluids are in pump, clean by pumping warm water through pump Clean pump quickly after birth so that blood does not clot in pump Use infection prevention steps				
• Dry pump by pumping air until equipment is dry inside				
• If cup and tubing are reusable decontaminate wash with soap and water rinse and dry, and sterilize				
• Store assembled vacuum extractor in clean, dry, and covered area				

Comments

Skills Checklist - Persistent Occiput Posterior Position

	Date	Date	Date	Date
When a woman is in labor and the baby is **occiput posterior position**				
1 **LOOK and FEEL** to confirm position of baby				
• Abdominal exam				
- Head looks high head feels large				
- Back difficult to feel limbs felt on both sides				
• Vaginal exam				
- Diamond shaped anterior fontanelle towards mothers front (pubis)				
• Contractions woman in labor				
2 **IDENTIFY PROBLEM** and **TAKE ACTION**				
• Danger if flexion does not happen descent stops				
• Decide whether REFERRAL is possible				
3 If **you can not REFER,** *try to help the baby rotate before* it is time for delivery				
• Explain to mother and family				
• Ask mother to				
- Urinate every hour, drink frequently				
- Relax between contractions change positions				
- Get in knee chest or knee arm position often				

	Date	Date	Date	Date
• Monitor labor (See Module 3 **Monitoring Labor Progress** page 3 66)				
• Prepare for depressed baby				
If you CAN NOT REFER, CERVIX IS FULLY DILATED, and WOMAN READY TO PUSH, try to increase flexion of head				
1 Make sure the bladder is empty				
2 Explain to mother and family what you are doing				
3 Help mother raise hips using either knee chest or knee arm position while assistant holds her right leg				
4 Insert your fingers into vagina under symphysis pubis				
5 Press on baby's forehead before contraction				
6 *Hold this position during contraction* to help flex and deliver the baby's head				
7 If the head does not flex after 2 or 3 contractions,				
• *Between contractions* push the baby's head up above the ischial spines with your hand to try to help the head rotate				
• If this is successful, be **prepared for a very fast delivery** Try to prevent the head from delivering too quickly				
8 If the baby's head does not flex, and you still can not get to the hospital, help the mother squat try to flex the head encourage the mother to push with each contraction				
9 If this is not successful after 5 contractions **OR** there are signs of distress in the mother or baby				
• Sedate the mother with Pethidine 100 mg				

	Date	Date	Date	Date
• Hydrate and reassure her Help the mother and family				
• Try to get transportation as soon as possible				
10 Be prepared for depressed baby See Module 6 **Resuscitation,** page 6 7				
11 Be prepared for bleeding from lacerations in the mother See Module 4 **Episiotomies and Repair of Lacerations**				
12 Care for the mother and her baby				
13 Be prepared for postpartum hemorrhage See Module 5 **Prevention and Treatment of Hemorrhage**				
14 Record your actions and outcome				

Comments

Skills Checklist - Umbilical Cord Prolapse

	Date	Date	Date	Date
When caring for a woman in labor				
1 **LISTEN** to the fetal heart beat routinely during labor· if any change **LOOK** for cause of change in heart beat				
2 When doing a vaginal examination **LOOK and FEEL**				
• For cord at vulva				
- after rupture of membranes or				
- when signs of fetal distress				
• Note presentation of baby				
• Note dilatation of cervix.				
3 **IDENTIFY PROBLEM** and **TAKE ACTION**				
If you can see the cord				
1 Using gloves **FEEL** for cervical dilatation and touch the cord to **FEEL** pulse (beat)				
2 *If cord has a beat and the cervix is fully dilated,* deliver with an episiotomy and vacuum extractor if available				
3 *If the cord has a beat and the cervix is NOT fully dilated* help get mother to hospital				
4 While waiting for transport, explain to mother/family				
5 Prevent chilling or handling of cord				
Gently wrap in cloth				
• **Do not attempt to replace cord**				

	Date	Date	Date	Date
6 Position mother with hips higher than chest				
7 Keep presenting part away from cord				
• Use gloved hand in vagina to push baby up				
• Continue position and pushing head up while traveling to hospital				
8 Take delivery and resuscitation equipment with you to hospital Be prepared for delivery				
If you can not see the cord and the baby is in distress				
1 Do vaginal exam, if cervix fully dilated deliver as soon as possible with the woman in knee chest position, do episiotomy, and use vacuum extractor, if available				
2 **FEEL** for cord in front of baby				
3 If you **FEEL** *cord and the cervix is not fully dilated*				
• Position mother with hips higher then chest				
• Push presenting part up, away from cord				
• Try not to touch cord				
4 REFER				
• Keep presenting part away from cord while traveling				
• Be prepared for delivery and infant resuscitation				
If it is not possible to get the mother to the hospital				
1 Monitor labor according to routine and				

	Date	Date	Date	Date
• change mother's position often, **always** hips higher than chest and left lateral as much as possible				
• continue trying to get transport				
• encourage and explain to mother and family				
2 Protect cord from cool air and handling to prevent spasm of cord				
3 Keep gloved hand pushing up on presenting part to prevent compression of cord until ready to deliver				
4 Deliver baby as quickly as possible				
• Position mother left lateral with hips on pillow and assistant holding her right leg or in knee chest position				
• Encourage mother to push with contraction				
• Perform episiotomy				
• Use vacuum extractor if it is available				
• Be prepared for infant resuscitation but the baby may die				
5 Help the mother and family the best you can				
6 Record actions and outcomes				
If the cord has no pulse *and* there is a transverse lie				
1 Explain to the mother and family				
2 REFER to doctor with cesarean section facilities				
3 Offer care and support to the mother and her family				

	Date	Date	Date	Date
4 Record all actions taken				
If the cord has no pulse *and* vertex or breech				
1 Explain your findings to the mother and family				
2 Continue to monitor labor and support mother				
3 Prepare the mother to deliver a stillborn				
4 Offer care and support to mother and her family				
5 Record all actions taken				

Comments

Skills Checklist - Uterine Inertia (Tired Uterus)

	Date	Date	Date	Date
When caring for a woman with **uterine inertia**				
1 Decide the progress, **ASK and LISTEN**				
• **Early labor** contractions are **not** painful and mother feels good as she can rest				
• **In later labor,** mother is distressed and tired as there is no progress				
2 **LOOK and FEEL**				
• Contractions				
- frequency duration strength				
• Abdominal exam				
- slow or no fetal descent				
• Vaginal exam				
- no progress in cervical dilatation				
- pelvic assessment is adequate				
3 **IDENTIFY PROBLEM** and **TAKE ACTION**				
4 Prevent exhaustion of mother and baby				
• Give oral fluids food, help her to get comfortable wash relax, rest				
• Reassure mother support encourage				
5 Give an enema Be prepared for delivery				
6 If enema does not work help mother to stimulate nipples explaining that this may encourage contractions				

		Date	Date	Date	Date
7	If ***vertex presentation is engaged*** and the woman is in ***active phase of labor***, artificially rupture membranes (ARM)				
8	If this is effective, **remember** to actively manage third stage and be prepared for postpartum hemorrhage				
9	REFER at any time for				
	• Fetal or maternal distress				
	• Cloudy or bad smelling amniotic fluid				
	• First stage of labor crossing the alert line				
10	Explain to woman and family that the hospital doctor may help stimulate labor by rupturing membranes augmentation of labor, and so forth Encourage and support, be prepared for delivery on way to hospital				
11	Record all actions				

Comments

Skills Checklist - Shoulder Dystocia

	Date	Date	Date	Date
When helping a woman in labor				
1 **Prevent** shoulder dystocia by anticipating and referring				
• Mother with diabetes				
• History of delivering large babies				
• Family history of large siblings				
• Maternal obesity				
• Large fetus				
• Previous shoulder dystocia				
• Fetal weight estimated as 0 5 kg (1 pound) more or much larger than the previous pregnancy				
2 **LOOK**				
• Head may be slow to deliver with much pushing and effort by the mother				
• Head delivers and looks as if it wants to go back in the vagina (turtle sign)				
• Head is very tight against the perineum				
3 **FEEL**				
• If hard pushing by mother does not turn or move the shoulders, **FEEL** for an abnormal baby, tumor, locked or joined twins, Bandl s retraction ring Sedate and REFER				
• For tight cord (may be short or around the neck) If cord tight clamp and cut				

	Date	Date	Date	Date
• Bladder If full, ask mother to urinate **Note** It is very important that the bladder is empty at the beginning of second stage for all deliveries				
IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION				
1 Quickly get ready				
• *Explain* to the mother and family what you are going to do				
• *Position* to have the mother's buttocks higher than for a normal delivery Ask mother to plant her feet firmly on the bed and elevate (lift) her buttocks *Be ready to deliver* as this may allow the shoulders to move				
• *Refer* as is appropriate Ask someone to call doctor/get transportation Be prepared for resuscitation of baby, postpartum hemorrhage, laceration/episiotomy repairs				
2 Cut or enlarge the episiotomy				
Try to deliver with the mother's legs back				
3 Position the mother to move Bring her hips to the edge of the bed This will give the baby's head more space when you deliver				
4 Explain and show how to spread her legs wide and pull her knees back as far as she can towards her ears				
5 Press down hard above pubic bone Ask someone to press down hard just above the mother's pubic bone releasing the baby's anterior shoulder				
6 Mother push hard At the same time, ask the mother to pull her legs very wide and push as hard as she can				

	Date	Date	Date	Date
7 Midwife pull with cupped hands Cup your hands around the sides of the baby's head (do not hold the baby's neck), and deliver the shoulders with downward and outward pressure while counting to 15				
If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15				
If the baby does not deliver, ask the mother to take long and slow breaths Explain to her that she will have to get in a different position to deliver the baby				
Try to deliver with mother on hands and knees				
8 Change position Help the mother to the hands and knees position with her head higher then her hips				
9 Mother push as hard as she can				
10 Midwife pull with cupped hands, see step 7 above				
Try to deliver the posterior arm of the baby				
11 Explain to the mother to remain on her hands and knees, that you must put your hand inside her to help the baby You will try to be gentle but it still may hurt her				
12 Deliver posterior arm				
• Put your gloved hand inside the vagina, along the baby's lower back to bring out the posterior arm				
• Move your hand around the baby				
• Grasp the baby's arm Bend its arm				

	Date	Date	Date	Date
• Pull the arm out of the vagina by pulling the baby's hand				
13 Ask the mother to push while you cup your hands around the sides of the baby's head and deliver the shoulders with downward and outward pressure while counting to 15				
If the baby does not deliver change the direction and deliver the shoulders with upward and outward pressure while counting to 15				
If the baby does not deliver the mother can stay on her hands and knees or lie on her side or her back Encourage her and tell her that you will need to try once more to deliver her baby				
Try to deliver by using the corkscrew method				
14 Try to turn the baby				
• With your hands in the vagina turn the baby one half circle so the posterior shoulder is where the anterior shoulder was located				
• Always turn the body of the baby so the back is anterior				
• Try to deliver as in number 13				
• If the baby does not deliver, turn the baby back to the original position and at the same time gently pull downwards				
If the baby does not deliver, the mother can stay in any position she would like to be Encourage her and tell her that you will need to try once more to deliver her baby				
15 **Break the baby's clavicle (collar bone)**				
• Reach in with your fingers of both hands and find the anterior clavicle				

	Date	Date	Date	Date
• Pull up (so as not to puncture the baby's lung) on the middle of the clavicle between your two thumbs and break it This allows the anterior shoulder to become free from behind the symphysis pubis				
16 Ask the mother to push				
• At the same time cup your hands around the sides of the baby's head and deliver the shoulders with downward and outward pressure while counting to 15				
• If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15				
17 Continue with infant care and resuscitation as needed				
• Prepare for third stage care of the mother				
18 When you have cared for the mother and infant record actions taken				

Comments

Skills Checklist - Breech Management

	Date	Date	Date	Date
When helping a mother deliver a baby with **breech presentation**				
1 Assess the progress of labor to decide if there is time to REFER If no time to refer				
• Explain to the mother and family what you are doing				
• Reassure as best you can				
2 Gather supplies and equipment for delivery with episiotomy				
• Have delivery bed or a table for second stage				
• Be prepared for infant resuscitation and postpartum hemorrhage				
3 Confirm second stage (complete cervical dilatation) **before** she starts to push				
• Encourage woman to push in any comfortable position				
• Make sure her bladder is empty				
4 When baby's buttocks are seen distending perineum				
• Help woman to lithotomy position (lying on her back with her legs bent) at edge of table or bed				
• Her feet should be supported OR she may want to spread her legs and pull them back when she pushes				
5 Wash your hands and put on gloves				
• Wash the genital area				

	Date	Date	Date	Date
6 Perform episiotomy (to make more space for the breech delivery) as the baby's buttocks distend and thin the perineum				
7 **Keep hands off the baby's body, until the umbilicus is seen,** as the breech passes through the outlet				
8 When the umbilicus is seen • Use one finger to flex the baby's knees and pull down a loop of umbilical cord This will bring the feet and legs out				
9 As the buttocks and legs deliver, the body usually hangs downward Watch as				
• The back turns from oblique to anterior (upwards)				
The face is looking downward				
• **Do not push on the uterus or pull on the baby**				
• Encourage mother to push with each contraction				
10 With each contraction watch as				
• The body slowly rotates as shoulders deliver				
• The arms become visible				
If the arms do not deliver with the next contraction, free the posterior arm				
• Insert two fingers into the vagina				
Follow humerus to elbow				
• Splint and support arm between your fingers				
• Bring arm down to deliver				

	Date	Date	Date	Date
• Anterior arm will usually follow				
11 As mother pushes the baby is born to the neck				
• Allow the baby to hang by its own weight for up to 1 to 2 minutes				
- Watch as the flexed head moves down to pelvic floor				
- Watch as the occiput and the back rotate forward/anterior				
12 Watch as the neck gradually delivers				
• The hairline can be seen				
• The suboccipital region (hairline) can be felt				
13 The delivery of the head can now be attempted				
• If **right-handed** stand with your back to the woman s left leg				
• Take the baby's legs in your right hand				
- Pull firmly outward (stretch) on the legs to prevent the baby's neck from bending backwards				
- The suboccipital region (hairline), and not the neck, should pivot under the apex of the pubic arch				
14 Use one hand to guard the perineum and prevent the head from delivering too quickly				
15 With the other hand, hold the feet and keep the body straight by pulling a bit (traction)				
• Lift the feet in a circular movement (an arc of 180 degrees) until the chin, mouth, and nose are free at the vulva				

	Date	Date	Date	Date
• Wipe the mouth and nose to clear away any mucus or liquor The baby can now breathe				
16 Deliver the head slowly and carefully in 2 to 3 minutes				
• Ask the mother to take deep breaths				
• Explain that the baby's head must deliver slowly				
• Protect the head from injury and prevent tearing the of episiotomy				
• Suprapubic pressure may be needed				
17 When baby is delivered, note time proceed as for a normal delivery Be prepared for depressed baby				
18 The third stage is usually very quick be prepared for postpartum hemorrhage				
19 When mother and baby are cared for record actions and outcomes				

Comments

Skills Checklist - Manual Vacuum Aspiration

	Date	Date	Date	Date
When performing **manual vacuum aspiration** procedure				
1 Establish rapport, get to know the woman make her feel comfortable				
2 Explain the procedure and be supportive to the woman and her family				
3 Prepare room, equipment, and medications				
4 Have the MVA instruments ready including				
• Have two MVA HLD/sterile kits ring forceps, speculum				
• Prepare MVA syringe use adaptor if needed, lock valve, create vacuum				
5 Manage pain				
• Care for the emotional state of the woman explain what you are doing and why at each step of the procedure				
• Assess dilatation of cervix and give analgesic according to findings See Learning Aid 6 - Paracervical Block, if needed				
• Perform MVA with competence and confidence				
6 **ASK and LISTEN** medical history, cramping, pain, bleeding, LNMP emotional state				
7 **LOOK and FEEL** Assess for shock anemia infection condition of cervix and uterine position and that ***uterine size is no larger than 12 weeks***				
• Abdominal examination - uterus not higher than the level of the symphysis pubis				

	Date	Date	Date	Date
• Vaginal examination - ***bimanual palpation confirmed uterus not larger than 12 weeks size***				
• Manage shock anemia infection				
• REFER if lacerations, trauma, pus discharge, or uterine size more than 12 weeks				
8 Prepare the woman explain what you are doing				
• Ask her to empty her bladder				
• Wash lower abdomen and genitals with soap and water				
Manual Vacuum Aspiration Steps				
• Explain what you are going to do				
• Use infection prevention hand washing, gloves				
1 Gently insert speculum				
2 Use infection prevention swab cervical os with antiseptic solution				
3 Grasp cervix with ring forceps Administer paracervical block and/or other medications if needed Allow time to take effect				
4 Inspect cannula and syringe again to make sure they are in good condition and correct choices according to uterine size and cervical dilatation				
5 Hold the cervix so it does not move and gently insert the cannula Rotate with gentle pressure if necessary				
6 Push the cannula slowly into the uterine cavity Measure the uterine depth by the dots visible on the cannula				

	Date	Date	Date	Date
7 Attach the prepared syringe to the cannula without contamination Make sure the cannula does not move forward in the uterus while you attach the syringe				
8 Release the pinch valve to transfer the vacuum through the cannula to the uterine cavity				
9 Move cannula effectively to empty the uterus				
10 Check for signs of completion				
• Red or pink foam no more tissue seen in cannula				
• Rough sensation is felt as cannula passes over the surface of the uterus				
• Uterus contracts around the cannula				
11 Withdraw cannula detach syringe place cannula in decontamination solution With valve open empty contents of MVA syringe into strainer by pushing on the plunger				
Do not put the empty syringe in decontamination solution until you are certain the procedure is completely finished				
12 Inspect the tissue removed You may need to strain and rinse the tissue so that you can see better				
• For quantity and presence of products of conception				
• To assure complete evacuation				
• To check for molar pregnancy (not common)				
Solve problem if no products of conception are seen according to findings				

	Date	Date	Date	Date
• No further action needed				
• Repeat aspiration				
• Decide cause for vaginal bleeding and take action				
13 After being certain the procedure is finished remove equipment Make the woman comfortable and explain your findings to her and her family				
14 Decontaminate all instruments after procedure				
15 Dispose of wastes				
16 Remove gloves and decontaminate				
17 Wash hands with soap and water				
18 Record findings including vital signs, fluids given appearance and amount of products of conception estimated blood loss, medications (given, time, dose)				
19 Comfort the woman and her family				
Monitor the Woman's Recovery				
1 Take and record vital signs				
2 Observe and monitor bleeding and condition while the woman rests				
3 Check for anemia and give iron tablets according to findings If the woman is Rh negative give Rh(D) immune globulin before discharge, if available				
4 If there is treatment for complications continue treatment and monitor or REFER as needed				

	Date	Date	Date	Date
5 For uncomplicated MVA, check bleeding at least once before discharge Recheck vital signs cramping and general well being				
Explain to the woman she may expect				
• Some uterine cramping over next few days, may take analgesic				
• Some spotting or bleeding, not more than normal menstrual period				
• That normal menstrual period should occur within 4 to 8 weeks				
Tell the woman the date for follow up visit and				
• That she should have no sexual intercourse or anything in the vagina until 5 to 7 days after bleeding has stopped				
• That her **fertility can return in less than 2 *weeks*** after the MVA procedure She needs to choose family planning method immediately if another pregnancy is not wanted				
Explain these WARNING SIGNS AND SYMPTOMS The woman should report back to you if she has				
• Cramping more than 5 days				
• Bleeding more than 2 weeks				
• Bleeding more than normal menstrual bleeding				
• Severe or increased pain				
• Fever chills or malaise (tired all of the time)				
• Fainting or weakness				

	Date	Date	Date	Date
Explain to the woman about postabortion family planning				
• She can get pregnant as soon as 11 days after MVA procedure				
• There are safe modern family planning methods that can help her avoid becoming pregnant				
• Where and how she can get these methods if you can not help her with the method of choice				

Comments

Skills Checklist- Symphysiotomy

	Date	Date	Date	Date
When you do a symphysiotomy				
1 **LOOK and FEEL** for signs of CPD				
• Decent of fetal head				
- Engaged				
- 2/5 or less felt abdominally				
- Molding + or ++				
• Dilation of cervix 7 cm or more				
2 Collect all of your equipment				
3 Explain and show your assistants what to do				
• The first assistant watches IV, monitors mother and baby				
• The second assistant is gloved to assist				
• Two reliable persons hold the woman's legs				
4 Explain to mother and family what you are doing				
5 Ask first assistant to wash the lower abdomen and genital area with soap and water				
6 Start an IV infusion if it is not already running				
7 Ask 2 reliable persons to help the woman lie on her back				
8 Scrub and glove				
9 Infiltrate 10 ml 1 0% lidocaine hydrochloride into the skin over and around symphysis pubis				
10 Infiltrate perineum with 10 ml of 1 0 % lidocaine hydrochloride				

	Date	Date	Date	Date
11 Pass a catheter				
12 Ask the 2 reliable persons to support the legs against their chests so that the legs are abducted (pulled apart) to not more than 80 to 90 degrees				
13 Check to make sure the anesthesia is working by touching a sharp needle to the area				
14 Get ready to make the incision				
• Insert two fingers into the vagina				
• Find the catheter/urethra with vaginal fingers				
• Push the catheter to one side				
• Find the symphysis pubis with the vaginal fingers				
15 Start the incision				
• Feel for symphysis pubis fibrocartilage				
• Insert scalpel in the mons over symphysis pubis				
• Make ¼ inch (½ cm) incision				
• Keep catheter pushed to one side with vaginal finger to protect the urethra				
• Place the other vaginal finger at the back of the symphysis pubis joint to feel for knife blade				
16 Finish the incision				
• Hold the scalpel at a right angle to the skin and symphysis pubis				

	Date	Date	Date	Date
• Keep the cutting edge pointing towards you				
• Push knife firmly and smoothly through the fibrocartilage				
• You will feel the blade more easily with vaginal fingers a cartilage is cut				
• You should always feel tissue between vaginal fingers and knife blade				
• Your vaginal fingers will feel about a 2 5 cm (width of thumb) separation of the pubic bones				
17 If there is bleeding, stop it with direct pressure				
18 Let the fetal head decide the amount of separation of the symphysis pubis				
• Ask reliable persons to adduct (put together) woman's legs after incision				
• Ask reliable persons to watch for bleeding and tell you right away				
19 Prepare for delivery				
• Make a generous episiotomy				
• Use vacuum extractor if woman can not push baby				
20 Deliver the baby				
• Be prepared for a depressed baby				
21 Give oxytocic and do active management of third stage				
22 Inspect vagina and cervix for trauma				
23 Repair episiotomy and symphysis cut				

	Date	Date	Date	Date
• Keep the legs as close together as possible				
24 Change catheter to a Foley if available				
25 Bathe the woman wrap her legs together make her comfortable				
• Place soft cloth between her knees				
• Wrap legs loosely together so that she does not forget to keep them together				
• Do routine after delivery care				
• Check the catheter				
26 Arrange for transport to hospital				
• Go with the woman and her family				

Comments

SUMMARY OF PERFORMANCE

Skills Checklist										
Module 2 Antenatal Assessment and Treatment	DATE									
	RESULT									
Module 3 Monitoring Labor Progress on Admission	DATE									
	RESULT									
Module 3 Monitoring Labor Progress	DATE									
	RESULT									
Module 4 Episiotomy and Laceration Repair	DATE									
	RESULT									
Module 5 Active Management of Third Stage	DATE									
	RESULT									
Module 5 Manual Removal of Placenta	DATE									
	RESULT									
Module 5 Bimanual Compression of the Uterus	DATE									
	RESULT									
Module 5 Inspection with Vaginal Speculum	DATE									
	RESULT									
Module 5 Digital Evacuation	DATE									
	RESULT									
Module 6 Infant Resuscitation	DATE									
	RESULT									

Module 6 Adult Resuscitation	DATE									
	RESULT									
Module 6 Heimlich Maneuver	DATE									
	RESULT									
Module 7 Incision and Drainage of Breast Abscess	DATE									
	RESULT									
Module 7 Infection Prevention	DATE									
	RESULT									
Module 7 Care of Surgical Gloves	DATE									
	RESULT									
Module 8 Starting an Intravenous Fluid in a Peripheral Vein	DATE									
	RESULT									
Module 8 Giving Fluids in the Rectum	DATE									
	RESULT									
Module 8 Giving Fluids into the Peritoneal Cavity	DATE									
	RESULT									
Module 9 Using a Vacuum Extractor	DATE									
	RESULT									
Module 10 Persistent Occiput Posterior Position	DATE									
	RESULT									
Module 10 Umbilical Cord Prolapse	DATE									
	RESULT									
Module 10 Uterine Inertia (Tired Uterus)	DATE									
	RESULT									

Module 10 Shoulder Dystocia	DATE									
	RESULT									
Module 10 Breech Management	DATE									
	RESULT									
Module 10 Manual Vacuum Aspiration	DATE									
	RESULT									
Module 10 Symphysiotomy	DATE									
	RESULT									

COMMENTS

FOLLOW-UP AND SUPPORT VISIT SUMMARY (1)						
ANTENATAL CARE LAST MONTH				DELIVERIES LAST MONTH		
NEW	REVISIT	REFERRALS		NUMBER	REFERRALS	
		NUMBER	REASON		NUMBER	REASON
What was done last month? (USE THE BACK FOR ADDITIONAL COMMENTS)						
Number of TBA or home birth attendant (HBA) visits?						
Last month what was the most serious problem causes prevention?						
Use information from Follow-up and Support Form to indicate in the second column ✓ **(satisfactory)** or ✗ **(needs improvement)** and in the third column **plans**						
Infection prevention						
Delivery equipment						
Oxytocic						
Postpartum visits						
Family planning counseling						
Incident & referral form review						
Antenatal record review						
Partograph review front						
Partograph review back						

Number of forms supplied partograph _____ antenatal _____ referral _____ incident report _____	Supervisor _____ Date _____ Return Date _____
Clinical Skills Checklist Summary see page 100 to 102 in this Clinical Practice Guide	

Additional Comments

FOLLOW-UP AND SUPPORT VISIT SUMMARY (2)						
ANTENATAL CARE LAST MONTH				DELIVERIES LAST MONTH		
NEW	REVISIT	REFERRALS		NUMBER	REFERRALS	
		NUMBER	REASON		NUMBER	REASON

What was done last month? (USE THE BACK FOR ADDITIONAL COMMENTS)		
Number of TBA or home birth attendant (HBA) visits?		
Last month what was the most serious problem, causes prevention?		
Use information from Follow-up and Support Form to indicate in the second column ✓ (satisfactory) or ✗ (needs improvement) and in the third column plans		
Infection prevention		
Delivery equipment		
Oxytocic		
Postpartum visits		
Family planning counseling		
Incident & referral form review		
Antenatal record review		
Partograph review front		
Partograph review back		

Number of forms supplied partograph _____ antenatal _____ referral _____ incident report _____	Supervisor _____ Date _____ Return Date _____
Clinical Skills Checklist Summary see page 100 to 102 in this Clinical Practice Guide	

Additional Comments

FOLLOW-UP AND SUPPORT VISIT SUMMARY (3)						
ANTENATAL CARE LAST MONTH				DELIVERIES LAST MONTH		
NEW	REVISIT	REFERRALS		NUMBER	REFERRALS	
		NUMBER	REASON		NUMBER	REASON
What was done last month? (USE THE BACK FOR ADDITIONAL COMMENTS)						
Number of TBA or home birth attendant (HBA) visits?						
Last month what was the most serious problem causes, prevention?						
Use information from Follow-up and Support Form to indicate in the second column **✓ (satisfactory) or ✗ (needs improvement)** and in the third column **plans**						
Infection prevention						
Delivery equipment						
Oxytocic						
Postpartum visits						
Family planning counseling						
Incident & referral form review						
Antenatal record review						
Partograph review front						
Partograph review back						

Number of forms supplied partograph _____ antenatal _____ referral _____ incident report _____	Supervisor _____ Date _____ Return Date _____
Clinical Skills Checklist Summary see page 100 to 102 in this Clinical Practice Guide	

Additional Comments

FOLLOW-UP AND SUPPORT VISIT SUMMARY (4)						
ANTENATAL CARE LAST MONTH				DELIVERIES LAST MONTH		
NEW	REVISIT	REFERRALS		NUMBER	REFERRALS	
		NUMBER	REASON		NUMBER	REASON
What was done last month? (USE THE BACK FOR ADDITIONAL COMMENTS)						
Number of TBA or home birth attendant (HBA) visits?						
Last month what was the most serious problem causes, prevention?						
Use information from Follow-up and Support Form to indicate in the second column **✓ (satisfactory) or ✗ (needs improvement)** and in the third column **plans**						
Infection prevention						
Delivery equipment						
Oxytocic						
Postpartum visits						
Family planning counseling						
Incident & referral form review						
Antenatal record review						
Partograph review front						
Partograph review back						

Number of forms supplied partograph _____ antenatal _____ referral _____ incident report _____	Supervisor _____ Date _____ Return Date _____
Clinical Skills Checklist Summary see page 100 to 102 in this Clinical Practice Guide	

Additional Comments

FOLLOW-UP AND SUPPORT VISIT SUMMARY (5)						
ANTENATAL CARE LAST MONTH				DELIVERIES LAST MONTH		
NEW	REVISIT	REFERRALS		NUMBER	REFERRALS	
		NUMBER	REASON		NUMBER	REASON

What was done last month? (USE THE BACK FOR ADDITIONAL COMMENTS)		
Number of TBA or home birth attendant (HBA) visits?		
Last month what was the most serious problem causes, prevention?		
Use information from Follow-up and Support Form to indicate in the second column ✓ (satisfactory) or ✗ (needs improvement) and in the third column plans		
Infection prevention		
Delivery equipment		
Oxytocic		
Postpartum visits		
Family planning counseling		
Incident & referral form review		
Antenatal record review		
Partograph review front		
Partograph review back		

Number of forms supplied partograph _____ antenatal _____ referral _____ incident report _____	Supervisor_____ Date _____ Return Date _____
Clinical Skills Checklist Summary see page 100 to 102 in this Clinical Practice Guide	

Additional Comments

FOLLOW-UP AND SUPPORT VISIT SUMMARY (6)						
ANTENATAL CARE LAST MONTH				DELIVERIES LAST MONTH		
NEW	REVISIT	REFERRALS		NUMBER	REFERRALS	
		NUMBER	REASON		NUMBER	REASON
What was done last month? (USE THE BACK FOR ADDITIONAL COMMENTS)						
Number of TBA or home birth attendant (HBA) visits?						
Last month what was the most serious problem causes, prevention?						
Use information from Follow-up and Support Form to indicate in the second column ✓ (satisfactory) or ✗ (needs improvement) and in the third column plans						
Infection prevention						
Delivery equipment						
Oxytocic						
Postpartum visits						
Family planning counseling						
Incident & referral form review						
Antenatal record review						
Partograph review front						
Partograph review back						

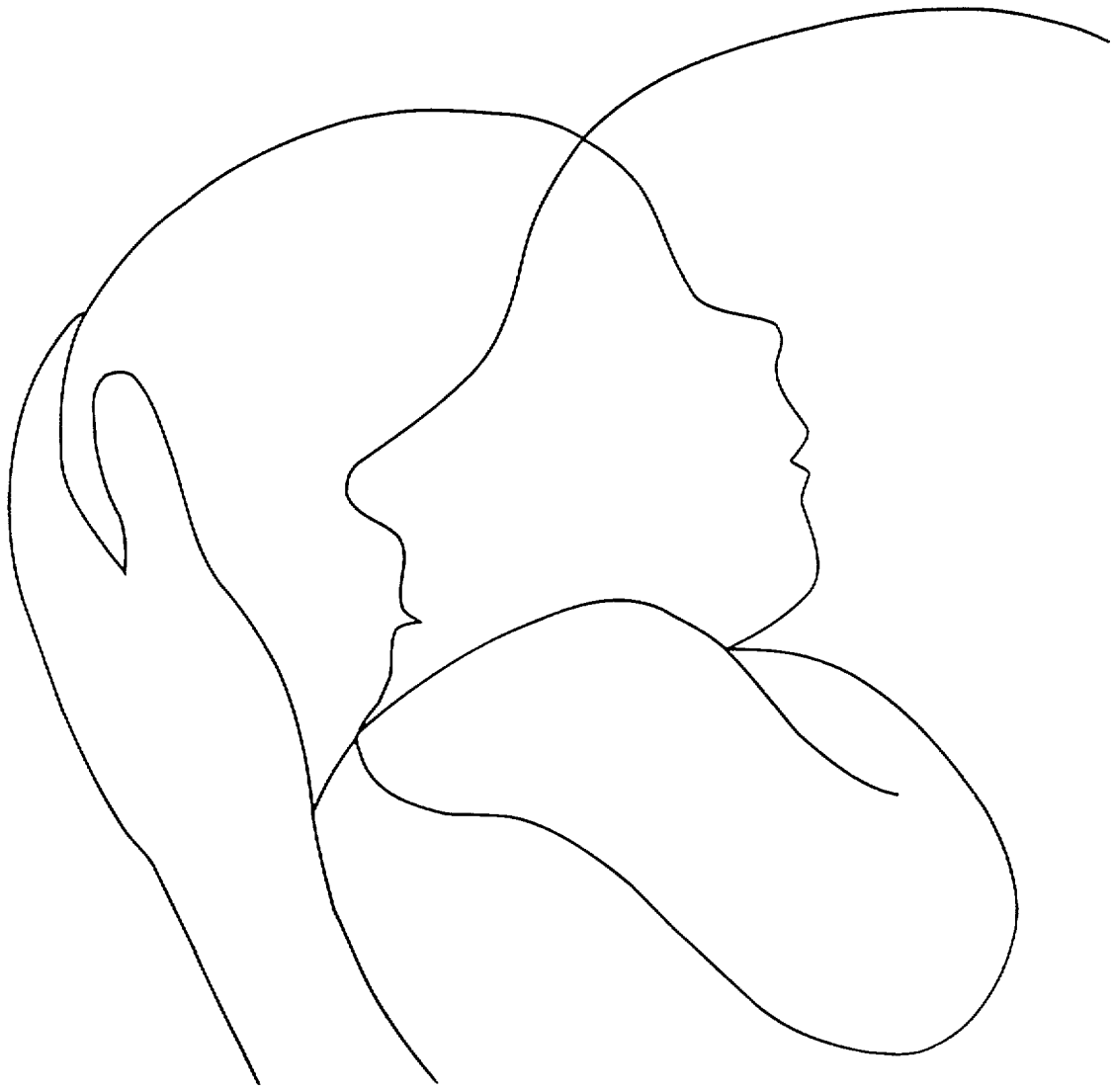
Number of forms supplied partograph _____ antenatal _____ referral _____ incident report _____	Supervisor _____ Date _____ Return Date _____
Clinical Skills Checklist Summary see page 100 to 102 in this Clinical Practice Guide	

Additional Comments

PN-ACF-276

LIFE-SAVING SKILLS MANUAL FOR MIDWIVES

3rd Edition



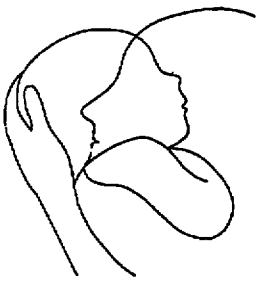
MODULE 1

INTRODUCTION

Life-Saving Skills Manual for Midwives

Third Edition

Module 1: INTRODUCTION TO MATERNAL MORTALITY



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Life-Saving Skills Manual for Midwives

TABLE OF CONTENTS

Acknowledgments

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This manual is written with a tremendous respect and admiration for the many thousands of midwives who, in spite of difficulties, are giving excellent care in their communities It is hoped that those midwives working in relative isolation or difficult circumstances will find this a useful reference book when they meet unfamiliar situations in the course of their daily work, and that all midwives will find it helpful as they continue to provide care in order to improve the lives of mothers and babies

Any suggestions or ideas would be gratefully received Please send all comments to

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Introduction

Life-Saving Skills (LSS) are those skills which allow midwives to recognize and respond to emergencies The main goal of LSS is to help midwives prevent maternal and infant mortality and morbidity by identifying and taking necessary action when problems occur in pregnancy, labor, delivery, and the early postpartum period The aim of LSS is women and babies who are alive and healthy

Development of the Life-Saving Skills Manual for Midwives (LSS Manual)

In 1989, two maternal mortality studies conducted in the Greater Accra Region of Ghana provided information that led to the development of an assessment tool to help midwives manage two of the major killers of pregnant women **pregnancy induced hypertension** and the prevention and treatment of anemia, thereby decreasing the risk of death from **hemorrhage** Subsequently, the LSS Manual was developed to address the five major causes of maternal mortality (hemorrhage, sepsis, unsafe abortion, pregnancy induced hypertension, and obstructed labor) The first edition (1990) was field tested and revised in a pilot training project in Ghana

The second edition (1991) of the manual is being used in many English-speaking countries and has been translated into other languages including Vietnamese, French, and Bahasa Indonesia This third edition (1998) includes revisions and new material requested by LSS midwives and trainers, as well as experiences they have shared from their practice

The LSS Manual and training course build upon the years of experience of midwives practicing in rural and urban areas The very important issues of family and community support and education are woven throughout the manual The LSS Manual encourages an expanded role for the midwife, to improve her ability to save the lives of women and infants The management, medications, equipment and procedures suggested in the manual assume that only the most basic provisions are always available Nothing in this manual is meant to replace the care of a good hospital or a good doctor

Life-Saving Skills Training (LSS Training)

LSS training emphasizes clinical practice, and provides the midwife with as much experience as it takes to master the skills Classes are held in or near the clinical area so the midwife can move easily into the clinical area to watch trainers demonstrate skills or to see classmates practice particular skills The goal of training is to produce confident, competent midwives who can practice advanced midwifery skills and save the lives of women and babies A *competent midwife* performs skills expertly A *confident midwife* uses her skills and believes she can perform skills well enough to teach others

Competency based clinical training uses the skills checklists Trainers demonstrate and observe midwives' skills in the clinical areas Midwives observe and perform skills Midwives are encouraged to manage their own learning and share responsibility with trainers This method draws on the practicing midwife's experiences, encourages active problem solving, and builds confidence

Manual for Policy Makers and Trainers, A Life-Saving Skills Training Program Process

This manual serves as a guide for developing and managing an LSS training program The **Ten Step Program Process** includes ideas from LSS programs in many countries The **Trainers Section** provides clinically active LSS midwives opportunities to develop confidence and competence using a participatory approach to teaching the competency based LSS There are sample **Lesson Plans, Program Tools, Training Aids,** and **Forms** for use, adaptation, and revision for local needs

About the Life-Saving Skills Manual for Midwives

This manual is intended and designed for use by practicing midwives in continuing education programs Some modules will serve as a review for some midwives Some of the skills presented in the manual will be new for some midwives New skills must be learned and used in practice Tutors and others may wish to use the technical content as a resource for pre-service training, or as a reference

Each module session follows the LSS Manual's design of allowing the trainer to support the midwife in becoming highly competent in the practice of life-saving skills The module does not teach skills, but structures discussions of **critical knowledge** necessary to learn to perform skills with confident competence The LSS trainer is not concerned about the **quantity** of times a particular skill is performed, but rather the **quality** with which it is performed She introduces, stimulates, guides supports, and reviews performance with the midwife in the process of learning life-saving skills in the antenatal labor, delivery, postpartum or other settings that provide hands-on learning opportunities In each module, the Problem Solving Method is used to guide the midwife in identifying problems and taking actions to treat or prevent them

Each module has a **manual table of contents** and a **module table of contents** that lists page numbers for procedures and other topics providing the midwife with a quick and easy reference Each module begins with a statement of the **goal** and **objectives** and an **introduction** to give the midwife an idea of what is covered in the module This is followed by **a midwife's experience** providing a midwife's experience related to the topic **Common medical terms** are defined

A **formulary** for the entire manual is found at the end of the Module 10 An **index** for the entire manual is found at the end of every module The index lists the subjects in alphabetical order If you cannot find what you want look for it under another name Or check the module table of contents For example, if you want to find information on hemorrhage you might look for hemorrhage or bleeding Or you might remember that Module 5 is about hemorrhage and look in that module's table of contents

The pages are numbered with both the **module number** and the **page number** For example if you find the number 5 3 you will look in Module 5 on page 3 If you want to find laceration of the cervix, look in the index for *laceration - cervix* you will find the number 4 You look in Module 4 table of contents and find Lacerations of the Cervix listed on page 4 21 Turn to page 4 21 of Module 4 for the information

Each **skill procedure** contains a **skill description, illustration(s), review questions, skills checklist(s),** and one or more **case studies** The midwife reads each section in a module and writes answers for the review questions and case studies Case studies help the midwife practice the Problem Solving Method The midwife may study alone or with other midwives

The **skills checklist** found at the end of each skill description in Modules 2 through 10, provides a step by step outline of the skill and can be used to review the skill procedure The competency based training approach continually refers to and uses the skills checklists

After an LSS procedure is performed the midwife fills out the appropriate skills checklist The trainer may also write on the same checklist The skills checklist should be reviewed the same day as the skill is performed while the details are very fresh in everyone's mind Using the appropriate checklist, the trainer and midwife discuss how they think the steps were performed and other information which could not be discussed while caring for the woman The checklist can also be used after the training, to review and practice skills and can serve as a continuing reference The **Learning Aids** found in each module provide additional information Many of the learning aids were developed in response to requests from LSS midwives

INTRODUCTION TO MATERNAL MORTALITY
MODULE 1

Contents

INTRODUCTION TO MATERNAL MORTALITY

OVERVIEW OF THE PROBLEM

The problem of maternal mortality worldwide can be pictured by imagining a jumbo jet with 274 women aboard crashing into the sea every 4 hours, day-in, day-out, 365 days of the year (adapted from Potts, 1986)

Maternal mortality refers to the death of a woman while pregnant or within 42 days of termination of pregnancy Maternal deaths often occur in the home and never become recorded in the health care system The World Health Organization (WHO), which monitors maternal deaths throughout the world, estimates that 600,000 women die every year as a direct result of childbearing, and most of these deaths are preventable (WHO, 1996)

The loss of these women is a great tragedy The fact that the great majority of the maternal deaths are preventable when low to moderate technology and education are available adds to the tragedy Yet maternal deaths, even when one considers all the personal loss a family experiences, are a small portion of the problems pregnant women face One study estimates that for every maternal death, there are sixteen cases of maternal illness (Liskin, 1988) The impact of maternal death and illness on a nation's economic productivity, health of the family, and loss of personal fulfillment of the individual woman is difficult to calculate

The difficulty of measuring maternal mortality has long been a barrier to progress in alerting health planners and others to the magnitude and causes of this problem and hence to the development of effective interventions (WHO, 1996) There are five major causes of maternal mortality hemorrhage, sepsis, unsafe abortion, pregnancy induced hypertension, and obstructed labor

THE FIVE MAJOR CAUSES OF MATERNAL MORTALITY

Hemorrhage
Sepsis
Unsafe Abortion
Pregnancy Induced Hypertension
Obstructed Labor

Most of these deaths are preventable through high quality obstetric care, including a functioning referral hospital for antepartum, intrapartum and postpartum, acceptance of referral by mother and family members, rapid and safe blood services, family planning (child spacing), access to safe abortion, improved nutrition, good transportation and communication, improved female education, and improved status of women within the culture

A Midwife's Experience .

A young girl of 16 years was coming from home at 4 45 p m in labor pains She has not attended antenatal clinic She has no husband I admitted her in labor, vital signs, hemoglobin and urine were normal Abdominal palpation found descent at 1/5 Contractions 2 in 10 minutes, lasted more than 40 seconds Fetal heart was 130 beats per minute This girl did not allow me to do the vaginal examination

I talked for a long time but she did not allow me to do the vaginal examination After some minutes she told me that this morning she was sent to a certain man in the village who says he is a doctor The doctor did a vaginal examination She is afraid and feels pain too That is why she did not allow me to do the vaginal examination I was very worried so I told the relatives to take the girl to the nearest hospital The girl refused to go She still refused to allow me to do the vaginal examination

She started pushing much The lower lip of the fetus appeared at the vulva I could see this was a face presentation This procedure was very difficult for me I convinced her and gave an episiotomy She pushed nicely and a severely asphyxiated female infant was delivered

I clamped the cord and cut it There was no heartbeat, no respiration I wrapped the baby and put her on the resuscitation table I tilted the head back, cleared the airway, rubbed her back I did full CPR This time I did not put cold water on the baby (I learned during LSS that this is a harmful practice) She responded slowly to resuscitation The baby had abrasions on the nose and the eyelids

The episiotomy was repaired using the new suture sparing method Estimated blood loss 600 cc I cleaned the mother and put her and her baby in a warm bed

A few hours later the baby was crying I examined and bathed the baby I wrapped her nicely to keep her warm Eye drops applied Abrasions were painted with gentian violet I gave her to the mother to suck the breast

LSS Midwife, Ghana

MATERNAL MORTALITY AND THE MIDWIFE

Goal

The midwife will learn about the problems of women dying during pregnancy and childbirth, and the role the midwife can play in preventing it

Objectives

The midwife caring for the mother and her newborn baby will be able to

1 explain the meaning of maternal mortality (death), maternal morbidity (illness), and risk factors

2 list the major causes of death for women during pregnancy and childbirth in her place of work and worldwide

3 describe her role in reducing the death of women and infants at her place of work and in the community in which she lives

4 describe how she will identify the cause(s) and the reason(s) why women and newborns die in her community and her place of work, through interviews and review of client records

5 develop a plan for helping the people in her community learn how they can prevent illness and death of women and babies during pregnancy and childbirth

Important Terms

Maternal Mortality - the death of a woman while pregnant or within forty-two days of termination of pregnancy, irrespective of the duration and site of pregnancy (uterine or extra-uterine), from any cause related to or made worse by the pregnancy or its management, but not from accidental or incidental causes (WHO definition) Maternal mortality is then subdivided into direct and indirect maternal deaths

Direct Maternal Deaths - deaths resulting from obstetric complications of pregnancy, labor, and puerperium, and from interventions or any after effects of these events For example, death from postpartum hemorrhage is a direct maternal death

Indirect Maternal Deaths - deaths resulting from the worsening of existing conditions by pregnancy or delivery For example, death from malaria, diabetes, or sickle cell disease during pregnancy are indirect deaths

Maternal Mortality Ratio - the number of pregnancy associated deaths per a chosen number of live births in the identified population In many countries, the chosen number is 1,000 or 10,000 live births Worldwide maternal mortality reports use the chosen number of 100,000 live births For example, a maternity clinic which last year had 100 live births and 1 maternal death, has a maternity clinic maternal mortality ratio of 1/100 live births This is the same as a ratio of 10/1,000 live births or 100/10,000 live births or 1,000/100,000 live births See Table 1 (page 1 6) for maternal mortality ratio estimates by region

Maternal Morbidity - any symptom or condition resulting from or made worse by pregnancy The quality of care often determines whether complications are effectively treated or continue on to death Midwives often care for pregnant women who have such problems as malaria, guinea worm, tuberculosis, anemia, malnutrition, vesico-vaginal fistula, and damaging effects from hemorrhage, infection and scarring in female circumcision It is common in both **developing and developed countries** to find **12 to 16 serious complications for each maternal death**

> It is important to carefully and completely document all the mother's complications If this information is available in the records, it is possible to identify the most important problems This information can be used to plan care and programs to reduce or prevent complications among women in future pregnancies

Risk - the harm that something *might* cause A risk does not mean that something bad *will* happen It means that something bad *is more likely* to happen Mothers in some countries have a higher risk than mothers in other countries "The developing world accounts for 76 per cent of the global population, 86 per cent of the world's births, 96 per cent of the infant mortality and 99 per cent of the maternal mortality" (Potts, 1986, p 29) A rural woman from Bangladesh is 55 times as likely to die due to pregnancy as a woman from Portugal, and 400 times as likely to die due to pregnancy as a woman from Scandinavia <u>each</u> time she becomes pregnant (Maine, 1986) The risk is not equal for all mothers

Risk Factors - those things in an individual or in the environment that make the individual more likely to develop a particular condition For example, obstructed labor is a major cause of maternal morbidity and mortality When the mother is a young, short primipara, she has the risk of cephalopelvic disproportion (the woman's pelvis is too small for easy passage of the fetal head) We can look for these factors (age, height, parity) to help determine whether a woman is at risk for this problem (Liskin, 1988) Risk factors are age, short stature, first pregnancy, malpresentation, rickets, and others

Maternal Mortality Worldwide

There are five major causes of maternal mortality worldwide They are hemorrhage, sepsis, unsafe abortion, pregnancy induced hypertension, and obstructed labor Figure 1 shows the portion of all maternal deaths caused by each Notice that *indirect causes*, that is, other existing illnesses or conditions a woman has, are also responsible for many maternal deaths

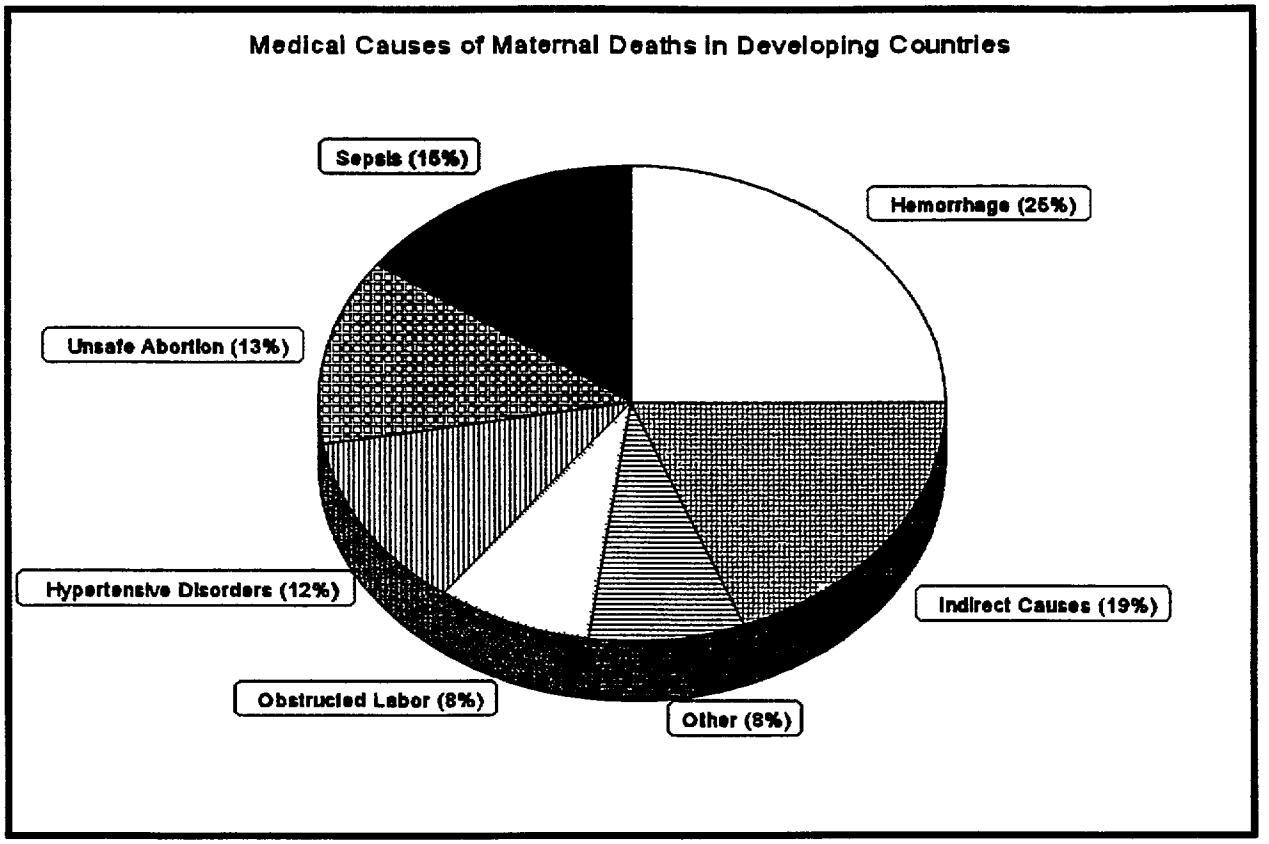


Figure 1 Medical Causes of Maternal Deaths
Source WHO 1992

To help prevent maternal morbidity and mortality, it is essential that all women receive quality maternal care **Because all women have some risk of developing complications, early identification of problems and risk factors, and the availability of good referral services, are essential to all maternity care.** Maternal risk, complications, and mortality differ depending on where women live in the world Compare the ratios in different areas in Table 1, below Women from Asia and Africa are at the highest risk

Table 1 Revised estimates of maternal mortality by United Nations regions (1990)

	Maternal mortality ratio (maternal deaths per 100,000 live births)	Number of maternal deaths	Lifetime risk of maternal death, 1 in
World total	430	585 000	60
More developed regions [2]	27	4 000	1800
Less developed regions	480	582 000	48
Africa	870	235 000	16
Eastern Africa	1060	97 000	12
Middle Africa	950	31 000	14
Northern Africa	340	16 000	55
Southern Africa	260	3 600	75
Western Africa	1020	87 000	12
Asia [2]	390	323 000	65
Eastern Asia	95	24 000	410
South-central Asia	560	227 000	35
Southeastern Asia	440	56 000	55
Western Asia	320	16 000	55
Europe	36	3 200	1400
Eastern Europe	62	2 500	730
Northern Europe	11	140	4000
Southern Europe	14	220	4000
Western Europe	17	350	3200
Latin America & the Caribbean	190	23 000	130
Caribbean	400	3 200	75
Central America	140	4 700	170
South America	200	15 000	140
Northern America	11	500	3700
Oceania [2]	680	1 400	26
Australia-New Zealand	10	40	3600
Melanesia	810	1 400	21

Source WHO, 1996

[2] Australia New Zealand and Japan have been excluded from the regional totals but are included in the total for developed countries Figures may not add due to rounding

Role of the Midwife in Preventing Maternal Mortality

Midwives can play a major role in decreasing maternal mortality at local, national, and global levels Midwives often live in the communities they serve and are familiar with the religions, beliefs, customs, taboos, and preferences of the families who live there Midwives usually know who controls decision making in the family and in the community They know who gets to eat the choice bits of food and how hard pregnant women work In most communities, midwives are respected They are consulted by both women and men They are expected to give advice on pregnancy, family planning, human sexuality, infant care, and many other issues Midwives must be aware of the needs of women Let the women know you care about them by listening to them, working with them, and sharing in their joys and sorrows In some way, midwives play each of these roles in the course of a day's work Each role has an important part to play in decreasing the incidence of death and illness in women and their babies

The midwife is a **team member** who works with many different teams such as hospital staff, work place staff, and community members In the *hospital*, the midwife refers to and seeks advise from the doctor, senior midwife, and others In her *private clinic, health center, or hospital unit,* the midwife trains, supervises, and works with assistant(s), the cleaner, maybe a driver, and whoever is helping her provide care to women and babies She can work with the team members to develop an emergency plan so that each person knows exactly what his or her role is, for example, in case of a woman with hemorrhage, an infant who needs resuscitation, or someone with a convulsion In the *community*, the midwife works with traditional birth attendants, women, and other community members to help keep mothers and babies healthy

The midwife is a **teacher** who explains and advises She can use her midwifery and community knowledge and her position of respect to provide information that will increase understanding She can influence the community to take actions that improve the lives of women and their babies She can help people learn good nutrition practices, and ways they can promote and maintain good health She can help the community understand the need for a rapid transportation service that can be relied upon when an emergency arises She can encourage the community to improve education for women and girls She can encourage many changes that improve women's status

The midwife is a **care provider** She provides quality care to women during their reproductive years, including family planning services, incomplete abortion care, and pregnancy care (antepartum, intrapartum, and postpartum) When she finds that a woman has an increased risk or complication, she refers her to a facility that is equipped and able to meet her special needs

The midwife is a **professional** She participates in her professional organization and works to influence policies that affect her practice, such as outdated midwifery codes or rules that limit her ability to take life-saving action in emergencies She understands that by practicing good midwifery, she can help to increase respect and value for all midwives

The midwife is an **active learner** She recognizes that technical knowledge changes continually, and she participates in (perhaps even organizes) continuing education programs to keep up to date on changes in midwifery practice She also learns how to improve her practice by analyzing maternity data at her place of work, studying her experiences in the work setting, and finding out about behaviors and needs in the community When she has the opportunity, she works with her colleagues to gather data for research on important problems or issues

The midwife is an **encourager** who supports and stimulates others to question the way things are, to make their own decisions, and change their lives for the better When people do not question customs and practices that are harmful to them, they accept unhappiness, customs that cause poor health, and even abuse For example, if a woman does not know that she needs to eat a greater amount of quality food to stay healthy during pregnancy, she may not try to do anything about it

The midwife can help people to recognize their own value
If a midwife respects people and their ideas,
she will help them appreciate their own intelligence and
she can learn from them
If a midwife respects people's feelings,
she will help them learn their feelings are important
If a midwife listens to people,
she will help them learn that they have a right to be heard [3]

[3] Paraphrased from Klein (1995) p 13

Working with the Community for Action

Saving the lives of women and newborns is an important issue for the community Many times community members do not realize what a valuable role they can play in saving the lives of women and babies Community leaders need information that helps them see how they can contribute Midwives and traditional birth attendants (where they exist) can help community leaders organize support services through improved communication, transportation, blood supply, revolving funds, and other ways

The midwife can play a vital role by meeting with and learning from traditional birth attendants (TBA), village/community leaders, men's or women's social and religious groups, schools, and other gatherings to discuss maternal deaths and explain how the majority of these deaths can be prevented Many sicknesses and injuries can also be prevented For example, women are less likely to suffer the disabling problems of vesico-vaginal fistulas and serious pelvic infection if they have not had neglected (prolonged) labors or do not have scarring of their genitalia from female circumcisions

Midwives must help the community members find the problems and discover ways to get emergency systems organized and operating Because midwives care for women and see the effects of hemorrhage, convulsions, infection, and shock, they are in a good position to speak about the need to improve the situation in their own and other communities

Transportation and Communication

In remote areas or night time hours, many women die due to lack of adequate transportation and communication It is the responsibility of the entire community to see that emergency services are provided for its people

In some communities, transport unions have organized an emergency community fund so that there is *no delay* during any emergency Women can be carried short distances on a door, a sling tied to a sturdy pole, a cart attached behind a bicycle or horse, a truck, a bus, a taxi, a boat, or by other means Sometimes the community pays the village truck driver or a private individual an advance to carry emergency passengers when the need arises These individuals can also keep a stock of fuel that is used only for emergencies Once communities understand the need for an emergency system and understand that many women die needlessly without this plan, they will come up with many creative ways in which to solve the problem Many minds working together can find good local solutions

Blood Supply

In many countries, hemorrhage is the leading cause of maternal mortality In *all* countries, hemorrhage is at least one of the three top killers of pregnant women Therefore, it is critically important to make certain that blood is available for emergencies

Once community members understand how common and serious the problem of hemorrhage is for women in childbirth, they can mobilize to establish a system of blood donation Often, rumors or cultural beliefs make families or neighbors unwilling to donate blood A strong community education program, plus frequent reminders of the problem and the value of blood, is necessary People in the community need to know that blood must be tested for HIV and compatibility Midwives can play a valuable role in helping community members change their attitudes and work to solve the problem of the blood supply

Some referral hospitals have a blood supply on hand, ready for emergencies In many places, there is no way to store blood In some communities, all adults have their blood typed so that they can be called upon when blood of their particular type is needed In other situations, patients are expected to bring several blood donors in with them when they travel to the referral hospital The midwife can consider these options with her community Which will work best in the situation? Perhaps another solution can be identified by community members In any case, regularly informing and encouraging the community to develop and maintain a plan are key to making blood available to women who need it Of course, men and children sometimes require blood transfusions too The plan can directly benefit everyone in the community

The community must understand that when women enter pregnancy and labor in good health, blood transfusions are needed less often The community can contribute to the improved health of its girls and women by

- encouraging adequate food intake,
- doing away with food taboos which prevent women from getting foods they need,
- encouraging girls to stay in school and delay childbearing,
- encouraging antenatal care including taking iron pills,
- decreasing work loads for pregnant women, and
- urging early referral to hospitals and other resources when needed

Community Maternal Health

Among all the people in the community, pregnant women, mothers, newborns, and children are at the greatest risk of disease and death The longer a midwife practices, the better she will understand that there are many reasons for poor health of women and newborns To be able to help community members, the midwife must find the main reasons for poor maternal and newborn health in her community

Common reasons are poverty, lack of medical care, lack of education, lack of transportation, harmful beliefs, delayed recognition of danger signs, and delayed decision making by husbands or other family members The midwife must learn as much as possible about traditional beliefs and practices She will need to talk to mothers and pregnant women about their health and their babies' health She must help people in the community understand her role and their role in preventing sickness and death for pregnant women, mothers, and newborns

A Midwife's Experience .

A young woman was found convulsing outside her home She had not come for antenatal care She had just delivered her first infant vaginally

The family carried her to our tent I consulted with our doctor and gave her magnesium sulfate by intravenous infusion After six hours, she stopped having convulsions and her reflexes became normal The family members and I took turns caring for her She never regained consciousness After fifteen hours she quietly stopped breathing Her baby also died

The family thanked me and said they now understood that you can not tell a pregnancy is normal just by looking at a woman

LSS Co-author

This experience made us very aware that we needed to find out what the community understood about antenatal care, and their own beliefs and practices about pregnancy

Learning about beliefs and practices

All communities have traditional beliefs and practices about pregnancy, childbirth, care after childbirth, and family planning Unless you are from this community or have lived there for a long time, you will need to learn about the community's beliefs and practices related to pregnancy and childbirth, so you will be able to discuss ones that can cause problems

Questions you might ask to learn about beliefs and practices include

- Do women take part in special practices, receive special treatments or medicines during pregnancy, labor, or after delivery?
- What do women eat during pregnancy? What can they not eat? Why?
- Where or to whom do pregnant women go for advice?
- What problems or dangerous conditions do women experience during pregnancy? What is done for them? Who usually helps?
- Where do pregnant women deliver?
- Who usually helps during a delivery?
- When is the newly born baby bathed?
- When after the delivery does the baby begin to suck the mother's breasts?
- What care is given to the baby's cord?
- What care does the newly delivered woman receive?

When you are knowledgeable about the beliefs and practices, you should be able to identify ones that you need to discuss with the community If you can explain how a belief or practice causes a problem, you can help people understand the need to change harmful practices like unsafe abortion, unclean things put in the vagina, or unclean materials put on the umbilical cord

Explaining about risk factors, danger signs, and problems

Pregnancy and childbirth are natural Most women become pregnant and give birth without problems However, some women and babies have problems during pregnancy, labor, delivery, or after delivery It is important for the mother to be aware of her risk and to follow the midwife's advice However, the mother must rely upon the support of her family and her community to follow that advice If the entire community understands about risk factors and danger signs and knows the important ones, community members are more likely to understand the reasons for the midwife's recommendations and to be sure they are followed

From their experience, people understand *risk* They know, for example, if they walk in an area where many snakes live, they risk snakebite They know that children have fun swimming in the river when it is calm, but that risk of drowning increases when the river is full and flowing swiftly Some members of the community have also experienced the loss of wives, sisters, mothers, and friends and their newborn babies They understand that pregnancy has risks Some risks can be reduced if the danger signs are recognized and proper action is taken The midwife can help the community learn danger signs that indicate risks so that special care and attention can be given The midwife can help explain about preparation for delivery

Risk factors and danger signs the entire community should know about include

- Very young or old age (Women under 16 and over 35 may be at risk)
- Many pregnancies, or pregnant often (Women who have had more then 4 pregnancies or pregnancies closer than 2 years may be at risk)
- Problems with a previous pregnancy, or with this one (Weak blood/anemia, high blood pressure, fits, delivery before due date/premature delivery, very long labor, too much bleeding, and babies who died, babies who were very big or were very little are risk factors)
- Problems after delivery (For the **mother** fever, pain/redness in breasts, pain in legs or abdomen, diarrhea, bad smelling vaginal discharge, too heavy bleeding, or passing large clots are risk factors For the **baby** fever, diarrhea, not sucking, convulsions are risk factors)
- No preparation for delivery (Preparations are ways to be at less risk These include choosing and registering with a caregiver, receiving antenatal care, being sure money is available to meet emergency costs, organizing baby things, arranging transportation, and going to the delivery site the midwife advised If the woman is staying at home to deliver, preparations include preparing a clean space and equipment for the delivery)

When giving care, the midwife tries to identify pregnant women, mothers, and newborns who may be at risk or have problems Module 2 **Quality Antenatal Care** discusses problems during pregnancy Module 3 **Monitoring Labor Progress** talks about labor and how to identify problems Module 5 **Prevention and Treatment of Hemorrhage** encourages limiting blood loss after delivery, with active management of third stage Module 7 **Prevention and Management of Sepsis** discusses prevention of infection and cord care

Learn Causes of Maternal Morbidity and Mortality

It is important to look at the reasons women and newborns die in the community, and in your hospital or maternity We must take note that many times a woman or her family does not want to go for care because they do not feel they are treated very well, their cultural beliefs are not respected, there is a lack of privacy, and so forth It is difficult to get this information However, these reasons need to be recognized and discussed Midwives and other health care providers need to ask themselves, (1) Why do women not want to come? (2) Are we doing anything to discourage them from coming? (3) Have we asked the women or families how they feel? (4) What did they say? and, (5) What can we do?

Establish a committee on health of woman and newborn It is very helpful to work with a group of health professionals (midwife, doctor, laboratory technician, administrator, pharmacist, and so forth) and community members (farmer, teacher, housewife, private midwife, dispenser, and so forth) to look at every death and find out what happened This committee may decide to hold a meeting after every maternal death or near death to study the factors that contributed to the death The job of the committee is **not** to assign blame, but rather to find creative solutions to the problems identified in each maternal death These problems may be found in many communities and in many countries Once the causes are understood, actions can be taken in the health facility and the community to improve services for the mothers and newborns of the future

Process of finding out why This process of finding out why deaths are occurring will help you and the community develop an action plan to make childbirth and pregnancy less risky in your environment Have the committee meet as early as possible after a death, so that the details of the situation are still fresh in everyone's mind

Interview A member(s) of the committee interviews family and/or friends who were caring for the woman who died (or the mother of a baby who died) Some of the things you may wish to know are

1 How had she been feeling? Did the mother say anything about feeling the baby move? Did she have any infections? Did she have fever? Did she have any bleeding during her pregnancy?

2 What did the mother do when she was sick? Where did she go for help? How soon did she get help for her sickness? If there was a delay in seeking care, what were the issues/problems? Why did the mother not want to go for help?

   Answers may include that she was afraid of hospitals or hospital staff, she was not treated respectfully last time, or there was no privacy, there was no money for transport or no vehicle available or no fuel available, she was not able to obtain permission to travel from husband or family, she did not know where to go to get help for her condition, the midwife/health provider was not home, or there was no money to pay for care

3 Was the mother receiving care from anyone or at any place during her pregnancy? Did she go to a health center, private doctor, private midwife, traditional birth attendant, family member, traditional or alternative practitioner? Was her family aware of any special care that was recommended? Was she advised of any risk?

Review records Read the woman's records These may be records found at her home or at the places she received care Find all the places she had care and ask to read the records at each place She may have been transferred from a private practice, health clinic, or other hospital The committee members will probably want to know

1 During the pregnancy
- how many antenatal visits did she have?
- were any danger signs identified, such as bleeding, swelling of face or hands, headache or blurred vision, baby did not move as much as usual?
- were any risk factors identified?
- was appropriate action taken for danger signs or identified risk factors?
- was advice followed?

2 What time was she first seen (time of admission)? How long did it take to get her to the hospital? How long after she first arrived was
- a temperature taken and recorded?
- a blood pressure taken and recorded?
- fetal heart beat taken and recorded?
- an anemia screening taken and recorded (either visual or hemoglobin)?
- a history and physical examination done and recorded?
- a partograph started? recorded?

3 During the course of her labor
- did membranes rupture prematurely?
- were vaginal examinations done and recorded?
- were any herbs or medications used at home?
- was labor or delivery prolonged or difficult?
- was the cord tight around the neck?
- was there damage to the baby from delivery?

4 Was a diagnosis made regarding her condition? (What was the problem?)

5 Was appropriate action taken, including
- medications ordered, available, and given?
- staff (doctor, midwives, anesthesia, laboratory) called to help or refer to?
- laboratory tests ordered and done?
- care (treatments or skills) done competently such as,
  - intravenous solutions and supplies ordered, available and given?
  - resuscitation equipment available and working?
  - resuscitation?
  - the baby dried and warmed immediately?
  - the mother given shock care?
- protocols established and followed for distressed newborn and distressed mother?

Use the interview and record(s) information to make a PLAN OF ACTION Once the information is collected, the committee can discuss the findings If problems are identified in the way this woman was helped or cared for, a plan of action can be made to solve them or prevent them happening in the future The advantage of involving community members, administrators, and clinicians, including midwives, in this process is that they learn and become motivated to help work on problems that cause maternal mortality The plan of action may include more than one solution Some of the solutions may take place immediately and some may take several years to implement

Here are some actions that might be included in the committee plan

Community Action The community members need to take the lead and establish ownership of their plan to learn to recognize danger signs in pregnancy, to learn the importance of care during pregnancy, or to understand the need to organize emergency transportation They need to share in accountability, creating a system for handling expenses, ensuring the availability of fuel, working vehicles or litters, and so forth They need to work with the midwife or TBA to develop an education plan to help the community people appreciate the life-saving value of giving blood, and to get rid of rumors and fears

Protocols Action Develop new protocols for management of problems identified, such as admission procedures, frequency of monitoring, medications a midwife can start before the doctor arrives, shock care, and so forth

Equipment Action Purchase needed equipment so that better care can be given For example, purchase oxygen masks, a vacuum extractor, surgical equipment, essential drugs

Personnel Action Hire essential personnel, such as someone to give anesthesia at night, or a laboratory technician Organize continuing education for staff, to update them or help them learn new clinical skills in the management of obstetrical emergencies Reorganize job tasks to make certain that essential skills can be performed by enough staff that illness, annual leave, or other reasons do not result in a lack of people available with emergency skills

Case Study 1 - Why Did This Woman Die?

Read this true story Answer the questions that follow

A postpartum woman with her first pregnancy was referred to the hospital and died in the delivery room 20 minutes after arrival The following information was written on the hospital record

The woman delivered by herself at home She had received antenatal care at the small health unit in her village, and it was recommended that she deliver at the hospital because her blood pressure was high

After delivery, the placenta would not come out Four hours after delivery, the family carried her to the health center The newborn baby died on arrival at the health center The health center midwife (the same midwife who saw her during pregnancy) immediately referred her to the hospital without treatment It took the family another 4 hours to locate transport to the hospital

1 **INTERVIEW** Who will the committee want to interview? What information do you need? It is good to let the family give their actual experience of what happened (page 1 14)

2 **REVIEW RECORDS** What records should be reviewed? What information should you be looking for? What problems can be identified? (page 1 15)

3 **ACTION PLAN** What plan of action should the committee develop? (page 1 16)

For working with the community

For the health center

For the hospital

ANSWERS - Case Study 1

1 Interview

A Interview family/friends/helpers who are caring for the woman during labor
- How was she feeling before labor began? Did she take any medicines or treatments?
- How was she feeling during labor? Did she take any medicines or treatments? What did she take?
- What was done when the placenta did not come out? Were any medicines given?
- How was the baby after the delivery? Were any treatments or medicines given to the baby?
- Who made the decision to carry the mother to the health center? When? Why?

B Interview the midwife at the health center
- What was the mother's condition when she arrived?
- What problems did you find?
- What did you do for her, and why?

2 Review

A Review antenatal records for identification and treatment of risk factors
- Was the mother screened for anemia?
- Was the mother screened for pregnancy induced hypertension?
- Was she treated appropriately? according to protocols?

B Review referral notes for history, blood pressure, pulse, and treatment, using protocols
- Was the mother in shock?
- Was she treated for shock?
- Were medications available?

C Review admission records at the hospital for time of arrival, time of shock assessment, and treatment
- Were protocols followed?
- Was staff available? Who?
- Were medications available?
- Was there a diagnosis? What was it?

3 Action Plan

A Work with the community:
- Teach the danger signs in pregnancy and labor
- Teach reasons for referral and when to refer
- If transportation was a reason for delay, introduce or re-introduce the need for a community emergency transportation system

B For the health center
- Review or develop protocols to deal with shock and retained placenta.

C For the hospital
- There was probably little the hospital staff could do in this situation However, review/develop protocols for shock and retained placenta

Review Questions

What Did I Learn? Find out what you know and understand of this module by answering the following questions When you are finished, look for the answers in the module on the pages listed in parentheses ( )

1 List the five major causes of death for women during pregnancy and childbirth (page 1 5)

2 How will you determine the maternal mortality ratio at your place of work? (page 1 4)

3 What role can you play in the prevention and reduction of maternal mortality in your area? (pages 1 7-1 8)

4 How will you work with your community to learn about the problems that cause maternal mortality and morbidity and to implement solutions? Outline the steps you will take (pages 1 9 -1 13)

5 What risk factors, danger signs, and problems should the entire community know about? (page 1 13)

USING THE PROBLEM SOLVING METHOD TO GIVE MATERNITY CARE

Life-Saving Skills (LSS) are actions that can save the lives of women and infants There may be no time to ask for help in an emergency Often there is no time to look in a reference book The midwife must take immediate action She must use life-saving skills

At present, not every midwife has life-saving skills The Life-Saving Skills Manual has been written to help midwives gain these skills The manual and the training help midwives learn each skill and how to perform it, step by step, in an organized way The steps of each skill are practiced over and over in the training, until the midwife is able to perform them perfectly When the LSS midwives return to their places of work, they are able to perform the life-saving skills whenever emergencies arise

When a woman first comes to the midwife, she may not yet have an *emergency* She may have a *problem* The Problem Solving Method is an organized way of giving care to women By getting and carefully organizing information, the midwife can better identify the problem(s) the woman has, then plan and provide her care To provide care in an organized way, the midwife can use the Problem Solving Method

Goal

The midwife will learn specific steps she can take to find what is wrong with a mother, and to decide how best to care for her

Objectives

The midwife caring for a woman will be able to

1 describe the Problem Solving Method and list the four steps
2 explain and demonstrate each step of the Problem Solving Method
3 explain why it is important to use the Problem Solving Method
4 use the Problem Solving Method in her practice

Procedure

The 4 steps of the Problem Solving Method are

- **ASK and LISTEN**
- **LOOK and FEEL**
- **IDENTIFY THE PROBLEM/NEEDS**
- **TAKE APPROPRIATE ACTION**

ASK and LISTEN

This is the first step that must be taken when seeing a woman Make her feel welcome Provide a private area to talk Ask questions in a kind and interested way Ask about the reason she came to see you Listen carefully to all the answers All answers are important and will help you find out the problems Help her feel comfortable with your actions Write down the important points so you will not forget her answers For specific information on **ASK and LISTEN**, see Module 2 **Quality Antenatal Care**, page 2 13 and Module 3 **Monitoring Labor Progress**, page 3 3

LOOK and FEEL

This is the second step that must be taken when seeing a women Examine the areas of the woman's body that relate to the information you learned in step one - **ASK and LISTEN** For example, if a woman complains of jaw pain, you will want to check her teeth, ears, throat, and neck If she complains of a vaginal discharge, you will need to do a speculum and pelvic examination

Sometimes you will need to do a general or full examination of the body For example, you may not be able to find the cause of her problem from the complaints she gives In the case of a woman registering (booking) for antenatal care, you will need to know about the condition of her entire body A general examination of the body will also help you to find problems that the woman herself has not recognized

IDENTIFY THE PROBLEMS/NEEDS

This is the third step of the Problem Solving Method Using information from the first two steps, the midwife must identify the problems It is important that all the woman's problems are treated, not just the problem that caused her to come to you

She may need information on family planning methods, good nutrition during pregnancy, how to relieve hemorrhoid pain, and where to go for immunizations for her small children, all in one visit She may have come with only one complaint, problem, or question Make certain that you write all the problems or needs on her record/ antenatal form

TAKE APPROPRIATE ACTION

This is the fourth step of the Problem Solving Method You must decide what should be done to solve each problem or meet each need The following actions should be considered for each problem or need, and you must decide which to do first, second, and so on Sometimes medical treatment will be needed first For example, when a woman has a retained placenta and is bleeding heavily, you must stop the bleeding by manually removing the placenta **before** laboratory tests can be done You may then give her more treatment, education, or counseling, or refer her When a woman who is 6 month's pregnant comes to you and is feeling very tired, you will want to test her hemoglobin **before** giving treatment, education, counseling or referring her

Medical treatment Take care of the problem with medicines or treatments, following standards and protocols of practice Remember that all medicines must be used with caution during pregnancy

Education Help the woman learn the information she must know to care for herself well

Counseling Help the woman understand the problem and work with her to develop a way to deal with it

Laboratory tests/investigations Gather more information about the problem

Referrals Use other resources in the area, such as doctors, hospitals, education programs, women's groups, charity groups, or to help her solve her problems

Plans for follow-up Ask the woman to return Explain *why* you have asked her to return The time she should return will depend upon how severe her problem is and how long it should take for improvement You may wish to see her in 24 hours, 3 days, 2 weeks, or later If she could get a serious complication from her problem, she should be seen frequently until she is out of danger

Recording All symptoms, problems, counseling needs, laboratory information, physical examination, treatments given, and date to return for care should be clearly and carefully written in her record When the recording is good and complete, the care is usually good and complete

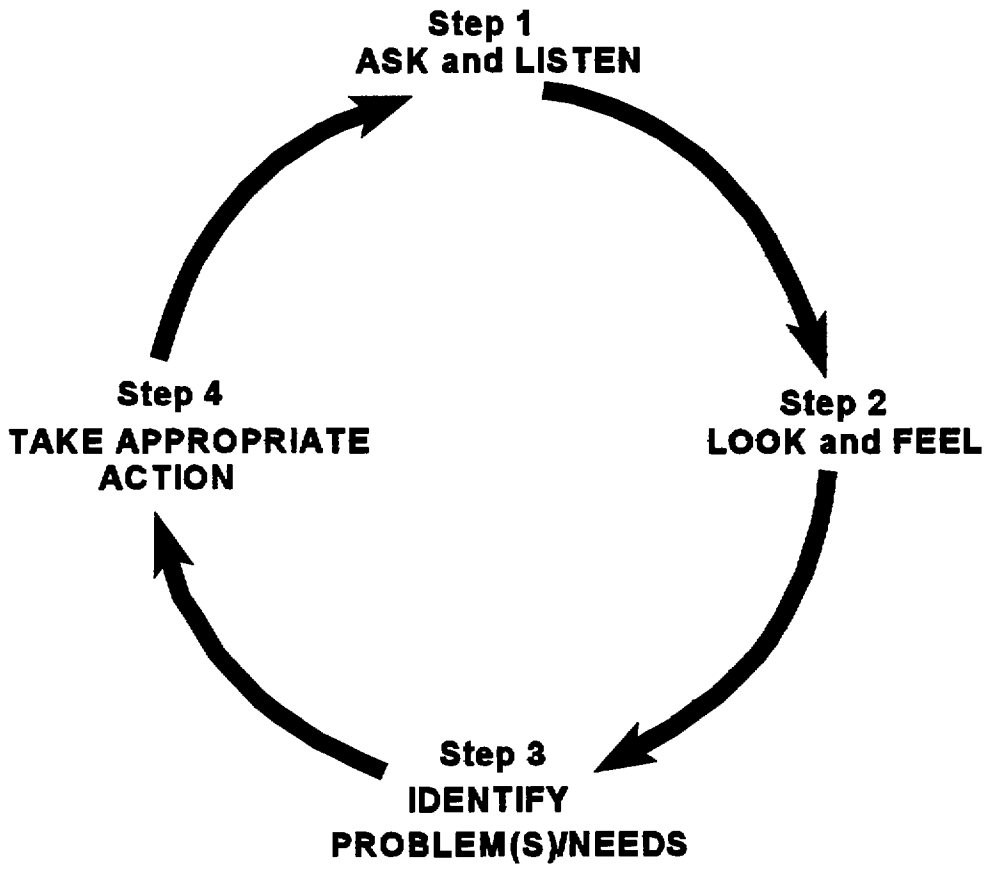
Repeat the Process as Necessary

When the woman returns, remember to check whether the problem is solved, staying the same, or getting worse You may need to develop a new plan for treating her She may need to have information or advice repeated to be sure she understands She may need a different medication or treatment She may need to be referred to a hospital/doctor Remember to record your actions A clear report in the woman's record helps others to give continued quality care

Summary

Who should use the Problem Solving Method and why? It should be used by midwives and anyone else who is caring for women It is a step by step way of finding and taking care of problems It helps you to work in an organized and thorough way

The Problem Solving Method



REMEMBER, if the problem is not solved, start again at Step 1 to gain more information

Case Study 2 - Problem Solving

Read the case study and answer the questions When you finish, look on page 1 28 for suggested answers

Anna is a shy 18 year old young woman who comes to you at your clinic complaining that she has not seen her period for four months She works in a paint factory and has been there 10 months now She lives at home with her parents, five brothers and sisters, two cousins, and an elderly grandmother

Step 1 **ASK and LISTEN**

How will you make this shy young woman comfortable in your clinic?

What questions do you want to ask her about her social situation, her family, her job, her symptoms (complaints or problems), her plans for the future?

Step 2 **LOOK and FEEL**

What parts of her body do you want to examine today? What particular things are you looking for? Do you need any laboratory investigations to get more information?

Step 3 **IDENTIFY THE PROBLEMS/NEEDS**

Think about and write down the problems or needs you have learned in Steps 1 and 2 It is important that you organize the information so you can then **TAKE APPROPRIATE ACTION**

Step 4 **TAKE APPROPRIATE ACTION**

Look at the problems/needs you have written Ask yourself, "How can I take care of these problems or needs?"

The more complete and the more organized your information is, the better the chance that you will give good advice and appropriate treatment This does not mean you will have solved all of the young woman's problems You may need to complete Steps 1 through 4 several times before a difficult problem is solved

ANSWERS - Case Study 2

Step 1 **ASK and LISTEN.** Be kind and respectful, welcome the young woman and show her a place to sit Provide privacy, listen carefully to her, answer her questions, and treat her as an adult If she feels shy talking about her body or about sex, it may be difficult for her to tell you things you need to know about her health Talk with her **before** you ask her to undress for an examination **(LOOK and FEEL)**

Find out if she has been sexually active, uses family planning regularly, and if so, what method? Is she married or in a supportive relationship?

Ask what she thinks the reason is she is not getting her periods Before working at the factory, did she have regular periods? Has she taken any medications or treatments? Has she seen any other health personnel or traditional healers? Has she had a pregnancy test done? Will she be happy if she is pregnant? Would she keep the pregnancy? How would the baby's father feel? How would her family feel?

Does she have sore breasts, bloating of the abdomen, nausea or vomiting, tiredness, nipples getting darker, or other symptoms? Is she getting enough food? Is her appetite good?

Is anyone in the family (in the home where she is living) ill, for example, with tuberculosis or other diseases she might get?

At her job, does she wear protective clothing so she does not touch the chemicals or inhale the fumes? What type of chemicals is she working with? What bad effects of these chemicals are found in people? Has anyone at her workplace become ill (or had health problems) from the chemicals?

Step 2 **LOOK and FEEL** Remember that the number one reason for loss of periods in women between the age of 15 and 49 is pregnancy Therefore, you will want to do a physical examination and all the laboratory tests you would do for a pregnant woman including breast examination, abdominal examination, pelvic examination, blood pressure, pregnancy test if pelvic examination is not clear, hemoglobin/hematocnt, and so on

If you find other possible reasons she is not getting her periods, you will want to follow up on those as well For example, did she tell you that a lot of the women working in this paint factory miss periods after they have worked there for some time?

Step 3 **IDENTIFY THE PROBLEMS/NEEDS.** Once you have gathered all the information you can from asking questions (**ASK** and **LISTEN**), doing the physical examination (**LOOK** and **FEEL**), and laboratory investigations, you need to organize the information The answers depend on what the girl answered to the questions above and what you found when you examined her

Step 4 **TAKE APPROPRIATE ACTION** Your actions or plan for treatment include general education, counseling for particular problems, giving treatments, and possibly referring her to someone else for care, or parts of her care Remember, if the problem is not solved, start all over again to gather more information that will help you to help her better

Remember when using the Problem Solving Method, you may need to complete Steps 1 through 4 several times before a difficult problem is solved The more complete and organized your information is, the better the chance is that you will give good advice and appropriate treatment This does not mean that you will have solved all of the problems

In each of the modules of the **Life-Saving Skills Manual for Midwives** you will find this Problem Solving Method used With practice, the method helps you to be more organized and more thorough in giving care to women

PROBLEM SOLVING METHOD

Step 1 **ASK and LISTEN**
Client history

Step 2 **LOOK and FEEL**
Physical examination
Laboratory tests

Step 3 **IDENTIFY THE PROBLEMS/NEEDS**
Study all information
List the problems/needs and plan for care

Step 4 **TAKE APPROPRIATE ACTION**
Give treatments
General education
Counsel for specific problems

Laboratory tests if necessary
Refer if needed
Record information

Give return visit appointment to
- repeat the entire **Problem Solving Method**
- evaluate progress or improvement
- evaluate for change in condition
- repeat laboratory tests

Case Study 3 - What is the Problem?

Read the case study and answer the questions When you finish, look on the next page for suggested answers

A 14 year old girl is brought to your maternity gasping her final breaths She dies within 10 minutes of arrival She has been bleeding profusely from her vagina A sharp stick is stuck partially inside her vagina

What is the **PROBLEM** at the level of the girl?

What is the **PROBLEM** at the level of the family?

What is the **PROBLEM** at the level of the community/society?

What are the preventive **ACTIONS** to be taken at the level of the girl?

What are the preventive **ACTIONS** to be taken at the level of the family?

What are the preventive **ACTIONS** to be taken at the level of the community/society?

ANSWERS - Case Study 3

What is the **PROBLEM** at the level of the girl?

Self-induced abortion Death Her hopes and dreams were not realized Unprotected intercourse Rape

What is the **PROBLEM** at the level of the family?

Loss of a beloved daughter, sister Maybe enormous shame Not recognizing the problem

What is the **PROBLEM** at the level of the community/society?

Loss of a potentially productive community member Loss of investment in her education

What are the preventive **ACTIONS** to be taken at the level of the girl?

Encourage girls to learn about their own bodies, including their fertility Encourage boys and girls to consider choices they can make about their own lives Encourage girls to choose what they want to do and be Ensure easy access to safe family planning options

What are the preventive **ACTIONS** to be taken at the level of the family?

Help families learn how to speak of sexuality and family planning issues with adolescents Provide easy access to safe family planning options

What are the preventive **ACTIONS** to be taken at the level of the community/society?

Provide all adolescents education in fertility awareness and safe family planning options Provide education through schools, religious organizations, community groups, and so forth

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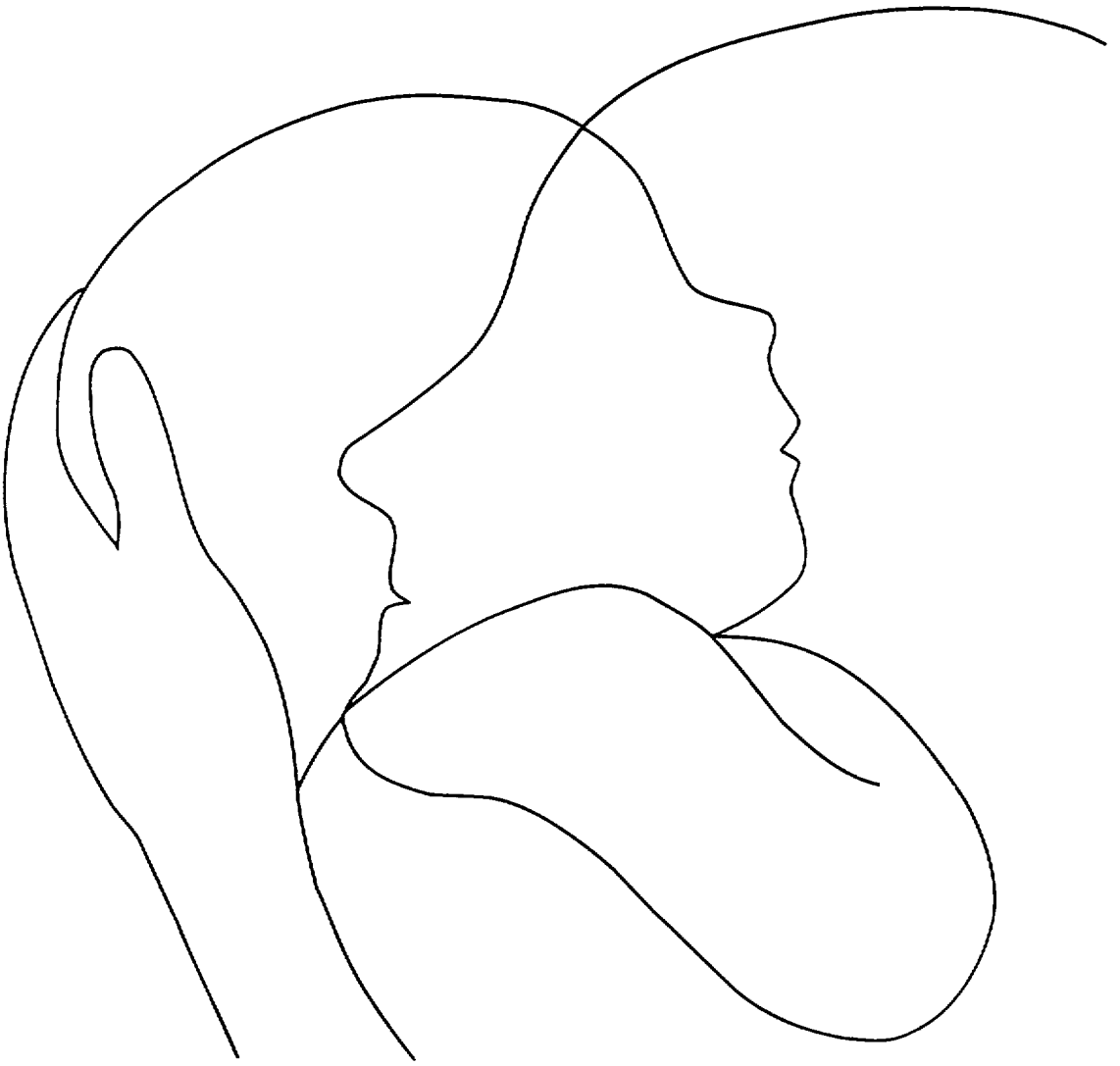
3rd Edition



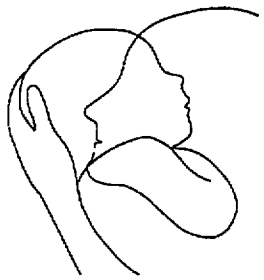
MODULE 2

ANTENATAL CARE

Life-Saving Skills Manual for Midwives

Third Edition

Module 2: QUALITY ANTENATAL CARE



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Life-Saving Skills Manual for Midwives

TABLE OF CONTENTS

QUALITY ANTENATAL CARE
MODULE 2

Contents

QUALITY ANTENATAL CARE

Goal

The midwife will refresh her skills and learn new skills that will enable her to give excellent antenatal care to pregnant women

Objectives

The midwife caring for a woman during the antenatal period will be able to

1 take the medical history in a way that allows her to identify possible problems, especially *anemia* and *pregnancy induced hypertension* (pre-eclampsia) **(ASK and LISTEN)**

2 identify *anemia, pregnancy induced hypertension,* and other problems by doing a physical examination, monitoring fundal height (uterine) growth, testing reflexes, monitoring weight gain and vital signs, ordering laboratory tests, and other procedures **(LOOK and FEEL)**

3 provide appropriate health information/advice, give treatment(s), and refer to a doctor when appropriate **(IDENTIFY PROBLEMS/NEEDS** and **TAKE APPROPRIATE ACTION)**

4 accurately record her findings on the Antepartum Assessment Form

Introduction

Good **antenatal care** is very important for a good outcome of pregnancy As the baby grows and the mother's body changes, you, the midwife, should monitor the growth and change This will allow you to **IDENTIFY PROBLEMS** early and solve them, and to identify risk factors and **TAKE APPROPRIATE ACTION** The information you gather as you give antenatal care will also help when you advise the mother and her family about important topics such as diet, exercise, rest, delivery preparation, and danger signs

Two major causes of maternal mortality that can be identified by good antenatal care are **pregnancy induced hypertension** (pre-eclampsia) and **anemia** which puts mothers at high risk of death from **hemorrhage** In this module, you will study antenatal assessment skills, with special attention to monitoring fetal growth and identifying pregnancy induced hypertension and anemia You will refresh your knowledge of risk factors You will learn to use the Antepartum Assessment Form to help follow the woman during her pregnancy The form will help you to identify problems, especially pre-eclampsia, anemia, hemorrhage, and abnormal fetal growth, from her history and from your physical examination findings

The antenatal record provides a place to write all the information you find out about the woman during her pregnancy, including the first history and complete physical examination findings, care, treatment, and advice Each time the woman returns to the antenatal clinic, read her record to remind yourself of the findings at the previous visits The **Antepartum Assessment Form** is found in Learning Aid 3 Learning Aid 1 - Conversion Tables for Hemoglobin Estimation, will help you evaluate the anemia Learning Aid 2 - Reflex Testing, will help you to test reflexes

During midwifery training, you learn to provide care and counseling to a pregnant woman and her family so that her pregnancy is as healthy as possible Before you study this module, be sure you know (1) the normal anatomy and physiology of the female reproductive system, (2) how to take and record an antenatal history, (3) how to perform and record an antenatal physical examination, and (4) how to offer counseling and advice If you are not sure how well you know this information or do these procedures, review them using a midwifery textbook or *Healthy Mother and Healthy Newborn Care* (Beck et al ,1996)

A Midwife's Experience...

The woman was a 44 year old gravida eleven She came in at 38 weeks' gestation She was in labor I had referred her to hospital prior to labor but she was not admitted although her BP was 170/100 I admitted her at 7 30 a m in labor with cephalic presentation 3/5, os 5 cms, BP 180/100, pulse 90, ankle edema, reflexes good (in the normal range) The woman was complaining of headaches and severe palpitation A sedative was given and she was transferred to the referral hospital immediately She delivered by vacuum extraction in the middle of the night The baby, a male, was in satisfactory condition She was discharged after 4 days She reported to my maternity for cord dressing I gave her advice on family planning and advised her to report at 6 weeks for counseling, but she has not turned up to date I felt very competent to manage this case LSS Midwife, Ghana

Common Medical Terms

Adnexa - attached or next to, the ovaries and fallopian tubes are uterine adnexa

Albuminuria - the presence of albumin (a protein) in the urine When present, it may indicate pre-eclampsia Also referred to as *proteinuria*

Cephalopelvic Disproportion - the baby's head cannot fit through the pelvis of the woman, resulting in obstructed labor

Eclampsia - in a pregnant woman with pre-eclampsia, one or more convulsions which are not caused by epilepsy or cerebral hemorrhage

Folic Acid Deficiency - a low level of the nutrient *folic acid* which the body needs to make red blood cells This deficiency most often occurs in pregnant women

Fundal Height Growth Monitoring - measuring the top of the uterus (fundus) to see if the baby is growing as expected

HELLP Syndrome - a serious complication which can occur among women with pre-eclampsia The woman usually has **H**emolysis (breakdown of red blood cells), **E**levated **L**iver enzymes, and **L**ow **P**latelet count It causes severe hypoxia (too little oxygen to the brain) and possibly death of the fetus due to vasospasm (narrowing of the vessels) The mother may die from hemorrhage, eclamptic seizures, or a ruptured liver

High Risk - the term used when there is a strong possibility that a person may develop a particular condition or problem For example, a woman with a very small pelvis is at high risk for developing an obstructed labor

Hyper-reflexia - above normal or increased reaction of the reflex, a very fast or brisk response of the reflex which may mean there is edema of the brain in a pre-eclampsia patient, or that there is neurological disease

Iron Deficiency Anemia - a condition that occurs when the iron stores in the body are low or exhausted The red blood cells are small and pale, new red blood cells are slow to form

Pre-eclampsia - during pregnancy, the development of hypertension with proteinuria and edema It is typically a disorder of a primigravida but also can occur in a multigravida Pre-eclampsia usually occurs after the 20th week of pregnancy but may develop before 20 weeks in trophoblastic disease (hydatidiform mole)

Pregnancy Induced Hypertension - the term used to include all hypertensive disorders of pregnancy including pre-eclampsia and eclampsia

Proteinuria - the presence of protein in the urine (also called albuminuria)

Risk - the harm that something *might* cause A risk does not mean that something bad *will* happen It means that something bad *is more likely* to happen

Risk Factor - something in an individual or in the environment that makes the individual more likely to develop a particular condition For example, the first pregnancy (primigravida) is a risk factor for pre-eclampsia

Equipment for Antepartum Assessment

Antepartum assessment form
Reflex hammer, if available
Fetal stethoscope
BP apparatus
Adult weighing scales
Hemoglobin testing equipment
Urine albumin testing equipment
Centimeter tape to measure the uterus
Height measure or mark on wall

Procedure: Fundal Height Growth Monitoring

Calculate the number of weeks' gestation (weeks by dates) at each visit, write down, and compare with the fundal height measurements You will also use this information when you plot on the Antepartum Assessment Form

ASK and LISTEN

1 Ask if the baby is active and moving often

LOOK and FEEL

2 Palpate the woman's abdomen Measure to estimate the gestational age (age of the pregnancy) in women under 20 weeks' gestation You may measure by using your fingers or a centimeter tape Use the method you are used to and that works well for you You can also make the measurement by estimating what per cent the uterus is up to the umbilicus (navel) Just above the pubic bone is 12 weeks' pregnancy, halfway to the umbilicus is 16 weeks, and at the level of the umbilicus is 20 to 22 weeks (See Figure 1)

3 Measure to check the fetal growth at each antenatal visit Compare what you find with how big the baby should be at this point in pregnancy Between 20 and 36 weeks' gestation (pregnancy), it is expected that the woman's fundal growth (height of the uterus) will be one centimeter (cm) per week The height of the uterus can be measured with a tape measure from the top of the symphysis pubis (pubic bone) to the top of the uterus

For example, a woman who is 29 weeks' pregnant should be just about 29 cm from the top of the symphysis pubis to the top of the uterus **OR**, If you are more comfortable using your fingers to measure or if you do not have a tape measure, compare fundal height to the umbilicus and sternum Fundal height felt at the umbilicus is about a 20 to 22 week pregnancy, halfway between the umbilicus and sternum is 28 to 30 weeks, and at the sternum is usually 36+ weeks gestation When the uterus is more than 29 cm, check the position, lie, and level of the head

4 In women over 36 weeks' gestation, growth will continue at roughly one cm per week However, if the head has begun to descend into the mother's pelvis, it may appear that growth is not sufficient because you are not measuring the entire baby Feel for descent of the fetal head if growth seems too little

5 If the uterus measures more than two cm different (larger or smaller) than expected, look for wrong dates, abnormalities of the baby, too much amniotic fluid (liquor), twins, a very large baby, or abnormal presentation of the baby (breech) If the baby is very large, remember to have the mother checked for possible diabetes and refer her because she is at increased risk for obstructed labor (cephalopelvic disproportion), and a difficult delivery may be anticipated

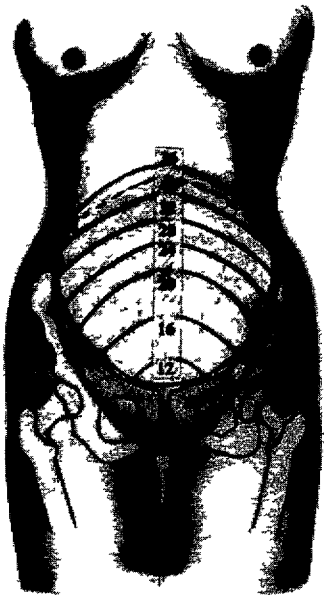


Figure 1 Fundal Height in Weeks of Gestation

IDENTIFY PROBLEMS/NEEDS and **TAKE APPROPRIATE ACTION**

6 If the fundal height is less or more than you would expect between two visits, try to figure out why

- Are the dates of her last menstrual period correct?
- Is she malnourished?
- Could she have diabetes?
- Does she have twins or triplets?
- Is there a breech presentation?
- Is there too much amniotic fluid (polyhydramnios)?
- Is there a deformed infant?
- Is the baby moving and active?

If you find a reason why the fundal height is too large or too small, refer her to a doctor/hospital with a clear referral note explaining the problem

7 If you can not find an explanation for your finding, have the woman return in one week and remeasure If she still is more than two cm different (larger or smaller) than expected, refer her with a good referral note explaining your findings Many women will have a growth spurt between 20 and 24 weeks, so you may notice she is larger than expected for one visit, and then the growth evens out

Procedure: Checking for Anemia

ASK and LISTEN

1 At the first antenatal visit, ask the woman what she eats daily Do not assume she eats what you do or that she eats what the rest of her family eats Ask her if she is allergic to any foods Is she avoiding any particular foods because she is pregnant (food taboos)? Can she afford to eat regularly and eat well? What foods does she dislike?

Take a **diet history** at the first antenatal visit Review her diet any time she seems to be having difficulty For example, review it if she is anemic, having nausea and vomiting, constipation, or social problems at home To get an accurate history, ask what she has eaten so far today Do not rush her answer Most people will have to think a minute to remember everything Ask

- What did you eat last evening?
- What did you eat yesterday during the day? How much?
- Is that all? Did you have any snacks?
- What did you drink?

Did she eat anything that is not really food, such as ashes, starch, clay, ice? A woman who craves and eats such things is frequently anemic If she does eat this type of thing (called pica or eating of non-foods), make certain to check her hemoglobin

Ask the woman whether she is suffering from fatigue, drowsiness, breathlessness, palpitations, headaches, sore tongue, loss of appetite, nausea, or vomiting These symptoms can indicate anemia

2 Find out if this woman is at high risk to develop anemia Ask

- When was your last pregnancy?
  (**Risk** closely spaced pregnancies - less than two years apart)
- How heavy were your periods? How many days did you bleed? How many cloths/napkins did you soak with blood in a day?
  (**Risk** a history of heavy or long periods)
- Have you ever had anemia?
  (**Risk** a history of anemia)
- When something bumps your skin, do you get a dark spot?
  (**Risk** bruises easily)
- When you had your other babies, did you lose a lot of blood? Did you bleed a lot any other time?
  (**Risk** a history of hemorrhage with other pregnancies or surgeries)

LOOK and FEEL

3 Look for anemia when you do the physical examination at each visit Look at the woman's eyelids, nail beds, gums, and palms Severe pallor (paleness) usually indicates a hemoglobin under 8 grams (gm) and severe anemia **This woman is at high risk**

4 The woman's hemoglobin should be checked at the time of registration (booking) and at least every two months during pregnancy If the hemoglobin falls below 8 gm (55%) on any visit, it should be checked every visit thereafter until it returns to 8 gm or better, see Learning Aid 1 - Conversion Tables for Hemoglobin Estimation, page 2 31 If she is living at high altitude, a woman's normal hemoglobin may be much higher than for women living at sea level Check your local standards if you work at high altitude

If sickle cell disease is a problem in your area, the woman should also have a sickle cell screen at the first visit Often the woman will know if she has sickle cell disease If she is sickle cell positive, the woman will need to be referred to a doctor These women can quickly develop serious complications and die

If she lives in an area where malaria is found, the woman should also have a blood test for malaria In many places, you need to check the stool for parasites, especially hookworm In areas where schistosomiasis is common, check the urine for blood

IDENTIFY PROBLEMS/NEEDS and TAKE APPROPRIATE ACTION

5 *Ask the woman who else is giving her advice*, what advice has been given, and what treatments she is currently using Advice may come from many sources -- family, friends, herbalists, spiritualists, traditional practitioners, or other health care practitioners Determine if the treatments and advice she has received are helpful, harmless, or harmful Reassure her about the helpful advice, permit her to continue with the harmless practices, and carefully advise her as to why the harmful practices may damage her baby or herself

6 *Counsel the woman* on high iron and high folic acid foods as found on page 2 9 Assist her to overcome any food taboos which limit her protein or iron intake To save time, you can give health talks on nutrition to many women at once Check with each woman as you care for her to be sure she has understood what you said, and counsel her about her specific situation

7 *Give iron tablets and counsel* The World Health Organization (WHO) recommends giving ferrous sulfate 320 milligrams (60 mg elemental iron) two times a day to all pregnant women If a woman's hemoglobin is 8 gm or less at any visit, increase her iron to one tablet, three times a day, for the rest of her pregnancy If ferrous sulfate is not available in your area, give an equal amount of elemental iron in another iron preparation Also repeat her stool specimen to look for hookworm and other parasites

Poor compliance is very common At each visit, inquire if she has enough medicines Check to see that she is taking them correctly and regularly Ask about nausea or constipation and explain the need to drink plenty of fluids and to eat high roughage (fiber) foods to prevent constipation In many areas women have the misunderstanding that iron tablets will cause them to grow very large babies Explain this is not true and in fact taking iron will make them feel better

8 *Give folic acid* 500 microgram (mcg) each day to prevent anemia In many countries, only 1 or 5 mg tablets are available It is OK to use these Sometimes you can find combination pills which have folic acid combined with multivitamins These are good, but often quite expensive

9 *Vitamin C* helps the woman to absorb iron into her system more efficiently She can take her iron tablets with citrus juice (orange, grapefruit, lemon, lime), which is rich in Vitamin C, or eat three servings of citrus fruits or green vegetables per day She should avoid drinking tea and coffee as these will decrease the absorption of Vitamin C If she is unable to get enough Vitamin C in her diet, give one Vitamin C 250 mg tablet daily

10 If *testing* for *malaria* is not possible, *treat* for *malaria* according to your protocol on her first visit Women living in areas with *malaria* should take weekly *prophylaxis* Consult the ministry of health in your area for its current recommendations If you give chloroquine prophylactically, make certain you are giving chloroquine 300 mg base weekly

11 *Treat the woman for parasites* if her stool is positive for parasites Remember that severe anemia can develop from chronic loss of blood from the intestines in women with heavy parasite infestations such as hookworm or schistosomiasis

12 **If the woman is more than 28 weeks' gestation at registration (booking), with a hemoglobin of less than 8 gm (55%), refer her to a doctor for a complete anemia workup and treatment**

13 *Check all women and girls for anemia* Women who have delivered or who are not yet pregnant should be checked for anemia *Teach that when someone has anemia, it means her blood is thin or pale -- usually because there is not enough iron in the diet* If a woman is anemic, she can be treated and advised to improve her eating habits **A woman who is well nourished when she starts pregnancy is at much lower risk of dying from hemorrhage or infection** She is also more likely to carry a healthy, full term infant It is important that midwives see all adolescent girls and all women as their concern It is important to think about the entire community -- to have a community focus to providing health care

Important Points to Remember

- **Check the woman for anemia on the first visit and at least every 2 months during pregnancy**

- **If the hemoglobin falls below 8 gm (55%) on any visit, check her at every visit until it rises to 8 gm or more If she does not improve to more than 8 gm in 2 or 3 weeks, refer her to the hospital/doctor**

- **Rich sources of iron are**

  egg yolk, ground nuts, dried navy and lima beans, dried apricots, dried peaches, prunes, figs, dates, raisins and molasses, fish (dried or fresh), liver, beef, veal, lamb, pork, turkey, chicken, oysters, enriched bread and cereals, pumpkin seeds, sunflower seeds, betel nuts, grasshoppers, termites, crickets, amaranth leaves

- **Rich sources of folic acid are**

  dark green leafy vegetables (such as kontonmire, cassava leaves, pumpkin leaves, kale, spinach), liver meats, fish, nuts, yeast, legume, eggs, whole grains, and mushrooms Storage of food and overcooking destroy folic acid Avoid cooking food too long

- **Rich sources of Vitamin C are**

  citrus fruits (grapefruit, oranges, lemons, limes), mangoes, papaya, guava, lychee, rambutan, selak, avocado pears, pineapple, also tomatoes, cabbage, melon, cantaloupe, jack fruit, chili peppers, white and sweet potatoes, broccoli, baobab (monkey bread), cauliflower, and carrots Storage and cooking destroy Vitamin C Avoid cooking if possible

Procedure Checking for Pregnancy Induced Hypertension

Pregnancy induced hypertension (pre-eclampsia) that progresses to eclampsia is a major contributor to maternal mortality worldwide With very careful antenatal care, many of these deaths can be prevented

Women should receive antenatal care throughout pregnancy A blood pressure (BP) taken prior to 20 weeks is considered to be the woman's normal or baseline blood pressure If her blood pressure is above 140/90 early in pregnancy, she probably has chronic hypertension Refer this woman to the doctor for evaluation and management of this chronic problem If you do not know what the woman's baseline blood pressure is, 140/90 can be used as the measure of what is abnormal Early recognition of problems and early treatment with appropriate referral will save lives

ASK and LISTEN

1 Take a good symptom history **ASK** the woman if she has had any of these symptoms epigastric pain (heart burn) not related to malaria, headaches, dizziness, visual problems (double vision, partial vision, rings around lights), edema or swelling of the hands, face, and feet

LOOK and FEEL

2 Take the blood pressure at every visit If it is elevated, check and see if the woman is nervous and find a place for her to rest After she has rested on her left side for twenty minutes, repeat the blood pressure

3 *If the blood pressure is elevated, check the biceps and/or patellar reflexes* If the reflexes are brisk (+3 or +4), refer her to a hospital/doctor See Learning Aid 2 - Reflex Testing, page 2 32 in this module

4 *If the blood pressure is elevated, check a midstream urine sample for protein* If she has +1 or more proteinuria (albuminuria), refer her to a hospital/doctor

5 *If the blood pressure is elevated, press on the tibia bone above the woman's ankle* **LOOK** for indentation of the tissue which is a sign of fluid (edema) she is retaining Swelling (edema) in the hands and face is a very serious sign If you find edema when you press on the tibia (pretibial edema) and/or edema of the hands and face, refer her to a hospital/doctor Remember that a woman with a *normal blood pressure* often has some pretibial edema in the last trimester of pregnancy

IDENTIFY PROBLEMS/NEEDS and TAKE APPROPRIATE ACTION

1 Mild Pre-eclampsia

FINDINGS Blood Pressure (BP) 140/90 up to 160/100, pretibial edema, protein +1, normal reflexes, no headache, visual problems or heartburn

ACTIONS Help the woman *lie on her left side* and *stay in bed* Have her *drink a lot of fluids* and *eat a normal* diet Every 4 hours, check her blood pressure, edema, reflexes, and urine If the woman is far from a referral center, her reflexes are normal and her blood pressure is stable (does not keep going up), you may try treating her in your maternity with strict bed rest If her condition gets worse or does not improve in 24 to 48 hours, refer her for medical care If the condition improves, check her blood pressure, edema, reflexes, and urine weekly and at her regular antenatal visits

Diuretics are not an effective treatment for pregnancy induced hypertension and should never be used at home or in the maternity Diuretics can make the situation worse

2 Severe Pre-eclampsia

FINDINGS BP 160/100 or higher, edema (pretibial or generalized), proteinuria +3 or +4 hyper-reflexia, may have headache, visual problems, and heart burn

ACTIONS *Sedate and prevent convulsions in the woman* Give magnesium sulfate 10 gm (There is one gm of magnesium sulfate in each 2 ml of a 50 percent solution Give 5 gm intramuscularly (IM) in each hip, that is 10 ml in each hip Before giving it, explain to the woman this is a painful injection) OR give Valium 10 to 20 mg IM Go with her and her family to the closest hospital/doctor *Keep the woman's face out of bright light* Try to *keep noise and other stimulation to a minimum*, to decrease the risk of convulsions **Be prepared for a convulsion**

The pregnant woman should not be kept on magnesium sulfate or Valium at home or in the maternity or health post They can produce very slow breathing in both the mother and the fetus Transfer the woman quickly while keeping her and the family calm and quiet

3 Eclampsia (Convulsions)

FINDINGS The woman does not respond when she is spoken to The woman's eyes roll or look up, and may tear (water) Her hands and face contract (move quickly) She becomes stiff Her body may shake violently She breathes with a loud, snoring sound Her color changes She has liquid (saliva) or vomitus coming from her mouth She may bite her tongue, urinate, or have a bowel movement **Convulsions are very dangerous** They are very frightening to all who see them Sometimes convulsions are thought of as evil, possession by spirits, or death

ACTIONS *Protect her from choking* on her tongue with a padded tongue blade or a rolled up cloth or pad Do not force the mouth open *Protect her from falling or from injury* from nearby furniture or objects *Turn her on her side* See Module 8 **Hydration and Rehydration**, Learning Aid 4 - Life-Saving Convulsion Care, page 8 21 Do not give her any fluids or medicines by mouth until she is fully awake *Sedate* by giving magnesium sulfate or Valium IM (see **severe pre-eclampsia** actions for dosages), and transfer her quickly to the nearest hospital/doctor

Avoid stimulation from noise, light, or unnecessary moving of the woman In some places, hot water, burning, biting to remove the evil, or beating may be traditionally used by the family to stop the convulsions These treatments will only make her condition worse *Reassure the family* and friends that you are trying to help the woman Explain to them everything you are doing *Travel with the woman* and give her antenatal records to the doctor Record and explain your care

Remember. *SIGNS* OF PRE-ECLAMPSIA (TOXEMIA)

Increased blood pressure, ***AND***

Pretibial edema and/or edema of face/hands, **OR**

Protein (albumin) in the urine, ***OR***

Hyper-reflexia

Using the Antepartum Assessment Form

Antenatal forms may differ from one place to another If you already have an antenatal record, you should continue to use it when you return to your place of work In this module, use the form provided As you study, think about the information you are getting and recording Is any of this information missing from the form you normally use? Is there something you normally ask or do during an antenatal visit that is missing from this form? You may wish to adopt this form or parts of this form to supplement the record you use when providing antenatal care See Learning Aid 3 - Antepartum Assessment Form

The Antepartum Assessment Form can help you follow the woman during her pregnancy It guides you in taking the history (**ASK and LISTEN**), and doing the physical examination (**LOOK and FEEL**) so you can **IDENTIFY PROBLEMS,** especially *pregnancy induced hypertension* (pre-eclampsia), *anemia*, and *risk of hemorrhage* It will help you *monitor fetal growth* As you plot the information on the graphs, you draw a picture of the woman's progress in pregnancy You can easily see if it is normal, or if it shows a problem This helps you to **TAKE APPROPRIATE ACTION**, to decide to treat or refer

History, Height, and Weight

Taking a history will help you get to know the woman She can start to feel comfortable with you Respect her privacy, keep her information confidential, and explain to her you must ask many questions to help you learn about her so you can care for her and her baby

Social Information The first section guides you in collecting social information about the woman (See Figure 2) It is important to remember that a mother can never be separated from her social situation If her partner or family is not supportive, she is more likely to have problems getting enough good food She is then at higher risk for developing anemia It is important to know where she plans to deliver If she chooses to deliver with a traditional birth attendant (TBA) or with a midwife far from the hospital, she must be "low risk "

ANTEPARTUM ASSESSMENT FORM **SOCIAL HISTORY**				**SIDE ONE**
Client's Name_____	Age_____	Gravida _____	Para _____	
Expected Date of Delivery _____	Planned Delivery Site _____		Date Booked _____	
Education Level _____	Partner Supportive _____		Family Supportive _____	
Blood Group_____ Rh_____	Hemoglobin Type _____	Height in Centimeters _____		

Figure 2 Social History Section

Risks Information from the social history that will indicate a woman has a high risk

- age under sixteen years or over thirty-five years
- parity first pregnancy or more than four births
- delivery site not planned or prepared
- family support not enough food, rest, money, or sharing of work load

Medical and Surgical History When you first see a pregnant woman, it is important to take a complete medical and surgical history (See Figure 3) What health problems does the woman have? What problems has she had in the past? If she has a history of sickle cell disease, diabetes, heart disease, tuberculosis, HIV/AIDS, or epilepsy, she needs to see a doctor during this pregnancy Women with any of these conditions can quickly develop complications and die If you are working closely with a doctor and the two of you agree on her treatment plan, you may continue to care for her during pregnancy It is important that you, the doctor, and the woman work out a plan for where she will deliver

If she has had surgery in the past, it is important to determine if that surgery might cause complications during this pregnancy Scars on the uterus and surgery on the genital tract may affect management of this pregnancy For example, if the woman has had a cesarean section, she is at high risk and should deliver in a hospital

MEDICAL/SURGICAL HISTORY

Anemia_____ Diet History_____
Sickle Cell Disease (Joint Pains)_____ Diabetes _____
Chest Diseases (Asthma Tuberculosis) _____
Cardiac Diseases_____ Hypertension _____ Seizures (epilepsy) _____
Sexually Transmitted Infections (HIV/AIDS)_____ Other Medical Problems (specify) _____
Laparotomy (specific reason)_____ Other Surgeries (specify like circumcision) _____
Previous Accidents_____ Blood Transfusion _____

Figure 3 Medical and Surgical History

Risks Information from the medical and surgical history that will indicate a woman has a high risk

- history of anemia
- history of abdominal surgery
- history of genital tract surgery, circumcision
- history of blood transfusion
- history of HIV/AIDS
- history of sickle cell disease, heart disease, diabetes, epilepsy, asthma, tuberculosis

Previous Pregnancies This section of the history form asks a lot of questions about the woman's previous pregnancies (See Figure 4) These questions are asked in order to learn about any problems that may be important in managing the present pregnancy If she has had many pregnancies (more than four), closely spaced pregnancies (less than two years), or previous hemorrhages, she is at high risk for anemia and postpartum hemorrhage during this pregnancy It will be important to watch her closely If she has a history of high blood pressure or if this is her first pregnancy, she is more likely to develop pregnancy induced hypertension Watch her more closely

PREVIOUS OBSTETRICAL HISTORY
Number Births Term_____Pre-term_____Number Children Currently Alive_____ Age Youngest Child _____
Number Abortions Induced _____Spontaneous _____Number Stillborn _____
Number C/Sections_____ Vacuum Extraction_____Forceps _____History Long or Obstructed Labor _____
History Abnormal Presentation (Transverse Breech Face) _____
History Hemorrhage Antepartum_____Postpartum _____History Retained Placenta _____
History Hypertension/Pre-eclampsia, Eclampsia _____

Figure 4. Previous Obstetrical History

Risks Information from the previous obstetrical history that will indicate a woman is at high risk

- parity more than four previous pregnancies
- close spacing pregnancies less than two years apart
- history of hemorrhage
- high blood pressure
- first pregnancy
- anemia
- history of difficult delivery stillbirth, C/Section, vacuum extraction, forceps
- history of 2 or more abortions

Menstrual History This section of the history form asks about menstrual and family planning history (See Figure 5) If the woman has a history of heavy, long, or very frequent periods, watch closely for anemia If her periods are not regular or she has been using oral contraceptives, it will be important to try to calculate her due date using the size of the uterus combined with the best history you can get

Determine weeks of gestation The date of the last normal menses is used to determine the expected date of delivery (record in Figure 2) Use the expected date of delivery to decide the weeks of gestation (pregnancy) Compare the information on the weeks of gestation with the fundal height measurement when you are doing the abdominal examination Use the weeks of gestation in order to find the correct place to write information on the graphs in the Antepartum Assessment Form

MENSTRUAL HISTORY		
Age of Menarche _____	Last Menstrual Period _____	Last Normal Menstrual Period_____
Duration of Menses_____	Amount _____	Family Planning Used_____

Figure 5 Menstrual History

Risks Information from the menstrual history that will indicate a woman is at high risk of anemia

- history of long, heavy periods, or frequent periods

Check the Woman's Height at The First Visit

In many cultures, women with heights less than 150 cm are considered to be high risk It is important that you know what is the lower normal level for the women in the area where you live and work Ask local authorities, other health workers, or other women Height needs to be checked only once in a pregnancy You can make a height measurement by painting markings on the wall of your maternity or clinic (See Figure 2 for recording the height)

Risks Information from the height measurement that will indicate a woman is at high risk

- height less than 150 cm (or less than normal for your area)

Weigh the Woman at Every Visit

The next section of the form is for recording the weight of the woman in kilograms (kg) (See Figure 6) Pregnant women slowly gain weight during their pregnancy Most of the weight is gained in the second half of pregnancy Keep in mind that edema may cause the woman to gain weight Weigh the mother at each antenatal visit, and record her weight so that you can compare it at the next visit If you do not have a scale, try to estimate her weight and observe her general appearance Weight gain is one way for midwives to know that the woman is getting enough food for both herself and her baby

The ideal weight gain during pregnancy for all women in all countries is not known A useful guideline women who start a pregnancy at a normal weight should gain 9 to 16 kg Obese women should gain at least 7 kg in order to get sufficient nutrients to their infants Underweight women should try to gain 12 5 to 18 kg

Risks: Women who are very thin (**LOOK** for sickness), do not gain weight (**FEEL** for growth of the baby), or gain weight suddenly (**LOOK** for twins or pre-eclampsia) may be at risk

Record the Weight

After weighing the woman, record the weight on the following form Move your finger along the bottom line until you reach the number of weeks she is pregnant In this example, the woman is 25 weeks' pregnant Now move your finger up the line until you cross the line showing her weight In this example the woman is 50 kg Place an X or dot at the point showing her weight today Does she seem well nourished, too lean, too heavy? Refer to the section on diet in this module for information on how to counsel a pregnant woman regarding good nutrition Write the weight in kg in the space below the graph

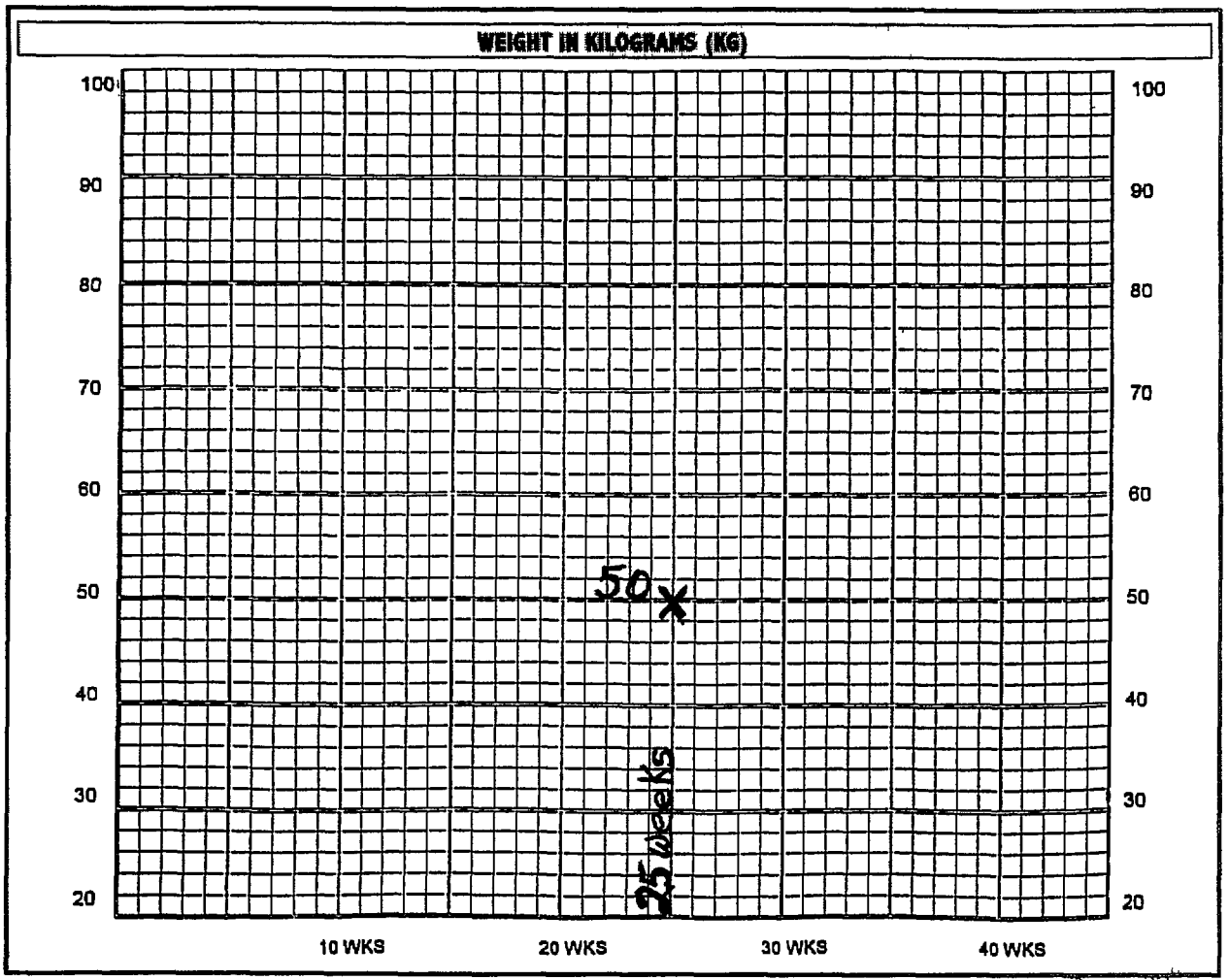


Figure 6 Weight Portion of Form

Physical Findings

This side of the assessment form is to record your physical findings throughout her pregnancy As you read, refer to the copy of this form on the next page (Figure 7)

Weeks by Dates On the first visit, use the expected delivery date to decide the weeks of gestation (weeks by dates) discussed on page 2 16 At each antenatal revisit, estimate and mark on the form the weeks by dates using the information from the previous visit Look in the middle of the form for the section marked Weeks by Dates The information in this section determines the vertical (up and down) line to use when marking all of the physical findings Our new client is 25 weeks' pregnant today Find the 25 weeks vertical line On the Weeks by Dates line of boxes, write 25 in the box just before the 25 weeks vertical line

Blood Pressure Look at the blood pressure graph at the top of the form To record the woman's blood pressure, move your finger along the bottom line until you see the vertical line for how many weeks' pregnant she is today For example, she is 25 weeks' pregnant today, and her blood pressure is 110/70 Stop your finger at the 25 Now move your finger up until you cross the line that indicates her systolic blood pressure of 110 Place the top of an arrow there Now place the bottom of the arrow on the line that indicates her diastolic pressure of 70 Draw a dark line between the 2 points and complete the arrow Is this blood pressure normal for a woman 25 weeks' pregnant? If her blood pressure is above normal manage her care as outlined in the section on pregnancy induced hypertension, page 2 10

Fundal Height Find the Fundal Height portion of the form The dark line across the graph shows the expected growth for a woman at the different weeks of pregnancy Today the woman's uterus measures 27 cms Move your finger up the graph until you cross the line showing how many cm high the uterus is today Make an X at this point If the fundal growth is within 2 cm of the line (either above or below), the growth is normal for a single baby If she is larger or smaller than expected, look for possible complications

Fetal Heart Rate, Albuminuria Check and record the fetal heart rate Record your findings from the urine examination

Hemoglobin The last graph on the form is to plot the woman's hemoglobin If she is 25 weeks' pregnant today, chart her hemoglobin above the 25 week line Today her hemoglobin is 9 gm Make a dot on the graph to show this

Treatment, Signs and Symptoms This section of the form is for recording any signs, symptoms, or treatments you give to the woman It is important to **ASK and LISTEN, LOOK and FEEL** to get the important pieces of information to put into these spaces Include here any signs and symptoms of anemia and pregnancy induced hypertension If you need more space, write on another sheet of paper and include it in the woman's chart

Always **initial or sign** your name and **date** all of your notes at every visit

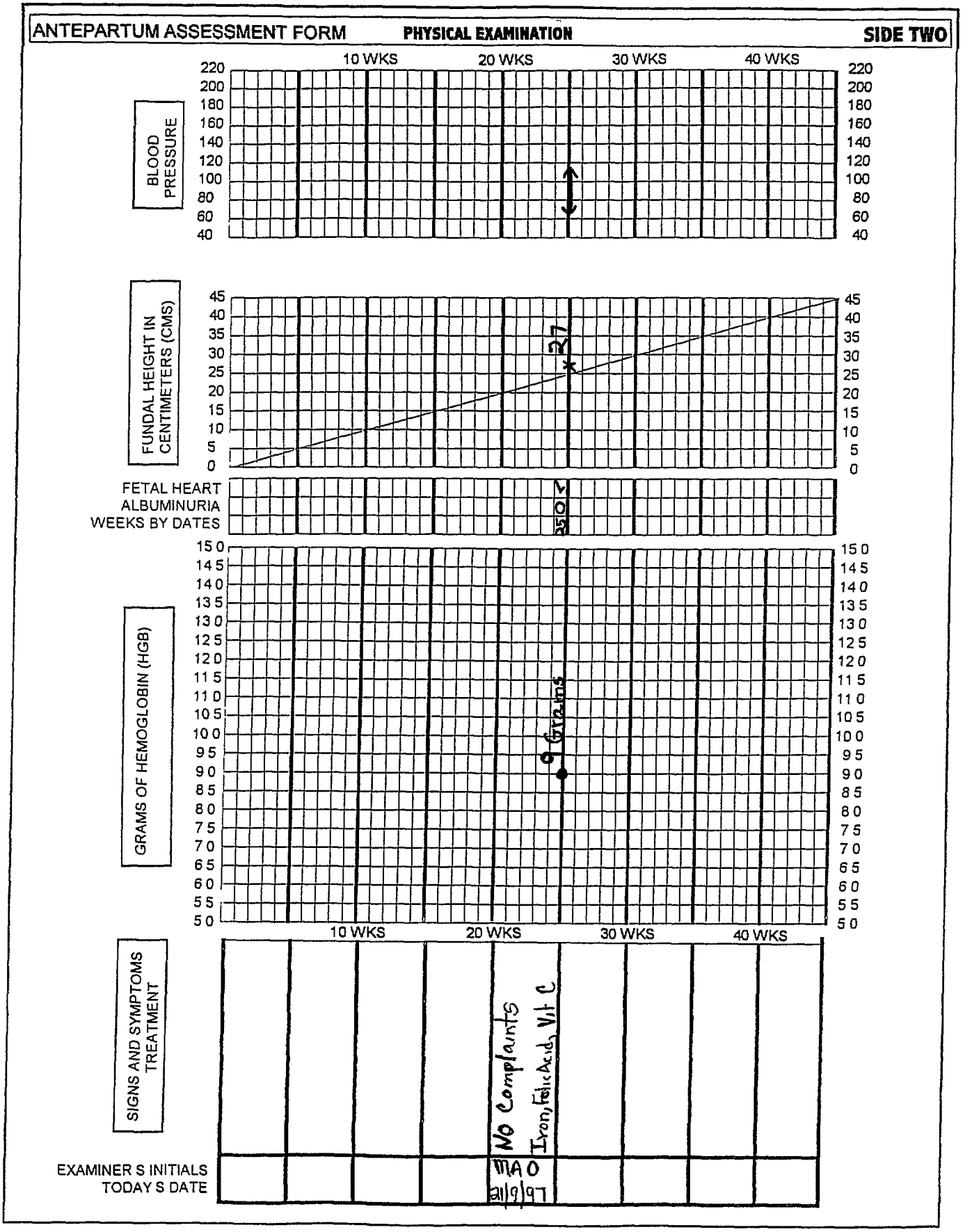


Figure 7 Antepartum Assessment Form Physical Findings

ANTEPARTUM ASSESSMENT FORM SOCIAL HISTORY SIDE ONE

Client's Name_____ Age_____ Gravida _____ Para_____
Expected Date of Delivery _____ Planned Delivery Site _____ Date Booked _____
Education Level _____ Partner Supportive _____ Family Supportive _____
Blood Group_____ Rh_____ Hemoglobin Type _____ Height in Centimeters _____

MEDICAL/SURGICAL HISTORY

Anemia_____ Diet History_____
Sickle Cell Disease (Joint Pains)_____ Diabetes _____
Chest Diseases (Asthma,Tuberculosis)_____
Cardiac Diseases_____ Hypertension _____ Seizures(epilepsy) _____
Sexually Transmitted Infections (HIV/AIDS)_____ Other Medical Problems (specify) _____
Laparotomy (specific reason)_____ Other Surgeries (specify like circumcision) _____
Previous Accidents_____ Blood Transfusion _____

PREVIOUS OBSTETRICAL HISTORY

Number Births Term_____ Pre-term_____ Number Children Currently Alive_____ Age Youngest Child _____
Number Abortions Induced _____ Spontaneous _____ Number Stillborn _____
Number C/Sections_____ Vacuum Extraction_____ Forceps _____ History Long or Obstructed Labor _____
History Abnormal Presentation (Transverse Breech Face) _____
History Hemorrhage Antepartum_____ Postpartum _____ History Retained Placenta _____
History Hypertension/Pre-eclampsia, Eclampsia _____

MENSTRUAL HISTORY

Age of Menarche _____ Last Menstrual Period _____ Last Normal Menstrual Period _____
Duration of Menses_____ Amount _____ Family Planning Used _____

WEIGHT IN KILOGRAMS (KG)

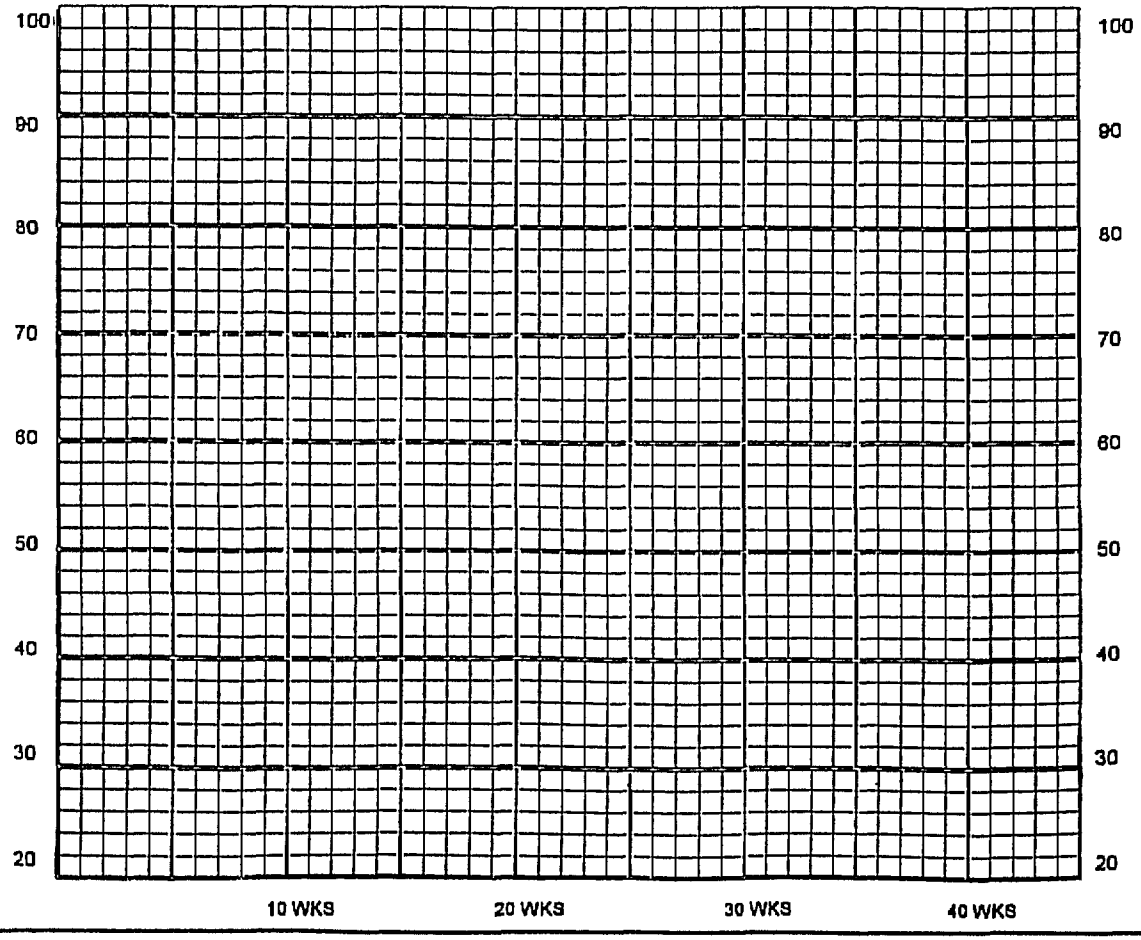


Figure 8 Antepartum Assessment Form History and Weight

Case Study 1 - Using the Antepartum Assessment Form

To practice using the antepartum assessment form, fill in these findings on the assessment form you will find on the next page

Mrs Gep is 24 years old This is her second pregnancy She has a cute 3 year old little girl with her She tells you that her husband is a driver and is hoping for another girl Mrs Gep completed 12 years of school and teaches the first grade at the primary school She has no history of any diseases but her appendix was removed when she was 10 years old Her first pregnancy was 9 months long, she has had no miscarriages She has no pregnancy history of bleeding, high blood pressure, or long labor Her first baby was delivered head first by a midwife Her menses began when she was 16 years old (on her birthday) The periods (menses) are every 28 to 30 days, lasting 5 days, and she uses about 4 pads a day She has not used any contraception The first day of her last normal menstrual period (LNMP) was 12 May, 1996

You need to determine how many weeks pregnant she is (or should be) before you start to fill in the graph You give her iron, folic acid, and Vitamin C at each visit Today is 1 February 1997 What is her Expected Date of Delivery?_____

The findings for Mrs Gep are

First visit 21 September 1996
- Height - 160 cm
- Blood pressure - 100/60
- Weight - 52 kg
- Hemoglobin 6 2 gm
- Weeks gestation - figure using LNMP
- Uterus measures -18 cm
- Signs and symptoms - tired, eyelids very pale

Second visit 2 November 1996
- Blood pressure - 110/68
- Weight - 54 kg
- Hemoglobin - 6 5 gm
- Weeks gestation - figure using LNMP
- Uterus measures - 26 cm
- Signs and symptoms - very tired, eyelids very pale

Third visit 28 December 1996
- Blood pressure - 120/70
- Weight - 55 kg
- Hemoglobin - 6 8 gm
- Weeks gestation - figure using LNMP
- Uterus measures - 35 cm
- Signs and symptoms - still very tired, eyelids very pale, not taking medications regularly

Fourth visit 1 February 1997
- Blood pressure - 114/76
- Weight - 57 kg
- Hemoglobin - 7 0 gm
- Weeks gestation - figure using LNMP
- Uterus measures - 36 cm
- Signs and symptoms - complains of constipation from iron tablets, less tired, eyelids still very pale

ANTEPARTUM ASSESSMENT FORM SOCIAL HISTORY SIDE ONE

Client's Name_____ Age_____ Gravida _____ Para_____
Expected Date of Delivery _____ Planned Delivery Site _____ Date Booked _____
Education Level _____ Partner Supportive _____ Family Supportive _____
Blood Group_____ Rh_____ Hemoglobin Type _____Height in Centimeters _____

MEDICAL/SURGICAL HISTORY

Anemia_____ Diet History_____
Sickle Cell Disease (Joint Pains)_____ Diabetes _____
Chest Diseases (Asthma Tuberculosis)_____
Cardiac Diseases_____ Hypertension _____ Seizures(epilepsy) _____
Sexually Transmitted Infections (HIV/AIDS)_____ Other Medical Problems (specify) _____
Laparotomy (specific reason)_____ Other Surgeries (specify like circumcision) _____
Previous Accidents_____ Blood Transfusion _____

PREVIOUS OBSTETRICAL HISTORY

Number Births Term_____ Pre term_____ Number Children Currently Alive_____ Age Youngest Child _____
Number Abortions Induced _____ Spontaneous _____ Number Stillborn _____
Number C/Sections_____ Vacuum Extraction_____ Forceps _____ History Long or Obstructed Labor _____
History Abnormal Presentation (Transverse Breech Face) _____
History Hemorrhage Antepartum_____ Postpartum _____ History Retained Placenta _____
History Hypertension/Pre eclampsia Eclampsia _____

MENSTRUAL HISTORY

Age of Menarche _____ Last Menstrual Period _____ Last Normal Menstrual Period _____
Duration of Menses_____ Amount _____ Family Planning Used _____

WEIGHT IN KILOGRAMS (KG)

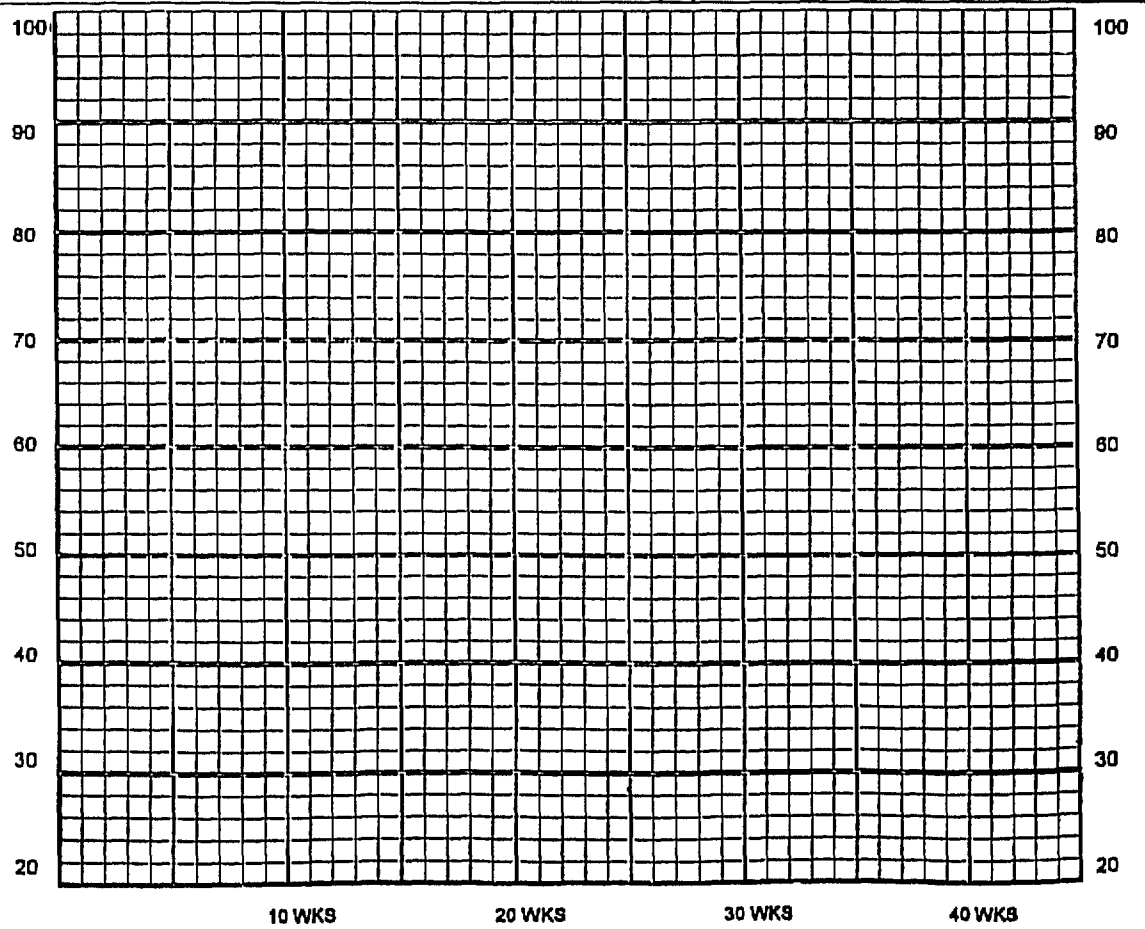


Figure 9 Antepartum Assessment Form - Side One

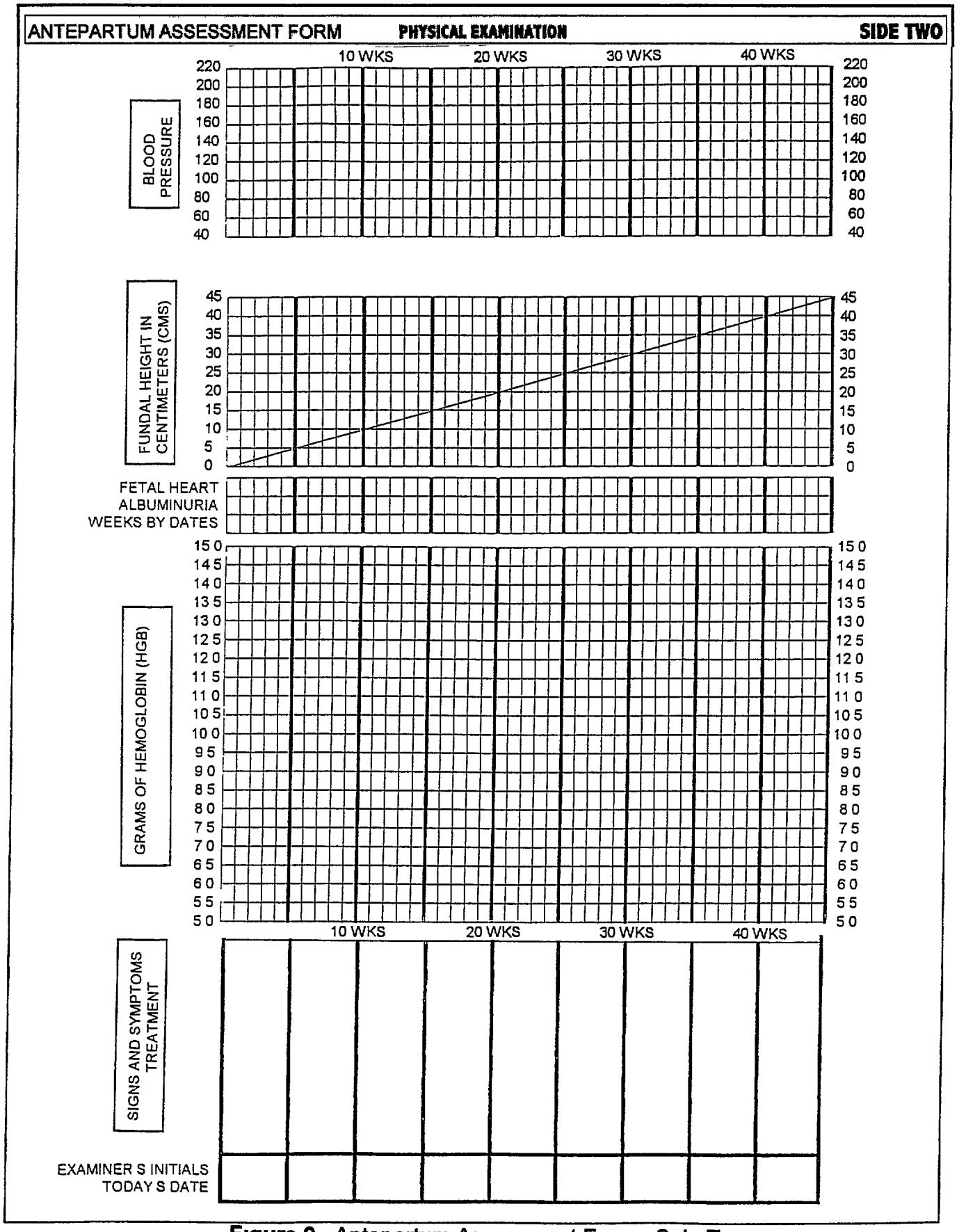


Figure 9 Antepartum Assessment Form - Side Two

Discussion Questions

Compare your findings about Mrs Gep with the information found on the form on pages 2 25 and 2 26 When you have finished, answer the questions Then look up the pages marked with parentheses ( ), and compare the information with your answer

1 What are Mrs Gep's problems? (pages 2 6 and 2 31)

2 How will you manage (treat) her problems during the antenatal period? (pages 2 7-2 9)

3 Do you consider her to be high risk?

4 If yes, high risk for what?

5 Would you deliver this woman in your maternity? (page 2 9)

ANSWERS - Case Study 1

ANTEPARTUM ASSESSMENT FORM **SOCIAL HISTORY** **SIDE ONE**

Client's Name Mrs Gep Age 24 Gravida 2 Para 1
Expected Date of Delivery 17 Feb 1997 Planned Delivery Site maternity Date Booked 21 Sept 96
Education Level 12 years Partner Supportive yes Family Supportive yes
Blood Group unknown Rh ____ Hemoglobin Type ____ Height in Centimeters 160

MEDICAL/SURGICAL HISTORY

Anemia No Diet History rice, beans, greens and fruit - 2 meals a day
Sickle Cell Disease (Joint Pains) NO Diabetes NO
Chest Diseases (Asthma,Tuberculosis) NO
Cardiac Diseases NO Hypertension NO Seizures(epilepsy) NO
Sexually Transmitted Infections (HIV/AIDS) NO Other Medical Problems (specify) NO
Laparotomy (specific reason) NO Other Surgeries (specify like circumcision) Appendix 1982
Previous Accidents NO Blood Transfusion NO

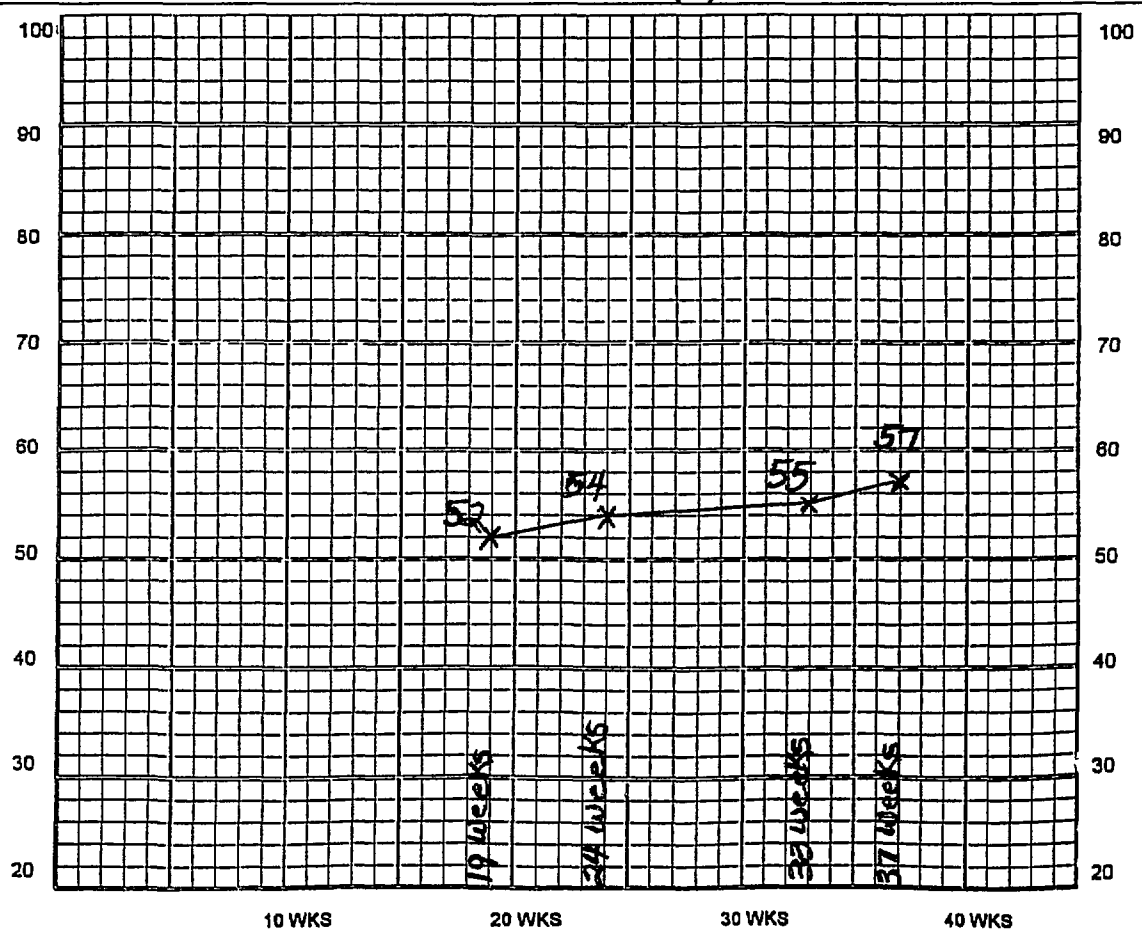
PREVIOUS OBSTETRICAL HISTORY

Number Births Term 1 Pre-term 0 Number Children Currently Alive 1 Age Youngest Child 3 yrs.
Number Abortions Induced 0 Spontaneous 0 Number Stillborn 0
Number C/Sections 0 Vacuum Extraction 0 Forceps 0 History Long or Obstructed Labor 0
History Abnormal Presentation (Transverse Breech Face) 0
History Hemorrhage Antepartum NO Postpartum NO History Retained Placenta NO
History Hypertension/Pre-eclampsia, Eclampsia NO

MENSTRUAL HISTORY

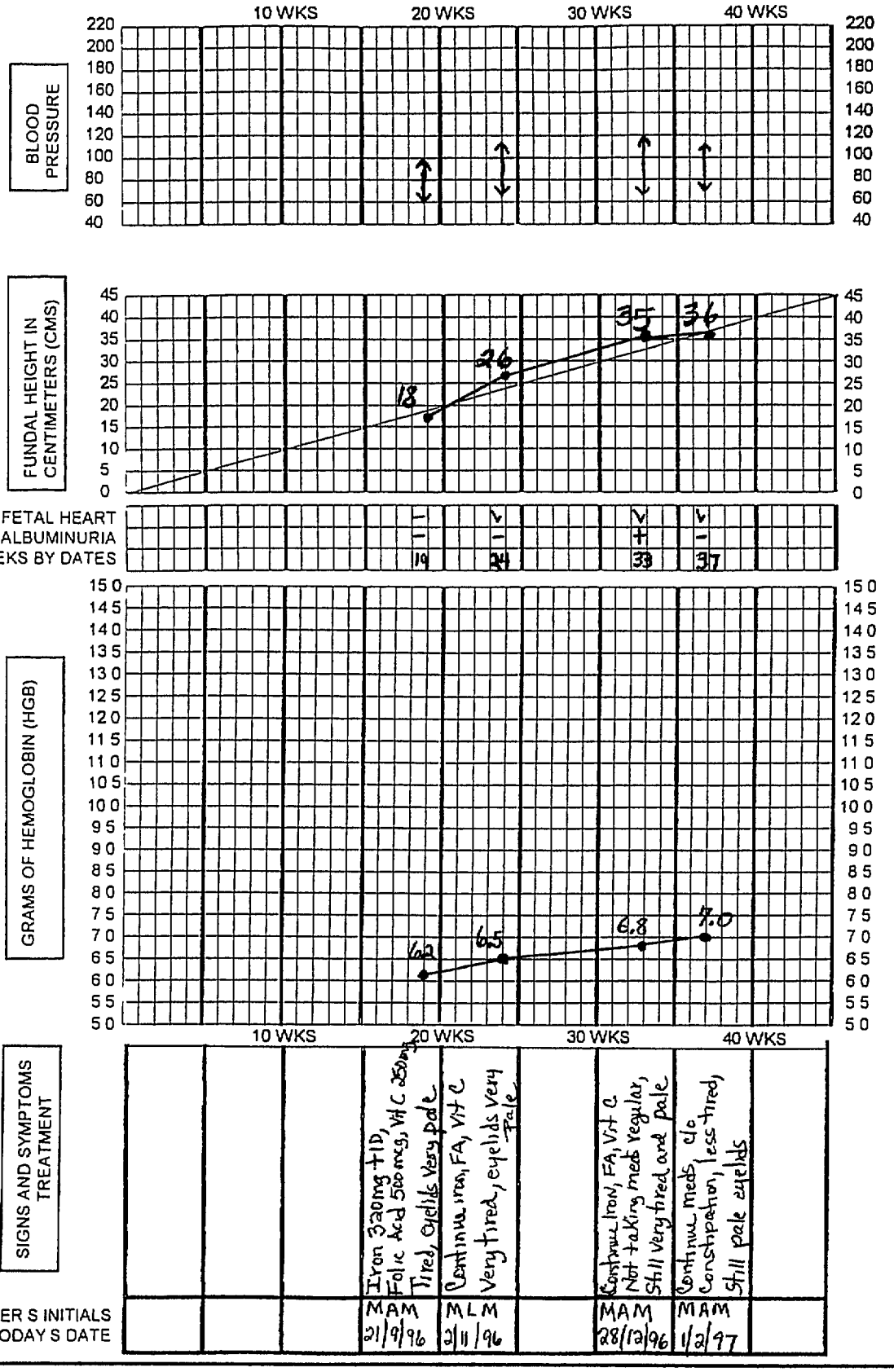
Age of Menarche 16 Last Menstrual Period 12 MAY 1996 Last Normal Menstrual Period 12 MAY 1996
Duration of Menses 5 days Amount 4 pads a day Family Planning Used None

WEIGHT IN KILOGRAMS (KG)



ANSWERS - Case Study 1

ANTEPARTUM ASSESSMENT FORM **PHYSICAL EXAMINATION** **SIDE TWO**



SIGNS AND SYMPTOMS TREATMENT				Iron 325mg TID, Folic Acid 500mcg, Vit C 250mg Tired, eyelids very pale		Continue iron, FA, Vit C Very tired, eyelids very pale		Continue iron, FA, Vit C Not taking meds regular, Still very tired and pale	Continue meds c/o constipation, less tired, Still pale eyelids
EXAMINER S INITIALS TODAY S DATE				MAM 21/9/96		MLM 2/11/96		MAM 28/12/96	MAM 1/2/97

Case Study 2 - What Is the Problem?

Read the **ASK and LISTEN** and the **LOOK and FEEL** sections in this case study (below) Then decide what you think is the **PROBLEM** and what **ACTION** needs to be taken to help the woman Remember that action may include treatment, education, counseling, more laboratory tests, referral, and follow up

It is also important to think about prevention, so you will find a question asking how you think this problem could have been prevented Sometimes it is very difficult to decide before a problem occurs, that it might be about to happen Other times it is very easy to say that certain actions can prevent a problem Sometimes a problem can not be prevented

When you finish, look on the next page for suggested answers

ASK and LISTEN A 32 year old woman, gravida 7, para 6, comes for her second antenatal visit She complains of feeling very tired

LOOK and FEEL At today's visit you find BP 112/66, pulse 78 beats in a minute, uterus 36 weeks by dates and exam (size), conjunctiva pale, nail beds pale, plus one (mild) ankle edema, hemoglobin 9 gm

What is the **PROBLEM**?

What are the **ACTIONS**?

ANSWERS - Case Study 2

What is the **PROBLEM?** Anemia

What are the **ACTIONS?**

- Find out why she is so anemic -- malaria, other parasites, poor diet with closely spaced pregnancies, bleeding, chronic illness?
- Treat her depending on the cause or causes you find
- Dietary -- take a diet history of the last 24 hours' intake Tell her which foods are high in iron, folic acid, and Vitamin C Find out if she can afford these foods Is she getting her fair share of family foods? Is something interfering with her food intake -- sore teeth, gums, nausea, or something else?
- Iron -- give her ferrous sulfate 320 mg 2 times a day, folic acid 500 mcg one time a day, and Vitamin C 250 mg daily if unable to get Vitamin C in her diet
- Malaria/other parasites -- treat the malaria/parasites and give malarial prophylaxis according to your protocols
- Closely spaced pregnancies -- explain that getting pregnant so soon after the last child has been hard on her body, teach her family planning methods appropriate for both breast feeding and beyond
- Bleeding -- identify if there is bleeding, what the sources of the bleeding are, and treat/refer
- Chronic illness -- identify symptoms according to condition, such as HIV, tuberculosis, malnutrition, and so forth

Case Study 3 - What Is the Problem?

Read the **ASK and LISTEN** and **LOOK and FEEL** sections in this case study

Mrs K is a 19 year old primigravida who presents at your maternity home to register for antenatal care She complains of severe upper abdominal pain

What are the **PROBLEMS** you will particularly want to rule out during this routine registration visit?

To determine **APPROPRIATE ACTIONS**, you must obtain more information through questioning, physical examination, and laboratory tests

ASK and LISTEN What history questions will you ask to help you diagnose this woman's problem?

LOOK and FEEL What portions of the physical exam relate to this complaint? What laboratory tests will you do for Mrs K ?

ANSWERS - Case Study 3

What are the **PROBLEMS** you will particularly want to rule out during this routine registration visit?

- Pregnancy induced hypertension (pre-eclampsia), malaria, gastrointestinal disorders, trauma, possible onset of labor/abortion, abruptio placenta

To determine APPROPRIATE ACTIONS, you must obtain more information through questioning, physical examination, and laboratory tests.

ASK and LISTEN What history questions will you ask to help diagnose this woman's problem?

- Gastrointestinal (GI) When did this pain start? What were you doing? Does it seem related to eating? What were you eating prior to the onset of this pain? (Spicy foods? Greasy foods? Very bulky foods?) Have you had any nausea? Vomiting? Diarrhea?
- Have you done anything that helps the pain? Taking antacids? Drinking milk? Changing positions? Any other thing?
- Malaria Have you had fever, chills, or muscle aches?
- Pre-eclampsia Have you experienced headaches or visual problems (spots in front of your eyes, blurry vision, double vision, halos around lights)?
- Trauma Have you experienced any blows to the abdomen? When and how did this occur? Have you ever experienced physical or sexual abuse from your partner or others?
- Labor/abortion Have you seen any fluid coming from your vagina? If yes, color? consistency? amount? Have you had any abdominal cramping/pains? When was your last menses?

LOOK and FEEL What portions of the physical exam relate to this complaint?

- Pre-eclampsia Check blood pressure, reflexes, edema of ankles, hands, face, abdomen
- Trauma, Malaria, GI Palpate abdomen to locate pain, check for rebound tenderness, look for scars, lacerations, bruises
- Labor Palpate abdomen for fundal height, contractions, uterine irritability
- Vaginal examination to rule out trauma, rule out abortion/labor

What laboratory tests will you do for Mrs K ?

- Hemoglobin/hematocrit
- Malaria if indicated
- Urine test for albumin/protein
- Referral to physician for liver studies if indicated

Learning Aid 1 - Conversion Tables for Hemoglobin Estimation

Per Cent Saturation	Equivalent	Interpretation
100%	14 6 Grams	NO ANEMIA
95	14 1	
90	13 3	
85	12 6	
80	11 8	
75	11 1	MILD ANEMIA
70	10 4	
65	9.6	MODERATE ANEMIA
60	8.9	
55	8.1	
50	7.5	SEVERE ANEMIA
45	6.7	
40	5.9	
35	5.2	
30	4.4	
25	3.7	VERY SEVERE ANEMIA
20	3.0	
15	2.2	
10	1.5	

Learning Aid 2 - Reflex Testing

Testing of reflexes is part of an examination of the nervous system It is very helpful for midwives to know how to test a few basic reflexes on adults Hyper-reflexia can indicate many diseases of the nervous system or edema of the brain (cerebrum) in a pregnant woman A woman with cerebral edema is at **very high risk** for developing eclampsia (convulsions)

Using a Reflex Hammer

A reflex hammer is used to check the deep tendon reflexes Once you are experienced, you may be able to use your fingers, the side of your hand, your knuckles, or the head of a stethoscope instead For beginners (learners), it may be helpful to use a reflex (percussion) hammer

1 Hold the hammer loosely between your thumb and index finger
2 Bring the hammer down onto the tendon in a rapid, smooth movement
3 Tap quickly and firmly
4 Lift the hammer back up quickly
5 Watch for how fast the response is It **is the speed** of the response, **not how far** the limb moves, that tells you if her reflexes are normal

Reflexes are usually given a grade of 0 to +4

The scale of grading is

0 no response

+1 low but within normal response

+2 average or normal response

+3 brisker than average

+4 very brisk, hyperactive, abnormal, may have rhythmic tremors (clonus)

Checking Reflexes

When you check reflexes, always check both sides (both arms or both legs) Check that the response is similar on both sides There are many reflexes you can check The biceps and patellar reflexes are the common ones to use when looking for pre-eclampsia in pregnant women

Biceps Reflex

1 Bend the woman's arm about halfway

2 With your fingers, feel for her tendon on the inside of her elbow (antecubital fossa) If it is difficult to locate, move her arm up and down while feeling You will notice a cord-like tendon

3 If the woman is lying down, the bed will support her arm If she is sitting up, you will need to support her arm on yours Place your thumb on the tendon

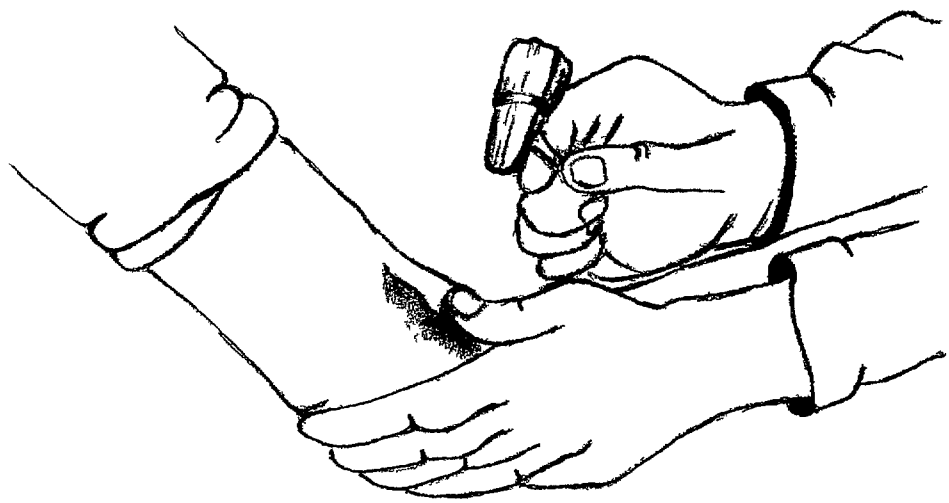


Figure 10 Testing Biceps Reflex

4 Strike your thumbnail, which is positioned over the tendon This causes the biceps muscle to contract You may or may not see the slight contraction at the woman's elbow

5 You will be able to feel the response from the tendon through your thumb You can grade the response by **how fast** you are able to feel the reflex response You will need to check many reflexes to gain a knowledge of what is normal Check your family, friends, and all of your clients to gain experience

Patellar Reflex

1 Have the woman sit on the examining table or couch Her legs should hang freely

2 Feel for her tendon right below the kneecap (patella) If it is difficult to locate, move her lower leg a little while feeling at the same time

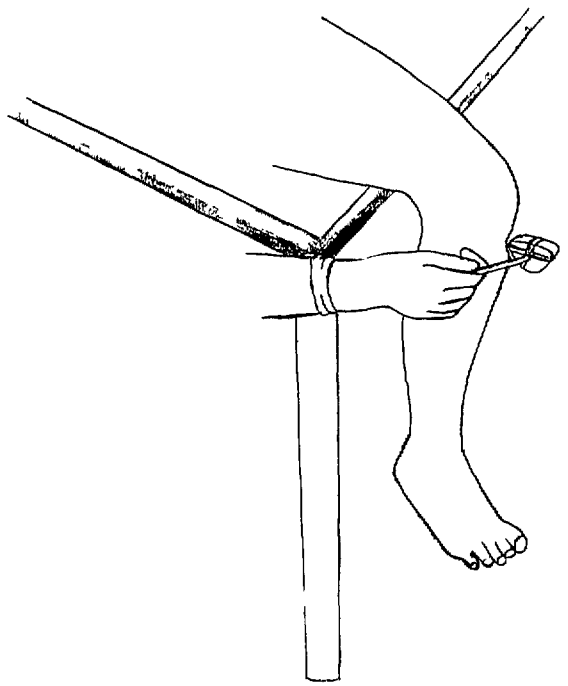


Figure 11 Testing Patellar Reflex

3 Strike the tendon with a quick, firm tap and lift up immediately You may also use the side of your hand or your knuckle to tap the tendon

4 Tapping the tendon will cause the quadriceps muscle to contract, causing the lower leg to move

5 The patellar reflex can also be tested with the woman lying in bed Place one hand under the leg, supporting it, and tap

6 If the woman is tense and contracting her muscles, you will not get an accurate test of her reflexes You may need to talk to her and keep her attention away from what you are doing

Remember A woman with pre-eclampsia who has hyper-reflexia (+3 or +4) is at very high risk for having seizures She must be given sedation and transferred to a doctor/hospital as quickly as possible Control of pre-eclampsia is a life-saving procedure for both the mother and fetus

Learning Aid 3 - Antepartum Assessment Form

ANTEPARTUM ASSESSMENT FORM **SOCIAL HISTORY** **SIDE ONE**

Client's Name_____ Age_____ Gravida _____ Para_____
Expected Date of Delivery _____ Planned Delivery Site _____ Date Booked _____
Education Level _____ Partner Supportive _____ Family Supportive _____
Blood Group_____ Rh_____ Hemoglobin Type _____ Height in Centimeters _____

MEDICAL/SURGICAL HISTORY

Anemia_____ Diet History_____
Sickle Cell Disease (Joint Pains)_____ Diabetes_____
Chest Diseases (Asthma, Tuberculosis) _____
Cardiac Diseases_____ Hypertension _____ Seizures (epilepsy) _____
Sexually Transmitted Infections (HIV/AIDS)_____ Other Medical Problems (specify) _____
Laparotomy (specific reason)_____ Other Surgeries (specify like circumcision) _____
Previous Accidents_____ Blood Transfusion _____

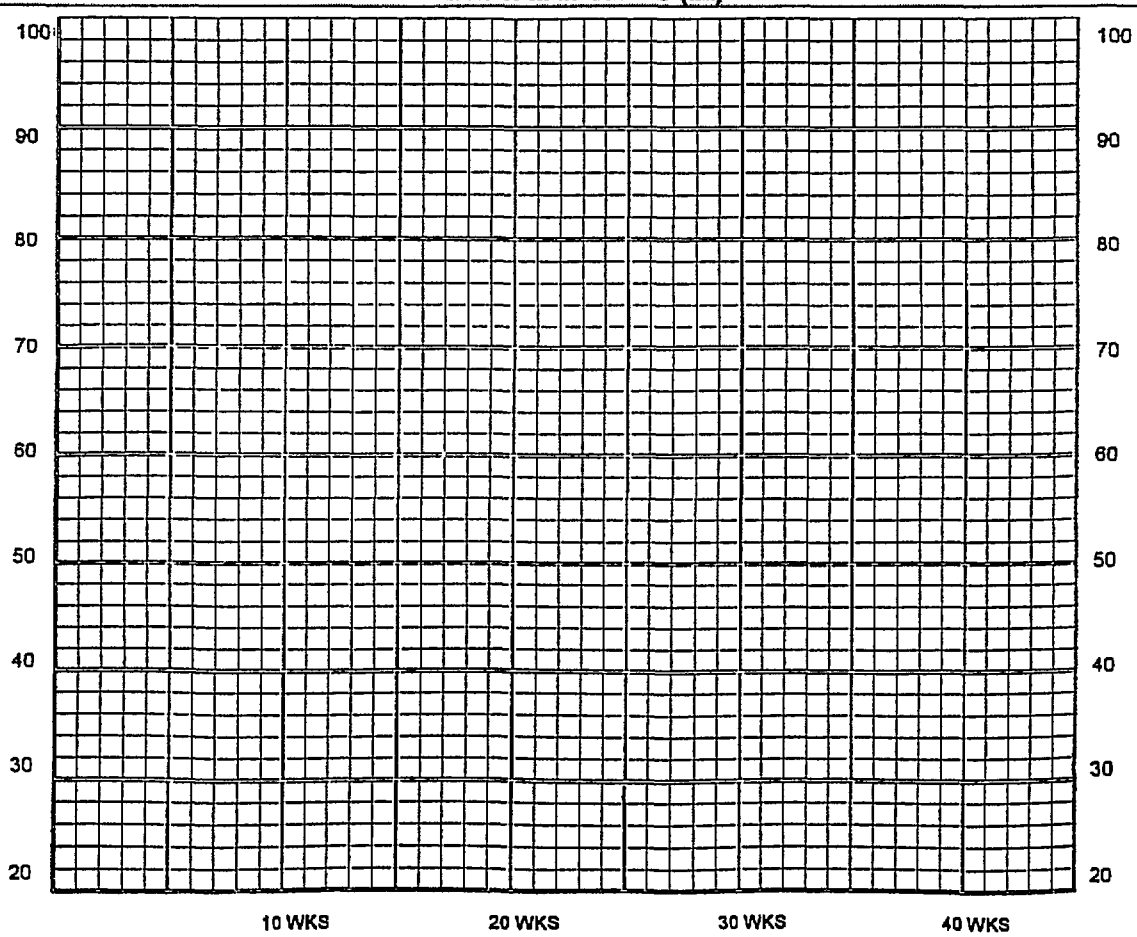
PREVIOUS OBSTETRICAL HISTORY

Number Births Term_____ Pre-term_____ Number Children Currently Alive_____ Age Youngest Child_____
Number Abortions Induced _____ Spontaneous _____ Number Stillborn _ _____
Number C/Sections_____ Vacuum Extraction_____ Forceps _____ History Long or Obstructed Labor _____
History Abnormal Presentation (Transverse, Breech, Face) _____
History Hemorrhage Antepartum_____ Postpartum _____ History Retained Placenta _____
History Hypertension/Pre-eclampsia, Eclampsia _____

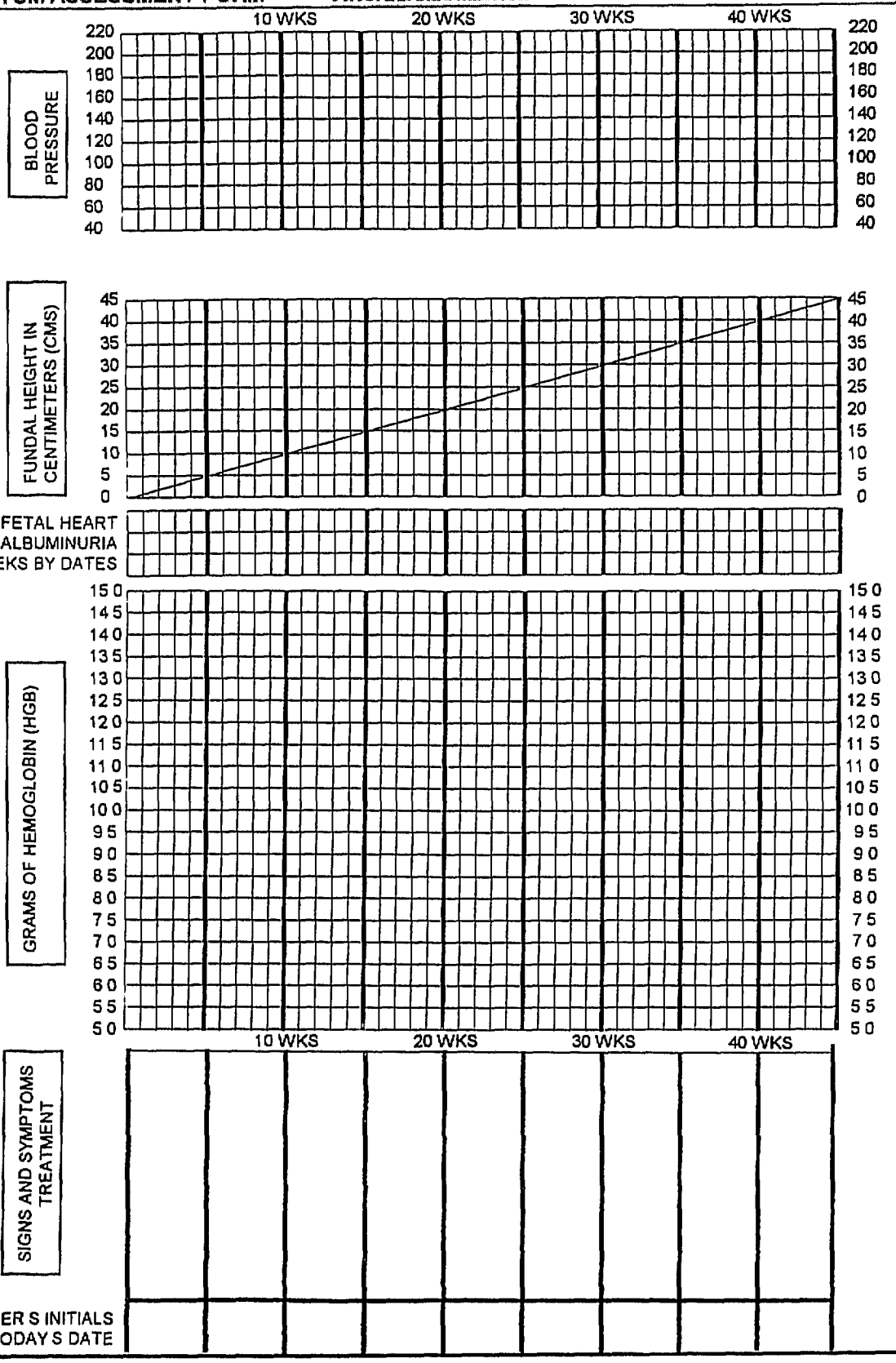
MENSTRUAL HISTORY

Age of Menarche _____ Last Menstrual Period _____ Last Normal Menstrual Period_____
Duration of Menses_____ Amount _____ Family Planning Used_____

WEIGHT IN KILOGRAMS (KG)



ANTEPARTUM ASSESSMENT FORM **PHYSICAL EXAMINATION** **SIDE TWO**



Review Questions

What Did I Learn? Find out what you know and understand of this module by answering the following questions When you are finished, look for the answers in the module on the pages listed in parentheses ( )

1 When must you take a baseline blood pressure? (page 2 10)

2 Why are brisk (hyperactive) reflexes a dangerous sign? (page 2 32)

3 How much should the uterus grow each week during pregnancy? (page 2 4)

4 If the uterus is growing too fast or too slow, what could the problem be? (page 2 5)

5 Why do anemic women develop more complications than women with a normal hemoglobin? (pages 2 1 and 2 9)

Skills Checklist - Antenatal Assessment and Treatment

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating of ✓ = satisfactory or ✗ = needs improvement
Add any comments in the comments sections below

	Date	Date	Date	Date
A Fundal Height Growth Monitoring				
1 Ask if the baby is active and moving normally				
2 Palpate the woman's abdomen and check the fetal growth at each antenatal visit				
3 If the uterus measures more than two centimeters different than expected, look for				
• Wrong dates				
• Abnormalities of the baby				
• Too much amniotic fluid (liquor)				
• Twins or triplets				
• A large baby				
• Abnormal presentation of the baby (breech)				
4 Gestation under 20 weeks estimate gestational age (age of the pregnancy), using your usual method				
5 Gestation 20 weeks or more use your usual method				
• For measuring tape				
- cm = weeks of pregnancy (gestational age)				
- expect growth of 1 cm per week				
- if growth is 2 cm less or more than the weeks of pregnancy, try to figure out why				
• Compare fundal height to umbilicus and sternum				
- at umbilicus = 20 weeks' gestation				

	Date	Date	Date	Date
- halfway (4 fingers above umbilicus) = 28 weeks				
- at sternum = 36 weeks' gestation				
- if growth is less or more for the weeks of pregnancy, try to figure out why				
6 Refer her to a doctor/hospital if a problem is found				
• Baby does not feel normal				
• Too much amniotic fluid (liquor)				
• Twins				
• Very large baby				
• Baby not cephalic presentation				
• Fundal height not the same as gestational age				
• Baby not growing				
• Other problems				
7 Record all information				
• If you can not find an explanation for your finding, have her return in one week and remeasure				

Comments

	Date	Date	Date	Date
B Checking for Anemia				
1 At the first antenatal visit **ASK and LISTEN** what the woman eats				
• Get a complete diet history, how many servings a day?				
• **ASK** if she eats non-foods (pica)?				
• **ASK** if she has fatigue, drowsiness, headaches, sore tongue, loss of appetite, nausea, or vomiting?				
2 Check the woman's history Find out if this woman is at high risk to develop anemia				
• Have her pregnancies been closely spaced?				
• Does she have a history of heavy or long periods?				
• Does she have a history of anemia?				
• Does she bruise easily?				
• Has she had hemorrhage with any pregnancy or surgery?				
3 At each visit, **LOOK** at the woman's				
• Eyelids				
• Nail beds				
• Gums				
• Palms				
4 Check her hemoglobin at her first visit Repeat her hemoglobin every visit if 8 gm or below Check her hemoglobin every two months if above 8 gm				
5 If these problems occur in your area				
• Do a sickle cell screen				
• Check her blood for malaria				
• Check her stool				

		Date	Date	Date	Date
6	Find out what treatments and medications she is taking Give advice if any of the treatments or medications are harmful				
7	Counsel the woman on				
	• High iron foods				
	• High folic acid foods				
	• High Vitamin C foods				
	• Good protein food sources				
8	Give ferrous sulfate 320 mg (60 mg elemental iron) two times a day Increase her iron to three times a day for a hemoglobin 8 grams or lower				
	• If her hemoglobin has not improved with treatment, repeat her stool specimen looking for hookworm and other parasites				
	• At each visit, **ASK** if she has enough medicines				
	• **ASK** how she is taking them to be sure she is taking them correctly and regularly				
9	Give folic acid 500 mcg each day to prevent anemia				
10	Give Vitamin C 250 mg daily or advise 3 servings daily of citrus juice or leafy green vegetables				
11	Give malaria prophylaxis according to the routine in your area				
12	If her stool is positive for parasites, treat for the parasite identified				
13	If the woman is more than 28 weeks' gestation at registration (booking) with a hemoglobin of less than 8 gm (55%)				
	• Refer her to a doctor for a complete anemia workup and treatment				
14	Give nutrition advice to girls and women who are not pregnant to prepare their bodies for the increased demands of pregnancy				

	Date	Date	Date	Date
15 Record findings and care given at each visit				

Comments

	Date	Date	Date	Date
C Checking for Pregnancy Induced Hypertension (Pre-eclampsia)				
1 Take a good symptom history **ASK** if she has had any				
• Epigastric pain (heart burn) not related to malaria				
• Headaches				
• Visual problems (double vision, partial vision, rings around lights)				
• Edema or swelling of the hands, face, and feet				
2 Take the blood pressure at every visit				
• If elevated, check again in 20 minutes				
3 If the blood pressure is elevated				
• Check the biceps and patellar reflexes				
• If the reflexes are brisk (plus 3 or plus 4), refer her to a hospital/doctor				
4 If the blood pressure is elevated				
• Check a midstream urine sample for protein				
• If she has +1 or more proteinuria (albuminuria), refer her to a hospital/doctor				
5 Do not give diuretics				
6 In the case of severe pre-eclampsia • Give magnesium sulfate 10 grams OR • Give Valium 10 - 20 mg				
• Go with her to the hospital/doctor				
7 If the woman has eclampsia (convulsions)				
• Protect her from choking on her tongue with a padded tongue blade or a rolled pad of cloth				
• Do not force the mouth open				
• Protect her from falling or injury from nearby furniture or objects				

	Date	Date	Date	Date
• Give magnesium sulfate 10 gm OR Valium 10 - 20 mg				
• Transfer her right away to the nearest hospital/doctor				
• Travel with the woman, avoiding stimulation				
• Record all complaints, findings, and care Take her antenatal card with you				
• Give medical personnel a complete summary of care given				
• Give the woman's records to the hospital personnel				

Comments

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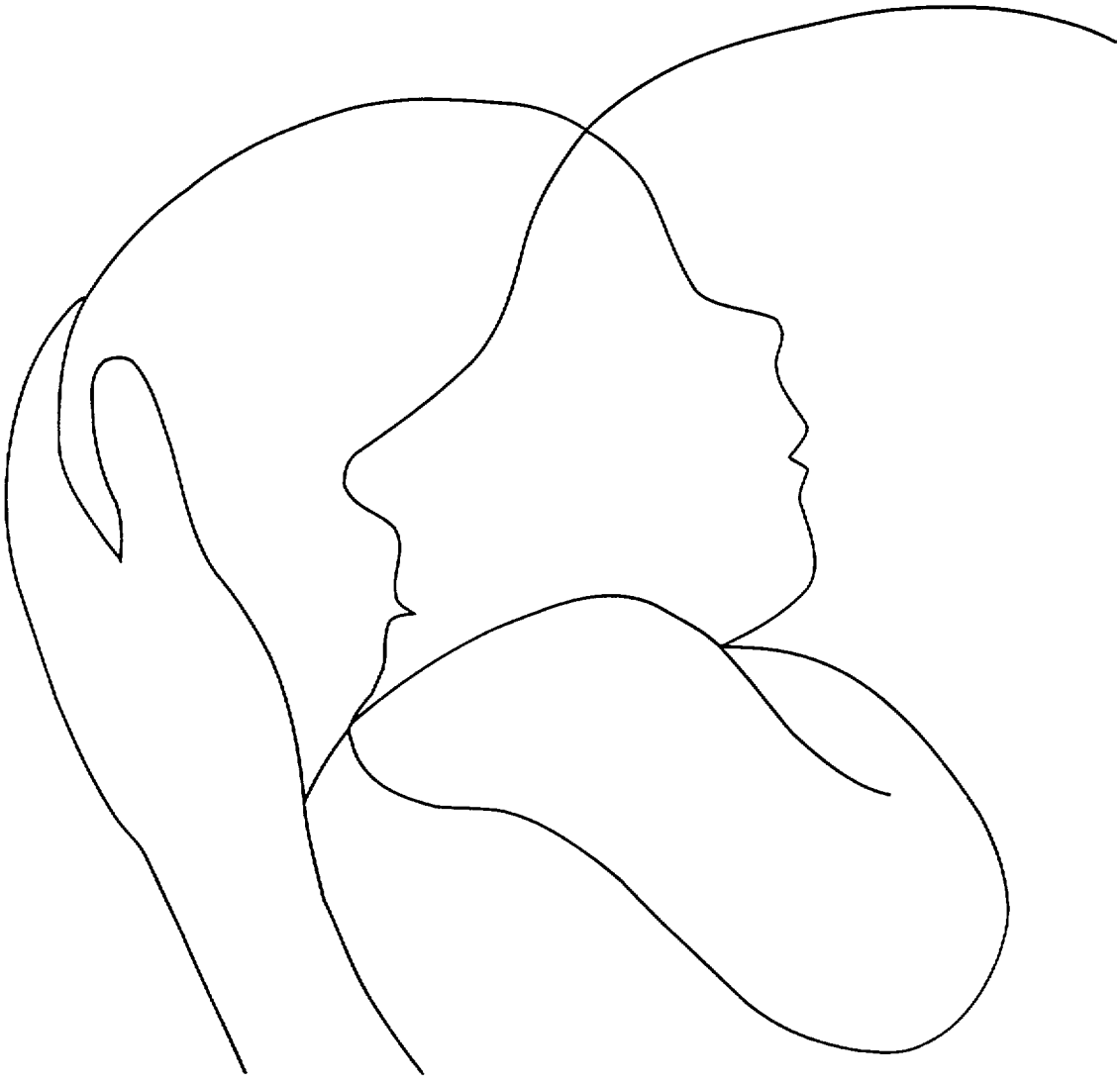
LIFE-SAVING SKILLS MANUAL FOR MIDWIVES

3rd Edition



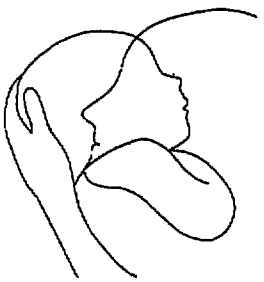
MODULE 3

LABOR PROGRESS

Life-Saving Skills Manual for Midwives

Third Edition

Module 3: MONITORING LABOR PROGRESS



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Life-Saving Skills Manual for Midwives

TABLE OF CONTENTS

MONITORING LABOR PROGRESS
MODULE 3

Contents

MONITORING LABOR PROGRESS

Goal

The midwife will review her knowledge and learn new skills to care for a woman during labor and delivery

Objectives

The midwife caring for women during labor and delivery should be able to

1 admit a woman in labor, (a) taking the labor history (**ASK and LISTEN**), (b) doing a general physical examination, including an abdominal examination and a vaginal examination (**LOOK and FEEL**)

2 write information from her findings on the partograph and labor record

3 describe the latent and active phases of labor

4 interpret a recorded partograph

5 **IDENTIFY PROBLEMS/NEEDS** of a woman and her baby during labor and **TAKE APPROPRIATE ACTION**

6 manage the second stage of labor of a woman and record the findings

7 record the outcome of delivery

8 explain the importance of progress in labor for healthy outcomes of the mother and baby

Introduction

Monitoring the progress of labor allows the midwife to identify mothers who are at risk during labor and to provide life-saving care Monitoring and interpreting the progress of labor and early identification of problems help prevent death or serious illness of the mother in labor This module outlines good care of women in labor

You will use the Problem Solving Method to identify problems during labor Skill procedures are (1) labor admission, including asking and listening to get the history, (2) doing the physical examination, (3) identifying problems/needs and taking appropriate action, and (4) monitoring labor, using the partograph Review questions and case studies will help you learn and use the information Skills checklists will guide you while you actually do the skills

Use the learning aids for review They give additional information, including cervical dilatation measurements, skills checklists for conducting the second stage of labor, and measuring the pelvic size

Before reading this module, review normal anatomy and physiology of the female reproductive system, the normal changes in a woman's body during pregnancy, and pelvic assessment in your midwifery textbook

A Midwife's Experience. .

A woman was brought to me in labor She was gravida 2, attended antenatal clinic, had normal vital signs Her contractions were 3 in 10 minutes, each lasting 20 to 40 seconds, the head 4/5 The cervix was 4 cm In 4 hours her contractions were the same, the head was 3/5 and the cervix was 5 cm I explained to the husband that his wife was not progressing and needed to go to the hospital He refused I continued to explain and showed him the partograph I told him that because the labor had crossed the alert line, it was the rule that I had to take the wife to the hospital, something might be wrong He finally agreed but had no money for transport I paid the lorry driver and we went to the hospital The woman was delivered by section (cesarean), a baby girl with the cord around the neck The husband and family were very happy They thanked me so much I felt confident and it was easier for me to make a referral decision using the partograph

LSS Midwife, Uganda

Common Medical Terms

Active Phase of Labor - the later part of the first stage of labor, the cervix dilates from 3 to 10 centimeters (cm), and the cervix is very thin

Caput - the head, sometimes refers to a swelling on the presenting head of the baby (caput succedaneum)

Diagonal Conjugate - an internal measurement of the pelvis from the bottom of the pubic bone to the sacral promontory

Dilatation - dilation, the opening of the cervix during labor, on vaginal examination usually measured in cm, with 0 cm being closed and 10 cm being fully open

Engagement - the presenting part of the fetus has passed into the pelvic brim

Latent Phase of Labor - the early part of the first stage of labor, the cervix dilates from 0 up to 3 cm and the cervix shortens (effacement)

Molding - the baby's cranial (skull) bones overlap so the head can fit through the pelvis of the mother The head is squeezed or compressed to a different shape

Occiput - the back of the baby's head, the area over the occipital bone

Partograph - a chart or card (central feature is a graph for plotting cervical dilatation) used to write all findings of a woman in labor (See page 3 31) Some of the findings are dilatation of cervix, descent of the presenting part, baby's heart beat, contractions, blood pressure, and pulse These findings are used to monitor and manage the progress of the labor

Pelvic Brim (Inlet) - the upper opening of the pelvic cavity The rounded opening that the presenting part of the baby goes into on its way to delivery In measuring the progress of labor and descent of the baby, the pubic bone area of the pelvic brim is used as a landmark

Pelvic Outlet - the lower opening of the pelvic cavity The diamond shaped opening has the greatest measurement from the apex of the pubic arch to the tip of the coccyx

Sinciput - the brow or forehead of the baby

Vertex - the top of the head, the crown, the area of the head between the anterior and posterior fontanelle

Skill. Labor Admission - ASK AND LISTEN

When the mother comes in labor, the midwife must evaluate her condition and that of her baby In the first part of this evaluation, you must **ASK and LISTEN** (take the labor history) to find out the woman's experience since her labor began

Equipment

Labor record (partograph)
Pen

Procedure

Welcome the woman and others coming with her Show her a comfortable place to sit or lie depending on her choice She may undress before or after the history How quickly you can take the history will depend on her condition *You must decide whether the woman is about to deliver, she may be fully dilated when you first see her* Explain to the woman that you need to ask her some questions about her labor

Start the labor record by writing the woman's name and other admission information Write the time of arrival You will use this to follow the progress of labor As you **LISTEN** to the woman's answers, write the information on the labor record The labor record will be discussed in detail later in this module

ASK the following questions and **LISTEN** to the answers

1 WHEN DID YOUR LABOR PAINS BEGIN? HOW OFTEN DO THEY COME?
By listening carefully, you will get a good idea of just how the woman is doing She may not know exactly when the pains started, but she will be able to tell you if they started during the night, morning, or afternoon

2 HAVE YOU BEEN EXAMINED AT AN ANTENATAL CLINIC?
If the woman has been coming to your antenatal clinic, you will have her record to review or she may bring her record with her A woman who has had an antenatal examination and antenatal care will often have fewer untreated or unidentified problems than a woman who has not Look at the general condition of a woman who has not had any antenatal examinations Take her complete antenatal history (See Module 2 **Quality Antenatal Care**, page 2 13, for information on antenatal history) Ask about her past pregnancies Ask about any medical or pregnancy problems she may have had

3 HAS YOUR BAG OF WATERS (MEMBRANES) BROKEN?
Ask when the bag of waters broke Tell the woman that the bag of waters surrounds the baby and breaks during labor The rush of water is a sign that labor has begun or will soon begin She may notice a slow leaking of fluid or a rush of water

4 HAVE YOU HAD A DISCHARGE OR BLOODY MUCUS (SHOW)?
The woman may see a spot, or bloody show, on her clothing She can tell the difference between bloody show and bleeding, as show is often sticky and stretches Tell the woman that the bloody show is a spot of blood and mucus that comes out of the opening of the womb during early labor Bloody show may be a few spots of brownish or red (fresh) blood Bloody show is another sign of early labor

5 WHEN DID YOU LAST EAT?
Labor may cause a woman to vomit if her stomach is full Tell the woman that she should not eat a lot of food at one time Explain that food and water give strength, and it is important to eat small amounts of food and drink water, especially during early labor

6 WHEN DID YOU LAST PASS STOOL?
Some mothers get loose stools (diarrhea) or hard stools (constipation) before they go into labor An enema washes the stool out of the body An enema is not always needed The mother may want an enema because it makes her more comfortable during labor, or because it is the custom (You may choose to give an enema to a woman who has not passed stool for 12 hours If the woman is in *active labor and the cervix is dilated more than 5 cm,* ***do not give an enema*** She may have an uncontrolled delivery in the bed pan or latrine *Do not give an enema to a mother if she does not want one)*

7 HAVE YOU TAKEN ANY MEDICINE OR TREATMENT TO INCREASE OR DECREASE YOUR LABOR?
A woman may have taken medicine for her labor pains A traditional healer, family member, or friend may have given her some local medicine You should know what medicine or treatment the woman has had and if the effects are helpful, harmless, or harmful

8 DO YOU HAVE A TRADITIONAL BIRTH ATTENDANT? WHAT IS HER NAME?
If the traditional birth attendant (TBA) came with the woman in labor, make sure to meet and welcome her The TBA may give you additional history You will have a chance to share information with her You will also have a chance to learn and work with her during the labor and delivery If the TBA has not accompanied the woman, ask if it is possible to contact her to invite her to come to the maternity

9 HAVE YOU BLED FROM YOUR BIRTH CANAL (VAGINA)?
Sometimes the woman will have bled during her pregnancy, but does not remember to tell you when you are asking about bloody show There may or may not be bleeding now that she is in labor **Bleeding any time during pregnancy is a danger sign** Decide during the physical examination whether any bleeding is normal bloody show or a more serious kind of bleeding Bleeding during labor is a sign of serious problems, and referral is necessary

ADDITIONAL POINTS TO REMEMBER If the woman in labor has not been to an antenatal clinic, the midwife must **ASK** the following questions

How old are you? Women younger than 16 often have problems Women over 35 and/or having a first pregnancy may have long labors and difficult deliveries

Is this your first pregnancy? Or how many times have you been pregnant?

Women with any of the following problems need to deliver in a hospital, if at all possible

- more than 4 pregnancies
- older than 35 years
- younger than 16 years
- pre-eclampsia or eclampsia
- deformed pelvis or leg and no previous vaginal delivery
- two or more miscarriages
- stillbirth
- previous cesarean section
- height below normal for ethnic group
- problem with the last delivery vacuum extraction or forceps delivery, retained placenta, severe bleeding, prolonged labor
- present pregnancy problem twins, transverse lie, hemorrhage, small pelvis, severe anemia

Do you have any other problems? A woman who *is sick* with any one of these should be referred to hospital for labor and delivery

- heart disease
- shortness of breath
- kidney disease
- diabetes
- tuberculosis
- malaria
- sickle cell disease
- anemia
- high blood pressure
- epilepsy

It is important to read and talk about the information on the antenatal record of a woman who has been to antenatal clinic This is a good way to get to know more about the woman and her family

ASK and LISTEN IS THE **FIRST STEP** WHEN SEEING A WOMAN IN LABOR WRITE THE TIME OF ARRIVAL AND INFORMATION THE WOMAN GIVES YOU ON THE LABOR RECORD

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answer in this module on the pages listed in parentheses ( )

1 What 9 questions will you ask a woman who comes to you in labor? (pages 3 4 - 3 5)

2 What additional information will you ask a woman who has not been to antenatal clinic? (pages 3 5 - 3 6)

Case Study 1

Read the following case study Below it, write the 9 labor admission questions, then look in the case study for this woman's answers Write the answers under the questions When you have finished, compare your answers with those on page 39

A 16 year old woman in her ninth month of pregnancy comes to the maternity because she feels sharp pains in her abdomen and has had some vaginal bleeding She says this is her first child She has had the pains in her abdomen for about two hours They come about every twenty minutes She has not been to an antenatal clinic Her bag of waters has not broken The bleeding from her vagina appears to be more severe than bloody show She ate a large meal about two hours ago and has not passed a stool for about three hours She is not taking any medications and does not have a traditional birth attendant

Case Study 2

Read the following case study Below it, write the 9 labor admission questions, then look in the case study for this woman's answers Write the answers under the questions When you have finished, compare your answers with those on page 39

A woman comes to the maternity and says that her bag of waters has broken She has had labor pains for about 4 hours, and they are now coming every 10 minutes She has been to antenatal clinic and has had a healthy pregnancy This is her third child

She ate a big meal about 4 hours ago, but has not passed a stool in the last 24 hours She is not taking any medications Her TBA has been told of her labor She says that her TBA wishes to attend this birth and will be coming to the maternity soon The woman has not bled from her vagina

ANSWERS - Case Study 1

1 When did your labor pains begin? How often do they come?
Two hours ago, about every 20 minutes

2 Have you been examined at antenatal clinic? No
Since she has not been to antenatal clinic, **ASK and LISTEN**
(a) How old are you? 16 years old
(b) Is this your first pregnancy? Yes
(c) Have you had any problems with this pregnancy? No information at this time

3 Has your bag of waters broken? No

4 Have you had any bloody show? Yes

5 When did you last eat? Two hours ago

6 When did you last pass stool? Three hours ago

7 Have you taken any medicine or treatment to increase or decrease your labor? No

8 Do you have a TBA? No

9 Have you bled from your birth canal? Yes, some vaginal bleeding

ANSWERS - Case Study 2

1 When did your labor pains begin? Four hours ago
How often do they come? Every 10 minutes

2 Have you been examined at antenatal clinic? Yes This is her third child, she has had a healthy pregnancy

3 Has your bag of waters broken? Yes

4 Have you had any bloody show? No

5 When did you last eat? Four hours ago

6. When did you last pass stool? Twenty-four hours ago

7 Have you taken any medicine or treatment to increase or decrease your labor? No

8 Do you have a TBA? Yes, she will be coming to the maternity soon to attend the birth.

9 Have you bled from your birth canal? No

Skill Labor Admission and Monitoring: LOOK and FEEL

When you see a woman in labor, the second step is to do a physical examination, **LOOK and FEEL** **LOOK** for changes at the start of labor and also during labor

Equipment

Fetoscope (fetal stethoscope)
Thermometer
Sterile gloves, bowl
Cotton or cloth squares
Antiseptic solution
Blood Pressure (BP) apparatus
Partograph
Soap and water
Pulsometer or watch

Procedure

Examine the woman in labor to find out

- The stage of her labor
- The presenting part of the baby
- Any problems that might affect the woman or baby

The woman in labor should have an admission physical examination, including abdominal examination and vaginal examination Monitoring examinations are also done during labor and recorded on the partograph

General Physical Examination

1 The woman should be clean and comfortable If there is time, offer the woman time to bathe Explain what you are going to do During the examinations, tell the woman what you are doing and why

2 Ask the woman to empty her bladder so that she will be comfortable when you feel her abdomen Help the woman to lie down

3 Take the blood pressure (normal 90/60 - 140/90), temperature (normal 37 5° C or 98 6° F), and pulse (normal 70 - 90) Check her height Is this woman shorter than most people in her area? See Module 2 **Quality Antenatal Care**, page 2 16 for more information on height

4 **LOOK** at the general appearance Notice if the woman looks ill, tired or malnourished **LOOK** at the eyes, ears, nose, mouth, throat, and neck for signs of infection or anemia

5 **LOOK and LISTEN** to the respiratory system **LOOK** how fast and deep the woman breathes between contractions (normal 16 to 20) and during contractions (normal 20 to 40) **LISTEN** to the breath sounds of the lungs (are they normal breathing sounds?) **LISTEN** to heart sounds COUNT the heart rate Between contractions, the heart rate should be normal (70 to 90) **LOOK** for enlarged veins in the neck Shortness of breath or enlarged neck veins may mean serious sickness Help the woman go to the hospital if at all possible

6 **LOOK and FEEL** the breasts for problems that might interfere with breast feeding

7 **LOOK and FEEL** the arms and legs for swelling and enlarged veins **LOOK** for deformities of her legs, back, and pelvis which may make vaginal delivery difficult or impossible Check her reflexes See Module 2 **Quality Antenatal Care**, page 2 10, for management of pregnancy induced hypertension (pre-eclampsia)

REMEMBER TO WRITE INFORMATION FROM
THE PHYSICAL EXAMINATION ON YOUR LABOR RECORD
USE THIS INFORMATION TO IDENTIFY PROBLEMS/NEEDS
SO THAT YOU MAY TAKE THE APPROPRIATE ACTION

Abdominal Examination

An abdominal examination will help you find out the stage of labor, the progress of labor, and the condition of the baby In order for you to do an abdominal examination, the woman must be well prepared Explain to her what you are going to do

1 Ask the woman to empty her bladder if she has not done so already

2 Help the woman to relax You can help by placing a pillow under her head and upper shoulders She should place her arms by her side or across her chest and bend her knees a little Help her to relax with some deep breathing

3 Uncover her abdomen **LOOK** for the way the baby is lying **LOOK** for any movement of the baby **LOOK** for contractions, unusual shapes or bumps The normal uterus is longer than wide, jerky movement in one area is usually the baby's arms and legs moving

4 Make sure your hands are warm and dry after washing them

5 **FEEL** for contractions Good uterine contractions are necessary for progress of labor Normally contractions become more frequent and last longer as labor progresses

22-C

6 **FEEL** THE CONTRACTIONS FOR 10 MINUTES EVERY HOUR IN THE LATENT PHASE OF LABOR AND EVERY 30 MINUTES IN THE ACTIVE PHASE OF LABOR Always **FEEL** contractions **at least** every hour if you can not **FEEL** every 30 minutes

There are three observations made of the contractions although only **frequency and duration are recorded on the partograph**

- How often can you feel them (frequency)? The frequency of contractions is assessed by the number of contractions in a 10 minute period

- How long do they last (duration)? The duration of the contraction is from the time the contraction is first felt by your hand on the abdomen to the time when the contraction is no longer felt

- How strong (effective) are they? A good, effective contraction **can not** be indented with your finger during the peak part of the contraction The experienced midwife **FEELS** for all three parts of a contraction beginning, peak, decreasing The beginning of the contraction is the longer part The peak is the strongest

In early labor, contractions usually start around every 20 minutes, last 15 or so seconds, and the uterus can be indented with your finger (mild) As labor progresses, contractions become more frequent, last longer, and get stronger so that by the end of first stage contractions are usually every 2 or 3 minutes, last more than 40 seconds, and the uterus cannot be indented with your finger

It is important for the midwife to FEEL the relaxation of the uterus BETWEEN contractions This relaxation is VERY IMPORTANT for the welfare of the baby, mother, and uterus

Relaxation of the uterus allows the baby to get oxygen through the placenta Relaxation of the uterus provides a resting time for the mother and prevents exhaustion of the uterus

When contractions are more frequent than every 2 minutes and last longer than 90 seconds, the relaxation time is too short The baby does not get enough oxygen The mother does not get time to rest The uterine muscle does not stop working, does not relax, and the effectiveness of the contraction decreases Refer to page 3 26 in this module where action is outlined for constant contractions

7 **FEEL** for the baby Use the flat surface of your fingers for palpating Keep your fingers together Press evenly and firmly to feel the fundal height and the parts of the baby Refer to Module 2 **Quality Antenatal Care**, page 2 4 for fundal height measurements

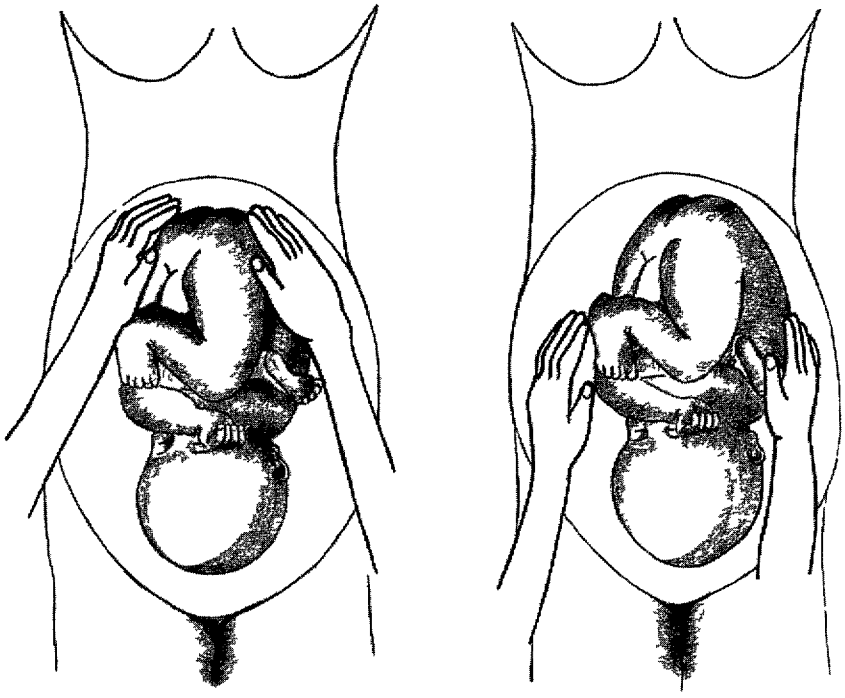
A **FEEL** (palpate) the **abdomen**

Step 1 First Palpation
HOW face the woman's head Put your hands on both sides of the top of the uterus and curve your fingers around (See Figure 1, Step 1) Palpate for shape, size, firmness, and how easily the baby moves Ask yourself, "What is in the top of the uterus?"

FINDINGS If the fetal head is in the top of the uterus, you will feel a round and hard part which is movable If the buttocks are felt, they will be irregular, bulky, and softer than the head, and the top of the uterus will feel full and not easily moved If there is a transverse lie, the fundus will feel empty

Step 2 Second Palpation
HOW Continue to face the woman's head Place both hands further down on the abdomen, push down with one hand, pushing the fetus to the other side of the abdomen (See Figure 1, Step 2) Feel the fetus so that you can tell the parts Gently move the baby from side to side to more easily tell which side has the back and which side has the arms and legs

FINDINGS A firm, continuous, smooth part will be the back of the fetus If you feel small, bumpy, irregular parts which may move or hit your hand, these will be parts of the fetus such as the feet or knees If you cannot feel the back on either side, this will tell you that the back is towards the back of the mother, a posterior position A transverse lie is when the baby's body is felt across the abdomen



Step 1 Step 2

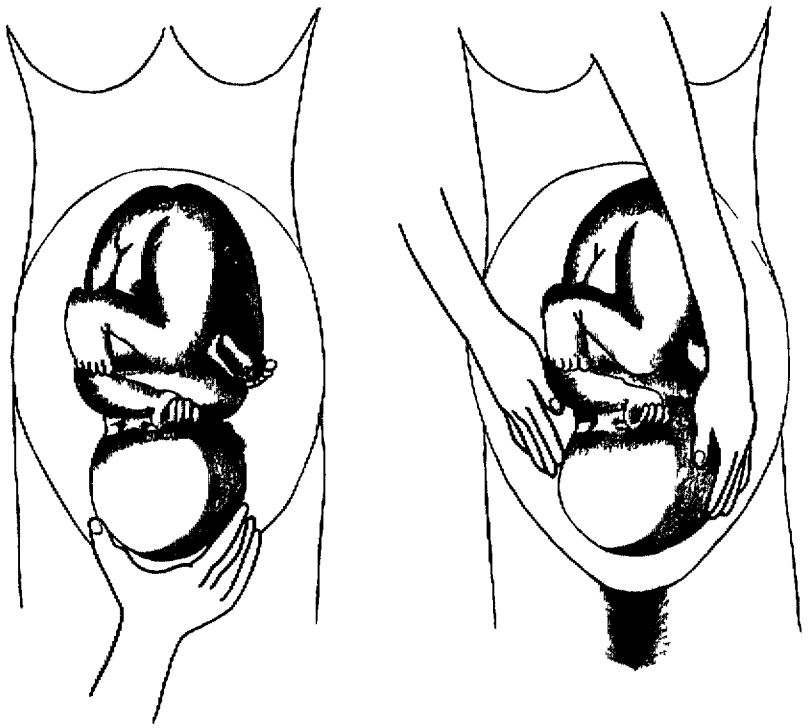
Figure 1 Palpation Steps to Decide the Position of the Baby

Step 3 Third Palpation
HOW Continue to face the woman's head Have the woman bend her knees Grasp the part of the baby in the lower part of the abdomen (See Figure 2, Step 3) Ask yourself "What is in the lower part of the abdomen?" Compare to your findings of the first palpation

FINDINGS If the mass moves up, the presenting part is not engaged Most often, the head is the presenting part This is a vertex presentation If the head is the presenting part, try to move it from side to side If the head cannot be moved, the head is engaged If neither the head nor the buttocks can be felt in the lower abdomen, the baby is lying sideways, a transverse presentation

Step 4 Fourth Palpation
HOW Turn and face the woman's feet Make sure that the woman's knees are bent Place both hands on the sides of the abdomen and press them towards the pelvis (See Figure 2, Step 4)

FINDINGS Compare the findings to the other palpations and figure out the presentation Ask yourself, "Do I feel more then one baby?"



Step 3 Step 4

Figure 2 Palpation Steps to Decide the Position of the Baby

B **FEEL** the level of the **head** (descent)

FEEL the level of the head or presenting part Landmarks used in measuring the descent are the fetal head and the maternal pelvic brim (inlet) (See Figure 3) FEELING the fetal descent through the abdomen is more comfortable for the mother than a vaginal examination

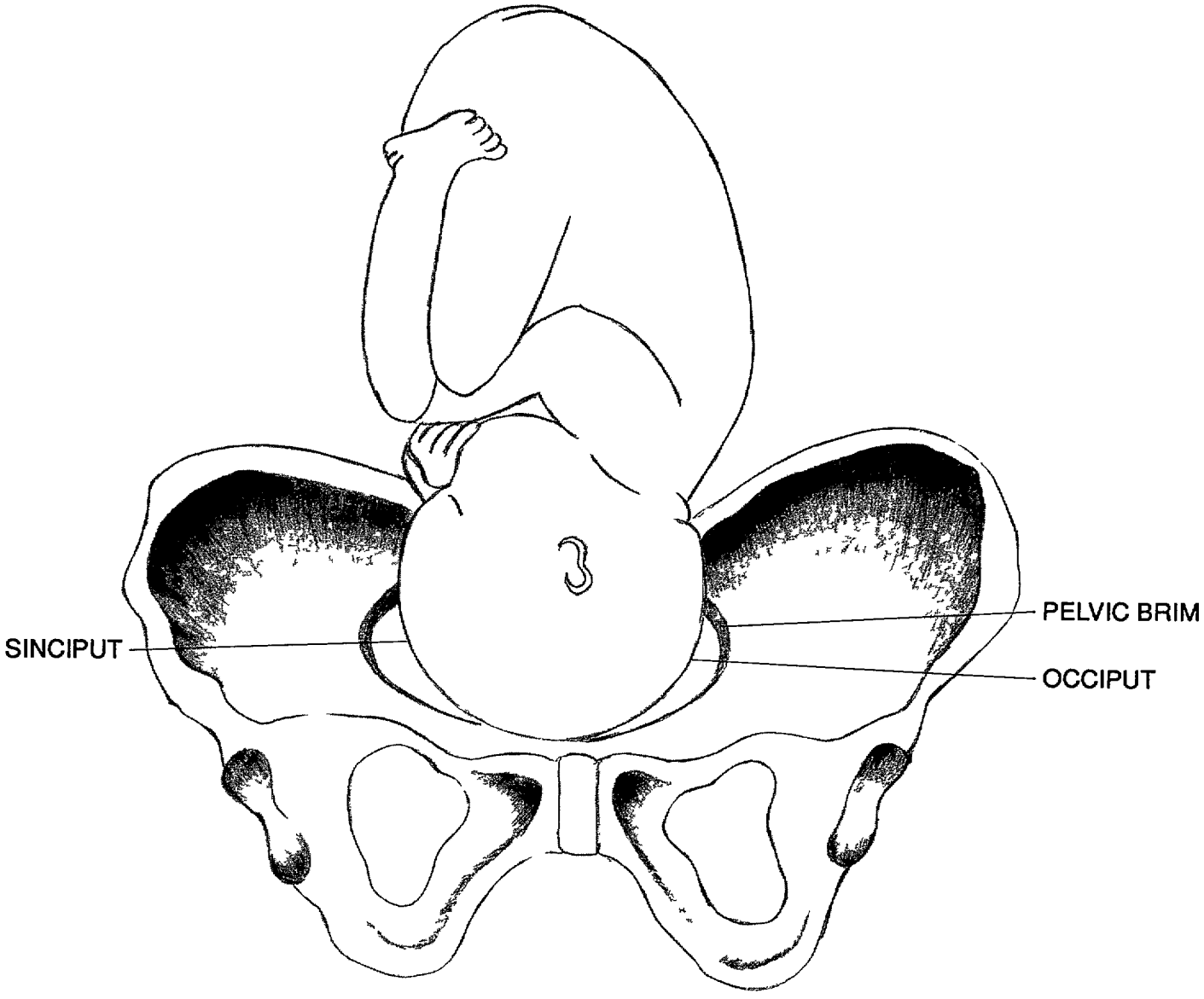


Figure 3 Landmarks for Descent

Stand at the side of the woman If you are right handed, stand at the woman's right side **FEEL** the head with your right hand (See Figure 4) The head can be moved When all of the head is felt, it is measured as **five-fifths** above the brim Five of your fingers can cover the head above the brim

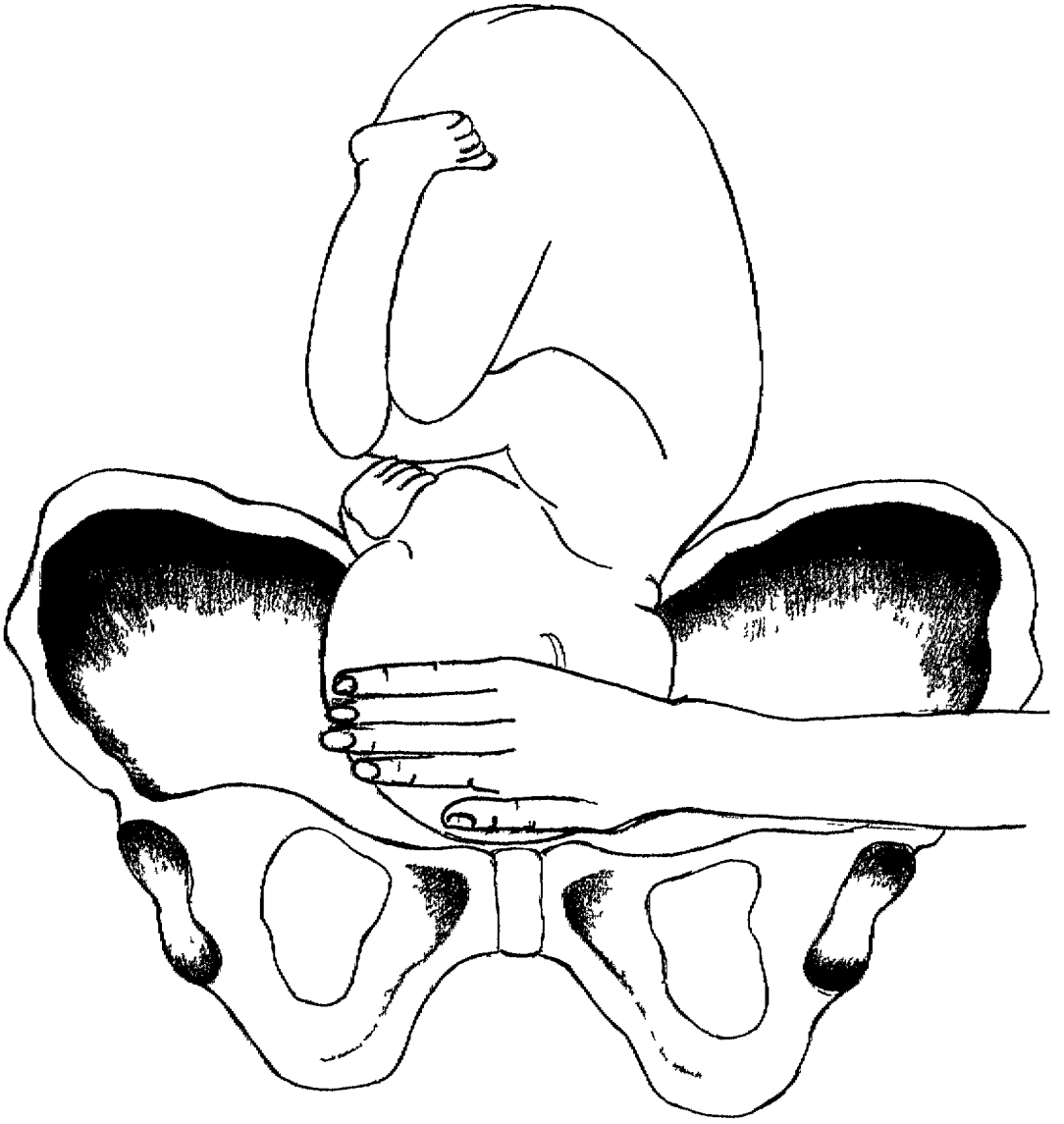


Figure 4 Level of Head above the Pelvic Brim, Five-fifths

When the baby's head is **four-fifths** above the brim, it is just entering the brim When it is **three-fifths** above, 3 of your fingers can still go partially round the head

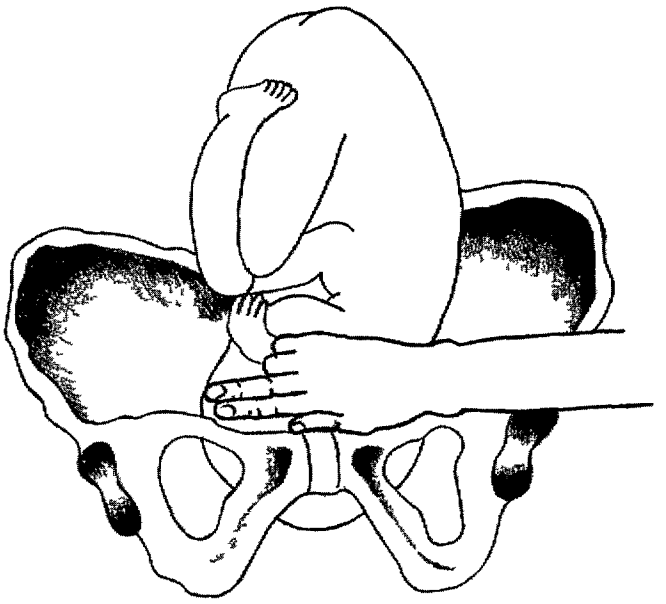


Figure 5 Level of Head above Pelvic Brim, Two-fifths

When it is **two-fifths** above the brim, only 2 fingers measure the head because more than half of the head has entered the brim You can no longer feel the roundness of the head The head is now **ENGAGED** It is almost impossible to move the head

When the head is all the way in the pelvis you can not feel it abdominally You will learn how to plot the level of the head on the labor graph (partograph) later in this module

C **LISTEN** to the **fetal heart rate**

Listening to the fetal heart rate is a safe and reliable way of knowing how the baby is doing during labor If the heart rate is above 160 or below 120 beats per minute, the baby may be having problems

HOW Have the woman lie on her back Find the heart beat before a contraction Use a fetal stethoscope to listen for the fetal heart sounds over the chest or back of the baby You will know where to find the chest or back of the baby after palpating the abdomen **LISTEN** carefully in all four areas of the abdomen When you find the place where the heart beat can be heard the loudest, count the number of beats in a minute **after the strongest part of the contraction**

LISTEN just as a contraction is finishing to determine how well the baby is standing (tolerating) the stress of labor If the heart rate is less than 120 at the end of the contraction, continue to listen and time how long it takes to come back to normal Late slowing of the fetal heart (late deceleration) is a severe form of fetal distress
ACTION

COUNT AND RECORD THE FETAL HEART RATE
EVERY 30 TO 60 MINUTES DURING ACTIVE LABOR

Vaginal Examination

The reasons for doing a vaginal examination when the woman is in labor are
1 to **FEEL** the thinning, shortening (effacement), and opening of the cervix,
2 to **FEEL** the position of the presenting part,
3 to **FEEL** (assess) caput, molding, and bag of waters (liquor and membranes), and
4 to **FEEL** (assess) the pelvic size *on admission* (See page 3 69)

A vaginal examination does not feel very comfortable and can be a cause of infection in the woman It is important to do a vaginal examination ONLY when it is necessary You need to do a vaginal examination when you first **LOOK and FEEL** (evaluate) the woman DO A VAGINAL EXAMINATION EVERY FOUR HOURS WHEN A WOMAN IS IN ACTIVE LABOR Some women, like *multiparas, may need to be examined more often when they are in advanced labor*

You may need to do a vaginal examination

- To decide whether a woman is in labor
- To monitor progress of labor
- To figure out the presentation or position
- To make sure the CORD IS NOT PROLAPSED
- Before giving an enema to a multiparous woman

Procedure

1 Explain to the woman what you are going to do Gather your equipment (Do an abdominal examination **before** doing a vaginal examination)

2 Ask the woman to lie on her back with her knees bent and her legs spread apart

LOOK at the woman's genitals for discharge

A whitish, clear, watery, or blood tinged discharge may be mucous plug or liquor (amniotic fluid) Remember, breech presentation may have a yellowish or greenish stained liquor Meconium (baby's stool) discharge from the vagina may be a serious warning sign Management of this problem is discussed in the section, Baby's Distress, page 3 29

3 Clean the genital area

- Wash the woman's genital area with soap and water
- Wash your hands with soap and water, put on sterile or high-level disinfected gloves, if available
- Use cotton balls or cloth squares and antiseptic solution or soapy solution to wipe the woman's genital area from front to back
- Repeat the wiping from front to back until the genital area is clean

4 **FEEL** the **vaginal walls and cervix**

- Dip the index and middle fingers of your gloved hand into an antiseptic lubricant
- Hold the woman's labia apart with the thumb and index finger of your other gloved hand Gently insert the 2 fingers of your hand into the woman's vagina *Once your fingers are inserted, do not take them out until the examination is finished*, this decreases the risk of infection
- Feel the woman's vagina Move your fingers around the vaginal wall Feel for hard scarring Move your fingers to the back of the vagina Feel for stool in the rectum
- Feel the cervix with the tips of your fingers Check its firmness and thickness and decide how much the cervix has thinned, thinning of the cervix is *effacement* Determine how much the cervix has opened, opening of the cervix is *dilatation* Measure the dilatation in cm, complete dilatation is 10 cm (See Learning Aid 1 - Cervical Dilatation Measurements, page 3 65, for information on how to convert finger measurements to cm)

  CERVICAL EFFACEMENT (THINNING) AND DILATATION (OPENING) ALLOW THE BABY TO PASS OUT OF THE UTERUS FULL EFFACEMENT HAPPENS WHEN THE CERVIX IS VERY, VERY THIN (it is as thin as the skin on a mango) COMPLETE DILATATION OCCURS WHEN THE CERVIX IS NO LONGER FELT

5 **FEEL** the **bag of waters (membranes)** The membranes may be intact until the cervix is fully dilated and may need to be artificially ruptured (ARM) with a sterile instrument The membranes feel like a full balloon

  If the membranes are ruptured, the water (amniotic fluid or liquor) should be clear If the water is stained from the meconium (stool of the baby) or if there is very little or no water, the baby may be distressed The meconium may indicate hypoxia (too little oxygen to the brain) Meconium is frequently seen in breech presentation

6 **FEEL the presenting part of the baby** and use this information with your abdominal examination findings to confirm (identify) which part of the baby is at the cervix

- A vertex presentation means that the head is at the cervix
- A breech presentation means the buttocks or legs are at the cervix
- A transverse presentation means the baby is lying sideways in the uterus, and an arm or shoulder may be at the cervix

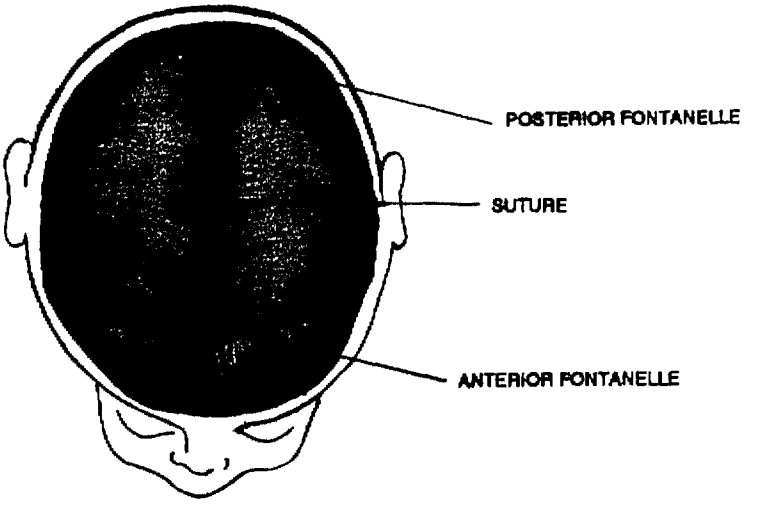


Figure 6 Fontanelles and Sutures

- IF THE HEAD is at the cervix, feel the fontanelles to decide the position of the baby The anterior fontanelle is a diamond shaped joining of four sutures The posterior fontanelle is a triangle joining of three sutures In a *well-flexed vertex presentation*, only the *posterior fontanelle is felt* If the head is *not well flexed* (deflexed), *both fontanelles are felt*

- **FEEL** for caput and molding Feel the suture lines for separation, severe overlapping of the bones can be a sign that the head will not fit through the pelvis of the woman (cephalopelvic disproportion) See molding on page 3 46 and in Learning Aid 3 - Measuring the Pelvic Size, page 3 69

7 **FEEL** how far the baby has progressed into the pelvis Compare this finding to your abdominal palpation of descent of the baby's head

8 **FEEL** for the absence of the umbilical cord, the cord is prolapsed when it drops through the cervix before the presenting part, it will feel like a soft, pulsating cord See Module 10 **Other Emergencies**, Umbilical Cord Prolapse, page 10 7

9 Remove your hand from the woman's vagina Help her turn to a comfortable position

10 Explain your findings to the woman and her family Record your findings on the labor graph (partograph)

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages listed in parentheses ( )

1 Why do you examine a woman in labor? (page 3 10)

2 List the steps of a general physical examination (pages 3 10 - 3 11)

3 Describe the steps used in palpation to decide the position of the baby (pages 3 11 - 3 17)

4 What is engagement? How can you find out if the baby's head is engaged? (page 3 17)

5 Why do you listen to the baby's heart rate? What are the normal heart rates? (page 3 17)

6 Why will you do a vaginal examination? List three reasons (page 3 18)

Skill Labor Admission and Monitoring - IDENTIFY THE PROBLEMS/ NEEDS and TAKE APPROPRIATE ACTION

The third and fourth steps that happen when seeing a woman in labor are **IDENTIFY THE PROBLEMS/NEEDS** and **TAKE APPROPRIATE ACTION**

The midwife is an expert on caring for pregnant women, finding high risk women and recognizing complications In order to identify the problems/needs and take the appropriate action, you must fully understand the normal findings discussed in **ASK and LISTEN, LOOK and FEEL** If you have any questions about these, go back and review the information

Labor is a natural process demanding a woman's total physical and emotional effort You will find women in various stages of labor when you go to them at home or when they come to you at the maternity You will have to adjust your actions to meet their needs The normal needs of a woman in labor are comfort, emotional support, cleanliness, nutrition, hydration and elimination Look at your midwifery textbook to review normal labor progress

ASK and LISTEN for PROBLEMS and TAKE APPROPRIATE ACTION

If you identify any of the following problems when you **ASK and LISTEN**, refer the woman You may find these problems during antenatal care or when a woman comes to you in labor Consult your midwifery textbook for discussions of these problems

Women with these problems need to deliver in a hospital, if at all possible

- more than four pregnancies
- older than 35 years
- younger than 16 years
- pre-eclampsia or eclampsia
- deformed pelvis or leg and no previous vaginal delivery
- two or more miscarriages
- stillbirth
- previous cesarean section
- height below normal for ethnic group
- problem with the last delivery vacuum extraction or forceps delivery, retained placenta, severe bleeding, prolonged labor
- present pregnancy problems twins, transverse lie, hemorrhage, small pelvis, severe anemia

LOOK and FEEL for PROBLEMS and TAKE APPROPRIATE ACTION

A woman in labor who suffers a problem that threatens her life and the life of her baby is in *distress* (trouble) Labor and delivery strains all of a woman's physical and emotional systems For this reason, monitoring the mother's condition during labor and delivery is as important as monitoring the baby's condition

If action is not taken to relieve the mother's distress, the problem may lead to death **Late signs of mother's distress include anxious expression, paleness around mouth, perspiration on upper lip, dry mouth, concentrated urine, and dark vomit**

REFER -- You will find this written throughout the actions **Each midwife will have to make the decision according to her situation** If it is impossible to transport a woman, decide what you can do to try to keep the woman and her unborn baby alive If you are at a hospital, call the doctor while you begin the actions

Use the following chart to find (identify) the reason for the mother's or the baby's distress Follow the actions to be taken Each time you refer a woman, ask the doctor to help you update the actions *It is important to check often for information on improved ways to give care and new treatments that may be available*

Mother's Distress In Labor

VITAL SIGNS Blood Pressure (BP)

FINDINGS	BP above 140/90
ACTION	Take every 30 minutes for 3 times, have her lie on her left side, hydrate If BP **decreases**, continue to monitor every 2 hours during labor If BP is still **high** (elevated), REFER If impossible to refer and • *close to delivery* prepare for delivery, hydrate, be ready for possible convulsions, a depressed baby, and postpartum hemorrhage • *early labor* continue hydration, be ready for convulsion, refer to Pregnancy Induced Hypertension in Module 2 **Quality Antenatal Care**
FINDINGS	BP **high** AND headache, OR blurred vision, OR brisk/quick reflex (hyper-reflexia), OR edema of face, hands, feet, or vulva
ACTION	REFER If referral is impossible and • *close to delivery* give intramuscular magnesium sulfate 10 grams (gm) OR Valium 20 milligrams (mg), deliver quickly with vacuum extractor, give oxytocic right away after delivery, be prepared for depressed baby and convulsion in woman • *early labor* give intramuscular anticonvulsant as above REFER if at all possible Monitor labor, bedrest, and watch for signs of eclampsia

VITAL SIGNS Blood Pressure (BP), continued

FINDINGS BP below 90/60
ACTION Take every 30 minutes for 3 times Hydrate If still 90/60 or lower, look for cause including illness, bleeding, infection, or shock, refer to Prevention and Management of Shock in Module 8 **Hydration and Rehydration** REFER if close to doctor, if pulse and temperature are normal continue to monitor labor, or if close to delivery, deliver

VITAL SIGNS Pulse

FINDINGS Pulse continuously above 90 or below 60 beats per minute
ACTION Take pulse every 30 minutes for 3 times between contractions, hydrate If the condition remains the same, look for cause, if blood pressure and temperature normal, continue to monitor labor and deliver REFER if close to doctor

VITAL SIGNS Temperature

FINDINGS Temperature 38°C (100 6°F) or above
ACTION LOOK for signs of infection, malaria or dehydration - - refer to Module 7 **Prevention and Treatment of Sepsis,** and Module 8 **Hydration and Rehydration** for additional information REFER to doctor if needed

BREATHING

FINDINGS Respirations above 40 per minute between or during a contraction, woman has difficulty getting her breath
ACTION Encourage the woman to breathe deeply and relax to make sure she is not hyperventilating Hydrate REFER if no change in her condition and/or continue to monitor labor and deliver, be prepared for depressed baby

HEART

FINDINGS Distended (bulging) neck veins, irregular heart rate, or unusual heart sounds May have edema or high blood pressure
ACTION Take action according to edema or high blood pressure above

ABDOMEN Contractions, Bleeding, Early Rupture of Membranes

FINDINGS Regular contractions before 28 weeks *with or without bleeding*
ACTION REFER to Incomplete Abortion Care in Module 10 **Other Emergencies**

FINDINGS Regular contractions, after 28 weeks, *no bleeding*
ACTION Monitor, she may deliver, be prepared for premature baby

FINDINGS Regular contractions, after 28 weeks, *ruptured membranes*
ACTION Monitor, she will probably deliver, be prepared for premature baby
Refer to Module 7 **Prevention and Treatment of Sepsis**, Prevention of Chorioamnionitis, page 7 12

FINDINGS Regular contractions, after 28 weeks, *severe bleeding*
ACTION REFER Look at Module 5 **Prevention and Treatment of Hemorrhage**, and Module 8 **Hydration and Rehydration**

FINDINGS *Hard uterus*, no relaxation of the uterus, term -- think abruptio placenta
ACTION Give intramuscular analgesic, intravenous infusion, REFER as soon as possible

FINDINGS Last 3 months of pregnancy, *no abdominal pain, little bleeding* -- think placenta previa
ACTION • Signs of shock give intramuscular analgesic, intravenous infusion, REFER as soon as possible
• No shock, No transport monitor for labor, intravenous infusion, bedrest, if labor starts within 24 hours, proceed with normal delivery Be prepared for hemorrhage, give oxytocic, monitor postpartum
• If labor does not start, REFER as soon as possible

FINDINGS Weak contractions, irregular, term
ACTION Sedate, hydrate, monitor closely for 4 hours
• If contractions stop, monitor twice a day until labor starts, proceed with normal delivery
• If no progress and weak, irregular contractions continue, REFER as soon as possible Monitor for infection and labor until referral possible

ABDOMEN Uterus Shape

FINDINGS Uterus wider than long transverse lie
ACTION REFER as soon as possible If in labor, give intramuscular analgesic, intravenous infusion, and broad spectrum antibiotic

ABDOMEN Descent

FINDINGS Presenting part not engaged, term, dilatation 3 cm or more, first pregnancy, active labor
ACTION Assess pelvis, give intravenous infusion, have woman change position often and walk, monitor for 4 hours, if no progress, arrange to REFER as soon as possible

ABDOMEN Presentation

FINDINGS Breech presentation or transverse lie
ACTION Do vaginal exam
- If breech and cord felt assist woman into knee chest position, see Module 10 **Other Emergencies**, Umbilical Cord Prolapse, page 10 7
- If breech and no cord felt - do episiotomy in second stage, see Module 10 **Other Emergencies**, Breech Procedure, page 10 16
- If transverse lie give intramuscular analgesic, intravenous infusion, and broad spectrum antibiotic, REFER, as soon as possible

ABDOMEN Bladder

FINDINGS Full or distended bladder
ACTION If unable to urinate, catheterize

VAGINA Cervical Dilatation

FINDINGS Less then 3 cm dilatation in 8 hours with contractions of 2 or more in 10 minutes, each lasting 20 seconds or more
ACTION REFER, if transportation delayed, give intramuscular analgesic, intravenous infusion, and continue to monitor

FINDINGS Dilatation on labor graph moves to the right of the alert line
ACTION REFER, unless delivery is about to occur, continue to monitor, be prepared for cord around the neck of the baby, depressed baby, and postpartum hemorrhage
- If delivery not about to occur, give intramuscular analgesic, broad spectrum antibiotic, and intravenous infusion, continue to monitor until transportation available for REFERRAL

FINDINGS Dilatation on labor graph reaching or crossing the action line
ACTION The woman should be in hospital The doctor will make the decision for action reassess pelvis and if adequate, continue to monitor for 4 hours, hydrate, augment labor and/or cesarean section
- If not at hospital, reassess pelvis if adequate, no distress in mother or baby -- hydrate, ambulate, monitor labor for 4 hours, and reevaluate
- If unable to refer to hospital, reassess pelvis and hydrate
  - adequate pelvis ambulate, monitor 4 hours
  - not adequate pelvis give Pethidine 100 mg intramuscular, try again to organize transport

VAGINA Discharge

FINDINGS	Meconium discharge, may be yellow or green stained fluid or thick greenish discharge with ruptured membranes Think of fetal distress
ACTION	Check condition of baby and cervix, if delivery not very soon, REFER Be prepared for infant resuscitation
FINDINGS	Greenish, thick or frothy (bubbly) vaginal discharge, membranes intact Think of gonorrhea
ACTION	Give broad spectrum antibiotics Be prepared to treat baby's eyes
FINDINGS	Black, thick vaginal discharge Think of breech presentation
ACTION	Check condition and presentation of baby Refer breech presentation, if any problems, See Module 10 **Other Emergencies**, breech delivery

VAGINA Membranes **Labor must begin within 8 hours after membranes rupture, and delivery must be completed within 15 hours, or referral necessary**

FINDINGS	Ruptured **less than 8 hours**, no contractions, term, clear or milky liquor, fetal heart tones in normal range
ACTION	• If head **not** engaged, monitor for cord prolapse, hydrate, bedrest • If head engaged wait for labor, hydrate, encourage walking and resting, watch for prolapse cord, watch for signs of infection
FINDINGS	Ruptured **8 hours or more**, no contractions, term, clear or milky liquor, fetal heart tones in normal range
ACTION	Monitor for prolapse cord, give broad spectrum antibiotic, hydrate and REFER
FINDINGS	Ruptured before labor begins, term, prolapse cord
ACTION	Refer **Prevent pressure on the cord Prevent the cord from being squeezed** See Module 10 **Other Emergencies**, page 10 7 for the procedure
FINDINGS	Ruptured before labor begins and pregnancy 28 to 36 weeks, **do not do a vaginal examination**
ACTION	Give broad spectrum antibiotics and REFER

Monitoring the baby during labor should give you early warning when a problem threatens the baby's life (distresses the baby) Use the chart on the next page showing the three FINDINGS and ACTIONS for a baby in distress during labor

Baby's Distress in Labor

HEART RATE

FINDINGS A baby's heart rate *faster than 160 or slower than 120 beats per minute* indicates a problem A sudden change in the sound of the heart rate can also mean the baby is distressed A heart rate of **100 or slower** means very severe distress and ACTION should be taken A heart rate which is less than 120 at end of contraction and is **slow returning to normal** means severe distress and ACTION is necessary Be prepared for a depressed baby at delivery

ACTION *In second stage Hydrate mother*, help *change the mother's position* and *deliver her* as soon as possible making an episiotomy and using the vacuum extractor, if available Remember to check for cord around the neck as soon as the baby's head is delivered

Not *in second stage* **LISTEN** to the heart rate between each contraction Change the mother's position *frequently* after listening to an abnormal heart rate Hydrate, watch for cord prolapse, and REFER If REFERRAL not possible, closely monitor until second stage

MECONIUM

FINDINGS The baby passes meconium stool causing a thick meconium stained liquor (amniotic fluid) to come from the vagina of the mother The color may be greenish or blackish The baby MAY be in distress from lack of oxygen

ACTION Check heart rate of the baby If delivery is not very soon, REFER, if transportation is delayed, continue to monitor labor, change position, hydrate mother, be ready for delivery Be prepared to suction the mouth and nose as soon as you see the baby's head For every baby born with meconium, suction stomach IMMEDIATELY after delivery to prevent aspiration (breathing in) of the meconium

ACTIVITY

FINDINGS The baby moves around a lot in the uterus, as if it is having a problem and is trying to move around and get rid of the problem The baby may even be having fits (convulsions) Normally the baby moves very little during labor

ACTION If delivery is not very soon, REFER if at all possible *Check the heart rate* every 5 minutes If the heart rate is still not normal, check for prolapse of the cord Be prepared for a depressed baby Hydrate mother, change position, give broad spectrum antibiotic, and monitor labor

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answer in the module on the pages listed in parentheses ( )

1 List seven problems you can identify by asking and listening to a woman in labor (page 3 23)

2 Define mother's (maternal) distress and give 3 examples (pages 3 24-3 28)

3 Describe three ways a baby can tell you that there is a problem during labor (page 3 29)

4 What can you do for fetal distress? (page 3 29 and Module 6 **Resuscitation**)

Skill: Use the Partograph to Monitor Labor Progress

A Midwife's Quote

> The partograph helps me diagnose abnormal labor when I still have time to refer the mother to the hospital.
>
> LSS Midwife, Uganda

The partograph[1] is a clear way to record all labor observations on one chart It is important to remember that the partograph is a tool for monitoring/managing labor only The partograph does not help you identify other risk factors which may have been present before labor started This graph can be used in hospitals and maternities to help identify women whose labors are not progressing normally

The Ministry of Health many times provides all labor forms to government health facilities Midwives in private practice can have copies made for their own practice The midwife, doctor, and auxiliary personnel caring for a woman in labor are responsible for recording information

After the midwife **ASKS and LISTENS** during the history taking and **LOOKS and FEELS** during the physical examination, the information must be written so that the **PROBLEMS/NEEDS** can be identified The midwife will be able to **TAKE APPROPRIATE ACTION** to care for each problem or need she identifies

Before you can use the partograph to write and interpret the information, you must learn about it LSS uses a labor record form with the *partograph on the front* and the *labor notes and the outcome of the delivery on the back* The outcome of the delivery information can be used to take **ACTION** during the postpartum time *Adapt and use the labor record form as appropriate for your situation*

Equipment

Labor record form
Pen
Fetoscope (fetal stethoscope)
BP apparatus
Pulsometer or watch
Thermometer

---

[1] The partograph was designed in 1970 by Dr R.H Philpott, a professor in Obstetrics and Gynecology at the University of Rhodesia (now Zimbabwe) and has been used since then We wish to thank all those who contributed to the development of the World Health Organization version of the partograph

The Parts of the Partograph

The partograph is used to record and observe labor progress, including the dilatation of the cervix, the descent of the head, and the frequency and duration of uterine contractions The parts of the graph are described below in the order in which they appear on the graph in Figure 7

Top of the partograph, including name, gravida, para, registration/hospital number, date of admission, time of admission, and time membranes ruptured, is written at the top of the graph

Fetal condition

- **Fetal Heart Rate** is recorded to monitor the condition of the fetus
- **Liquor or amniotic fluid** is observed and recorded as clear "C" or meconium stained "M " If the membranes are not ruptured, record "I" for intact
- **Molding** is felt and recorded with an "O" for no molding or + (small), ++ (moderate), +++ (severe)

Maternal condition and management

- **Cervical Dilatation** is the most important observation in monitoring progress of labor The dilatation is plotted with an "X " The latent phase, active phase, and alert and action lines will be explained in detail in the skill section of this module
- **Descent of the Head** is very important in the monitoring of labor progress The descent is plotted with an "O "
- **Time** is recorded using the time of admission as zero time The *actual time of day* is recorded below the hours line
- **Contractions**, along with cervical dilatation and descent of the head, tell the progress of labor The contractions are recorded below the time line
- **Medications** - Intravenous **Fluids** (infusion) are recorded in the space provided **Note that oxytocin in labor is to be directed only by the doctor**
- **Blood Pressure, Pulse,** and **Temperature** are recorded in the space provided
- **Urine** amount is recorded every time urine is passed Albumin (protein) and acetone (ketone) are tested if materials for testing are available Vomitus is recorded each time the woman vomits

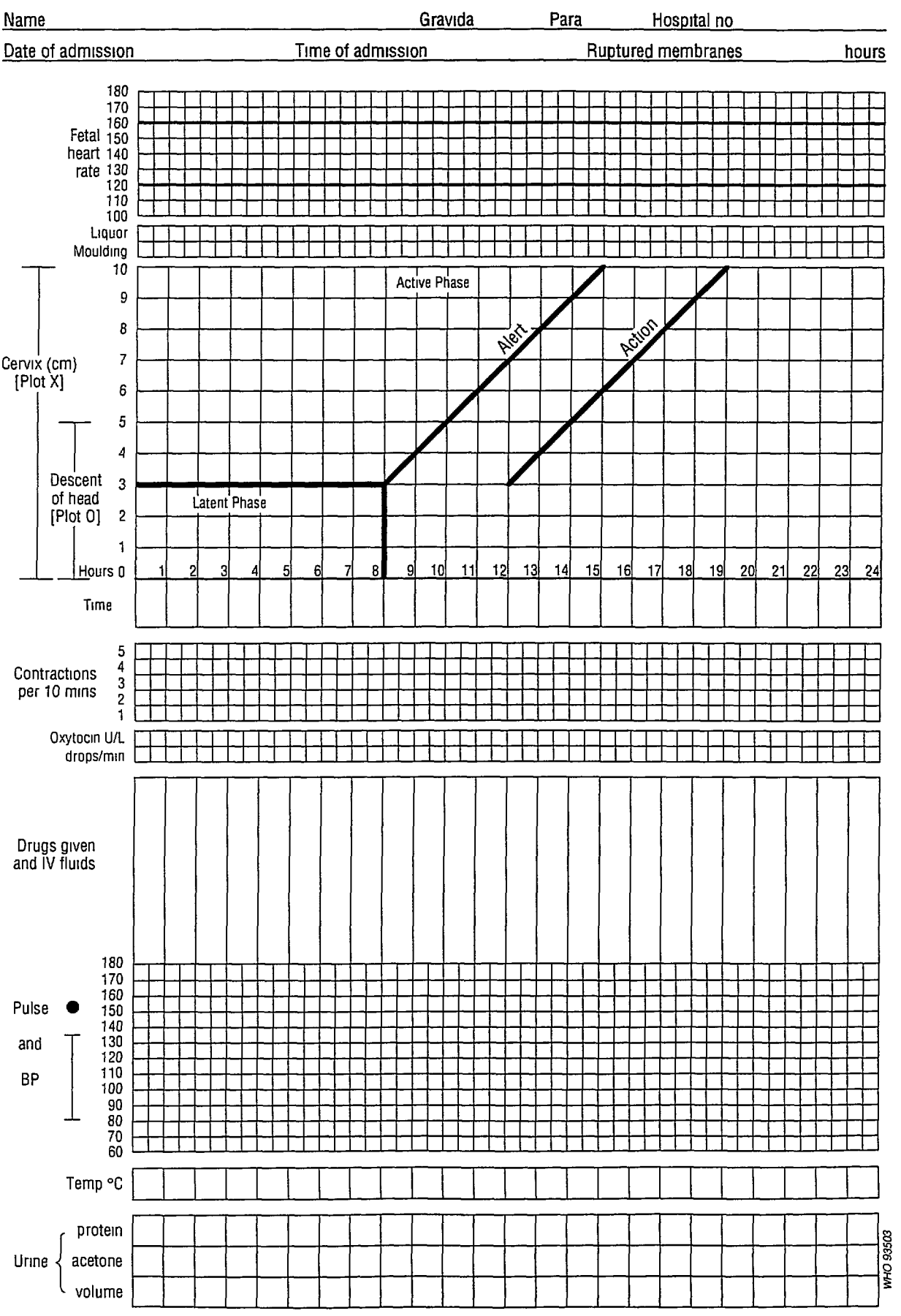


Figure 7 Partograph - Front of Labor Record Form

LABOR NOTES

Please circle or write responses

DELIVERY

DATE TIME METHOD Spontaneous / Vacuum Extraction / C/S / Other

PERINEUM Intact / Episiotomy / Laceration

ANESTHESIA None / Local /General

THIRD STAGE

Oxytocic Given Yes / No If Yes Type_____Amount_____

PLACENTA Time Complete / Incomplete

BLOOD LOSS AMOUNT

small (less than 250 cc)
moderate (250-499 cc)
large (more than 500 cc)
significant for mother

APGAR

Time	Color	Breath	Heart	Tone	Reflex	TOTAL
1 min						
5 min						

BABY

Weight _____Grams Sex Male / Female

Baby Position Vertex / Breech / Other

COMPLICATIONS OF MOTHER / BABY

Midwife Name _____ Date _____

Figure 7 Labor and Delivery Notes - Back of Labor Record Form

On the **BACK of the labor record form**, there is space for labor notes and delivery outcome This part of the form can be modified to fill the needs of your own health center or labor ward You may want to add or adapt your labor form as shown in this module, or use this one if you do not already have a labor record form You may choose to have one sheet for labor notes and a separate sheet for outcome of delivery

Labor Notes is a space for recording additional care during labor For example, each time you give mother fluids to drink or food to eat, record it here When the mother is up walking around, has a very bad backache, or takes a bath, record her activities Write any information about what is happening during the labor that you do **NOT** write on the partograph This information is **EXTRA** or **IN ADDITION** to the information you write on the partograph

Delivery information is a place to record what happened during the delivery The following information may be included in the delivery outcome

- Delivery date, time, method record the date and time Record the method as spontaneous, vacuum extraction, cesarean section
- Perineum and anesthesia record whether perineum is intact, any laceration or type of episiotomy and repair Record any anesthesia given, such as local, pudendal block, or general
- Oxytocic record the type given, the time and method of administration
- Placenta and membranes record time of placental delivery, type, and complete or incomplete
- Blood loss amount small (less than 250 cc), moderate (250 to 499 cc), or large (more than 500 cc)

APGAR of Newborn (Refer to Module 6 **Resuscitation,** page 6 16 for information on APGAR)

- Record the baby's APGAR **after** birth at one and 5 minutes

Newborn Baby Details record delivery information including baby's position, sex, weight, and length

Complications or problems of the mother or baby Use this section to write any problems Details of management should be recorded on either a postpartum record or newborn record

Midwife or person delivering and the date are always filled in at the end of recording the information This is very important for follow up in case additional information is needed

Procedure

When a woman is admitted in labor, a complete evaluation of her condition and the condition of her baby is done This includes a history and physical examination, with both abdominal and vaginal examinations The following information will help you learn how to record, observe, and interpret your findings on the partograph

1 PROGRESS OF LABOR

Cervical Dilatation

The first stage of labor is divided into the latent and active phase

- The **latent phase**, a period of slow cervical dilatation, is from 0 through 2 cm with gradual shortening of the cervix
- The **active phase**, a period of faster cervical dilatation, is from 3 to 10 cm

Look at the graph in Figure 8 Along the left side are the numbers 0 to 10 Each number/square represents one cm dilatation

Along the bottom of the graph are numbers 0 to 24 Each number/square represents one hour Write the time at admission **on the line**

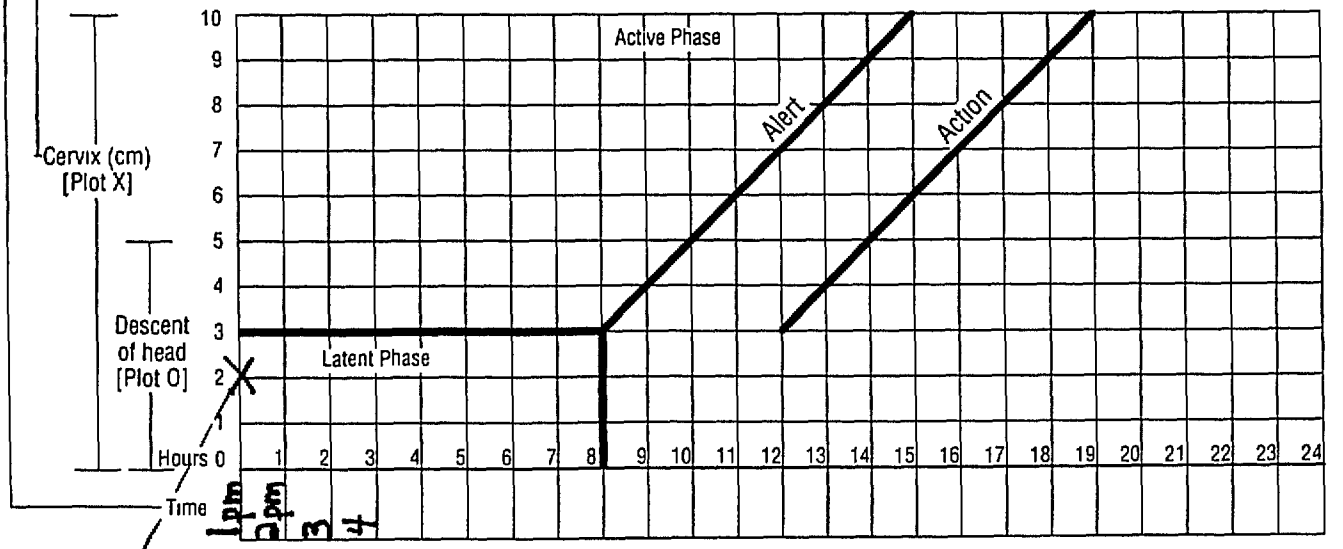


Figure 8 Recording Cervical Dilatation

The dilatation of the cervix is recorded with an **X** Look at Figure 8, to see how the dilatation is recorded The first vaginal examination, on admission, is recorded Vaginal examinations are made **at least every 4 hours** Women, particularly multipara, may need to be checked more frequently in advanced labor

Exercise 1 Plotting cervical dilatation in the LATENT phase

The **latent** phase normally may take 8 hours When the woman is admitted in the latent phase, dilatation of the cervix is plotted with an **X** on the line marked zero Vaginal examination is made every 4 hours If the membranes have ruptured and the woman has no contractions, a very careful vaginal examination is made upon admission to make sure the cord is not prolapsing Cervical dilatation, and the position and descent of the head are also determined

Cervical dilatation is plotted with an **X** If **progress is satisfactory**, the **X** will remain ***on* or *to the left*** of the **alert line**

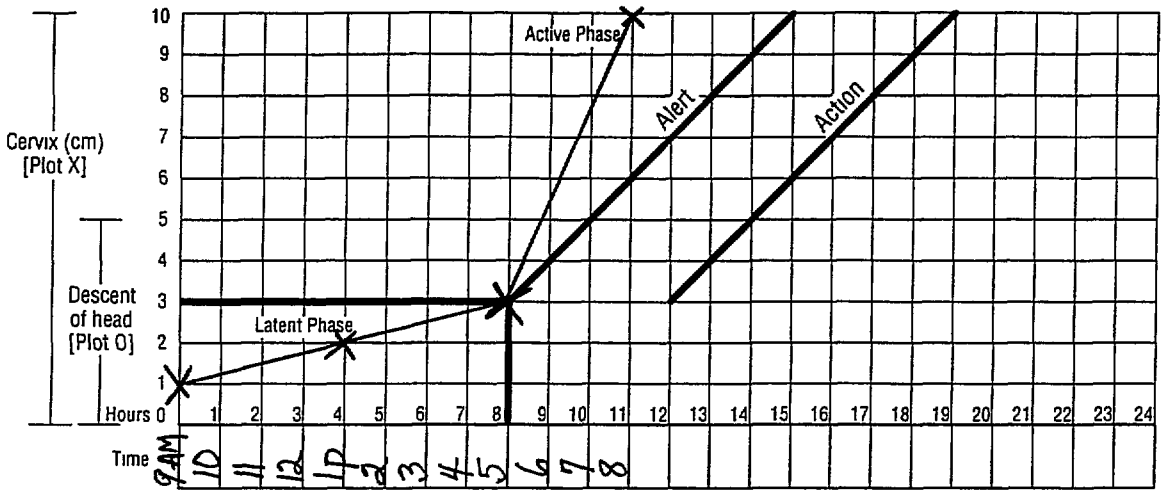


Figure 9 Recording Dilatation

Find the following on Figure 9

- Admission was at 9 am and the cervix was one cm dilated
- At 1 pm the cervix was 2 cm dilated
- At 5 pm the cervix was 3 cm dilated when she entered the active phase of labor,
- At 8 pm the cervix was 10 cm

How many hours was the latent phase of labor?

How many hours was the active phase of labor?

ANSWERS - Exercise 1

- The latent phase of labor began on admission at 9 am and the cervix was 1 cm dilated The latent phase of labor ended at 5 pm when the cervix was 3 cm dilated The latent phase lasted 8 hours
- The active phase began at 5 pm when the cervix was 3 cm dilated and ended at 8 pm when the cervix was fully dilated The active phase lasted 3 hours

CERVICAL DILATATION IS PLOTTED WITH AN X

IF PROGRESS IS SATISFACTORY, THE X WILL REMAIN *ON* OR *TO THE LEFT* OF THE ALERT LINE

Exercise 2 Plotting cervical dilatation from latent to active phase

When dilatation is 0 through 2 cm, plotting, there is an **alert** line, a straight line running through the boxes from 3 to 10 cm When labor goes into the active phase, plotting must be moved **by a broken line** to the alert line See the example in Figure 10

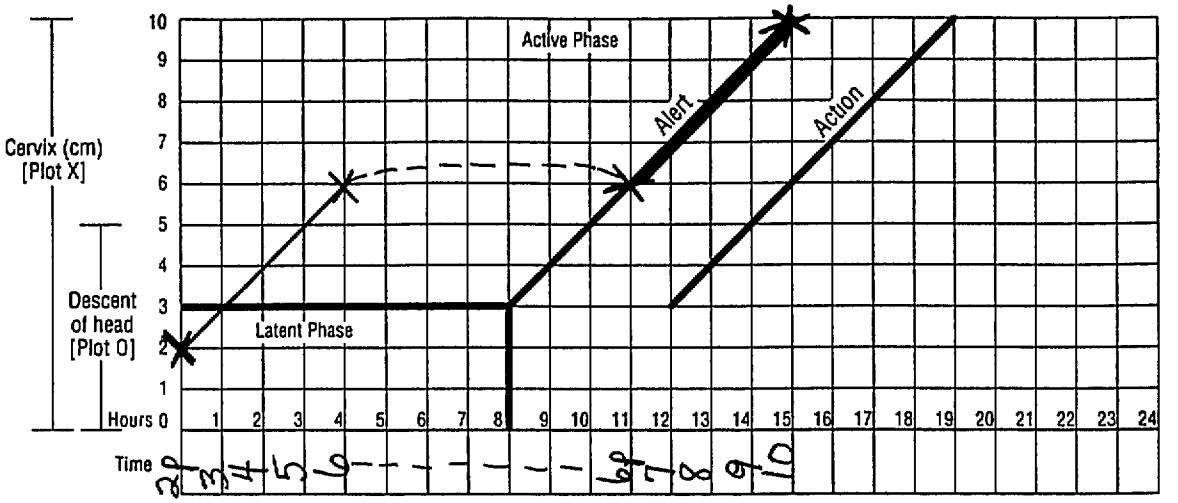


Figure 10 Plotting Cervical Dilatation from Latent to Active Phase

Look at the following information on Figure 10

- Admission time was 2 pm and the dilatation was 2 cm
- At 6 pm, the dilatation was 6 cm - active phase, move the time and dilatation from latent to active phase on the alert line **Remember to use a dotted line for the move**
- At 10 pm, the cervix was 10 cm

How many vaginal examinations were performed?

How long was the first stage of labor at the maternity?

ANSWERS - Exercise 2

- Vaginal examinations were performed at 2 pm, 6 pm, 10 pm
- First stage of labor was 8 hours, beginning at 2 pm and ending at 10 pm

Points to Remember

- The latent phase is from 0 through 2 cm dilatation and is accompanied by gradual shortening and thinning (effacement) of the cervix It should normally not last longer than 8 hours

- The active phase is from 3 to 10 cm, and dilatation should be at the rate of at least one cm/hour

- When labor progresses very well, the dilatation should remain on or to the left of the alert line

- When admission takes place in the active phase, the admission dilatation is immediately plotted on the alert line

- When labor goes from latent to active phase, the dilatation (plot **X**) is immediately moved (using a broken line) from the latent phase area to the active phase area on the alert line

Descent of the Fetal Head

For labor to progress well, dilatation of the cervix should be accompanied by descent of the head Measuring the descent of the baby's head helps the midwife follow the progress of labor

Descent of the head is measured by palpating the head through the abdomen and recording the findings every hour As discussed in **LOOK and FEEL,** page 3 11, descent is measured in "fifths" of the head palpable above the pelvic brim

Descent of the head should always be assessed by abdominal examination immediately before doing a vaginal examination so that you will know where to expect to feel the head during the vaginal examination

Exercise 3 Plotting descent

To plot descent of the head, look on the left side of the graph and see the word *descent* with lines going from 5 to 0 Plot the descent with an **0** on the graph

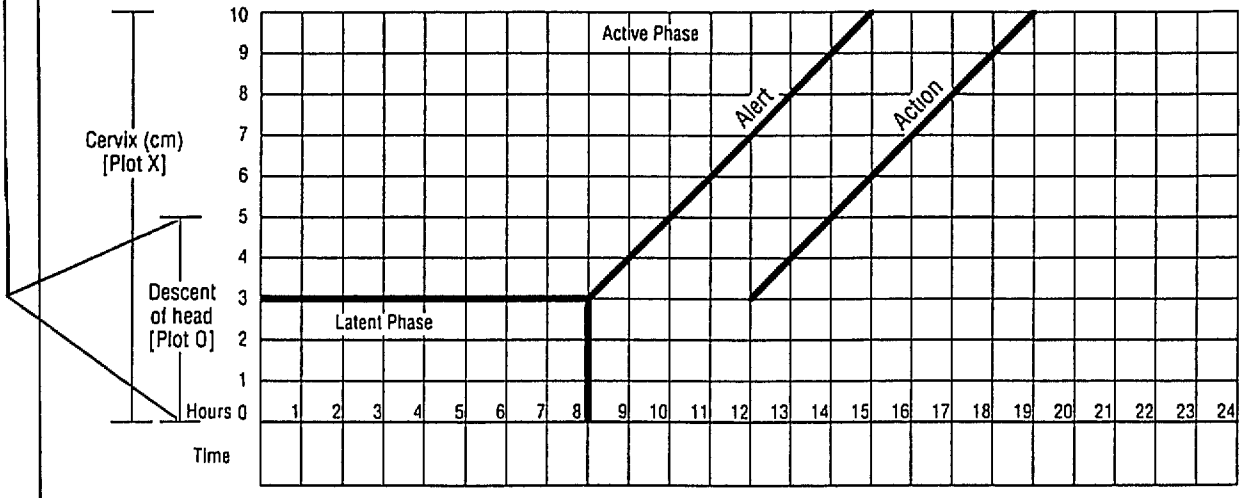


Figure 11 Plot Descent of the Head

Record the following on the graph

- On admission at one pm, the head is 5/5 (five-fifths) above the pelvic brim and the cervix is one cm dilated
- After 4 hours, the head is 4/5 (four-fifths) above the brim and the cervix is 5 cm dilated Labor is now in the active phase Cervical dilatation, descent of head, and time recordings are transferred to the alert line
- After 3 more hours, the head is 1/5 (one-fifth) above the pelvic brim and the cervix is 10 cm dilated
- How long was the first stage of labor in the maternity?

ANSWERS - Exercise 3

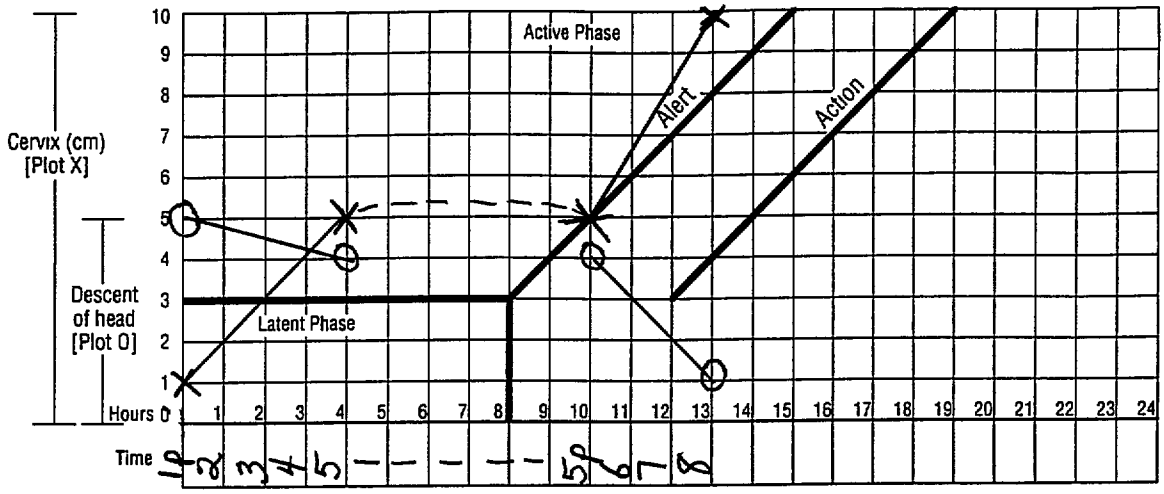


Figure 12 Plot Descent of the Head

- On admission at 1 pm, the head is 5/5 (five-fifths) above the pelvic brim, and the cervix is one cm dilated
- After 4 hours, the head is 4/5 (four-fifths) above the brim, and the cervix is 5 cm dilated Labor is now in the active phase Cervical dilatation, descent of the head and time recordings are moved to the active phase
- After 3 more hours, the head is 1/5 (one-fifth) above the pelvic brim and the cervix is 10 cm dilated
- The first stage of labor in the maternity was 7 hours

Points to Remember

- Measuring the descent of the baby's head helps the midwife follow the progress of labor
- An abdominal examination must always be done before a vaginal examination

Uterine Contractions

Good uterine contractions are necessary for progress of labor Normally, contractions become more frequent and last longer as labor progresses *A woman must be in labor for the partograph to be useful in monitoring labor progress*

Start a Partograph

- In latent phase if contractions are at least 2 or more in 10 minutes, lasting 20 seconds or more, to monitor labor progress, **OR**
- In active phase if contractions are at least one or more in 10 minutes, lasting 20 seconds or more, to monitor labor progress, **OR**
- In early labor to monitor if labor is established Sometimes a woman may be monitored in early labor with 4 hourly observations plotted on a partograph There is no harm in this At the end of 8 hours, there may be no change in the cervix, or contractions may have stopped completely If all observations are normal, including blood pressure, pulse, temperature, and fetal heart beat, and if the woman is not sick AND membranes are not ruptured, then the woman may rest or go home for a while until labor contractions begin A new partograph should be started when the woman returns in labor

Recording on the Partograph

Below the time line and at the left hand side, contractions per 10 minutes is written

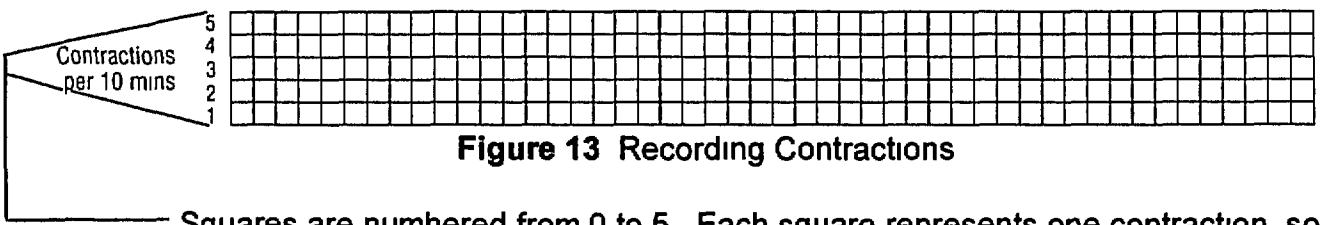


Figure 13 Recording Contractions

Squares are numbered from 0 to 5 Each square represents one contraction, so if 2 contractions are felt in 10 minutes, 2 squares will be shaded The squares below show the key to the 3 ways the strength of contractions are recorded on the partograph

Dots are for mild contractions of less than 20 seconds' duration

Diagonal lines indicate moderate contractions of 20 to 40 seconds duration

Solid color represents strong contractions of longer than 40 seconds

Exercise 4 Plotting contractions on a partograph

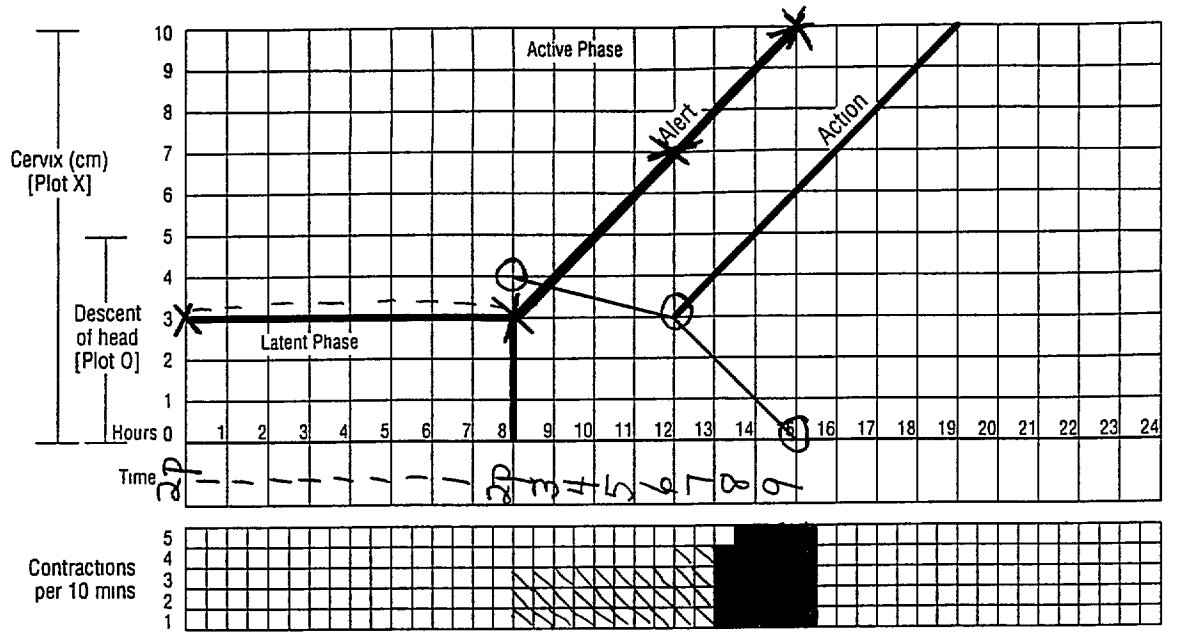


Figure 14 Plotting Contractions

Find the following on the above graph

- The woman was admitted at 2 pm in the active phase of labor
- The cervix was 3 cm dilated, the head was 4/5 (four-fifths) above the pelvic brim
- Contractions were 3 in 10 minutes, each lasting between 20 to 40 seconds
- At 6 pm, the cervix was 7 cm dilated, the head 3/5 (three-fifths) above the brim, and contractions were 4 in 10 minutes, lasting between 20 to 40 seconds
- At 9 pm, the cervix was 10 cm, the head 0/5 (no fifths) above the brim, contractions were 5 in 10 minutes, lasting over 40 seconds

Points to Remember

- Contractions are observed for frequency and duration
- The number of contractions in 10 minutes is recorded
- The three ways of recording the duration of contractions are up to 20 seconds, 20-40 seconds, more than 40 seconds
- Record contractions below the correct time on the partograph

2 THE FETAL CONDITION

Fetal heart rate, membranes, liquor (amniotic fluid), and molding of the fetal skull bones give information about how the baby is doing during the labor

Fetal Heart Rate

Listening to and recording the fetal heart rate is a safe and reliable way of knowing that the fetus is well Listen to the fetal heart rate for a full minute immediately after the strongest part of the contraction, with the woman lying on her back

The fetal heart rate is recorded at the top of the partograph, Figure 15 There are spaces to record the fetal heart rate every half hour Each square represents 30 minutes Take and record the fetal heart rate **at least** every hour, and every half hour when possible The lines for 120 and 160 beats per minute are darker to remind the midwife that these are the normal limits of the fetal heart rate When there are problems, you may listen to the fetal heart after every contraction

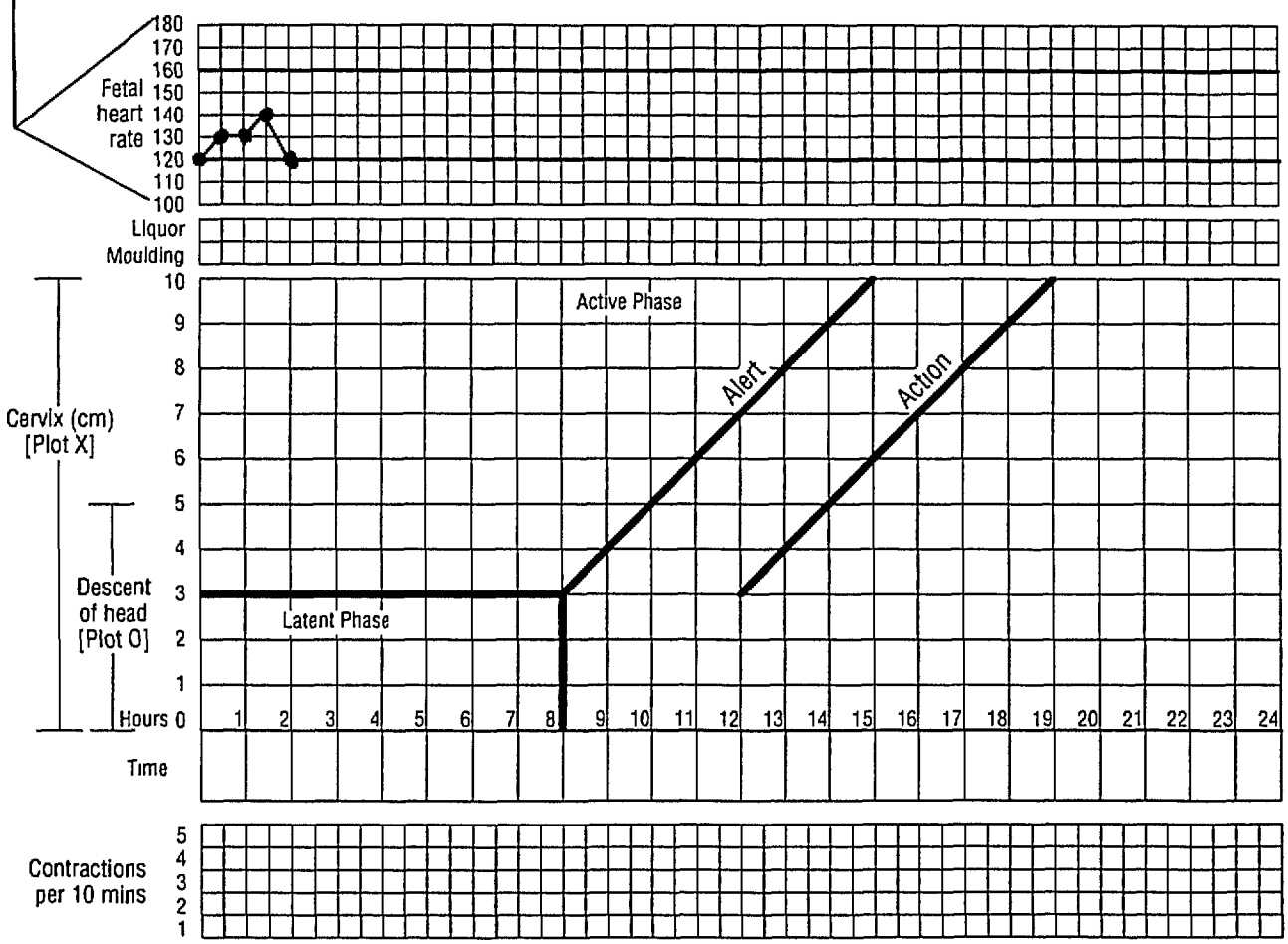


Figure 15 Recording Fetal Heart Rate

Membranes and Liquor (Amniotic Fluid)

The state of the liquor or amniotic fluid can assist in assessing the fetal condition

The following observations are recorded on the partograph immediately below the fetal heart rate recordings, Figure 16 The observations are made at each vaginal examination They are

If the membranes are intact

- write the letter "I" for intact

If the membranes are ruptured

- liquor is clear, write the letter "C" for clear
- liquor is blood stained, write the letter "B "
- liquor is meconium stained, write the letter "M "
- liquor is absent, write the letter "A" for absent

THESE MAY BE SIGNS OF FETAL DISTRESS (The baby is in trouble) Listen to the fetal heart rate every 5 to 15 minutes if

- liquor has thick green or black meconium
- liquor is absent at the time membranes rupture

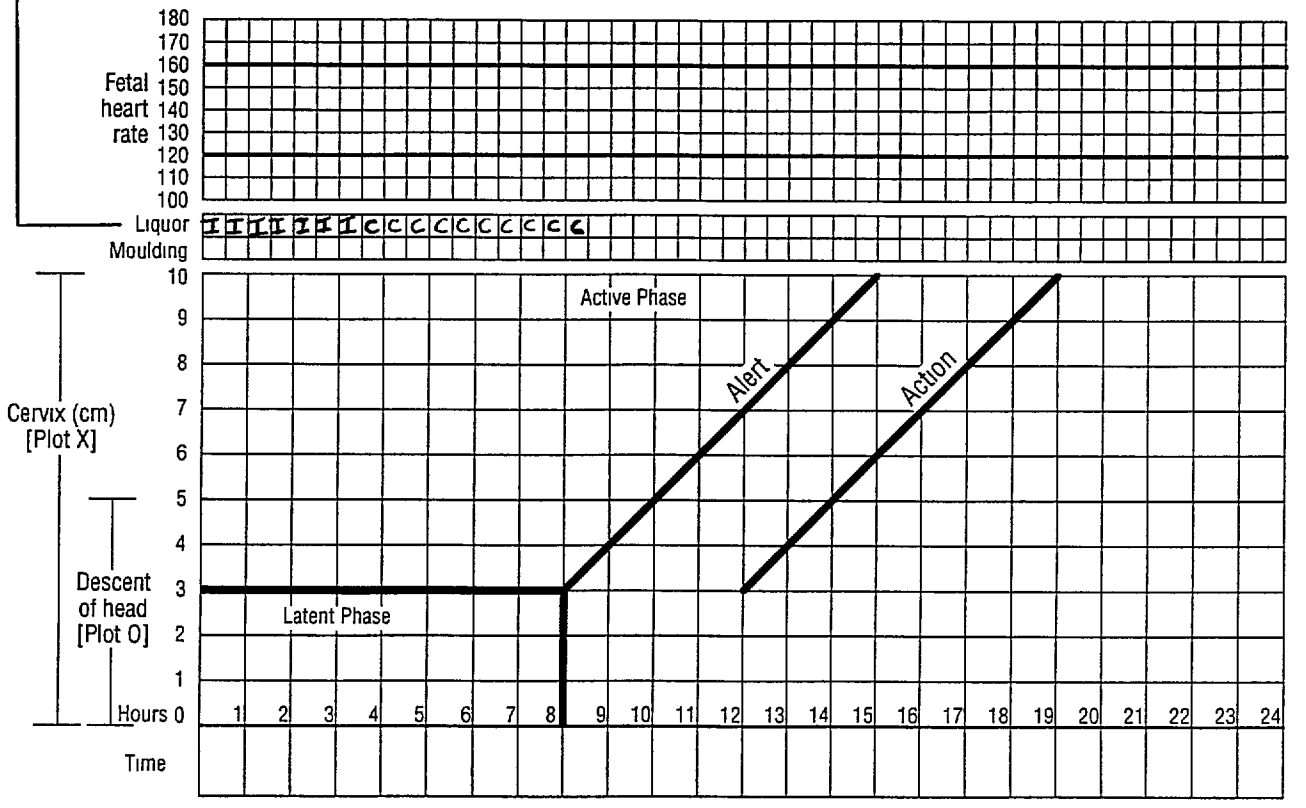


Figure 16 Record Status of Membranes and Liquor

Molding of the Fetal Skull Bones

The amount of molding helps you know how well the pelvis is making room for the fetal head Molding is evaluated each time you do a vaginal examination Molding when the head is still high is a sign of disproportion (baby is too big for mother's pelvis)

Record the molding Look at Figure 17 and use the following key

0	=	bones are separated and the sutures can be felt easily
+	=	bones are just touching each other
++	=	bones are overlapping, **can be separated** easily with pressure from your finger REFER if descent and labor not progressing
+++	=	bones are overlapping, **can not be separated** easily with pressure from your finger REFER

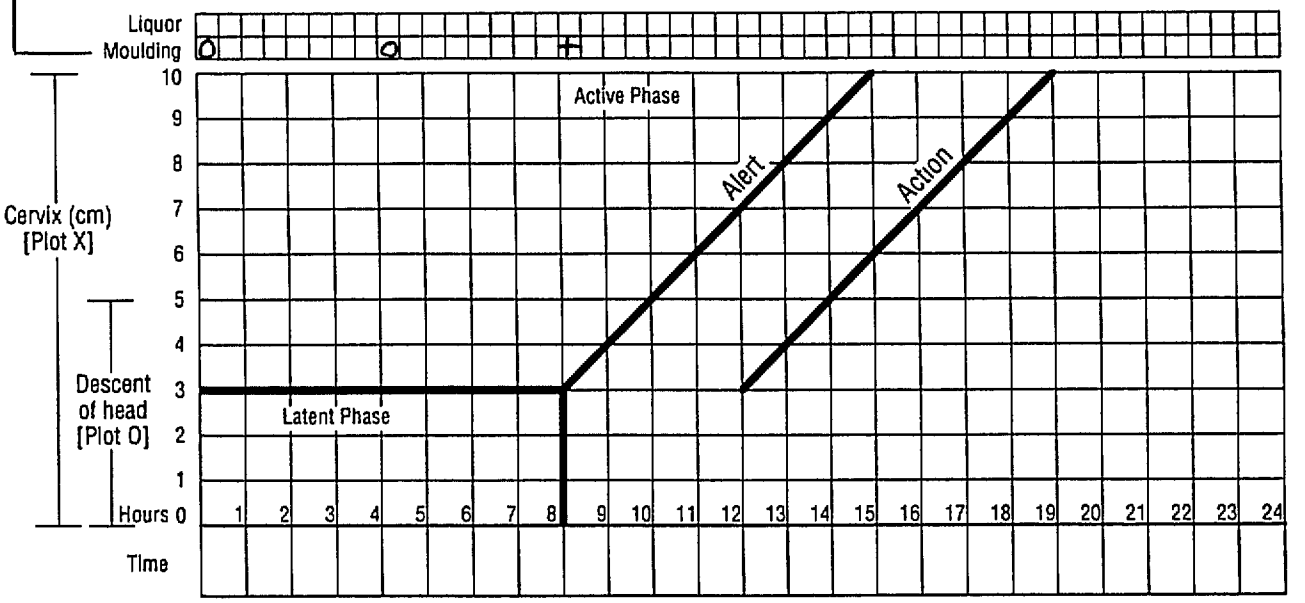


Figure 17 Record Molding

Points to Remember

- Listen to the fetal heart rate for a full minute immediately after the strongest part of a contraction, with the woman lying on her back
- Record the fetal heart rate at least every hour in the first stage of normal labor
- Normally the fetal heart rate is between 120 and 160 beats in a minute
- Molding when the head is still high is a sign of disproportion (baby is too big for mother's pelvis) REFER IMMEDIATELY

3 THE MATERNAL CONDITION

All the observations on the mother's condition are recorded at the bottom of the partograph All entries are made on the time line at which the observations are made Look at the partograph in Figure 18

- **Pulse, blood pressure, and temperature** Take the blood pressure, temperature and pulse every 4 hours

- **Urine** Ask the mother to pass urine every 2 to 4 hours Look at the urine for amount and concentration Concentrated urine is a sign of dehydration The protein and acetone should be tested on admission in hospital and at maternities if possible Protein in the urine may be a sign of pregnancy induced hypertension Acetone in the urine may be a sign of dehydration or diabetes

- **Drugs and rehydration fluids** Chart these when you give them

- **Oxytocin** There is a separate column for oxytocin above the column for rehydration fluids and drugs **Oxytocin in labor is used <u>only</u> when a doctor is available to manage the infusion and when cesarean section facilities are present**

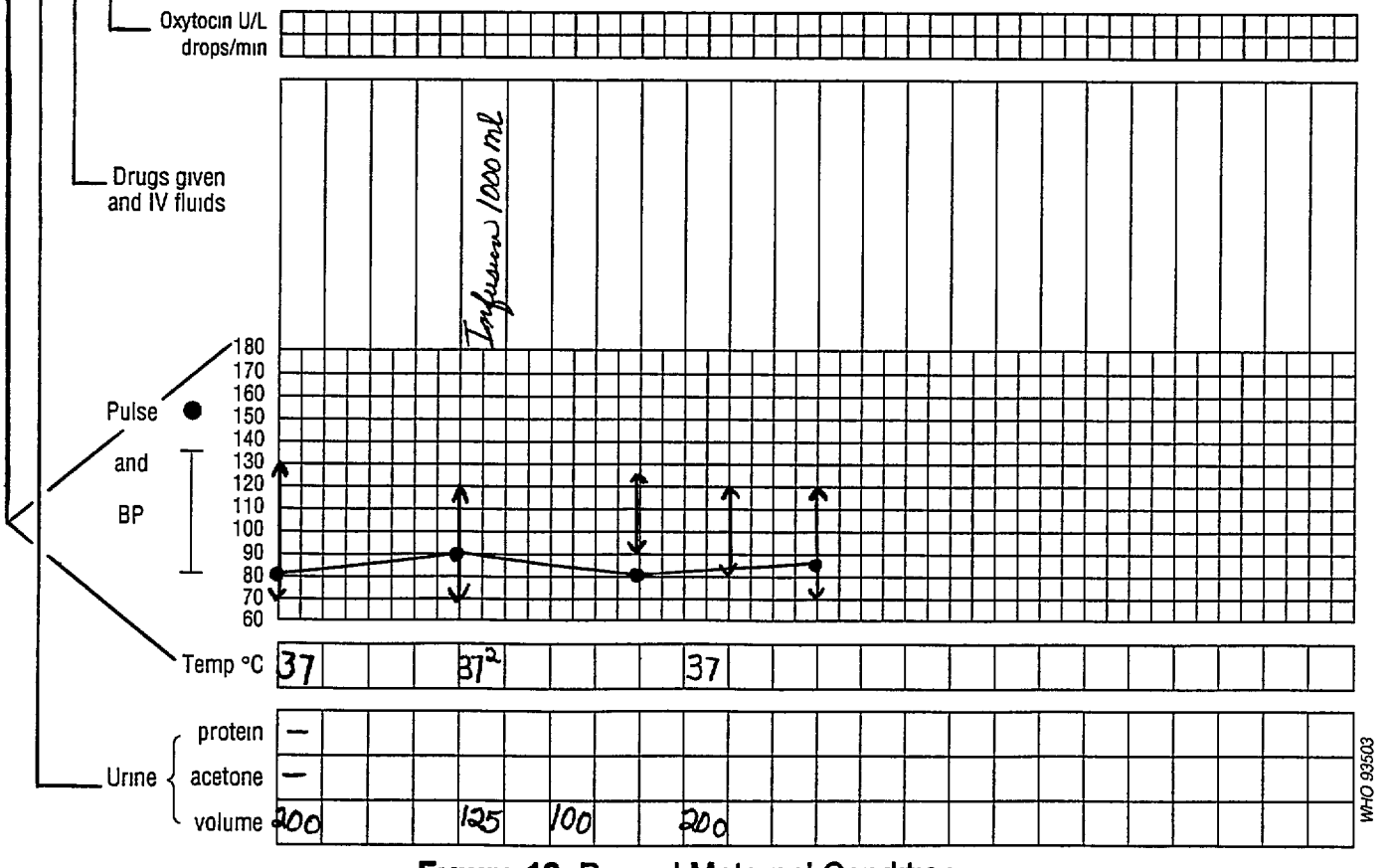


Figure 18 Record Maternal Condition

Name Mrs. Tubi Gravida 1 Para 0 Hospital no 123

Date of admission 21-8-96 Time of admission 5 AM Ruptured membranes 2 hours

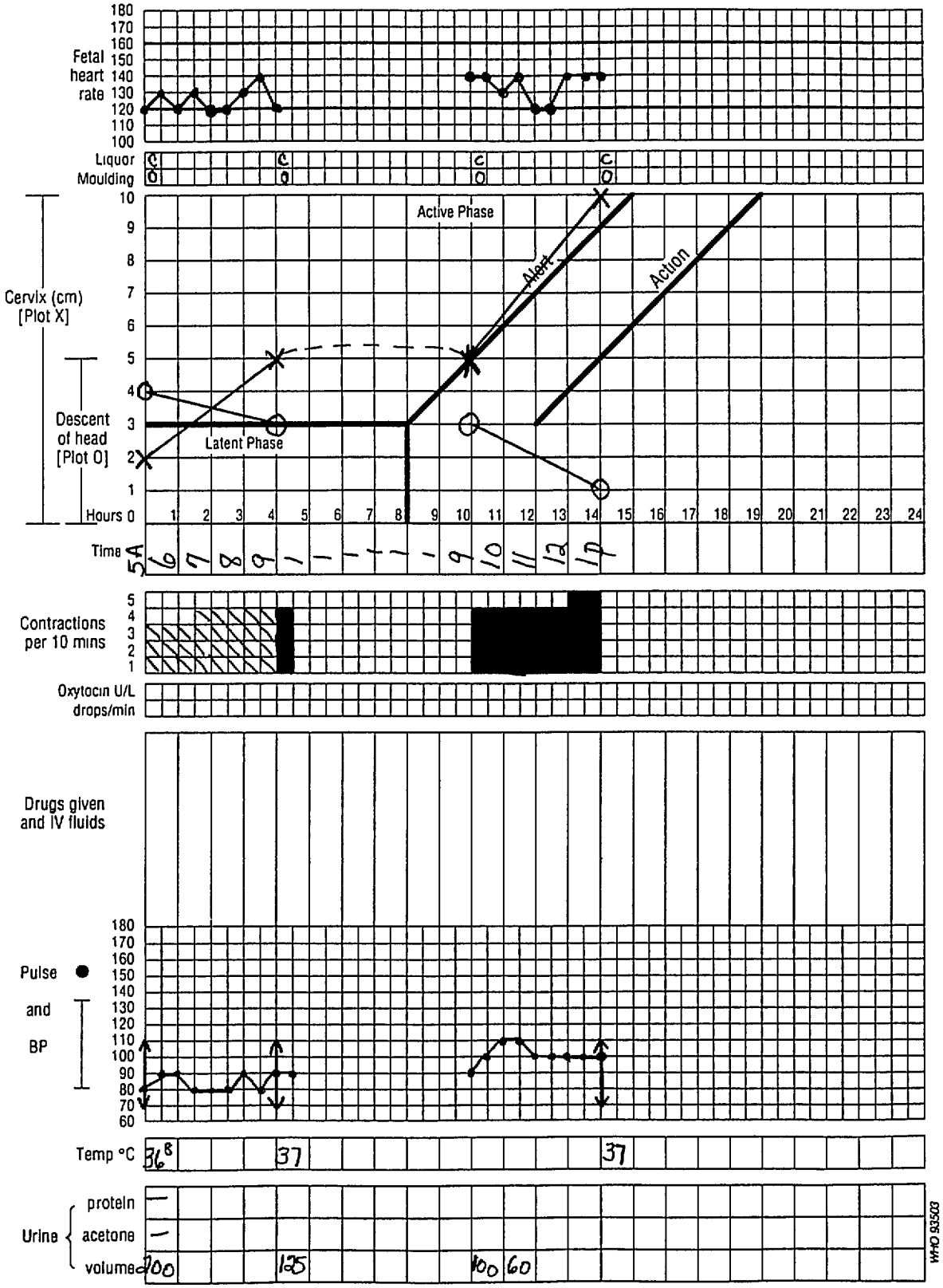


Figure 19 Partograph - Front of a Labor Record Form

LABOR NOTES

5A hungry - took tea and bread, resting
6.10 1 cup water
6 40 1 cup water
8.10 backache. - took 1 cup tea with sugar - sitting in chair
9 A pains stronger - 1 cup water - lying on right side
9:30 1 cup water
11 10 1 cup water - lying on left side
12 NOON refuses water
1p sips of water - starting to feel like pushing

Please circle or write responses

DELIVERY

DATE 21/8/96 TIME 210p METHOD (Spontaneous) / Vacuum Extraction / C/S / Other

PERINEUM (Intact) / Episiotomy / Laceration

ANESTHESIA (None) / Local /General

THIRD STAGE

Oxytocic Given (Yes) / No If Yes Type ~~Ergometrine~~ Amount 0.2 mg IM

PLACENTA Time 220p (Complete) / Incomplete

BLOOD LOSS AMOUNT

(small) (less than 250 cc)
moderate (250-499 cc)
large (more than 500 cc)
significant for mother

APGAR

Time	Color	Breath	Heart	Tone	Reflex	TOTAL
1 min	1	1	2	2	2	8
5 min	1	2	2	2	2	9

BABY

Weight 2800 Grams Sex Male (Female)

Baby Position (Vertex) Breech / Other

COMPLICATIONS OF MOTHER / BABY No problems

Midwife Name Nanna Nebbet Date 21 Aug 1996

Labor and Delivery Notes - Back of a Labor Record Form

Exercise 5 Interpret front of labor record (partograph)

Look at the completed partograph, Figure 19, page 3 48, of a *normal* first stage of labor Answer these questions Check your answers with the answers on the next page when you are finished

1 What was the fetal heart rate on admission?

What was the fetal heart rate at 1 PM?

2 When did the membranes rupture?

What was the condition of the liquor?

3 How much molding of the fetal head was recorded?

4 What was the dilatation of the cervix on admission?

What was the descent of the head?

5 What was the dilatation of the cervix when the labor transferred from latent to active phase?

6 Describe the contractions at 9 AM

7 List the vital signs on admission

8 How long was the latent phase after admission?

9 What was the length of the active phase?

ANSWERS - Exercise 5

1 Fetal heart rate on admission 120

At 1 PM 140

2 Membranes ruptured 3 AM, 2 hours before admission

Condition of the liquor Clear

3 How much molding of fetal head was recorded no molding was recorded

4 Dilatation of the cervix on admission. 2 cm

Descent of the head 4/5

5 Dilatation of the cervix when the labor transferred from latent to active phase 5 cm

6 Contractions at 9 AM 4 contractions in 10 minutes, strong, lasting over 40 seconds

7 Vital signs on admission B/P 110/70, P 80, T 36 8

8 Latent phase after admission was 4 hours

9 Length of the active phase 4 hours

Points to Remember

- When the woman comes to the maternity in the latent phase of labor, the time of admission is *zero time*
- When the active phase of labor begins, all recordings are transferred, and cervical dilatation is plotted on the alert line
- When progress of labor is normal, plotting of the cervical dilatation remains on the alert line or to the left of the alert line

Exercise 6 Interpret back of labor record

Look at the completed back of the labor record form, page 3 49, of a *normal* delivery Answer these questions Check your answers with the answers on the next page when you are finished

1 What time was the baby born?

How long was second stage?

2 What was the APGAR at 5 minutes?

3 What time was the placenta delivered?

How long was third stage?

4 What oxytocic was given?

5 How much did the baby weigh?

What was the baby's sex?

6 How much blood loss?

ANSWERS - Exercise 6

1 The baby was born 2 10 PM,

The second stage was one hour and 10 minutes

2 The APGAR at 5 minutes APGAR of 9

3 The placenta was delivered at 2 20 PM

The third stage was 10 minutes

4 The oxytocic given Ergometrine 0 2 mg IM

5 The baby weighed 2800 gm

The baby's sex female

6 Blood loss Small (less than 250 cc)

4 ABNORMAL LABOR PROGRESS

The midwife or doctor can use the partograph to identify problems in labor When the labor is not normal, the midwife must help the woman get to the hospital The doctor will decide the management of the labor and delivery The doctor will decide if cesarean section, oxytocin drip, analgesia, rehydration, forceps, or vacuum extraction is necessary to save the mother and her baby

Prolonged Latent Phase

When a woman is admitted in labor in the latent phase (less than 3 cm dilated) and remains in the latent phase for the next 8 hours, her progress is **not normal** She must be transferred to a hospital for further care The woman needs care at hospital **REFER** the woman

Write on the partograph all of your findings and actions including referral In figure 20, page 3 55, **REFER** is written when the woman was transferred to the care at hospital

Exercise 7 Interpret prolonged latent phase

Fill in the following blanks, using information on the graph in Figure 20

On admission at 7 am, the head was _____and the cervix was _____

There were _____contractions in 10 minutes, lasting _____

After 4 hours, at 11 am, the head was _____and the cervix was _____

In the last 10 minutes of that half hour, there were _____contractions lasting _____

Four hours later at 3 pm, the head was still _____and the cervix was still _____

Contractions were _____in 10 minutes lasting _____

The length of the latent phase at the maternity was_____

The woman was referred at what time? _____

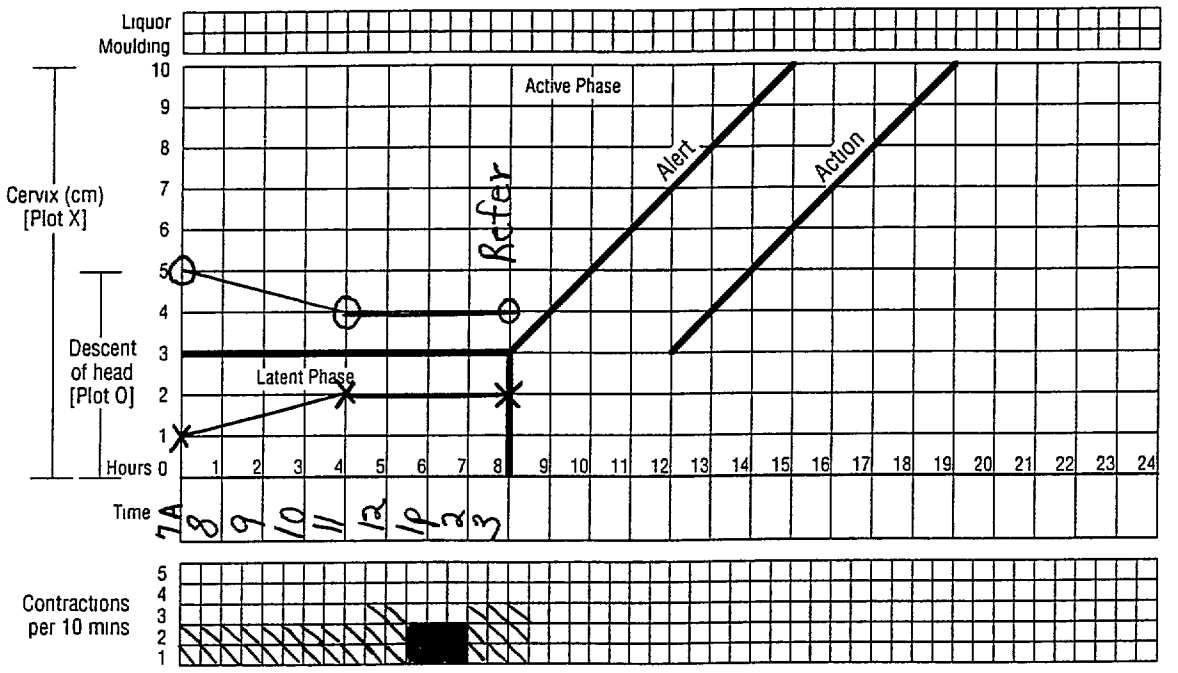


Figure 20 Prolonged Latent Phase

ANSWERS - Exercise 7

On admission at 7 am, the head was ***5/5*** and the cervix was ***1 cm dilated*** There were **2** contractions in 10 minutes, lasting **20 to 40 seconds**

After 4 hours, at 11 am, the head was **4/5** and the cervix was **2 cm dilated** In the last 10 minutes of that half hour there were 2 contractions lasting **20 to 40 seconds**

Four hours later at 3 pm, the head was still **4/5** and the cervix was still **2 cm dilated** Contractions were **3** in ten minutes lasting **20 to 40 seconds**

The length of the latent phase at the maternity was **8 hours and this phase of labor was not completed**

The woman was referred at what time? **3 pm**

NOTE: In this *case, referral must be immediate* in order to allow the doctor time to make a decision on how to assist the woman in labor

Moving to the right of the alert line

In the active phase of labor, the cervical dilatation (plot X) will normally remain on, or to the left of, the alert line When dilatation crosses to the right of the alert line, **this is NOT normal, this is a warning that labor may be prolonged**

When the dilatation moves to the right of the alert line, the mother must be transferred to a hospital, unless she is very close to delivering

At the action line

The action line is 4 hours to the right of the alert line If a woman's labor reaches this line, a decision must be made about the cause of the slow progress and **action taken** The decision on necessary action to assist the labor must be made with a doctor, usually in the hospital

Exercise 8 Interpret prolonged active phase

The alert and action lines are very important Look carefully at Figure 21, which shows the dilatation (plot X) crossing the alert line Use the information on the partograph to answer the questions below

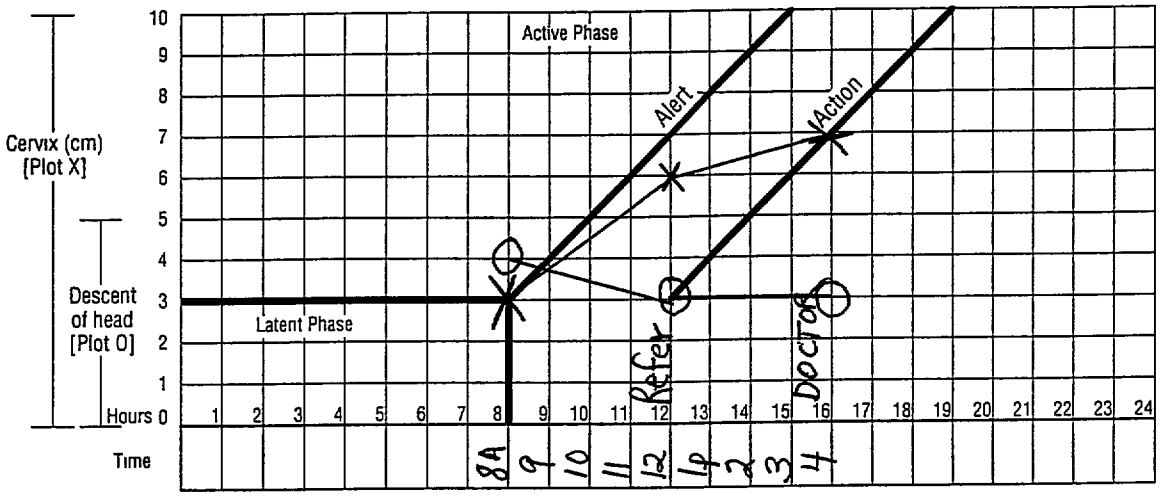


Figure 21 Dilatation that Crosses the Alert Line and Reaches the Action Line

Questions

At 8 am, the cervix is_____dilated on the alert line The woman may remain in the maternity

At 12 noon, the cervix is ____dilated, crossing the alert line The woman must be transferred to the _____ The woman was referred at what time?_____

At hospital at 4 pm, the cervix is _____dilated, reaching the action line The doctor was notified at _____

***THE DOCTOR* MUST MAKE THE DECISION ON ACTION TO BE TAKEN AT THE HOSPITAL**

ANSWERS - Exercise 8

At 8 am, the cervix is **3 cm** dilated on the alert line The woman may remain in the maternity

At 12 noon, the cervix is **6 cm** dilated, crossing the alert line The woman must be transferred to the **hospital under the care of a doctor** The woman was referred at what time? **12 noon.**

At 4 pm, the cervix is **7 cm** dilated, reaching the action line The doctor was notified at **4 pm.**

***THE DOCTOR* MUST MAKE THE DECISION**
ON ACTION
TO BE TAKEN AT THE HOSPITAL

Points to Remember

- All women whose cervical dilatation (plot X) moves to the right of the alert line must be transferred to hospital, unless delivery is near
- At the action line, the woman must be reassessed for lack of progress The doctor must decide what action needs to be taken Possible actions are hydration, reassess pelvis and if adequate, observe for two more hours, augmentation of labor, cesarean section and others

PARTOGRAPH

Name Gravida Para Hospital no

Date of admission Time of admission Ruptured membranes hours

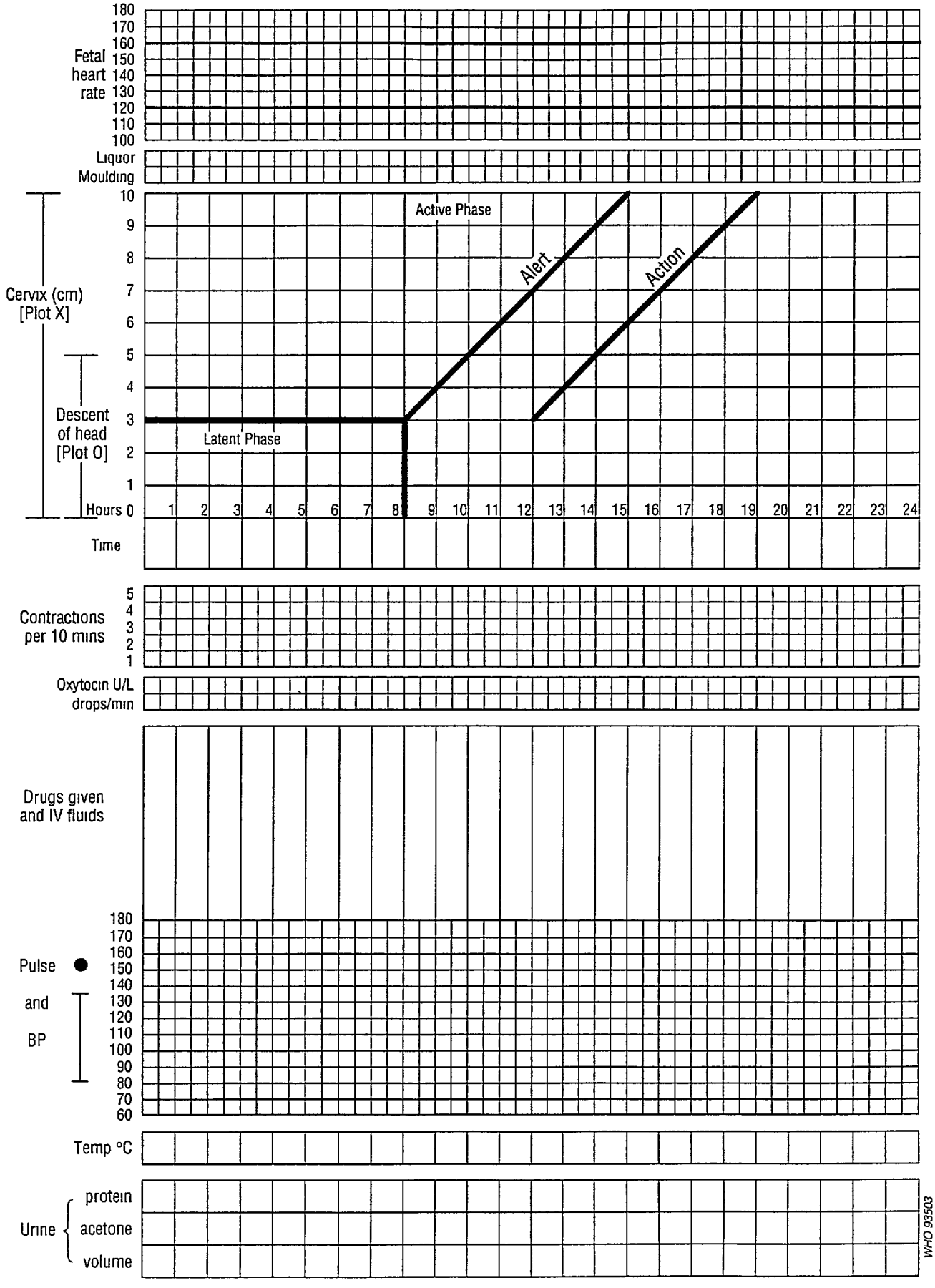


Figure 22

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LABOR NOTES

Please circle or write responses

DELIVERY

DATE TIME METHOD Spontaneous / Vacuum Extraction / C/S / Other

PERINEUM Intact / Episiotomy / Laceration

ANESTHESIA None / Local /General

THIRD STAGE

Oxytocic Given Yes / No If Yes Type_____Amount_____

PLACENTA Time Complete / Incomplete

BLOOD LOSS AMOUNT

small (less than 250 cc)
moderate (250-499 cc)
large (more than 500 cc)
significant for mother

APGAR

Time	Color	Breath	Heart	Tone	Reflex	TOTAL
1 min						
5 min						

BABY

Weight _____Grams Sex Male / Female

Baby Position Vertex / Breech / Other

COMPLICATIONS OF MOTHER / BABY

Midwife Name _____ Date _____

Figure 23 Labor and Delivery Notes - Back of Labor Record Form

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answer in the module on the page listed in parentheses ( )

1 Why should a partograph be used? (page 3 31)

2 List the 11 parts of a partograph (page 3 32)

3 Describe the information on the back of the labor record form (page 3 35)

Case Study 3 - What Is the Problem?

What is the problem? Read the **ASK and LISTEN**, **LOOK and FEEL** paragraphs, in the following case studies Then decide what you think the **PROBLEM** is and what **ACTION** should be taken to help the woman Remember that action may include treatment, education, counseling, more laboratory tests, referral, and follow up

It is also important to think about prevention, so you will find a question asking how you think this problem could have been prevented Sometimes it is very difficult to decide, before a problem occurs, that it might be about to happen Other times it is very easy to prevent a problem Sometimes a problem cannot be prevented

When you finish, look on the following pages for suggested answers

ASK and LISTEN

During a very painful active labor, a woman suddenly stops feeling the pain from labor contractions When you monitor her, you find the contractions have stopped This is her eighth pregnancy and she has seven living children This is a twin pregnancy

LOOK and FEEL

Blood pressure 60/40, pulse 100, no contractions felt, fetal heart rates are 100 and a weak 80, mother looks anxious (nervous) and her skin feels cool and moist

What is the **PROBLEM**?

What is the **ACTION**?

Was this **PROBLEM** preventable? If so, how?

Case Study 4 - What Is the Problem?

ASK and LISTEN

Mrs Fub has been in active labor 4 hours She is now complaining of a headache

LOOK and FEEL

Blood pressure 170/100, pulse 88, Temperature 98 6°F (37°C) increased reflexes (hyper-reflexia) present, hands and fingers are swollen, protein (albumin) in the urine

What is the **PROBLEM**?

What is the **ACTION**?

Was this **PROBLEM** preventable? If so, how?

ANSWERS - Case Study 3

What is the **PROBLEM?** The mother is close to shock, the babies are in distress, the uterus may be tearing (ruptured uterus)

What is the **ACTION?** REFER while treating for shock with intravenous infusion, keep mother warm, head lower than rest of her body, be prepared for distressed babies, reassure mother and family, get blood donors prepared, record all actions

Was this **PROBLEM** preventable? If so, how?

Maybe yes, but it is difficult to be sure This is the mother's eighth pregnancy We might be able to say that her uterus is stretched too thin with the twins and the number of pregnancies She must deliver at a hospital, and should have labored at a hospital, too

ANSWERS - Case Study 4

What is the **PROBLEM?** Pre-eclampsia (toxemia) in labor

What is the **ACTION?** REFER if mother is not very close to delivery Treat with magnesium sulfate or Valium If mother is close to delivering, be prepared for convulsion and distressed baby, start intravenous infusion, deliver, medicate as above, go with the mother and family, explain what is happening, record all of the care and treatment

Was this **PROBLEM** preventable? If so, how?

The problem is not really preventable, but the mother is best cared for at a referral site where her condition can be closely monitored and a doctor is always available

Learning Aid 1 - Cervical Dilatation On Measurements

The dilatation of the cervix is usually measured in centimeters (cm) or fingers This module refers to cm If you use fingers, measure your fingers on the illustrations below so that you can record cervical dilatation on the partograph

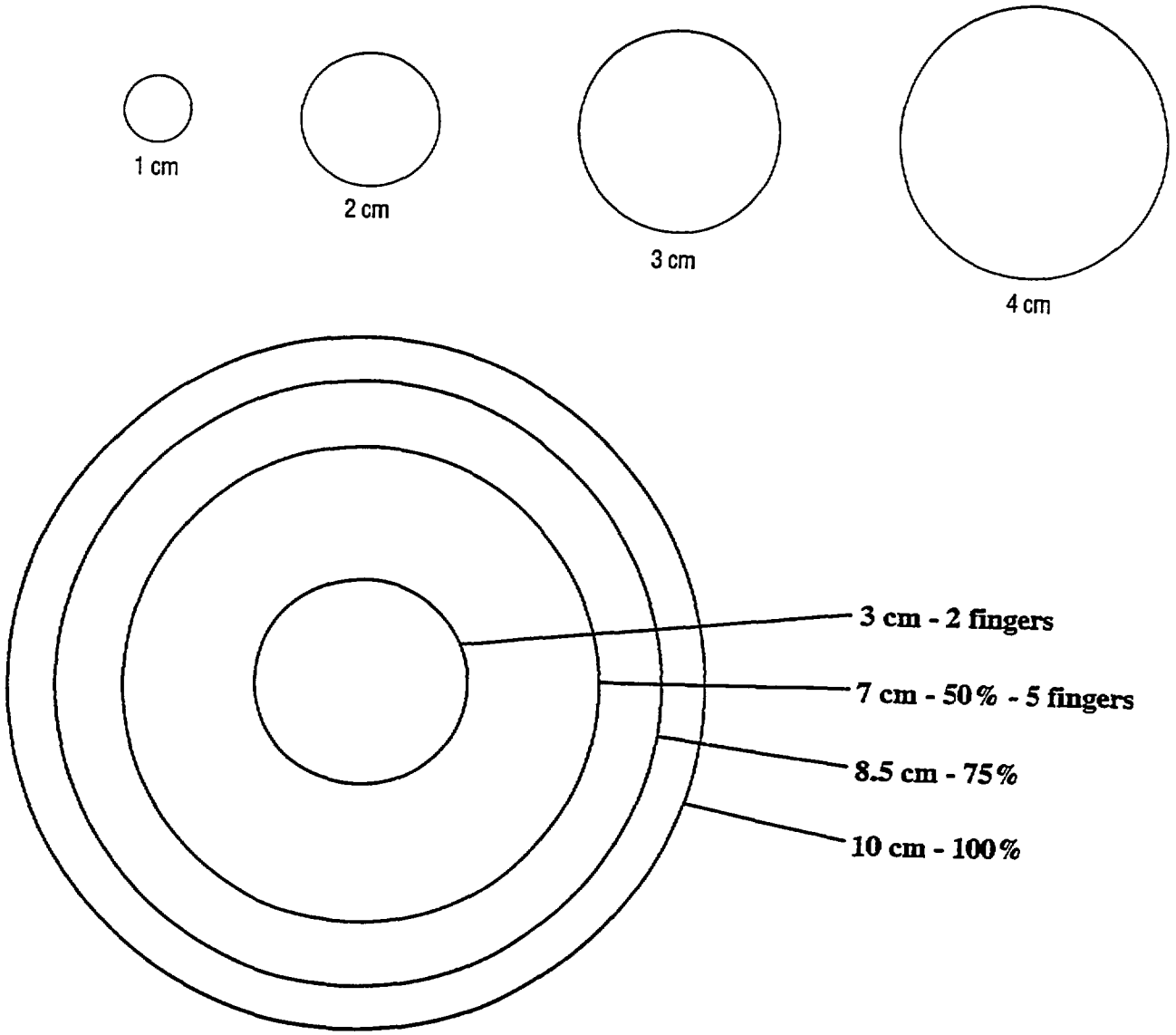

Figure 24 Measurement Guide

Once 50% dilatation has been reached, think about the amount of cervix remaining during the each vaginal examination For instance, when the dilatation is 75%, the midwife feels only a circle of cervix remaining, about the width of a finger When the dilatation is 95%, the midwife feels only a very thin rim of cervix She knows that the cervix soon will slip over the fetal head She knows that second stage will soon begin

Learning Aid 2 - Second Stage Checklist

Use this checklist to refresh your memory or to practice conducting some normal deliveries to update your normal clinical skills After observing/performing, write ✓= satisfactory **OR** ✗ = needs improvement Add any comments in the comments section below

Second Stage Procedure	Date	Date	Date	Date
1 Put on protective apron, shoes				
2 Explain to mother everything as you do it Hydrate				
3 Wash hands				
4 **Confirm second stage** Make sure there is full dilatation				
• Collect equipment				
• Keep bladder empty				
• Reassure mother				
• Wash hands				
• Check abdomen for descent of baby				
• Put on sterile high-level disinfected gloves				
• Look for bleeding, liquor				
• Separate labia				
• Cleanse vulva				
5 **Vaginal examination** Insert index & middle fingers into vagina, noting				
• Condition of vagina any scarring or stool felt				
• Cervix effacement and dilatation				
• Membranes - If ruptured, feel for prolapse cord - If *not*, artificially rupture (ARM)				

	Date	Date	Date	Date
• Presenting part - Position (ROA, LOT, so forth) - Caput - Descent & molding				
• Urge to push				
6 **Prepare for delivery** Remove hand Remove gloves if delivery not soon				
7 Make mother comfortable				
8 Wash hands				
9 Tell mother your findings				
10 Record findings				
11 **Mother feels urge to push and cervix fully dilated** Help push effectively				
• Pushing position				
• Explain when to push and when not to push				
• Encourage & support				
12 **While pushing in second stage**, check every 30 minutes				
• Pulse				
• B/P				
• Bladder				
• Check fetal heart beat every 15 minutes				
13 Decide if progress is normal				
14 **Delivery about to happen**, wash hands				
15 Head about to crown, have equipment ready				
• Put on gloves				
• Birthing position				

	Date	Date	Date	Date
• Cleanse vulva				
16 Prevent tears/injury, remind when to push				
• Remind when to not push				
• Deliver head slowly				
• Maintain flexed head				
17 Deliver head, ask mother not to push				
• Feel for cord around the neck - Manage loose cord over head/body - Manage tight cord, clamp, cut				
• Wipe mouth & nose				
• Clear airway *If meconium present*, use DeLee (mucus sucker)				
18 Deliver shoulders, ask mother to push gently				
• Deliver top shoulder				
• Deliver bottom shoulder				
19 Deliver baby Place on mother's abdomen				
• Dry, use one cloth				
• Warm, use another cloth				
• **LOOK and FEEL** for baby breathing and heart beat ***If breathing and heart beat,*** do APGAR				
• Suction mouth & nose, if necessary				
• Cut cord				
• Place baby on breast - help mother				
20 Use APGAR score at 1 and 5 minutes color, heart beat, reflex, muscle tone, breathing				

Comments

Learning Aid 3 - Measuring the Pelvic Size

Although most women have enough room in their pelvis for an average-sized baby to pass, the midwife must be constantly on the alert to identify a woman who might be too small When a disproportion is identified, the midwife REFERS the woman to the hospital

In ***addition to measurements, the strength of uterine contractions, the descent of the baby, the size of the baby, and the degree of molding help to identify possible disproportion signs*** for REFERRAL

The diagonal conjugate measurement is the distance between the pubic bone and the tip of the sacrum It is good practice for a midwife to know the place on her hand from the tip of the middle finger that measures 12 to 13 cm (4¾ to 5 inches), the normal diagonal conjugate This measurement helps the midwife estimate the obstetric conjugate, which is about 1 5 to 2 cm (½ inch) smaller than the diagonal conjugate

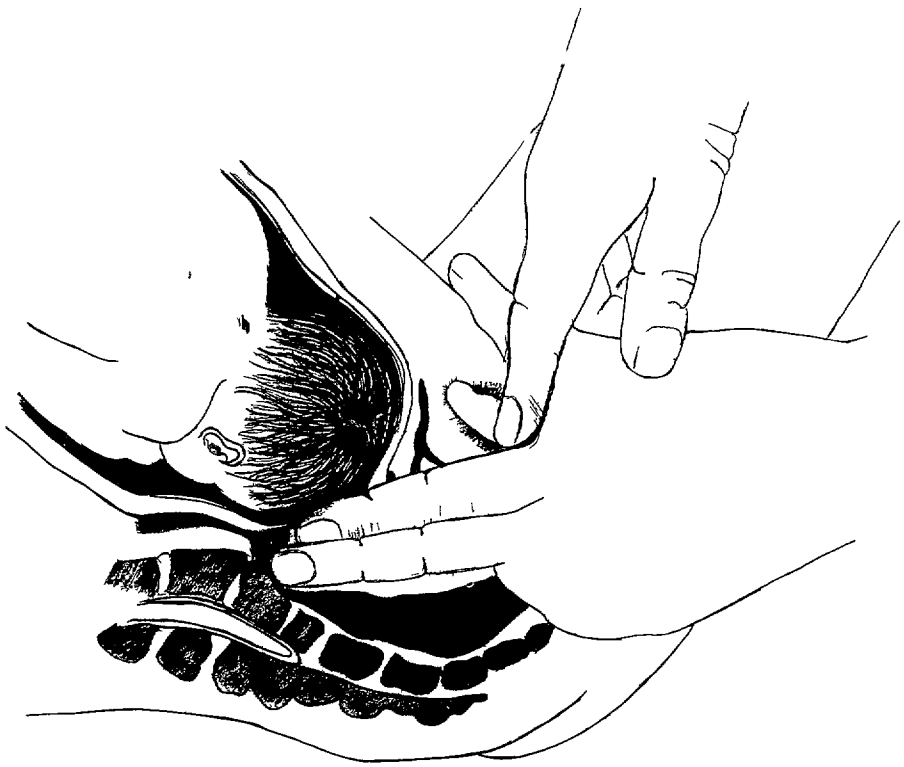

Figure 25 Measuring Diagonal Conjugate

The **diagonal conjugate** is measured from the lower border of the symphysis pubis to the promontory of the sacrum It is usually 12 to 13 cm **This internal measurement of the pelvis may be done when a woman is first admitted in labor** This measurement may be taken in primigravidas, in multiparous women who have had a difficult labor with normal-sized babies, or when the midwife thinks there is a possible problem

Procedure

1 Ask the woman to empty her bladder

2 Ask the woman to lie on her back with knees drawn up

3 Explain what you are going to do

4 Wash your hands, put on gloves, and clean the woman's genital area

5 Insert your fingers into the vagina

- Try to reach up and back to the part of the spine which is coming forward (the promontory of the sacrum)

- When the tip of the middle finger is touching this spot, place the other index finger on the part of the hand which is touching the pubic bone (see Figure 25)

- Move your fingers along the side of the pelvis to feel the ischial spines on both sides (*not protruding, not sharp),* measure the sciatic notch (*two fingers should fit),* feel the sacral curve (*rounded curve)* and the pubic arch (*two fingers should fit - angle 90 ° or more)*

6 Remove your fingers

- Measure the outlet Ask the woman to lie on her side with her knees pulled up Place your fist between the ischial tuberosities (*fist should fit - about 8 cm or 3 inches)*

7 Record your findings of the evaluation for diagonal conjugate and pelvic size, think about the size of the baby and the measurements you felt of the pelvic cavity

Most of the time, a woman's pelvis is big enough in size to give birth to a normal-sized baby Is this what you found from your evaluation? The best way to learn what size of baby will come through what size of pelvis is by remembering each and every woman and baby you deliver Your experience will be your best measurement!

Skills Checklist - Monitoring Labor Progress on Admission

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills

2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write ✓ = satisfactory **OR** ✗ = needs improvement

Add any comments in the comments section below

	Date	Date	Date	Date
When monitoring the progress of a woman in labor **on admission**				
1 Collect all equipment, wash your hands				
2 Welcome and prepare the mother				
• Explain what you are going to do				
• Ask her to sit or lie in a comfortable position				
• ***Decide whether the woman is about to deliver, she may be fully dilated***				
3 **ASK and LISTEN**, RECORD				
• Patient information, including time of arrival				
• When contractions began, how often contractions occur?				
• Whether the woman has gone to antenatal clinic?				
• Whether bag of water has broken, any bloody show?				
• When the woman last ate?				
• When she last passed stool?				
• Whether she had any medications to increase or decrease the labor and whether they worked?				
• Name of TBA, whether TBA knows woman is in labor, where TBA can be reached?				
• Whether any bleeding from vagina?				

		Date	Date	Date	Date
4	**LOOK and FEEL**, RECORD Help the woman get ready for examination, explain what you are going to do				
5	**ASK** the woman to pass urine so her bladder will be empty				
6	**LOOK** at her general condition and do a general examination including				
	• Vital signs and height				
	• General appearance nutrition, illness, tired				
	• Checking eyes, ears, nose, mouth, throat				
	• Checking neck for enlarged veins				
	• Breathing how fast, breathing sounds				
	• Heart how fast, regular				
	• Breasts				
	• Arms, legs, back swelling, veins, deformities				
7	Tell the woman that you are now going to do an abdominal examination Explain to her that you need to feel the baby and find out how the baby is lying in her abdomen				
8	Stand at the woman's side, look at the abdomen and the way the baby is lying				
9	Feel the woman's abdomen				
	• Decide the strength and length of contractions				
	• Count how many contractions in 10 minutes				
	• Start at top of abdomen - Feel shape, size, firmness, mobility - Decide what part of baby is at top of uterus				

	Date	Date	Date	Date
• Put your hands on lower abdomen, feel for arms, legs, back, head of baby				
• Ask woman to bend her knees - Hold the part of baby in lowest part of abdomen - Decide what part of the baby you feel				
10 Listen to the heart beat over the chest or back of the baby Count the heart rate				
11 Record your abdominal examination findings on the partograph Explain your findings to the mother				
12 See **vaginal examination**, page 3 74				

Comments

Skills Checklist - Monitoring Labor Progress

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments needed in the comments section below

	Date	Date	Date	Date
When monitoring the **progress** of a woman in **labor**				
ASK and LISTEN - General well being				
LOOK and FEEL				
1 **Abdominal examination**				
Descent of baby • Latent phase - every 4 hours • Active phase - every 2 hours				
Contractions for 10 minutes • Latent phase - every 1 hour • Active phase - every 30 minutes				
Fetal heart beat, at least every hour • Latent phase - every 1 hour • Active phase - every 30 minutes				
2 **Vaginal exam every 4 hours or as needed**				
• Explain what you are going to do				
• Gather equipment, wash hands				
• Ask woman to lie on her back with her legs apart and knees bent				
• Explain each step of exam before you do it				
• Wash hands, put on gloves				
• **LOOK** for discharge				
• Wash genital area and vulva with soap/water or antiseptic solution				
• Moisten fingers of gloved examining hand				
• Insert fingers into vagina				

	Date	Date	Date	Date
• **FEEL** vaginal wall temperature/moisture				
• **FEEL** for hard scarring/stool				
• **FEEL** cervix - Thickness (effacement) - Tight or stretchy - Dilatation				
• **FEEL** bag of waters - Broken - Bulging - Prolapsed cord				
• **LOOK** at color of amniotic fluid (liquor)				
• **FEEL** presenting part, descent, and position - Caput - Molding - If indicated at first exam, assess pelvic size, see page 3 69				
• Remove hand from vagina				
• Help woman get comfortable				
• Record findings on partograph and labor record				
• Explain findings to woman and family				
IDENTIFY PROBLEMS AND NEEDS, TAKE ACTION				
3 **Vital signs every 4 hours**				
• Hydrate at least every hour				
• Have woman urinate at least 2 - 4 hours				
• Care for mother - Change position often - Encourage activity - Rub her back - Reassure/encourage/help - Explain progress to mother/family				
• Record findings and actions				

	Date	Date	Date	Date
• Interpret partograph - Latent stage - Active stage - Alert line - Action line				
• REFER as necessary				

Comments

REFERENCES

Experience and the following references were used to develop this module These references will give you additional information about history taking, physical examination, management of abnormal findings, and the partograph You can review all of this information in your own midwifery textbooks and in the *Healthy Mother and Healthy Newborn Care* manual

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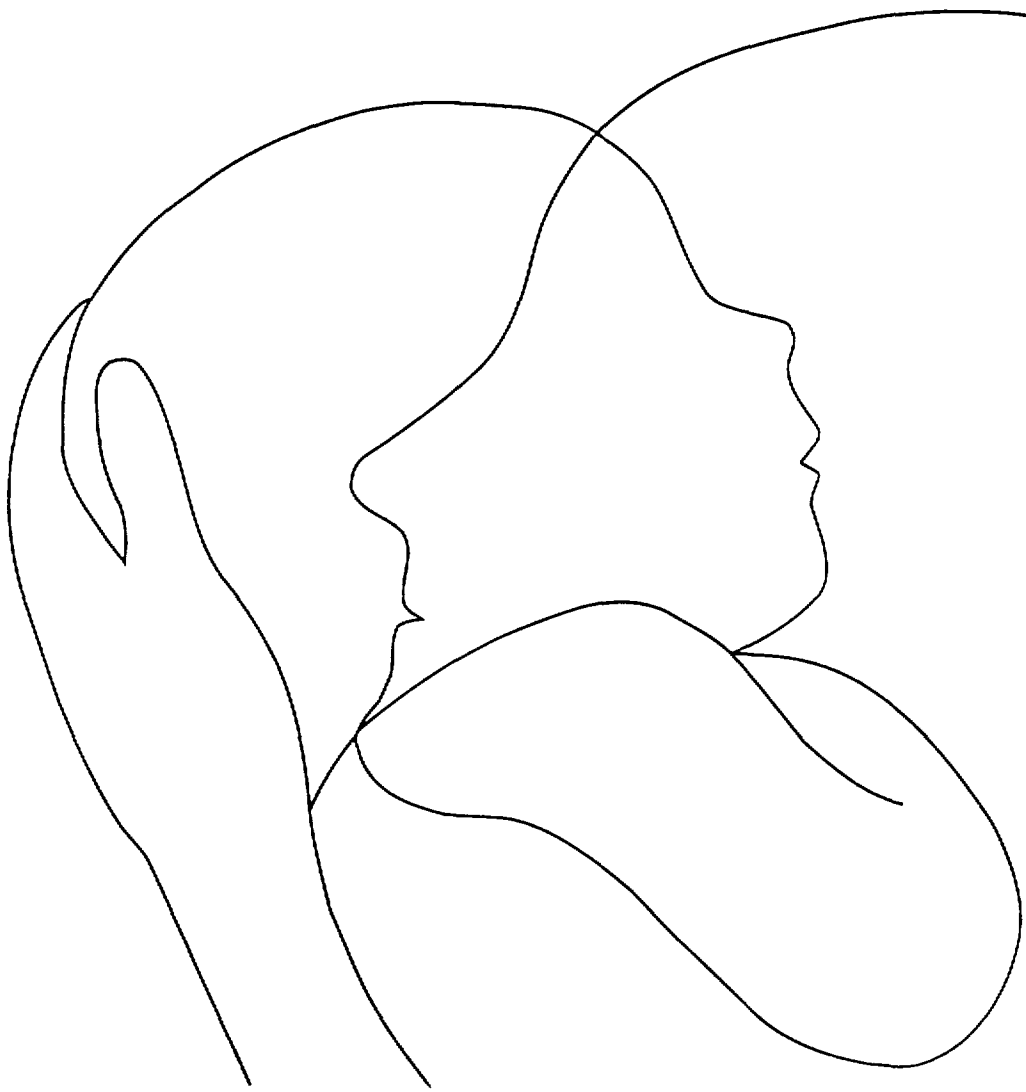
3rd Edition



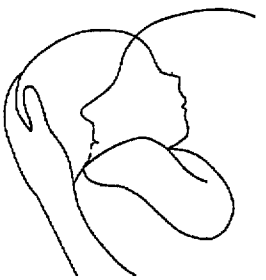
MODULE 4

EPISIOTOMIES

Life-Saving Skills Manual for Midwives

Third Edition

Module 4: EPISIOTOMIES AND REPAIR OF LACERATIONS



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Life-Saving Skills Manual for Midwives

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EPISIOTOMIES AND REPAIR OF LACERATIONS
MODULE 4

Contents

EPISIOTOMIES AND REPAIR OF LACERATIONS

Goal

The midwife will learn to prevent, diagnose, and repair lacerations She will learn when to cut and how to repair episiotomies

Objectives

The midwife caring for mothers in labor and delivery will be able to

1 name the two major types of episiotomies and explain how they differ
2 list signs and symptoms that indicate the need for an episiotomy
3 list signs and symptoms of vaginal and cervical lacerations
4 perform a complete inspection of the cervix and vagina
5 inject local anesthesia before doing an episiotomy
6 cut and repair episiotomies
7 repair a laceration
8 explain to a mother the need for cutting an episiotomy, performing a vaginal inspection, and/or repairing a laceration or episiotomy, and obtain her consent

Introduction

An episiotomy is done to prevent tears (lacerations) or to permit a faster delivery of the baby when the mother or baby is in distress Lacerations and unrepaired episiotomies can lead to heavy blood loss, infection, scarring, unsatisfactory sexual intercourse, and even death If it is not repaired, even a small laceration of the cervix can cost a woman her life It is important that midwives know how to suture, to reduce both sickness (morbidity) and death (mortality) An episiotomy is not done as a routine procedure or simply as a convenience for the health care provider

In this module you will learn how to

- prevent lacerations during the delivery process
- cut an episiotomy when needed
- give local anesthesia
- tell if the woman has a laceration of the genital tract by performing a cervical and vaginal inspection
- repair episiotomies
- repair vaginal and cervical lacerations

Information on how to choose suture and the way to tie a knot will also be found in the learning aids at the end of the module

A Midwife's Experience...

It was the first baby, and the woman pushed hard for over an hour at home When she came to me, she was crying and asking for help, the baby's head was swollen, fetal heart was 100 The perineal tissue was so tight and the mother did not want to be cut I finally convinced the mother to allow me to help the baby deliver With a right mediolateral episiotomy, she delivered a big male baby in satisfactory condition I gave local anesthesia and used the new LSS repair method The woman can walk and sit without pain after the episiotomy repair Other women are asking for the same care I felt very competent to manage this case using the suture sparing method

LSS Midwife, Vietnam

Common Medical Terms

Deep Muscles - in the perineal area the levator ani and coccygeal muscle groups

Centimeter - a measure of one-hundredth part of a meter, 100 centimeters (cm) = 1 meter

Continuous Suture - a suturing method the suture is not cut and tied until the end of a row of stitches

Cubic Centimeter - a measure of volume or capacity, same as milliliter (ml), one-thousandth part of a liter 1000 cubic centimeters (cc) = 1 liter

Episiotomy - a cut made in the perineum at the end of the second stage of labor to prevent tears (lacerations) or to allow a faster delivery of the baby when the mother or baby is in distress

Fistula - an abnormal opening between the rectum and vagina (recto-vaginal) or between the bladder or urethra and vagina (vesico-vaginal)

Fourchette - a fold of mucous membrane at the back of the vagina, joining the posterior ends of the labia minora

Interrupted Suture - a way of suturing each stitch is cut and tied

Laceration - a wound or irregular tear of the tissue (flesh)

Median, Medial, or Midline Episiotomy - a cut made in the middle part of the perineum from the vagina towards the rectum

Mediolateral Episiotomy - a cut made in the perineum either to the left or right of center at about a 45 degree angle The diagonal cut is made from the vagina beginning in the center of the fourchette in a straight line, towards the buttock, away from the rectum

Subcutaneous Layer - the layer of tissue lying beneath the subcuticular layer

Subcuticular Layer - the layer of tissue lying immediately under the skin

Suture - (1) the act of stitching (suturing) parts of tissue together, (2) a thread or other material used to sew parts of the body together Suture may be absorbable or non-absorbable Refer to Learning Aid 1, page 4 26 for more suture information

Equipment

A light source such as flashlight (torch), lantern, anglepoid lamp, or other strong light
Soap and water to wash the genitals and hands
Gloves
Needle holder or toothed clamp
Scissors with one blade rounded or a bandage scissors (in good condition)
Sponge forceps (ring forceps), 1 or 2
Suture with needle or suture and curved, round body suture needle
Thumb forceps (tissue forceps)
Local anesthesia such as 1% lidocaine hydrochloride without epinephrine
Syringe size 10 to 20 cc is best, but use whatever you have
Injection needle 1 ½ inch 22 gauge is ideal but use whatever you have
Gauze (4 x 4's)
Vaginal tampon

Preventing Lacerations

Sometimes the head of the baby can tear the mother's perineum or around the vaginal opening This is more common with primigravidas or women who have been circumcised Lacerations occur with uncontrolled delivery of the baby, with very large infants, with instrument delivery (vacuum extraction or forceps), and with tears (extensions) of the episiotomy They are also more likely to occur in women who have very poor nutrition or have had repeated vaginal infections Refer to Module 2 **Quality Antenatal Care**, page 2 6, for nutrition information See Module 7 **Prevention and Management of Sepsis**, page 7 4, for information about infections

The midwife can do a lot to prevent lacerations from occurring Women who ambulate (walk, stand, or keep the upright position) for a significant amount of time during labor (about half of the labor time) had half the rate of operative delivery (vacuum extraction, forceps or cesarean section) compared with those who did not ambulate (Albers, et al 1997) The midwife can encourage and explain the reasons for the laboring mother to sit upright, walk, and change positions The midwife can help prevent tears around the vaginal opening by positioning the mother, applying warm cloths to the perineum, and slowing the birth of the head Sometimes the best way to prevent a laceration is to cut a big enough episiotomy The signs that an episiotomy is needed will be found in the Reasons for Cutting an Episiotomy section, page 4 4

Birthing Position

Studies have shown that lacerations in primigravidas can be decreased by one-third (33%) by delivering the mother in a lateral (lying on the left side) position and applying warm cloths to the perineum in second stage Using lithotomy position with stirrups for delivery was found to cause over stretching of the perineum and increases the risk of lacerations (Albers, et al 1996)

When the baby's head is about to crown, help the mother get in a good birthing position Good birthing positions to prevent lacerations are (a) semi-sitting, (b) squatting, (c) lying on the left side, with someone holding the mother's right leg, and, (d) on hands and knees

Warm Cloths

Warm cloths around the vaginal opening help increase circulation to the skin, making the skin soft and more able to stretch Use cooled boiled or very clean water Put a very clean cloth in the water and wring it out Touch the cloth to the inside of your wrist to ensure that it is not too hot Hold the cloth on the mothers' genitals **Make sure you do not burn her** You can support the perineum with a warm cloth when the baby's head is crowning

Slow the Birth of the Head

As the baby's head crowns, the midwife must try to prevent the mother from tearing **If the head is born slowly,** the mother's skin has more time to stretch and is less likely to tear

Remember that the mother's need to push is very strong To keep from pushing, the mother should blow with short, fast hard breaths During a contraction, ask the mother to "blow, blow, blow, don't push, blow, blow, blow " When the contraction is finished, ask her to give a small push Each time, a little more of the head will come out Keep the baby's head flexed After the widest part of the head comes out, the rest of the head usually comes out without any pushing

It is best to teach the mother during her third trimester, in antenatal clinic, how to stop pushing Review it with her during labor Explain to the mother that her urge to push will be very strong and that her perineum may feel hot (burning)

Cut an Episiotomy

At times, the best way to prevent a laceration is to cut an episiotomy

Cutting an Episiotomy

Reasons for Cutting an Episiotomy

Deciding when an episiotomy is needed comes with experience Signs that an episiotomy may be necessary are (1) bright red blood from the vagina before the head delivers (caused by tearing in the vagina), and (2) the perineal skin becomes pale (blanched) and shiny in appearance (caused by overstretching) just prior to tearing

There are several reasons you should decide to cut an episiotomy, including

1 to prevent a perineal tear or overstretching of perineal tissues as in the case of a very large infant

2 to protect the baby from brain damage, as in the case of a premature infant whose head is being repeatedly pressed against a thick, firm perineum

3 to speed the birth in the case of fetal distress

4 to prevent damage to both mother and baby in the case of an abnormal presentation (breech, face, occipital posterior position) by providing more space for a safe delivery

5 to decrease the length of second stage for women who are ill with heart disease, sickle cell disease, eclampsia, and so forth

Giving Local Anesthesia before Cutting the Episiotomy

Put a 22 gauge 1 ½ inch needle on a 10 cc syringe Longer needles and larger syringes can be used One percent lidocaine hydrochloride without epinephrine (Xylocaine) is the most popular local anesthetic, though a number of others are available Explain to the woman what you are going to do and help her to relax

1 Fill the syringe with anesthetic

2 Place your two fingers between the baby's head and the perineum (See Figure 1) It is very important that your fingers serve as a protection in front of the baby's head Injecting anesthetic into the head of the baby can cause death

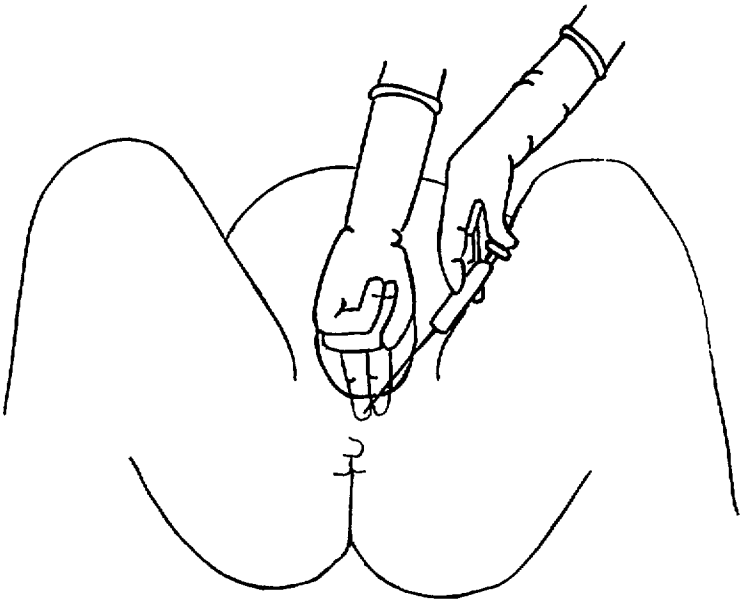

Figure 1. Injecting Local Anesthetic

3 Insert the whole length of the needle from the fourchette, running just below the skin, along the line the episiotomy will follow Pull back on the plunger of the syringe to check for blood (aspirate) If you inject local anesthetic directly into a blood vessel, it could cause heart irregularity Inject evenly **as you withdraw** the needle

4 Now angle the needle one side of center and repeat step 3 Repeat on the other side of center

5 Change the position of the needle again and repeat, injecting up the center of the back wall of the vagina Remember to protect the baby's head by keeping your fingers between the baby's head and the needle By this time, you should have injected about 10 cc of anesthetic

6 If there is time, wait a minute or two before cutting the episiotomy Otherwise, remember that the thinning and stretching of the perineum provides natural anesthesia The anesthetic will have worked (taken effect) by the time you start the repair

7 During the repair, if the woman is uncomfortable, inject up to 10 cc more of anesthesia in the area where the woman feels pain Try always to inject evenly as you withdraw, to prevent the solution from staying all in one area, and to lessen the chance of injecting into a blood vessel

With experience you will usually be able to give the anesthetic prior to delivery

Giving Local Anesthesia After the Episiotomy Has Been Cut and Baby Delivered

Put a 22 gauge 1 ½ inch needle on a 10 cc syringe Longer needles and larger syringes can be used One percent lidocaine hydrochloride without epinephrine (Xylocaine) is the most popular local anesthetic, though a number of others are available Explain to the woman what you are going to do and help her relax **This same procedure can be used before suturing a perineal laceration**

1 Fill the syringe with anesthetic

2 Because the episiotomy (or laceration) is already cut, you now have two sides which need to have anesthetic (See Figure 2) Look carefully at the shape of the wound

3 Insert the whole length of the needle from the entry points indicated on the drawing (Figure 2) Pull back on the plunger of the syringe to check for blood (aspirate) If you inject local anesthetic directly into a blood vessel it could cause heart irregularity Inject evenly **as you withdraw** the needle Withdraw the needle to just below the skin

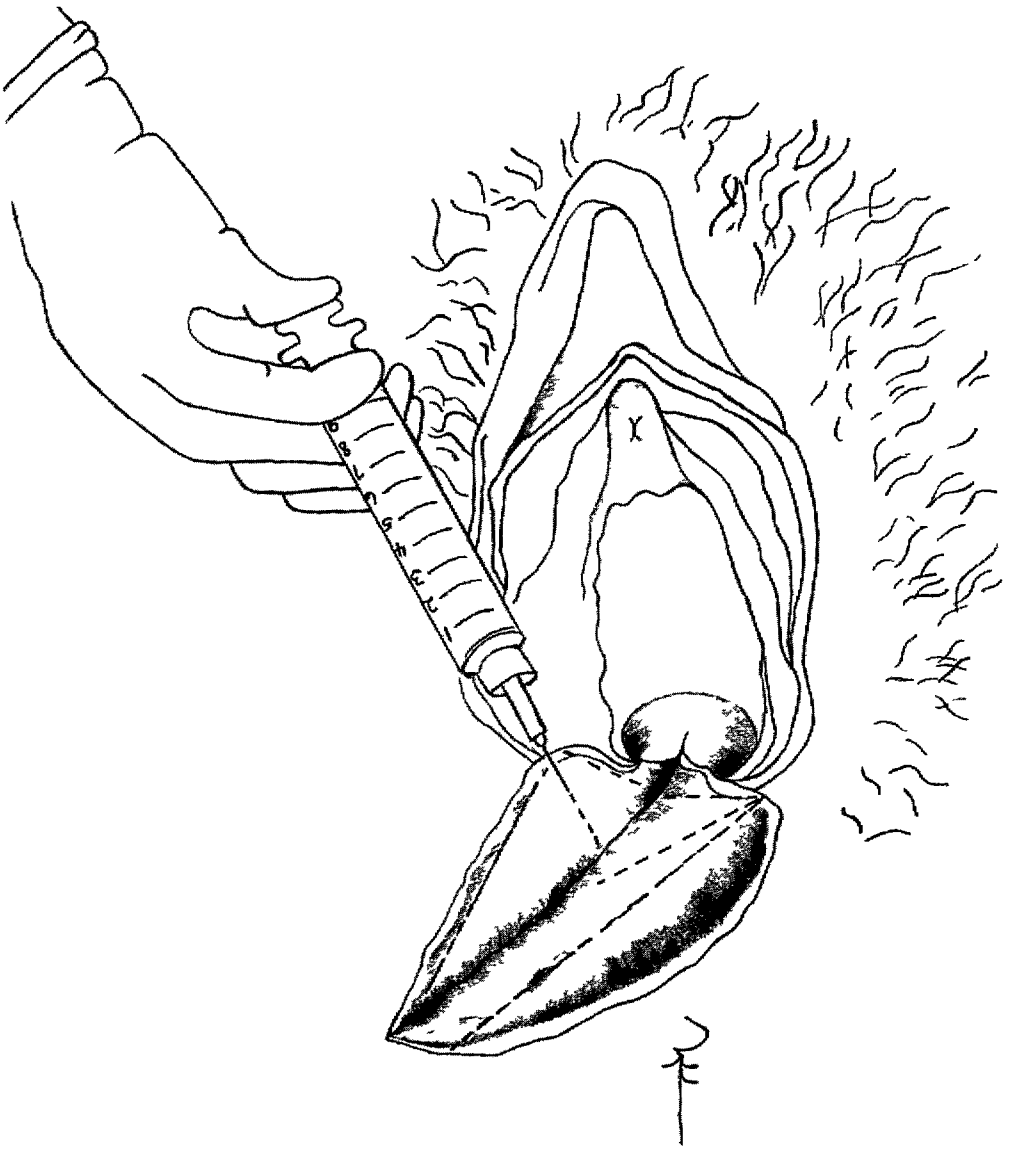

Figure 2 Injecting Local Anesthetic after Delivery

4 Now angle the needle above the center and repeat step 3 Repeat, going below center as shown in Figure 2 Withdraw the needle Repeat on the other side of the episiotomy in the 3 positions shown (see dotted lines in Figure 2) At this point, you should have injected about 10 cc of anesthetic

5 Wait a minute or two to allow the medication to take effect before starting to sew the episiotomy The anesthetic will have worked (taken effect) by the time you start the repair Touch the cut areas with the sharp point of a needle to make sure the anesthetic is working

6 During the repair, if the woman is uncomfortable, inject up to 10 cc more of 1% anesthesia in the area where the woman feels pain Try always to inject as you withdraw to prevent the solution from staying in one area, and to lessen the chance of injecting into a blood vessel

Cutting a Mediolateral Episiotomy

1 **LOOK and FEEL** Is the perineum long or short? Thick or thin? Does it have varicose veins, genital warts, or other problems?

2 If you prefer to do a mediolateral episiotomy or you are not close to a hospital and doctor with obstetrical experience, it is safer to do a mediolateral episiotomy This type of episiotomy is unlikely to extend into the rectum and bowel It does take a bit longer to repair than other types, and the healing process may be slower and more uncomfortable for the woman However, you will not create complications such as recto-vaginal fistula, which may cause great expense and difficulty for the woman in the future

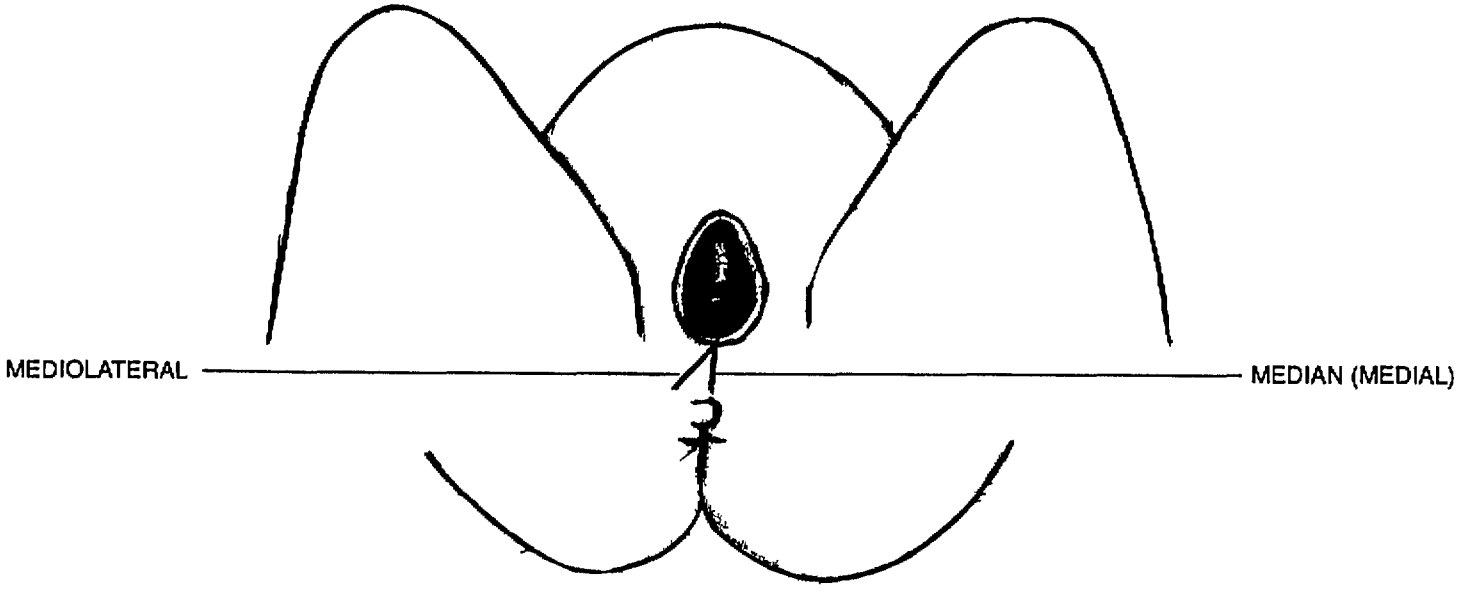

Figure 3. Positions to Cut Episiotomies

3 Try not to cut an episiotomy before it is time Remember the best time is when the perineum is thinned and pale or shiny The blood loss will be greater if you cut too soon

4 Take a sharp pair of scissors in one hand Place 2 fingers of your other hand in the vagina between the scissors and baby's head, to prevent accidentally cutting the baby The rounded (blunt) blade should be inside the vagina Start at the center of the perineum and angle (slant) your scissors out at a 45 degree angle (See Figure 4) If you are right handed, cut towards the mother's right buttock If you are left handed, cut towards the mother's left buttock

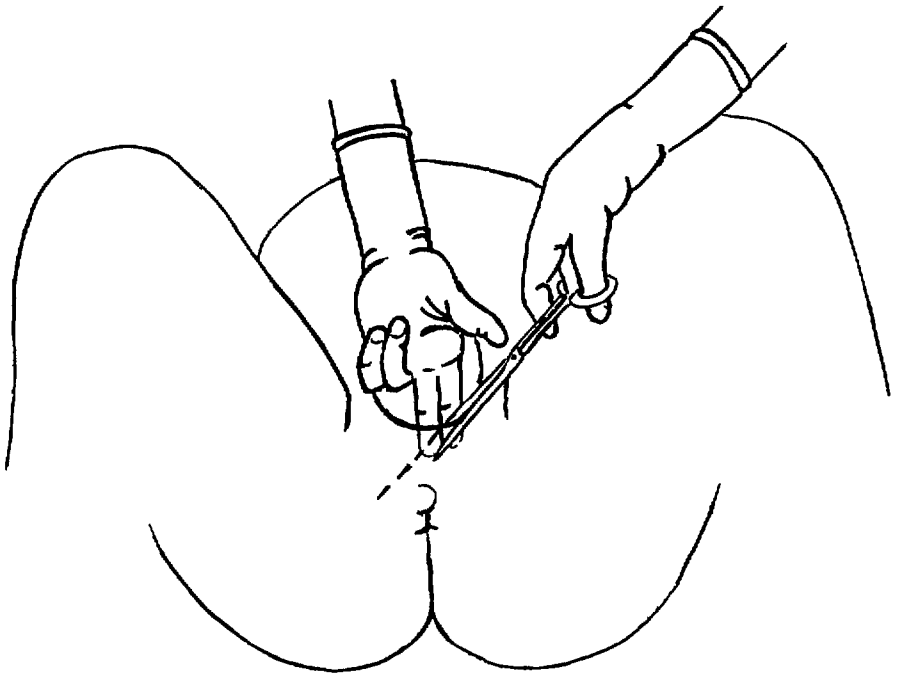

Figure 4 Cutting a Mediolateral Episiotomy

5 Make the episiotomy with one or 2 large cuts Many tiny cuts may give a ragged edge to the wound, and will make repair and healing more difficult

6 After the perineal cut has been made, turn your scissors around and position them facing up the vagina With your hand, protect the baby's head with your fingers Cut up the center of the vagina 5 to 7 5 cm (2 to 3 inches) This cut allows more space in the vagina and helps to prevent tearing upward from the perineal cut

7 Press a gauze firmly over the cut area while the woman continues to push with contractions, to keep the blood loss as small as possible Remember to use good sterile technique If you lift the gauze off the cut, you will need to take a fresh sterile gauze to place on it Take care not to contaminate (infect) the cut by touching the rectal area with your gloved hands, gauze, cotton, cloths, or instruments

Diagnosing a Laceration (Tear)

ASK and LISTEN

If the woman delivered at home or with a traditional birth attendant (TBA), **ASK** the woman, TBA, or family member about the delivery

ASK - When did you deliver? Have you noticed bleeding? More than usual? Where is the bleeding coming from? How much? Have you changed her clothing or cloths used in delivery? Were the other clothes soaked through?

ASK - Did the placenta deliver? Was it all there in one piece? If twins, did you deliver two placentas or one large placenta with two cords?

ASK - Did you take any medicines, herbs, treatments? Has anything been placed in the vagina to stop bleeding or for another purpose?

Since you do not know how much blood the woman lost before you see her, DO NOT WASTE TIME SHE MAY BE CLOSE TO SHOCK OR DEATH

LOOK and FEEL

LOOK for signs of shock (See box)

LOOK at and **FEEL** the placenta to make sure the tissue and membranes are completely delivered

FEEL the uterus to make certain that it is well contracted

LOOK at the woman's clothing and genitals Try to decide how much blood she has lost

SHOCK SIGNS	
Eyes	- dull
Face	- pale, sweaty
Breathing	- fast and shallow
Pulse	- fast, weak
Skin	- cold, clammy
Blood pressure	- low

IDENTIFY THE PROBLEMS/NEEDS and TAKE APPROPRIATE ACTION

FEEL to see that the uterus is well contracted If the uterus is not well contracted, perform bimanual compression Give oxytocic if needed

Refer to Module 5 **Prevention and Treatment of Hemorrhage,** for a complete discussion of active management of the third stage, bimanual compression of the uterus, and manual removal of the placenta

Prepare to perform a vaginal and cervical inspection to see where the bleeding is coming from You should perform this procedure for women who are referred to you with problems, and on all women you deliver

Cervical and Vaginal Inspection

Explain to the woman what you are going to do Let her know this procedure will cause discomfort, but that you will do it as quickly and gently as possible Let her know that it is important to make certain she does not have any tears which will cause her to bleed too much Before you begin, check the uterus to be sure it is well contracted

1 **LOOK and FEEL** as you quickly and gently wash off the woman's genitals with soap and water With your gloved hand, separate the labia (vaginal lips) Have your assistant shine a light into her vagina Look carefully for any tears or hematomas (collection of blood under the tissue) (See Figure 5)

2 Press firmly on the back wall of the vagina with your fingers Look deep into the vagina Bleeding from a laceration may be slow oozing or spurts from a pumping artery

3 Slowly press against the vaginal wall and move your fingers up the side wall of the vagina, one side at a time **LOOK and FEEL** Is the surface smooth? Are there any points where you notice bleeding? **Be sure to feel all the way up the vagina to the cervix**

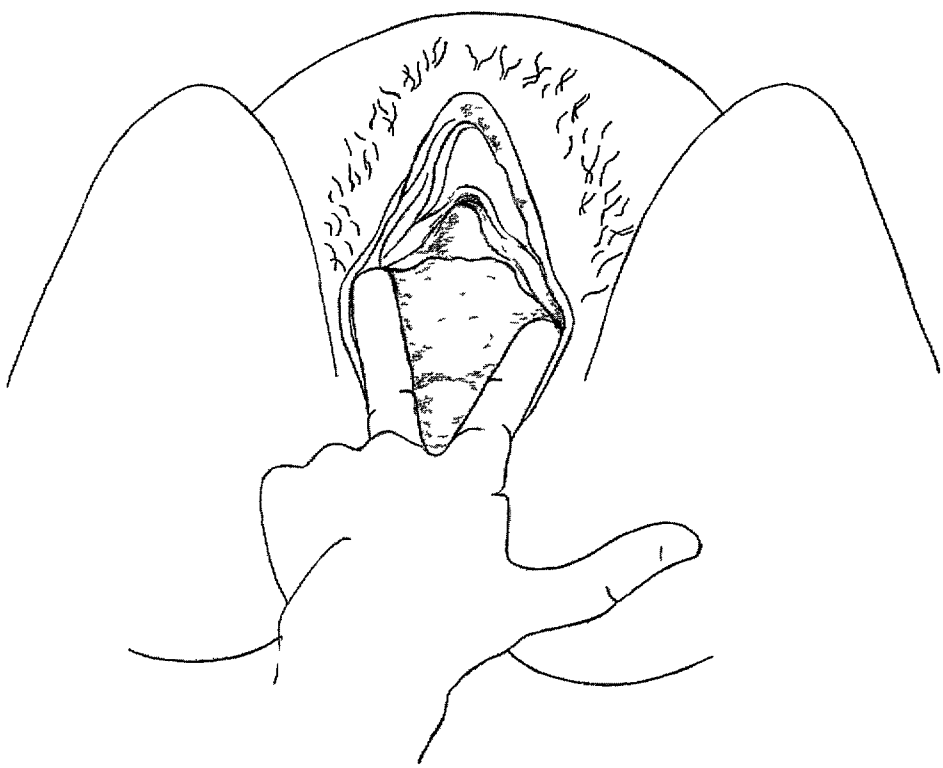

Figure 5 LOOK and FEEL for Tears in the Vagina or Cervix

4 Next have your assistant press firmly down on the woman's uterus This will move the cervix lower in the vagina so you can examine it more carefully Press firmly on the back wall of the vagina with one hand If you see bleeding or tears, take your sponge forceps (ring forceps) and clamp **the entire rounded part of the forceps** onto the anterior lip (top lip) of the cervix Pull gently on the forceps

WARNING If you do not place the clamp well onto the tissue, you can tear off a piece of the cervix, creating more bleeding

5 You should now be able to clearly see the cervix **LOOK** carefully at all sides of the cervix Do you see oozing or spurts of blood? Lacerations occur most frequently on the sides of the cervix at 3 or 9 o'clock (mid-right and mid-left) (See Figure 6)

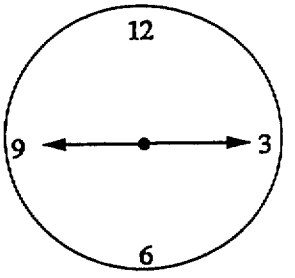

Figure 6 Most Common Sites for Cervical Tears

6 If the bleeding blocks your view so that it is difficult to see where it is coming from, take a sterile gauze or cloth and wipe the blood away **LOOK** and see where the bleeding is coming from Is it from the uterus, a vaginal laceration, or a cervical laceration?

a If the bleeding is from the uterus, give an oxytocic medication and massage the uterus If the bleeding is from a laceration, repair it as described in the section on laceration repair, page 4 19 If no lacerations or bleeding are noted, remove the sponge forceps, make the woman comfortable, and continue to monitor her vital signs carefully for 2 hours

b If the lacerations seen are large and/or deep, or if the woman does not improve with intravenous rehydration, pack her vagina with a tampon of sterile gauze or cloth and prepare to transport her immediately to a health care facility with surgical capability (operating theater) She may be suffering from a ruptured uterus, laceration of the uterine arteries, or other complications See Module 8 **Hydration and Rehydration** for shock information

Repair of an Episiotomy or Laceration

There are several ways that can be used to repair episiotomies The method which will be taught here is called *the suture sparing continuous method* This method has been chosen because it has several advantages The midwife needs to learn only one type of stitch and one or two types of knots It also causes the woman less pain after repair because only a small amount of suture is left in her tissue Remember that this basic repair can be changed or modified when needed If a woman has an unusually deep laceration or extension (tear) of her episiotomy, an additional layer of interrupted (individual) sutures can be used for added strength

Preparation for Repair

1 Put on gloves

2 Position the woman's buttocks at the edge of the bed or table Her legs may be supported by stirrups or held up by family members

3 Remove any soiled cloths from under her, then wash her genitals

4 Put on clean gloves or wash your gloves with soap and water Place a tampon or gauze into the vagina if needed to keep blood off the area you are suturing

5 Place a sterile or very clean towel or cloth under her buttocks

6 If you gave her local anesthesia before cutting the episiotomy, check to see if is working well To do this, touch the cut areas with the sharp point of a needle If she feels sharp pain, you need to give her some more anesthesia before the repair If you are repairing a laceration, or if you were unable to give anesthesia before the episiotomy was cut, give the local anesthesia now See the section on local anesthesia, page 4 6

7 Ask someone to adjust your light source so you can see well into the vagina This is a very important point If you can not see very well, it is easy to miss lacerations or fail to see the top of the episiotomy

8 Sit down and make yourself comfortable If your body is relaxed and comfortable, you will do a better job

9 If you have not already done so, perform a complete vaginal, cervical, and perineal inspection as described in Procedure for Cervical and Vaginal Inspection, page 4 11

10 Open the suture and gently stretch it out until it is straight Choose 2-0 or 3-0 chromic catgut, it is good for repairing episiotomies and lacerations because it is flexible, strong, lasts long enough for healing to occur, does not have to be removed, and causes a minimum of tissue reaction If it is not available, use whatever you have

If you use regular (coat) thread or non-absorbable suture, use interrupted stitches and the one layer method Non-absorbable suture must be removed when healing is completed (5 to 10 days) This may create difficulties for women who must travel long distances See Learning Aid 1, page 4 26 for more information on sutures

11 Place the needle in the needle holder at a right angle (See Figure 7) Clamp the teeth of the holder firmly shut If not clamped well, the needle will twist in the tissue as you sew and be difficult to control

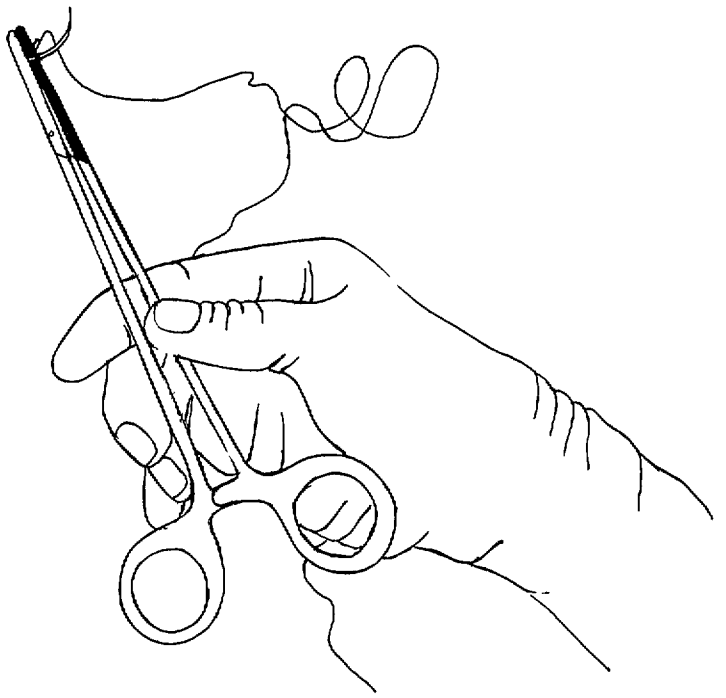

Figure 7 Proper Angle of Needle in Needle Holder

Mediolateral Episiotomy Repair

The suture-sparing continuous method is used in the repair of a mediolateral episiotomy When you cut on a slant (as in a mediolateral cut), the tissue pulls apart unevenly and one side appears thicker than the other You must take a bigger bite of tissue on one side of the cut in order to make it come out evenly You must move your body and your needle holder to the side to line up parallel with the wound Hold your needle holder parallel to the wound (cut) when suturing, to make the angle of suturing correct The procedure for repair of a median episiotomy (suturing straight across from side to side) is described in Learning Aid 3, page 4 29

In Figures 8 and 9, the continuous sutures are the same as for repair of the median episiotomy Because the perineum has been cut on an angle, the opening leans a bit to the side When you begin to suture the perineum (shown in Figures 10 through 15), you must change the angle of your body and your needle holder Notice how much larger the bite of tissue taken on the one side is in comparison to the other You will get the impression that you are suturing "uphill" (upwards)

If the episiotomy is unusually deep or uneven in depth, it is possible to place several interrupted sutures or an entire row of interrupted sutures in the deep part before doing the rest of the repair as usual To learn how to do interrupted sutures, see the section on repair of lacerations of the cervix, page 4 21

1 Run your finger through the whole wound (cut) See clearly where the top of the wound is Place your first suture about 1 cm (½ inch) above the top of the wound in the vagina Hold the thumb forceps in your other hand Use the thumb forceps to pull the needle through the tissue **Never use your fingers** Using your finger to feel for the needle is dangerous You may prick your finger or make tiny tears in your gloves greatly increasing your risk of getting a blood borne infection like HIV or hepatitis B Tie the suture off with a square knot (described in Learning Aid 2, page 4 27) and trim off the short thread to about 1 cm (½ inch) (See Figure 8)

2 Suture the vaginal mucosa using a continuous stitch (continuous suturing), sewing down to the hymenal ring (See Figure 9)

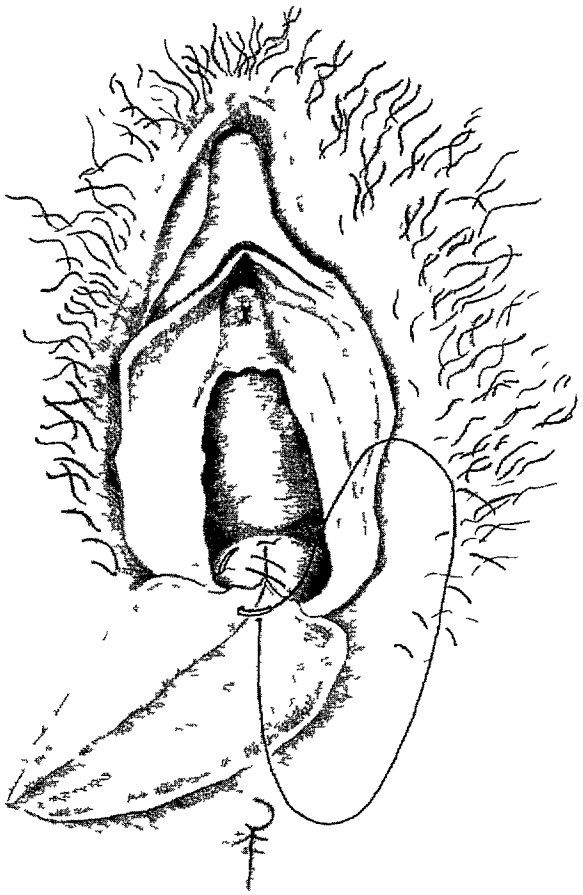

Figure 8 Sew Vaginal Mucosa

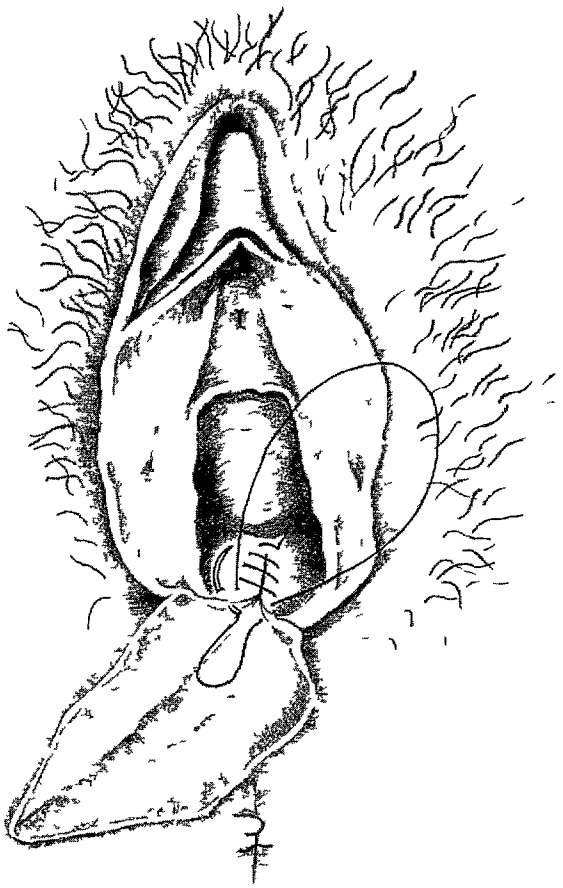

Figure 9 Continuous Suturing to Hymenal Ring

3 The needle then goes through the vaginal mucosa, behind the hymenal ring, and is brought out on the wound of the perineum (See Figure 10) Notice how close the needle is to the top of the wound

4 Use continuous suturing as you suture the muscle layer **LOOK** inside the cut for the muscle layer It looks a little red in color and feels firm to touch It is important to sew muscle to muscle **FEEL** the bottom of the cut The suture should come through just above the bottom of the cut When you reach the end of the wound, you have closed the deep muscle layer

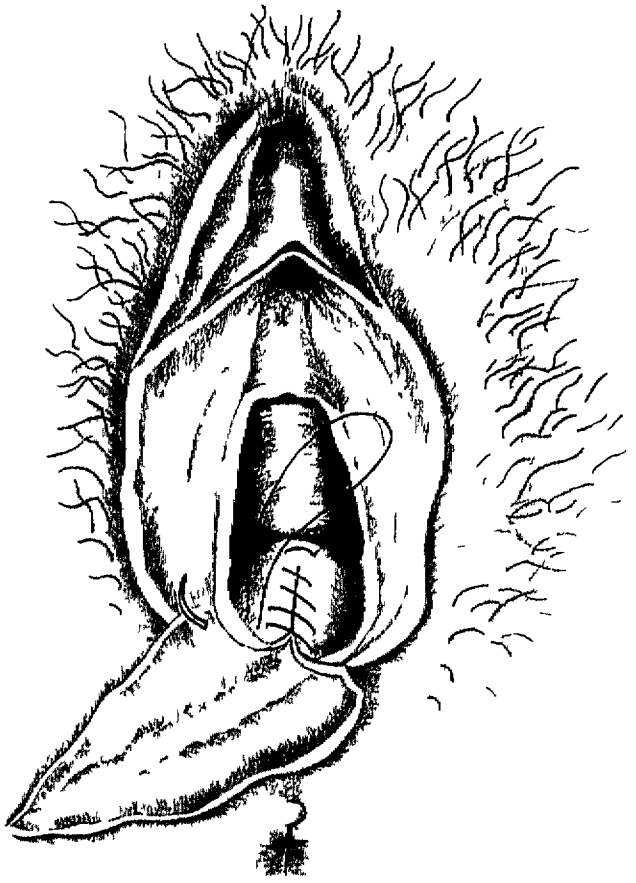

Figure 10 Suture Moved to Perineum

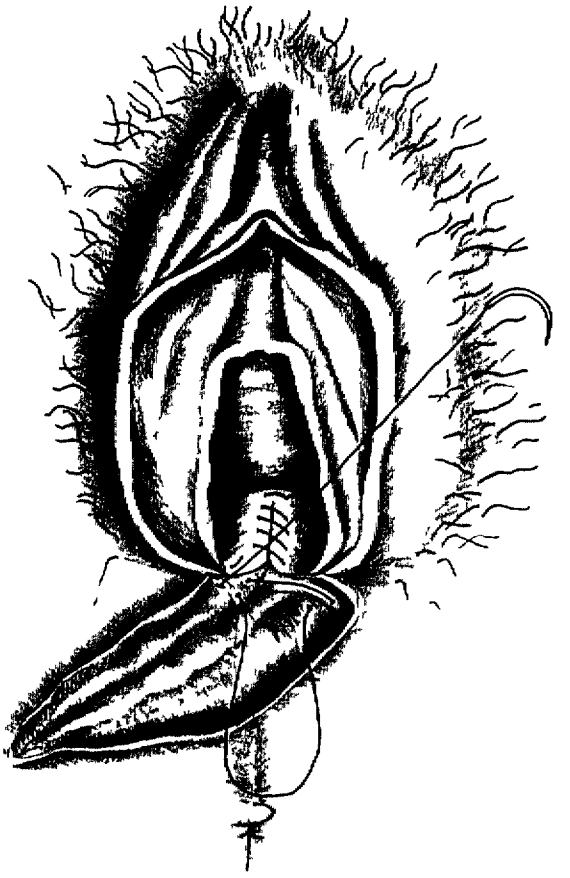

Figure 11 Continuous Suturing Continues

5 Once you have reached the very tip of the wound (see Figure 12), turn your needle over and start to sew up towards the vagina, using continuous stitches to close the subcuticular tissue (See Figure 13) **LOOK** for the subcuticular layer just immediately under the skin This tissue is soft to touch and has the same color as the vaginal mucosa You are now making a second layer of stitches Notice the angle of the needle in Figures 12 and 13 This second layer of suture will leave the wound about 0 5 cm (¼ inch) open This will close well by itself as healing occurs

Remember to always pull the suture through with your thumb forceps Do not use your fingertip to feel for the tip of the needle

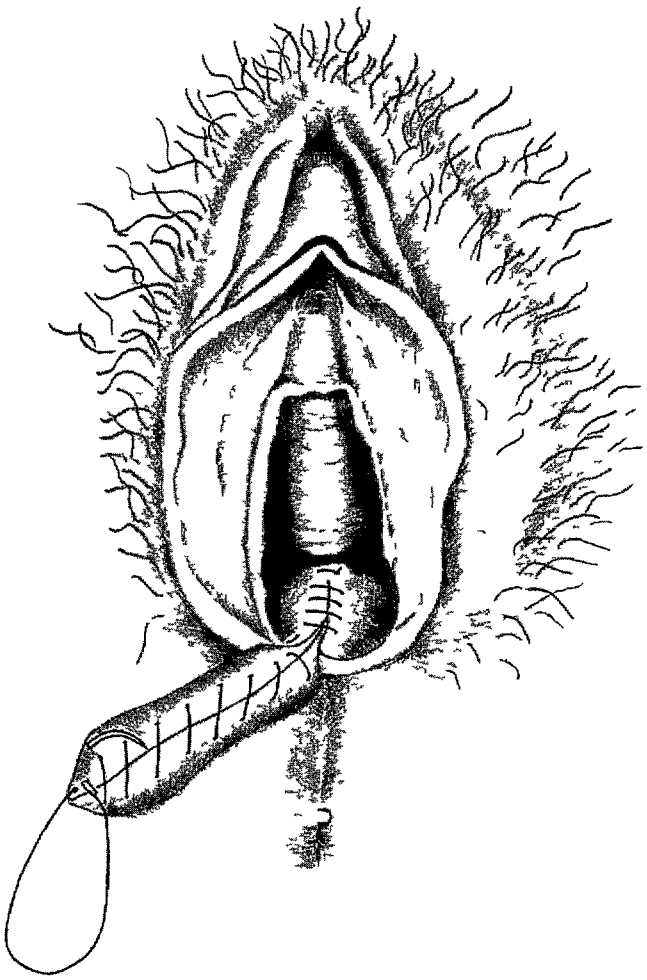

Figure 12 Sew from the Very Tip of the Wound

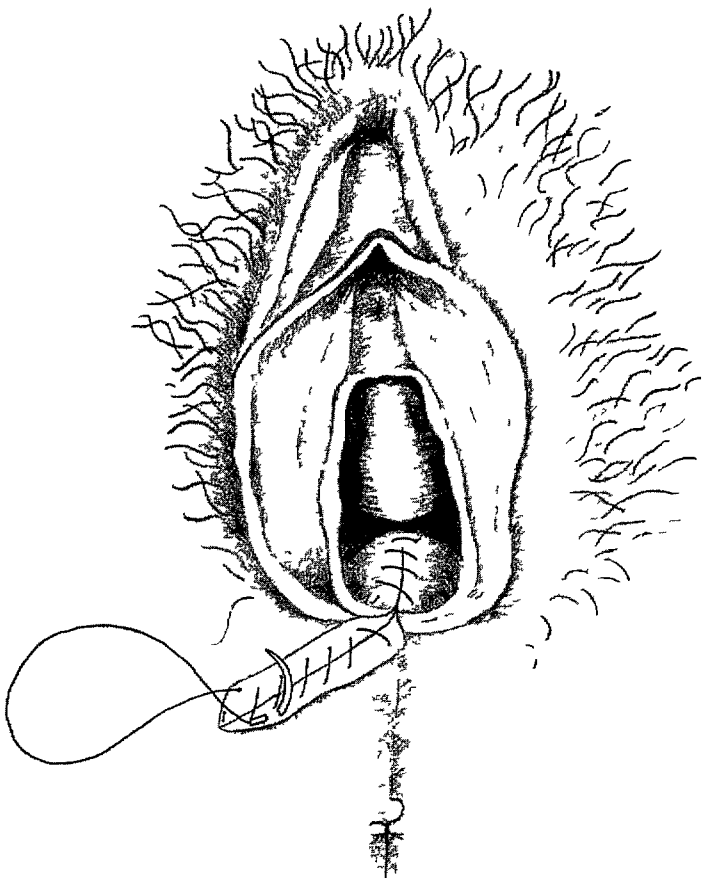

Figure 13 Subcuticular Layer Starts

6 Now move the suture again from the perineal part of the wound back into the vagina behind the hymenal ring to be secured, tied off, and cut See Figures 14 and 15 to see how the suture comes out behind the hymenal ring

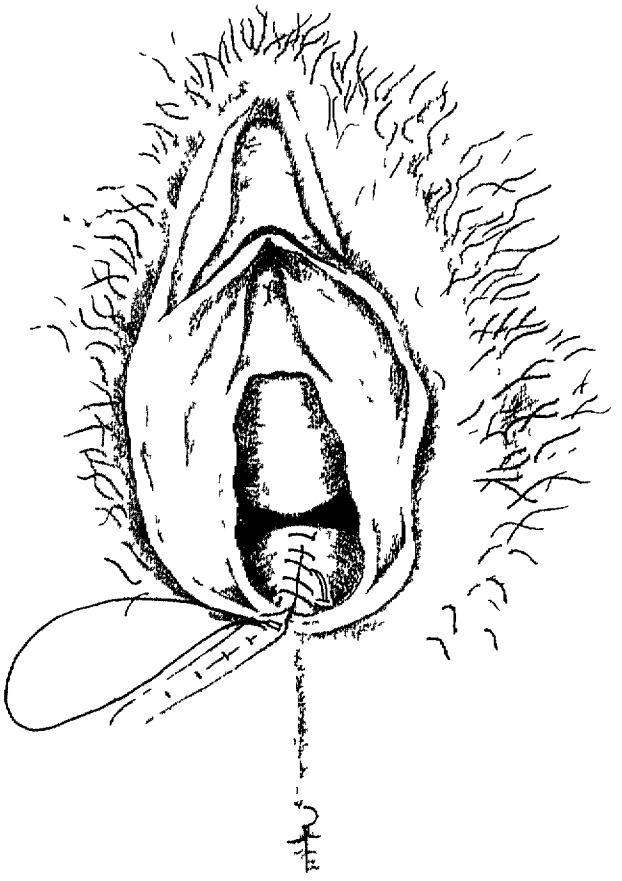

Figure 14 Move Needle Back into Vagina

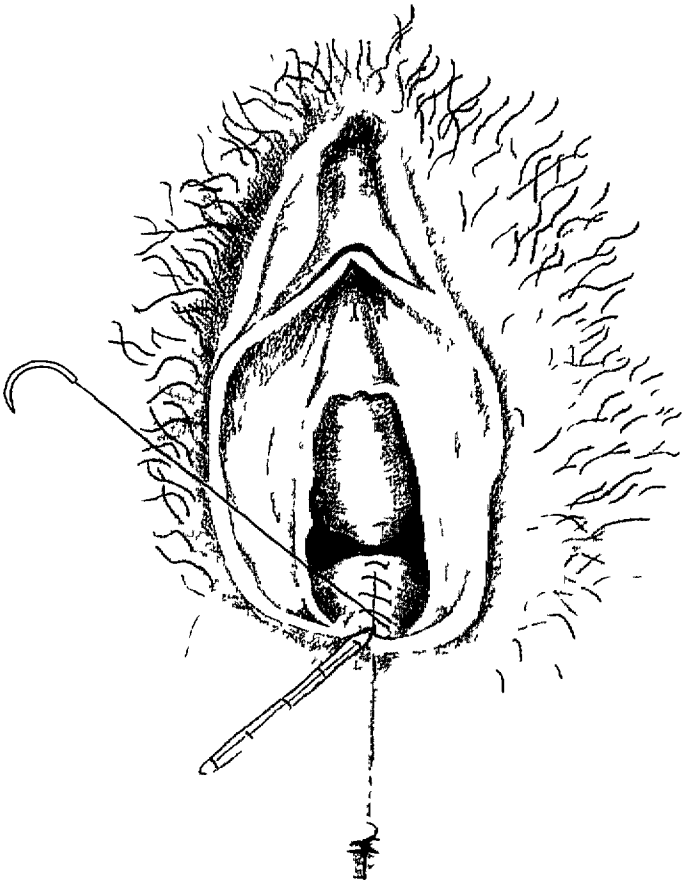

Figure 15 Tie Off in Vagina

7 Tie off the suture with a square knot To make the knot very secure, make one and a half square knots Cut the 2 ends of suture off, leaving about 1 cm (½ inch) If you cut the ends too short, the stitch may pull apart If this happens, the whole episiotomy becomes loose or pulls apart

8 Double check to make certain you have not left any gauze, tampon, or instruments in the woman's vagina Wash her genitals with soapy water Dry her and make her comfortable

9 Advise the woman to wash the area well with soapy water 3 to 4 times per day Otherwise, she should keep her perineum clean and dry Discourage her from putting anything into her vagina She should not use boiling baths Ask her to return for a follow up visit in one week, so you can check the healing of the wound Record findings, care, and medications, see Back of Labor Form in Module 3 **Monitoring Progress of Labor**

10 If possible, check the perineum daily for 3 to 4 days Look for redness, pus, loosening or opening of the sutures, or a hematoma A hematoma may look like a bruised or shiny swelling Watch to see if it gets bigger If it is more than 3 to 4 cm (1-1½ inches), refer her to a hospital so it can be opened and the blood vessel sutured

Repair of Lacerations

Lacerations occur in different places Once you have done a cervical and vaginal inspection (page 4 11) and you have found the place(s) where the tissue is torn, you must decide whether to refer the woman or do the repair yourself Remember that women die from blood loss from simple lacerations which are not found or repaired

Periurethral Lacerations

Tears around the clitoris and urethra can bleed very heavily and can be very difficult to repair If you can, refer the patient To prepare her for referral, pack sanitary pads or other bandages firmly against the vulva and have her keep her legs pressed together You may wrap her thighs together with cloths to remind her to keep her legs firmly together

If you must repair the laceration yourself

1 Place a catheter in the bladder This will help you identify the urethra and keep you from accidentally sewing the urethra shut or damaging it

2 Choose the finest (most narrow) suture you have (see Learning Aid 1 - Choosing a Suture, page 4 26)

3 Press the tissue together Do not hurry this part Lacerations are like puzzles The ragged pieces must go together again so that the tissue looks like it did before the laceration The better job you do pressing the tissue together and planning where to place the suture, the better it will look when it heals

4 Place interrupted (individual) sutures the length of the shallow tear, spaced about 1 cm (1/4 inch) apart To make an interrupted stitch
- take a bite of tissue,
- bring it through to the center of the tear,
- look for the needle,
- check that it is not too deep or too shallow,
- push it through the other side of the tear with the same size bite of tissue,
- pull the suture through, leaving just enough of an end (5 to 8 cm), that you can tie the suture with a square knot (See how to tie a square knot in Learning Aid 2, page 4 27)

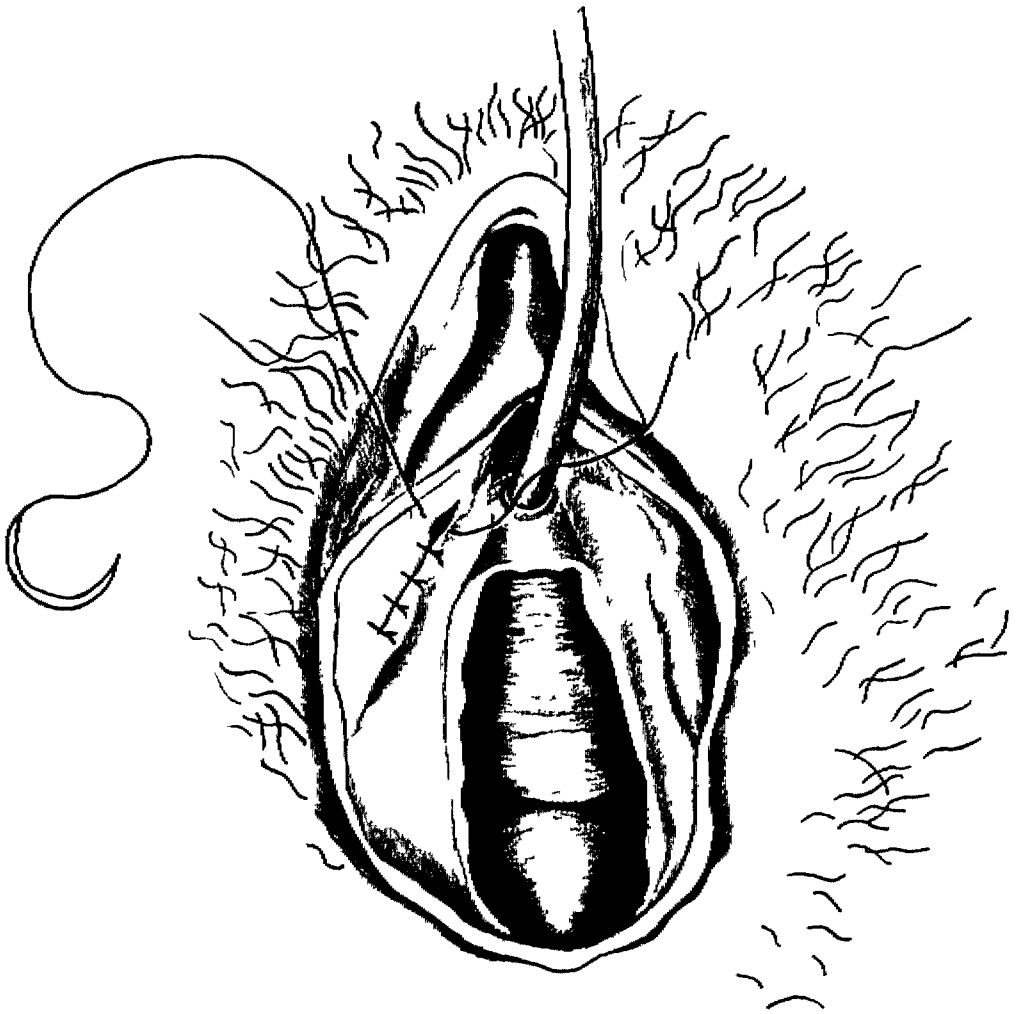

Figure 16 Repair of an Anterior Periurethral Laceration Interrupted Sutures Can Be Used An Indwelling Catheter Is Placed before the Repair Is Made

5 Continue making interrupted (individual) sutures for the full length of the laceration *Remember the most important thing is to control the bleeding*

- If blood continues to ooze from the laceration, press a gauze firmly over the wound for a couple of minutes
- Carefully take off the gauze
- If the bleeding has stopped, clean and dry the woman, make her comfortable
- If she continues to ooze or bleed, press gauze over the wound with steady continuous pressure for at least ten minutes **Do not peek** (look) Normal clotting time is usually about 7 minutes If she still continues to bleed, you will need to add one or more stitches to control the bleeding

Vaginal Lacerations

Lacerations of the vagina are repaired as described in the previous section on repair of periurethral lacerations However, in this case the best choice of suture is 2 0 or 3 0 chronic suture It is also not necessary to place a catheter in the urethra, unless the laceration is on the anterior vaginal wall

Circumcision Scar

In some parts of the world, women have been circumcised With some types of circumcision, there is more problem during delivery Scarring from circumcision does not always allow scarred skin to stretch, causing tearing, pain, and bleeding If the vaginal opening is very small, it must be opened so that the baby can deliver

To cut the scar open

1 Inject local anesthesia as on page 4 5
2 Place your scissors in the vagina pointing up Cut up through the old scar until you can see the opening to the bladder The vagina will probably now stretch enough to let the baby deliver

To repair the cut

1 Use the laceration repair as on page 4 19
2 This might be a good time to explain to the woman that it would be safer for her to not have the cut repaired so as to not cause more scarring, which may block the opening to the bladder and the vagina Partial repair may be needed to control bleeding

Lacerations of the Cervix

Lacerations of the cervix most often occur at the middle left or middle right (3 and 9 o'clock) of the cervix See the illustration (Figure 6) of common laceration sites on page 4 12 Lacerations will be found as you do your vaginal and cervical inspection **Because the cervix does not contract as the uterus does, giving oxytocic will not stop bleeding from the cervix**

Cervical lacerations can also occur when the mother starts pushing before her cervix is fully open The cervix may tear so that the baby can deliver Cervical lacerations can occur in easy deliveries For this reason, careful cervical and vaginal examinations should be done for every woman Women die from small cervical lacerations that could have been repaired with two or three stitches

1 Place your sponge forceps on one side of the laceration (See Figure 17) If you have a second sponge forceps, place it on the other side of the laceration Place the handles from both forceps in one hand

2 Pull the handles toward you This will help you see the laceration on the cervix better

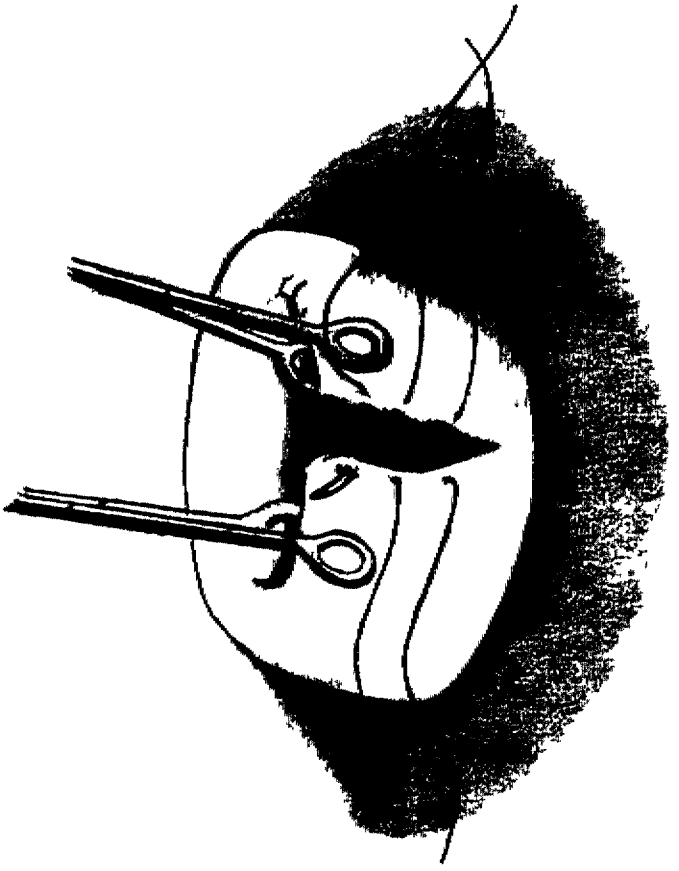

Figure 17 Holding the Cervix for Laceration Repair

3 Place interrupted sutures the length of the wound, spaced about 1 cm apart as described in the perIurethral section (See Figure 18)

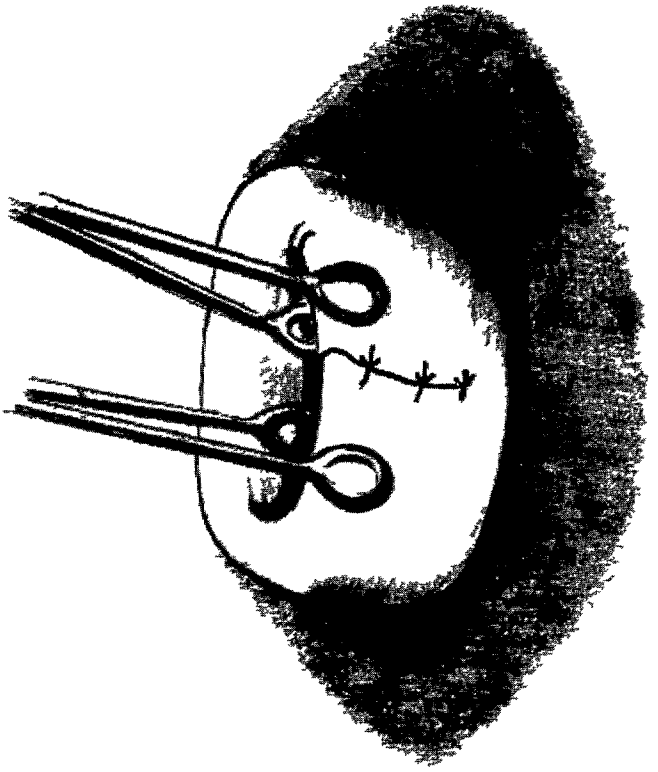

Figure 18 Interrupted Sutures on the Cervix

If you do not have sponge forceps to grasp the cervix, have your assistant put on a pair of gloves Have her press on the posterior (back) wall of the vagina This will help hold it out of the way so you can see the laceration better It is quite difficult to sew without the forceps to hold the cervix still, but it can be done in an emergency Do not use toothed forceps or clamps to hold the cervix steady **Instruments with teeth can cut the cervix and cause much greater bleeding, or you might accidentally pull off a piece of cervix**

If it is not possible for you to repair the cervical laceration

1 Place your sponge forceps over the cervical laceration as illustrated in Figure 19 Placing pressure over the bleeding points is often enough to stop the bleeding, at least for some time

2 Wipe out the vagina and make certain the bleeding has stopped If the laceration is extensive, prepare the family and woman for referral to a place where a physician with obstetric experience can repair the laceration

3 Release the clamp briefly every 15 minutes or so where possible, to keep the edges of the lacerated cervix from dying from lack of blood If this can not be safely done during transport of the woman, keep the cervix clamped and get her to the referral hospital as quickly as possible

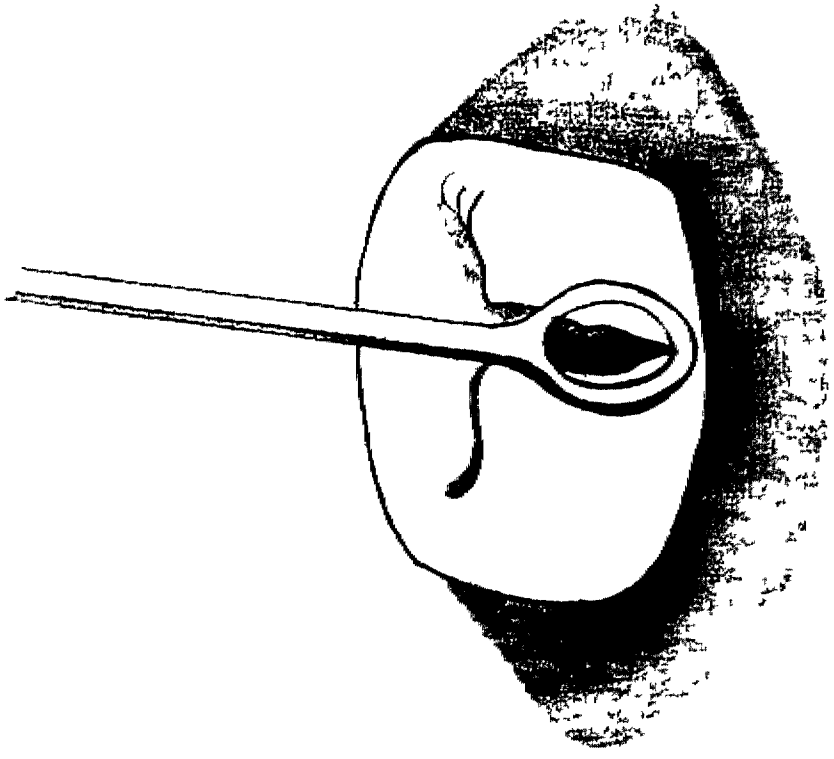

Figure 19 Sponge Forceps over Cervical Laceration

If you do not have sponge forceps

1 Place your gloved hand with gauze or cloth over the cervical laceration

2 Apply pressure with your fingers for 15 minutes

3 Continue the pressure while transporting the woman to hospital

If the laceration is not large

1 Keep the sponge forceps clamped on for 10 minutes

2 Carefully release the clamp and watch to see if the bleeding has stopped

3 If the bleeding has stopped, remove the clamp and clean the mother

4 If the bleeding continues, try clamping the cervical laceration for another 10 minutes

5 If the bleeding continues, repair the laceration

Remember that *vaginal packing* ***does not stop bleeding*** Vaginal packing absorbs (soaks up) the blood and prevents the blood from running out of the bleeding woman **IT IS BEST TO STOP BLEEDING WITH PRESSURE FROM YOUR FINGERS or HANDS if you can not repair the laceration** REFER as soon as possible

Women die from blood loss from simple lacerations which are not found or repaired.

Learning Aid 1 - Choosing a Suture

Suture comes in two types - absorbable and non-absorbable

Absorbable suture, which is often called plain catgut, is usually made from the connective tissue of the small intestine of sheep It is dissolved within a week by body tissues or body fluids However, catgut which is soaked in chromic oxide resists absorption and retains its strength for 10 to 40 days It is often called chromic catgut Because of its strength and slower rate of dissolving, chromic catgut is ideal for repair of episiotomies and delivery lacerations

Some man-made or synthetic suture are also absorbable Vicryl or Polyglactin 910 are examples of absorbable suture It is completely absorbed in 60 to 90 days

Non-absorbable suture may be made from cotton, silk, plant tissue, metal, or man-made fibers They tend to cause some tissue reaction (like inflammation with swelling or redness) If no absorbable suture is available, use non-absorbable suture and interrupted suture technique Non-absorbable suture must be removed after 5-10 days Remember, an unrepaired laceration can lead to hemorrhage, anemia, and even death

Size Suture material is graded by size 3-0 means 000 The more zeros in the size, the smaller the width of the thread Therefore, 2-0 or 3-0 is very strong and good for repairing lacerations 6-0 is very good for repairing wounds on the face 9-0 is very good for surgery of the eye

The ideal suture for episiotomies or genital lacerations is 2-0 or 3-0 chromic catgut It is flexible, strong, lasts long enough for healing to occur, and causes a minimum of tissue reaction

However, if you are in a situation where chromic catgut is not available, use anything at hand Strong cotton thread from a tailor on a regular sewing needle can serve in an emergency

Learning Aid 2 - Principles of Knot Tying

1 The knot, when complete, must be firmly tied so it can not slip Therefore, the simplest type of knot is preferred

2 The knot must be as small as possible to prevent reaction of the tissue (like an inflammation) The ends of the knot should be clipped about 1 cm (½ inch) in length

3 In tying any knot, rubbing the two strands on each other (sometimes called sawing) should be avoided This can weaken the suture and cause it to break

4 Be careful not to damage suture when you are handling it If you clamp onto it with the needle holder or forceps, you can weaken or break the threads

5 When pulling tissue together with your suture, be careful not to pull too tightly This can cut off circulation to the tissue Pulling tissue too tightly can also cause suture to break

6 Square knots and surgeon's knots are the best knots They lie flat, take up a minimum of space, and hold together well Granny knots (the type of knot children typically use to tie their shoes) frequently pull apart with pressure and should never be used for repair of episiotomies or lacerations

Square Knot Using Two Hands

To learn how to tie knots, it is helpful if you tie a dark and light thread together Then

1 Place the white strand or thread over the index finger of your left hand and hold it in the palm of your left hand Hold the black thread or strand in your right hand

2 Bring the black thread in your right hand between the left thumb and index finger

3 Turn your left hand inward and swing the thumb under the white thread to form the first loop

4 Cross the black strand over the white and hold it between the thumb and index finger of your left hand

5 Let go of the black strand in your right hand Then with the left hand, grasp the black strand and bring it through the white loop Again grasp the black strand with the right hand

6 With your left hand, let go of the black strand and pull with even tension (pressure) The first half of the knot is now complete

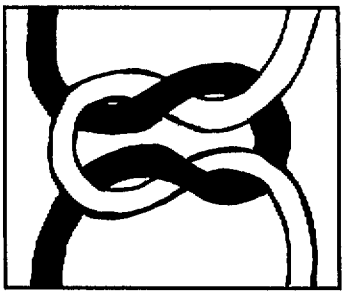

Figure 20 Completed Square Knot

7 Wrap the white strand behind your left thumb

8 Loop the black strand over your left thumb

9 Bring the black strand back up under the white strand

10 Pull the black strand through

11 Pull with equal tension on both strands, one in each hand The second half of the knot is now complete For added security, tie another half knot

Square Knot Using the Needle Holder

1 The short black strand lies free The long white strand is held with one hand Form a loop by placing the needle holder on top of the white strand, wrap the strand around the needle holder

2 Grasp the end of the short black strand with the needleholder

3 Pull the black strand through the loop, pull firmly, making the first half of the knot

4 Let go of the black strand

5 Hold the long white strand and form a loop by placing the needle holder under the white strand, wrap the strand around the needle holder

6 Grasp the end of the short black strand with the needle holder

7 Pull the black strand through the loop, pull firmly making a complete square knot Pull horizontally to set the knot

8 A third knot may be made by using steps 1 through 3

Learning Aid 3 - Procedure for Median Episiotomy Repair

See the section on Preparation for Repair, page 4 50, to review how to prepare for suturing

1 Run your fingers through the whole wound (cut) See clearly where the top of the wound is Place your first suture about 1 cm (½ inch) above the top of the wound in the vagina Hold the thumb forceps in your other hand Use the thumb forceps to pull the needle through the tissue **Never use your fingers** Using your finger to feel for the needle is dangerous as you may prick your finger or make tiny tears in your gloves, greatly increasing your risk of getting a blood borne infection such as HIV or hepatitis B Tie the suture off with a square knot (see Learning Aid 2, page 4 27), and trim off the short thread to about 1 cm (½ inch) (See Figure 21)

2 Suture the vaginal mucosa using a continuous stitch, sewing down to the hymenal ring (See Figure 22)

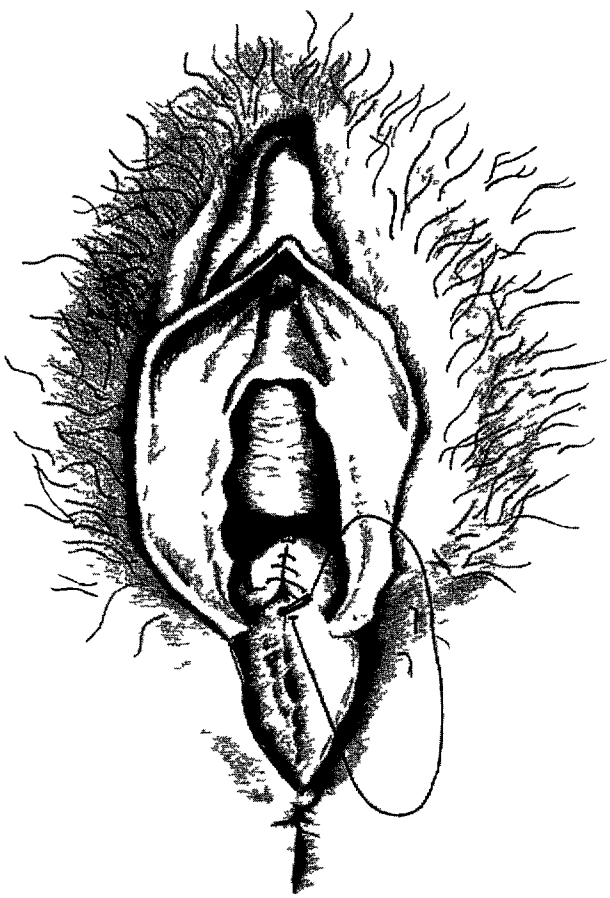

Figure 21 Sewing Vaginal Mucosa

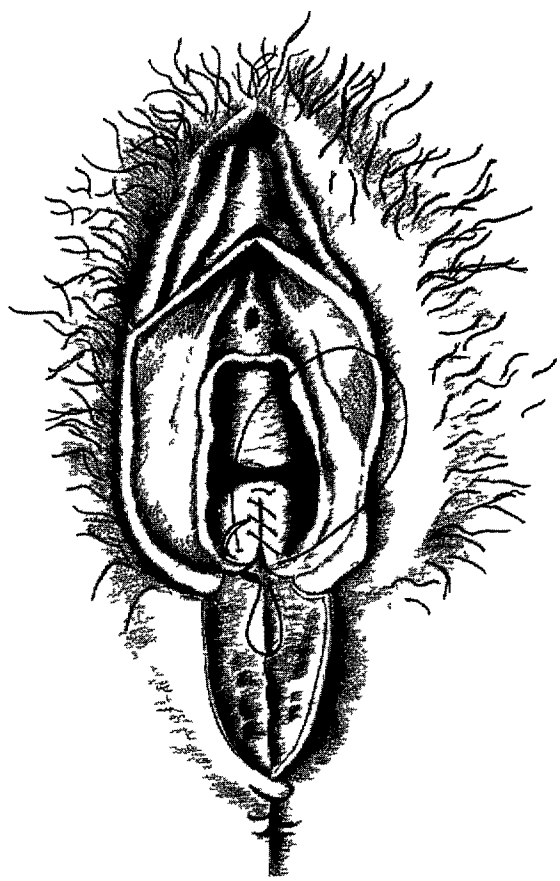

Figure 22 Continuous Suturing to Hymenal Ring

3 The needle then goes through the vaginal mucosa, behind the hymenal ring, and is brought out on the wound (cut) of the perineum (Look at Figure 23) See how close to the top of the wound the needle is

4 Now use the suture sparing continuous method to suture all the way to the bottom of the wound Make sure that the bite taken on each side is equal in size You have now closed the deep muscle layer

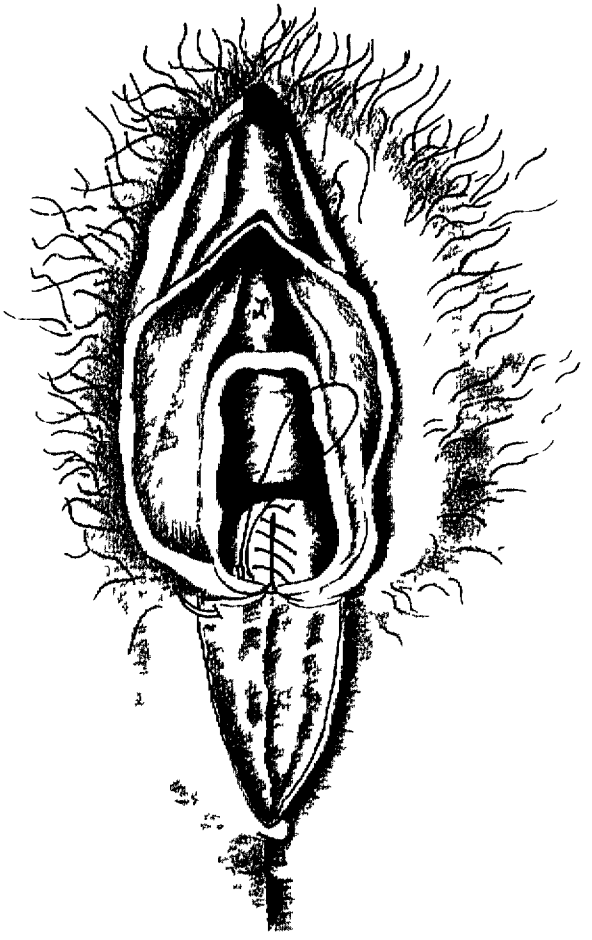

Figure 23 Suture Moved to Perineum

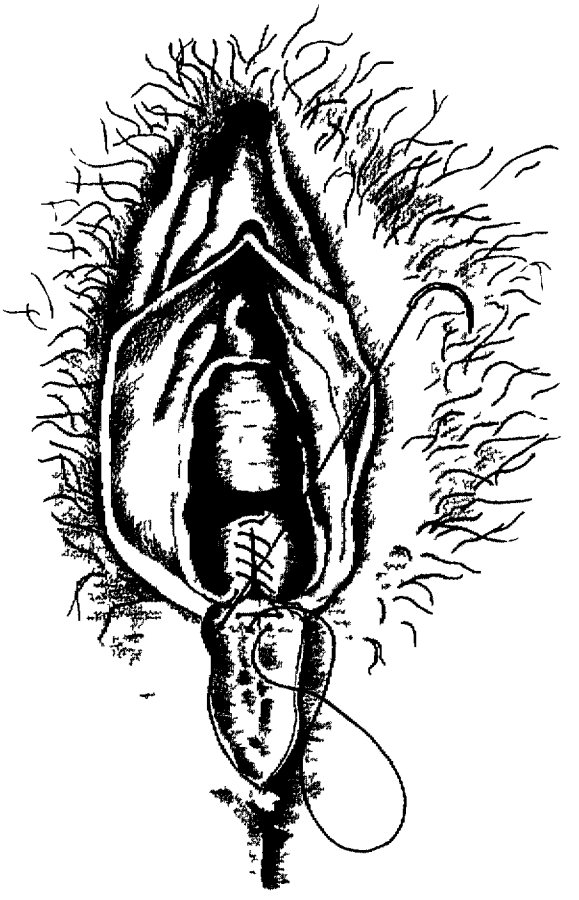

Figure 24 Continuous Suturing Continues

5 Once you have reached the very end of the wound just above the rectum (Figure 25), turn your needle over and start to sew up towards the vagina, using continuous stitches to close the subcuticular tissue (See Figure 26) You are now making a second layer of stitches in the same area Notice the angle of the needle in Figures 25 and 26 This second layer of suture will leave the wound about 0 5 cm (¼ inch) open This will close well by itself as healing occurs

Remember always pull the suture through using your thumb forceps Do not use your fingertip to feel for the tip of the needle

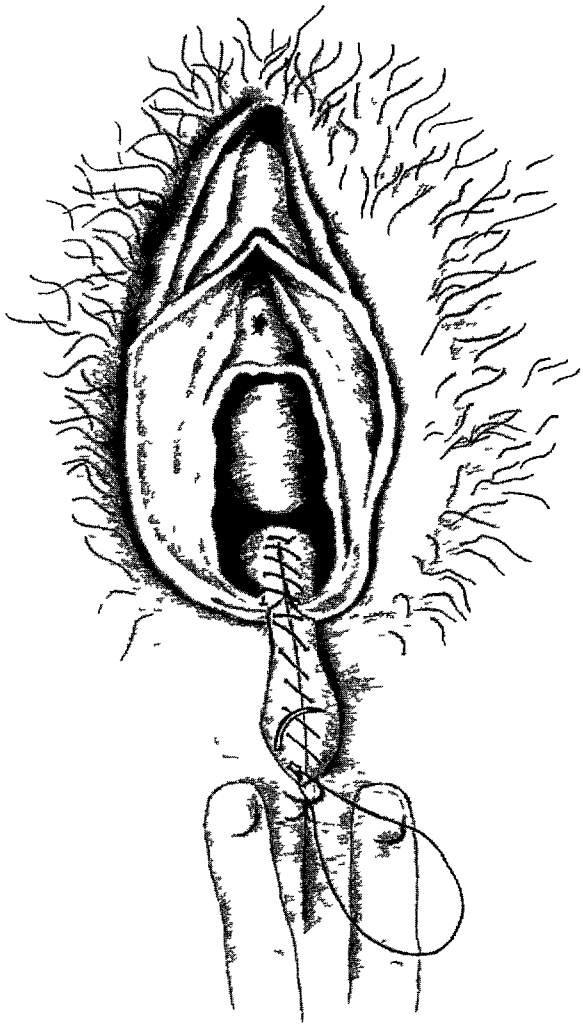

Figure 25 Sew to very Bottom

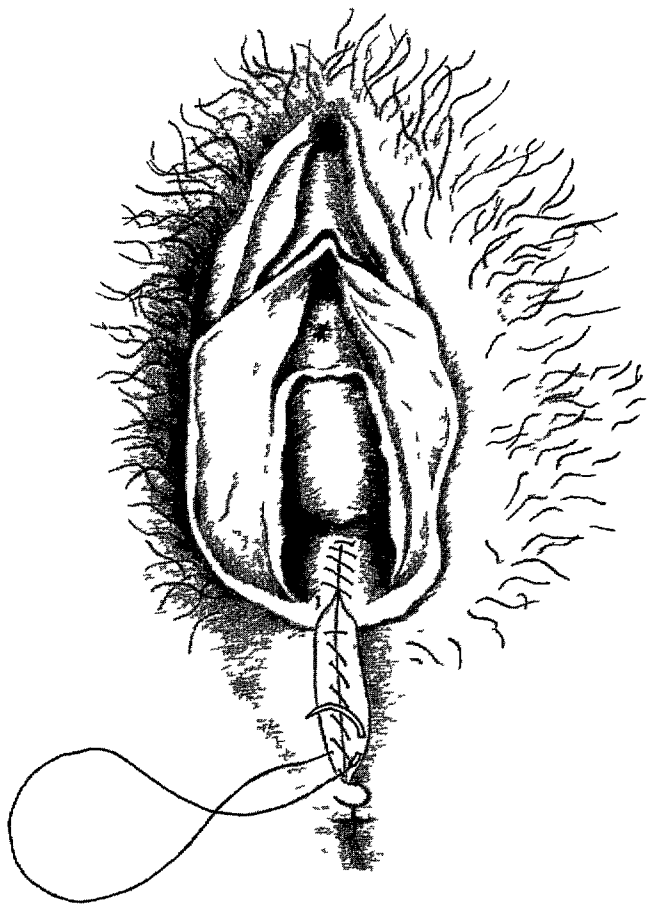

Figure 26 Subcuticular Layer Starts

6 Now move the suture again from the perineal part of the wound back into the vagina to be secured, tied off, and cut See Figures 27 and 28 to see how the suture comes out behind the hymenal ring

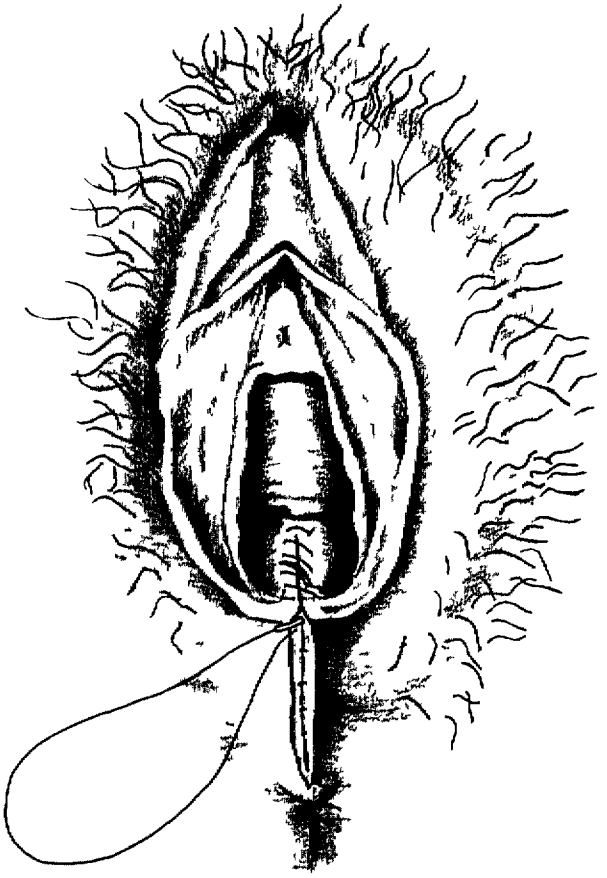

Figure 27 Move Needle Back into Vagina

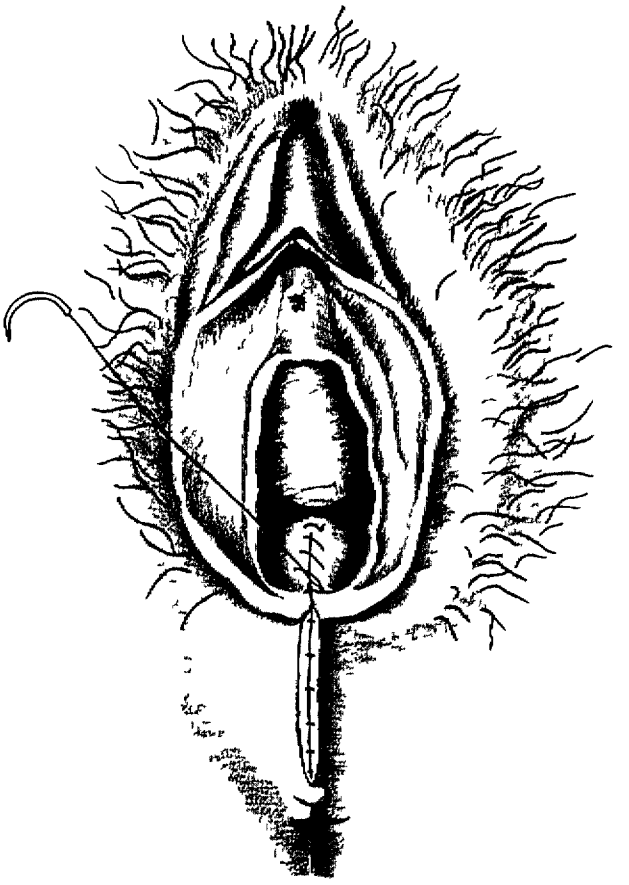

Figure 28 Tie Off in Vagina

7 Tie off the suture with a square knot To make the knot very secure, make one and a half square knots Cut the two ends of suture off, leaving about 1 cm (½ inch) If you cut the ends too short, the stitch may pull apart If this happens, the whole episiotomy becomes loose or pulls apart

8 Insert your finger into the rectum Feel the top of rectal wall for suture If you feel suture, make certain to repeat the rectal exam 6 weeks postpartum If it is not fully healed at that time (fistula), refer the woman to the doctor Double check to make certain that you have not left any gauze, sanitary pads, or instruments in the woman's vagina Wash her genitals with soapy water Make her dry and comfortable

9 Advise the woman to wash the area well with soapy water 3 to 4 times per day Otherwise, she should keep her perineum clean and dry Discourage her from putting anything into her vagina or on the wound She should not use boiling baths Ask her to return for a follow-up visit in one week, so you can check the healing of the wound

10 If possible, check the perineum daily for 3 to 4 days Look for redness, pus, loosening or opening of the sutures, or a hematoma A hematoma may look like a bruised or shiny swelling Watch to see if it gets bigger If it is more than 3 to 4 cm, refer her to a hospital so it can be opened and the blood vessel sutured

Review Questions

What Did I Learn? Find out what you know and understand of this module by answering the following questions When you are finished, look for the answer in this module on the pages indicated in parentheses ( )

1 What are the two common types of episiotomies? (page 4 2)

2 What are the signs that a woman will likely tear if she does not have an episiotomy? (page 4 4)

3 What are the signs and symptoms of vaginal and cervical lacerations? (page 4 10)

4 What steps will you take to perform a vaginal and cervical inspection? (pages 4 11 - 4 12)

5 Describe how to inject local anesthesia before the baby is born (pages 4 5 - 4 6)

6 What are the types of suture and what type is preferred to sew genital lacerations and episiotomies? (page 4 26)

7 List the steps in the repair of a mediolateral episiotomy (pages 4 14 - 4 19)

PROBLEM SOLVING METHOD CASE STUDIES

The Problem Solving Method is an organized way of giving care to women It is a way of thinking about the care you give This case study will help you review the Problem Solving Method Use Modules 1, 4, 5, and 8 for reference

We all solve problems every day of our lives We usually do not think about the steps involved in problem solving, though we all follow steps to solve problems The Problem Solving Method is a way to help us follow steps in giving care to women Read, then write your answers to the questions in these cases

The four steps of the Problem Solving Method are
1

2

3

4

(Check your answers by looking in Module 1, page 1 22)

The Problem Solving Method is used by midwives to identify problems and take appropriate action

Case Study 1

ASK and LISTEN

This is the first step in caring for a woman Ask questions about the reason she came to see you, the midwife In an emergency, you may be asking questions, looking, feeling, making decisions, and taking actions almost at the same time It is very important that the four steps of the Problem Solving Method are practiced over and over, so that you do not have to look in a book or stop and say, "Now, what should I do first?" In an emergency, you must know the steps

Read the following example Mrs C L is brought to the maternity in a truck (lorry) Her husband is shouting for you to come and help his wife Mrs C L is lying in the back of the truck on a mat soaked with blood and fluid Another woman is sitting beside her holding a baby As you greet Mrs C L while she is still lying in the truck, you immediately **FEEL**_____ (Fill in this sentence)

Now that you know the uterus is firm and contracted, you quickly recall that Mrs C L is a primipara who registered in her fifth month of pregnancy She had a normal pregnancy, even though she was seen by the doctor at the hospital 3 times during the pregnancy You and the doctor both requested that she deliver at hospital She attended antenatal clinic last week The baby was close to term and breech Mrs C L was going home to get her things and move to the hospital maternity village until she delivered

As you help get the mother into the maternity, you ask the driver to please wait because Mrs C L may need to go to the hospital What questions would you ask Mrs C L and her family?

1

2

3

4

You find out that Mrs C L is very weak and afraid She is thirsty The woman holding the baby tells you that Mrs C L was waiting for market day (today) transport to the hospital She delivered 4 hours ago The baby's head did not come out for a long time Someone helped the baby deliver by pulling on the baby After the placenta came out, the bleeding did not stop Mrs C L has not taken any liquids or food since before the delivery She has not taken any medicines

You do not waste any time writing down the above information at this time You know that prolonged bleeding after delivery can lead to shock and death You can see that Mrs C L is close to shock You must continue quickly with the Problem Solving Method and prevent shock at the same time

LOOK and FEEL

This is the second step when seeing a woman As you prevent shock, find out where the bleeding is coming from What will you do to prevent shock?

Refer to Module 8, page 8 4

As you help her lie down, cover her to keep her warm and dry Give her liquids to drink, talk to her, and reassure her so she is not too afraid Quickly **LOOK and FEEL**

What will you find as you **LOOK and FEEL**?

1

2

3

4

5

You find that Mrs C L is nervous (anxious) and afraid Her respirations are shallow and fast (44 in a minute), pulse is strong but fast (100 beats in a minute), blood pressure is low (70/48) Her skin is cold and wet The uterus is still firm and contracted The perineum is intact There is a tear at the middle left (3 o'clock position) of the cervix

IDENTIFY THE PROBLEM

This is the third step of the Problem Solving Method The midwife must identify the problems, using the information from the first two steps

What is the problem?

Using the information from **ASK** and **LISTEN** (difficult delivery of breech, primipara, placenta is delivered, thirsty, nervous, bleeding), the **LOOK and FEEL** (anxious, respirations shallow and fast, pulse 100 but strong, blood pressure 70/48, skin cold and wet, uterus firm and contracted, tear in cervix), you **IDENTIFY** the problem -- Mrs C L has a cervical laceration and is close to shock

TAKE APPROPRIATE ACTION

This is the fourth step of the Problem Solving Method You must decide what should be done to take care of each problem Mrs C L has a life threatening problem She is close to shock and is bleeding from the cervical laceration

What EMERGENCY actions will you take, and why will you take each action?

Refer to Modules 4, 6, and 8

You make sure the airway is open The breathing is fast at 44 You stop the bleeding with pressure on the cervix and ask your assistant to get the suture pack to repair the cervical laceration You ask your assistant to cover and keep the woman warm, raise her feet and legs, start an IV, and check the blood pressure and pulse every 10 minutes

If you know how to repair the cervical laceration, repair it, and then go with Mrs C L to the hospital

The EMERGENCY actions should include treating for shock and repair of the cervical laceration If you can not repair the cervix well, hold sterile gauze against the cervix, and go with the family to the hospital

Case Study 2

Mrs V L comes to the maternity by taxi She was at the market when her bag of waters broke and labor contractions started She had a lot of difficulty finding transport to the maternity She delivered in the market Her cloth is soaked with blood The baby is crying and moving around a lot What do you do ***immediately?***

You help Mrs V L lie down, feel the uterus to make sure it is firm and contracted, wash her genitals with soap and water, put the baby to each breast for 3 to 4 minutes, ask your assistant to take the blood pressure and pulse

As you care for Mrs V L , you observe that there is a steady stream of bright red blood coming from the vagina

ASK and LISTEN

Since Mrs V L delivered at the market and this is the first time you have seen her, you need to find out what happened to her Do not waste time You do not know how much blood she lost before you saw her She may be close to shock or death

What do you need to ask her in this situation?

1

2

3

4

5

6

Refer to Module 4, page 4 10

You find out that this is her first baby and there was no bleeding before or during the delivery She has the placenta wrapped in a cloth, you can see that it came out in one piece She only saw the bleeding when she got out of the taxi She has not taken any medicines or herbs No one has put anything into her vagina during or after the delivery

LOOK and FEEL

What examination will you do on Mrs V L ?

Refer to Module 4, pages 4 10 - 4 12

You find out that her blood pressure is 96/62, pulse is 70 Her skin is warm and sweaty There are no signs of shock now The placenta and membranes are complete and not torn The uterus is firm and contracted The vagina and perineum have a medial (midline) laceration with bright red bleeding The cervix has no laceration

IDENTIFY THE PROBLEM

IDENTIFY the cause of this emergency problem of bleeding You know that continuous blood loss leads to shock, coma and death You must decide what is causing the bleeding using the information from **ASK and LISTEN**, and **LOOK and FEEL** Write the problem here

Refer to Module 4, page 4 10

Using the information from **ASK and LISTEN** (delivered a normal baby and placenta at the market, bleeding after the delivery) and **LOOK and FEEL** (placenta and membranes complete, uterus firm and contracted, no cervical tear, midline vaginal tear), you **IDENTIFY THE PROBLEM** that Mrs V L has a vaginal laceration She is not in shock

TAKE APPROPRIATE ACTION

A vaginal laceration can be life threatening What **ACTION** will you take?

Refer to Module 4, page 4 19

If the bleeding is not controlled, what do you do next?

If the bleeding is controlled, what do you do next?

TAKE APPROPRIATE ACTION AFTER BLEEDING IS CONTROLLED

Mrs V L had a life threatening problem which had to be taken care of right away What other action needs to be taken using the following

Medical treatment

Education/counseling

Laboratory tests

Plans for follow up

Recording

You take her vital signs If the temperature is elevated, refer to Module 7 and treat for infection You teach her about care of her laceration, cleanliness of breasts, baby care, and prevention of tetanus You talk with her about the need for postnatal care for mother and baby, family planning, and the supportive roles of the family and the Traditional Birth Attendant (TBA)(if she has one) You check her hemoglobin and refer her if she has a low hemoglobin or if she continues to bleed

You give her a date to come back to see you Depending on her condition, you may want to see her in 2 weeks If she has a very large laceration, you may want to see her or ask her to see her TBA every day until she is stronger It all depends on the condition of Mrs V L

You write in the record that Mrs V L , a primipara delivered her baby and complete placenta and membranes at the market today, and the time On arrival in a taxi, the baby was crying, the mother was lying in blood soaked clothes (estimated 400 cc blood) Record her blood pressure and pulse, that her skin was warm and sweaty, uterus firm and contracted, that she had a medial vaginal laceration, that her cervix was intact The laceration was repaired and bleeding stopped Mrs V L is eating, drinking, and walking to the toilet

Case Study 3 - What Is the Problem?

(Answers are on the next page)

The new midwifery student working in your maternity has just completed evening postpartum rounds She tells you the woman who delivered at 4 AM today seems to be bleeding too heavily You try to have the student solve the problem

You ask the midwifery student What could be the **PROBLEM**?

What **ACTIONS** will you and the student take?

Case Study 4 - What Is the Problem?

(Answers are on the next page)

A family member has sutured a woman with a large perineal laceration with coat thread The woman comes to you 6 days later complaining of pain and pus coming from her wounds

What could be the **PROBLEM**?

What **ACTIONS** will you take?

ANSWERS - Case Study 3

You ask the midwifery student What could be the **PROBLEM**?

Uterine atony - with or without retained products of conception
Missed laceration of the cervix, vagina, or perineum
Normal postpartum lochia New student not yet aware of range of normal postpartum loss

What **ACTIONS** will you and the student take?

Massage the uterus
Express clots
Estimate the blood loss
Start an IV if indicated
Under good light thoroughly inspect the vagina, cervix and perineum
Suture any lacerations found to be bleeding or oozing
Monitor for vaginal bleeding, contracted uterus, full bladder, and vital signs every hour until normal and then, 3 times a day for 3 days to make sure the bleeding stops Teach the mother to monitor her own uterus
Determine if referral is needed

ANSWERS - Case Study 4

What could be the **PROBLEM**?

Infected laceration repair

What **ACTIONS** will you take?

Inspect the area under good light
If the area is infected, remove the coat thread
Wash the wound with an antiseptic or soap and water
Take the woman's temperature, blood pressure, and pulse
Teach the woman how to monitor her own uterus, clean herself, and change pads frequently
Give antibiotics according to your protocol
Check how she is healing every 2 or 3 days
If the infection is severe, refer

Skills Checklist for Episiotomy and Laceration Repair

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✔ = satisfactory or ✗ = needs improvement
Add any comments in the comments section below and at the end of the checklists

	Date	Date	Date	Date
A Procedure for Giving Local Anesthesia				
Put a 22 gauge, 1 ½ inch needle on a syringe				
1 Fill the syringe with local anesthetic				
2 Place your two fingers between the baby's head and the perineum, if giving anesthetic before delivery				
3 Insert the whole length of the needle from the fourchette, running just below the skin, down the direction of episiotomy				
• Pull back on the plunger of the syringe to check for blood				
• Inject evenly **as you withdraw** the needle				
4 Now angle the needle to one side of center				
• Repeat the steps in 3				
• Repeat on the other side				
• Repeat going up the center of the vagina				
5 About 10 cc of anesthetic has been injected				
6 Wait a minute or two for the anesthesia to take effect				
7 During the repair, if the woman is uncomfortable, inject up to 10 cc more of 1% local anesthetic in the area where the woman feels pain				

	Date	Date	Date	Date
B Procedure for Cutting an Episiotomy				
1 **LOOK and FEEL**				
• Is the perineum long or short?				
• Thick or thin?				
• Does it have varicose veins, genital warts, or other problems				
2 If you are not close to a hospital/doctor, do a mediolateral episiotomy				
3 Cut an episiotomy when the perineum is thinned and pale or shiny				
4 Take a pair of scissors with one rounded blade or bandage scissors (good condition)				
• Place 2 fingers of your other hand in the vagina between the scissors and baby's head				
• Start at the center of the perineum and angle (slant) your scissors out at a 45 degree angle				
• If you are right handed, cut towards the mother's right buttock				
• If you are left handed, cut towards the mother's left buttock				
5 Make the episiotomy with one or 2 large cuts				
6 After the perineal cut has been made, turn your scissors around, positioned up the vagina				
• With your other hand, protect the baby's head with your fingers				
• Cut up the center of the vagina 5 to 7 5 cm (2 to 3 inches) (This cut allows more space in the vagina and helps to prevent tearing up from the perineal cut)				
7 Press a gauze firmly over the cut area while the woman continues to push with contractions				
8 Use sterile technique				

	Date	Date	Date	Date
C Procedure for Cervical and Vaginal Inspection				
1 Explain to the woman what you are going to do				
2 Quickly and gently wash off the woman's genitals				
• With your gloved hand, separate the labia (vaginal lips)				
• Have your assistant shine a light into her vagina				
3 Look carefully for any tears or hematomas (collection of blood under the tissue)				
• Press firmly on the back wall of the vagina with your fingers				
• Look deep into the vagina				
4 Slowly pressing against the vaginal wall, move your fingers up the side wall of the vagina, one side at a time				
LOOK and FEEL				
• Is the surface smooth?				
• Are there any points where you notice bleeding?				
• Did you feel all the way up the vagina to the cervix?				
5 Have your assistant press firmly down on the woman's uterus				
• Press firmly on the back wall of the vagina with one hand Look for bleeding or tears				
• If you see bleeding or tears, take the sponge forceps (ring forceps) and clamp them on the anterior lip (top lip) of the cervix				
• Clamp the entire rounded part of forceps onto the tissue				
• Pull gently on the forceps				
• **LOOK** at the cervix				

		Date	Date	Date	Date
	• **LOOK** at all sides of the cervix carefully				
	• Take a sterile gauze or cloth and wipe the blood away				
	• **LOOK** and find is the bleeding coming from the uterus, vaginal laceration, or cervical laceration?				
6	If the bleeding is from the uterus, give an oxytocic medication and massage the uterus				
	• If the bleeding is from a laceration, repair it				
	• If no lacerations or bleeding are noted, remove the sponge forcep, make the woman comfortable, continue to monitor her vital signs for 2 hours				
7	If the lacerations seen are very large or deep, or if the patient does not improve with intravenous rehydration, pack her vagina with a tampon of sterile gauze or cloth and prepare to transport her immediately				

Comments

	Date	Date	Date	Date
D Preparation for Episiotomy or Laceration Repair				
1 Get equipment ready				
2 Position the woman's buttocks at the edge of the bed or table Her legs may be supported by stirrups or held by family members				
3 Remove any soiled cloths from under her and wash her genitals				
4 Put on fresh gloves or wash gloved hands with soap and water				
5 Place a sterile or very clean towel or cloth under the buttocks				
6 Check to see if the local anesthetic is working well				
• Touch the cut areas with the sharp point of a needle				
• If she feels sharp pain, give her some more anesthesia before the repair				
7 If there is no time to give anesthetic before delivery or if it is a laceration you are repairing, give the local anesthesia now				
8 Have your light source adjusted so you can see well into the vagina				
9 Sit down and make yourself comfortable				
10 Perform a complete vaginal, cervical, and perineal inspection				
11 Open the suture and gently stretch it out straight				
12 Place the needle in the needle holder at the right angle				
• Clamp the teeth of the holder firmly shut				

Comments

	Date	Date	Date	Date
E Procedure for Episiotomy Repair				
1 Run your finger through the whole wound (cut)				
• See clearly where the top of the wound is				
• Place your first suture about 1 cm (½ inch) above the top of the wound in the vagina Pull it through with your thumb forceps				
• Tie it off with a square knot, and trim off the short thread to about 1 cm (½ inch)				
2 Suture the vaginal mucosa using a continuous stitch (continuous suturing), sewing down to the hymenal ring				
3 Put the needle through vaginal mucosa behind the hymenal ring, and bring it out on the wound of the perineum				
4 Continue using the suture sparing continuous method to suture all the way to the bottom of the wound				
5 Once you have reached the very end of the wound, turn the needle over and start to sew again using continuous stitches to close the subcuticular tissue				
• Always use your forceps to pull the needle through				
• This second layer of suture will leave the wound about 0 5 cm (¼ inch) open This will close well by itself as healing occurs				
6 Move the suture again from the perineal part of the wound back into the vagina and secure it				
7 Tie off the suture with a square knot				
• Cut the 2 ends of suture leaving about 1 cm (½ inch)				
8 Double check to make certain that you have not left any gauze, tampon, or instruments in the woman's vagina				

	Date	Date	Date	Date
• Perform a rectal exam to check that no stitch is in the rectum if this is a midline (medial) episiotomy				
• Wash the genitals with soap and water				
• Make mother dry and comfortable				
F Procedure for Repair of Lacerations				
1 If the laceration is periurethral (around the urethra), place a catheter in the bladder This helps you identify the urethra and keeps you from accidentally sewing the urethra shut or damaging it				
2 Choose the finest (most narrow) suture you have (see the section on how to choose a suture in Learning Aid 1, page 4 26)				
3 Press the tissue together				
• Put the ragged pieces together again so that the tissue looks like it did before Do not hurry this part				
4 Place interrupted sutures the length of the shallow tear about 1 cm apart To make an interrupted stitch				
• Take a bite of tissue				
• Bring it through to the center of the tear				
• Look for the needle				
• Check that it is not too deep or too shallow				
• Push it through the other side of the tear with the same size bite of tissue				
• Pull the suture through leaving just enough of an end (5 to 8 cm) so that you can tie the suture with a square knot				
5 Continue making interrupted (individual) sutures for the full length of the laceration Remember the most important thing is to control the bleeding				

	Date	Date	Date	Date
• If she continues to ooze blood from the laceration, press a gauze firmly over the wound for 10 minutes, do not look				
• After 10 minutes, carefully take off the gauze				
• If the tear has stopped bleeding, the sutures are enough				
• If she continues to ooze or bleed actively, you will need to add one or more stitches to control the bleeding				
G Procedure for Repair of Lacerations of the Cervix				
• Place your sponge forceps on one side of the laceration				
• If you have a second sponge forceps, place it on the other side of the laceration				
• Place the handles from both forceps in one hand				
• Gently bring handles toward you				
• Place interrupted sutures the length of the wound about 1 cm apart				
• If you do not have sponge forceps to grasp the cervix, have your assistant put on a pair of gloves				
• Have her press on the posterior (back) wall of the vagina This will help hold it out of the way so that you can see the laceration better				
H Record Findings				
• Record progress of vital signs throughout procedure				
• Record type and amount of IV fluids and time started				
• Record estimated blood loss				

	Date	Date	Date	Date
• Record location and appearance of laceration or episiotomy (you may wish to make a drawing of the location)				
• Record time, type and dose of medications or treatment given				

Comments

Comments for all of the previous skills

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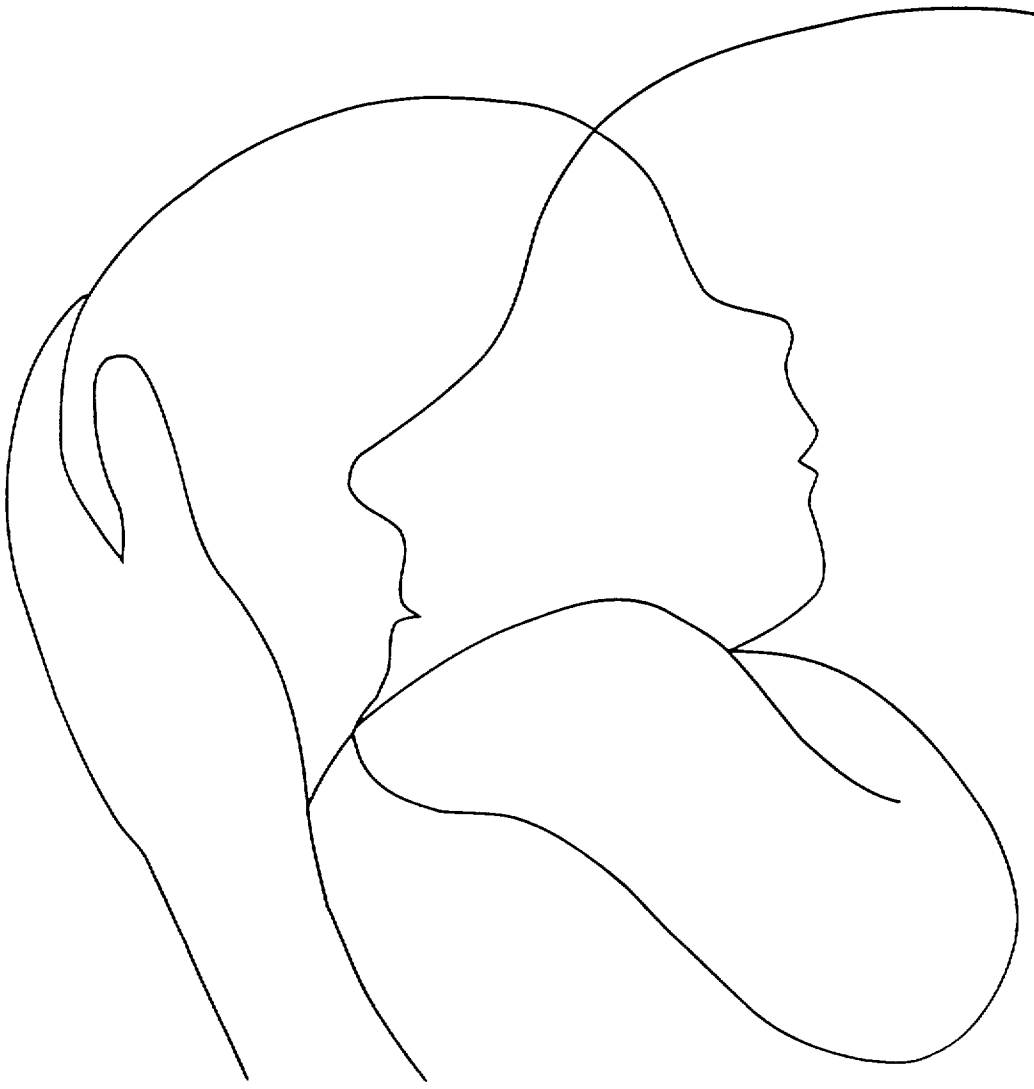
3rd Edition



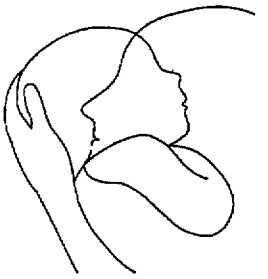
MODULE 5

HEMORRHAGE

Life-Saving Skills Manual for Midwives

Third Edition

Module 1: INTRODUCTION TO MATERNAL MORTALITY



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Life-Saving Skills Manual for Midwives

TABLE OF CONTENTS

PREVENTION AND TREATMENT OF HEMORRHAGE
MODULE 5

Contents

PREVENTION AND TREATMENT OF HEMORRHAGE

OVERVIEW

Hemorrhage in labor and the early postpartum period is a major cause of maternal mortality worldwide Hemorrhage is one of the top three causes of death in every maternal mortality study ***Sixty percent of all pregnancy-related deaths occur during the postpartum period Of that 60%, nearly half (45%) of the mothers die in the FIRST 24 HOURS AFTER DELIVERY*** (Li, 1996) Hemorrhage in the first FOUR HOURS AFTER DELIVERY accounts for the single largest number of maternal deaths The major causes of hemorrhage in those first hours after birth are uterine atony and retained products of conception **This is an area where improved maternal care can save many lives**

This module outlines methods that midwives in rural or urban settings can use to make a large contribution to saving mothers' lives In this module you will use the Problem Solving Method to find the cause of bleeding The skill procedures include active management of the third stage, bimanual compression of the uterus (internal and external), manual removal of the placenta, and digital evacuation of the cervix Review questions and case studies will help you learn and use the information Skills checklists will guide you while you actually perform the skills There are also learning aids that contain additional information Some learning aids describe procedures that are not often performed but may help you save a life Some learning aids are simply checklists of often performed procedures, to help you review Use learning aids to review your knowledge or to learn new ideas

It is important for the midwife, when helping someone who is bleeding, to remember that a person may have a disease you do not know about, such as hepatitis or AIDS There is a chance you will get the disease from her blood in your mouth or eyes The danger is greater when you have a cut or sore on your body To protect yourself, cover all cuts or sores Protect your body from splashes of blood by wearing protective clothing, including gloves and aprons Use soap and water to wash off blood splashes AS SOON AS POSSIBLE

Modules which also deal with ways to decrease maternal blood loss are Module 4 **Episiotomies and Repair of Lacerations** and Module 3 **Monitoring Labor Progress**, which discuss preventing uterine rupture by early recognition of prolonged labor Module 2 **Quality Antenatal Care** deals with early detection and treatment of anemia and the importance in building up a mother to endure the blood loss at delivery Module 10 **Other Emergencies** gives information on postabortion care Treatment of shock is in Module 8 **Hydration and Rehydration** Prevention of blood borne diseases for mothers, families, and midwives is in Module 7 **Prevention and Management of Sepsis**

A Midwife's Experience

A 36 year old gravida 5 who was unbooked (not attending antenatal clinic) came to me She was bleeding She said that she had bled a lot at home, with clots Her BP was 110/70 and pulse 96 On abdominal palpation, she was 36 weeks and the fetal heart was 144

I had to refer There was no vehicle We had no boat to go to the hospital on the river I set up a drip (infusion) of Dextrose 5% I called the Lord to help and save the poor woman's life, and save my clinic as well I really had a "midwife's fever"! The relatives of the woman could not afford to hire a boat to the hospital and she couldn't sit on a bicycle to the other hospital I left everything to the Lord The IV drip in situ got finished I set up a second one

While checking the fetal heart and BP every 1/4 hour, to my surprise, I noticed the placenta at her vulva "OH LORD," I shouted while the woman was still bleeding Then the placenta followed by the head of the infant delivered with the contraction I started singing, "The Lord is my shepherd I shall not want "

This lady had a live female premature active infant Is this not wonderful?

LSS Midwife, Ghana

Midwives are called upon to manage hemorrhage This requires equipment, drugs, blood and surgical expertise that are not always available In these cases, they are asked to do as much as possible and refer as best as they can

PROBLEM SOLVING METHOD FIND THE CAUSE OF BLEEDING

Goal

The midwife will learn to use the problem solving method to determine risk of hemorrhage and to find the cause of bleeding in a pregnant woman

Objectives

The midwife caring for women during labor and delivery will be able to

1 ask questions regarding the woman's medical history to determine her risk of hemorrhage (**ASK and LISTEN**)

2 do abdominal and vaginal examinations to check for findings which alert her to the possibility of hemorrhage (**LOOK and FEEL**)

3 **IDENTIFY PROBLEMS/NEEDS** so that she is able to take **APPROPRIATE ACTION**

When a woman comes to you and says that she is **pregnant and bleeding** or **in labor and is bleeding** or **has delivered and is bleeding**, you must try to learn all you can about her problem The problem solving method can help you find out about her problem in an organized way If it is an *emergency,* the midwife must **take action**

WHEN YOU FIRST SEE A WOMAN WITH VAGINAL BLEEDING, ALWAYS ASK and LISTEN

- **When did the bleeding start?**
- **How much bleeding?**
- **Still pregnant or delivered?**

Risk Factors

There are risk factors for hemorrhage that you should be alert to during the **pregnancy, labor, and postpartum** It is important that you **ASK** questions which will help you to recognize when a woman is at high risk Use the questions that are appropriate to the woman's condition, depending on whether she is antepartum, intrapartum, or postpartum Find out if she has ever had any of the following

PAST ILLNESS OR SURGERY
- surgery on her uterus fibroid, cesarean section, or dilatation and curettage
- blood clotting problems
- anemia
- hepatitis

PAST PREGNANCY PROBLEMS
- previous postpartum hemorrhage
- previous rupture of the uterus
- previous inverted uterus
- previous history of retained placenta
- five or more previous pregnancies

THIS PREGNANCY
- placenta previa
- placenta abruptio
- pre-eclampsia/eclampsia
- fetal death in utero
- multiple pregnancy
- polyhydramnios
- abdominal pain
- contractions
- bleeding
- induced labor (medicines or herbs)
- prolonged labor
- chorioamnionitis
- precipitate labor (3 hours or less)

Early Pregnancy Problems

If the woman is pregnant and bleeding with a nonviable pregnancy (baby is not big enough to live)

ASK and LISTEN Are you having pain? Where is the pain? Do you feel tightening or contractions in your belly (uterus)? How long have you had contractions or pain? Have you passed any clots or tissue?

LOOK and FEEL Based on your **ASK and LISTEN** information, you will check the woman carefully, knowing that she may be at risk for a hemorrhage You are now ready to do a physical examination of the woman

Abdominal Examination First perform an abdominal examination **FEEL** for the **contractions**, what are the uterine contractions like? How much pain? If severe, think of abortion or ectopic pregnancy **FEEL** the size of the **uterus** How many weeks pregnant? Is the bladder full? Is there tenderness?

Perineal Examination **LOOK** at the perineum How much bleeding do you see? Are there any clots or tissue? If there is a foul smelling discharge, think of septic abortion If the woman is transferred or comes to you, are her clothes and cloths or pads soaked with blood? Did she bring any blood, clots, or tissue for you to see?

TAKE THE APPROPRIATE ACTION IMMEDIATELY!

FINDING	Abdomen hard and tender, may have signs of shock think of ectopic pregnancy or injury to internal organs from unsafe abortion
ACTION	Treat as outlined in Learning Aid 1 - Bleeding in the Abdomen, page 5 62
FINDING	Severe abdominal pain with tender uterus OR fever OR offensive vaginal discharge think of ectopic pregnancy or septic abortion
ACTION	REFER Treat as outlined in Module 7 **Sepsis** or Learning Aid 1 - Bleeding in the Abdomen, page 5 62
FINDING	Heavy vaginal bleeding OR clots with painful contractions think of incomplete abortion
ACTION	Treat as outlined in **Manual Removal of Clots and Products of Conception** (page 5 49) and in Module 10 **Other Emergencies**
FINDING	Vaginal bleeding that has stopped think of threatened abortion
ACTION	REFER if bleeding recurs OR fever OR offensive discharge OR severe abdominal pain

Antepartum or Intrapartum Bleeding

If the woman is pregnant or in labor and bleeding with a viable pregnancy (baby is big enough to live)

ASK and LISTEN Are you having pain ? Where is the pain? Do you feel tightening or contractions in your belly (uterus)? Is your belly (uterus) sore or tender to touch? What color is the blood? Have you seen any clots or tissue? Do you bleed when resting, standing, or walking?

LOOK and FEEL Based on your **ASK and LISTEN** information, you will check the woman carefully, knowing that she may be at risk for a hemorrhage You are now ready to do a physical examination of the woman

Abdominal Examination First perform an abdominal examination See Module 3 **Monitoring Labor Progress** for a full description of how to perform the abdominal exam **FEEL** for contractions, size, and tenderness of the uterus

Uterus How many weeks' pregnant? How big is the fetus? Is the shape of the uterus normal? Is there a Bandl's ring or constriction ring in the lower third of the uterus? If yes, think of uterine rupture or impending uterine rupture Is the bladder full?

Baby What is the position of the baby? If the presenting part is high or if it is a breech or transverse lie, think of placenta previa Is it easier than usual to feel the parts of the baby? If so, think of possible uterine rupture or, rarely, abdominal pregnancy

Contractions What are the uterine contractions like? Are the contractions of normal rhythm and strength? If the contractions are continuous, think of ruptured uterus If the uterus is irritable and painful and there are sometimes sharp back pains, think of placenta abruptio

Perineal Examination **LOOK** at the perineum Do you see any blood, mucus, or amniotic fluid? How much bleeding do you see? Are there any clots? If the woman is transferred or comes to you, are her clothes and cloths or pad soaked with blood?

IDENTIFY PROBLEMS If the **blood is dark brown or bright red and mixed with mucus** and **not more than 5 to 15 cc** , it is most likely bloody show, and you may safely proceed to do a vaginal examination

If the blood **is bright red with some blood clots**, think about what you found on abdominal examination It may be light bleeding to very heavy Think of placenta previa or uterine rupture **Do not perform a vaginal examination**

If the **bleeding is dark red, does not clot,** and may be small to large in amount, think of what you found on abdominal examination She may have placenta abruptio or uterine rupture You may do a very gentle vaginal examination to see if delivery is very close

TAKE THE APPROPRIATE ACTION IMMEDIATELY!

Antepartum Bleeding

FINDING	Continuous bright red vaginal bleeding is found, but no abdominal pains, contractions, or tenderness when you **FEEL** the uterus think about placenta previa
ACTION	**Take action immediately!** REFER Start intravenous (IV) fluids and quickly arrange to transfer the woman to a hospital where cesarean section and blood transfusion are possible Have family members find blood donors to travel with you
FINDING	Abdominal pain, abdominal tenderness, and dark red vaginal bleeding or you see dark red bleeding when you **LOOK** or no bleeding at present think about abruptio placenta
ACTION	**Take action immediately!** REFER with analgesia Start IV fluids and quickly arrange to transfer the woman to a hospital where an operation can be done and blood transfusions are possible Have family members get blood donors to travel with you

Intrapartum Bleeding

FINDING	Very strong abdominal pain, labor contractions stop, may or may not have vaginal bleeding, may or may not have signs of shock think about ruptured uterus or abruptio placenta
ACTION	**Take action immediately!** REFER with antibiotics, IV infusion, and analgesia When you think a woman has placenta previa, placenta abruptio, or ruptured uterus, she must be referred for surgical treatment As soon as you anticipate an emergency, send a family member to arrange for transport Go with the family to the hospital so that you can keep the IV fluids going, be ready to deliver the baby in route, be prepared to resuscitate the baby, see Module 6 **Resuscitation** Encourage the family and explain what you are doing, to prevent them from panicking

Postpartum Bleeding

If the woman has delivered and is bleeding

ASK and LISTEN Are you having pain? If yes, where is the pain? Do you feel tightening or contractions in your belly (uterus)? Is your belly (uterus) sore or tender to touch? What color is the blood? Have you seen any clots or tissue? Has the afterbirth (placenta) come out?

LOOK and FEEL Based on your **ASK and LISTEN** information, you will check the woman carefully, knowing that she may be at risk for a hemorrhage You are now ready to do a physical examination of the woman

Abdominal Examination First perform an abdominal examination **FEEL** for the contractions and the size and tenderness of the uterus

Uterus Is the bladder full? Is the postpartum uterus hard or soft? Is there tenderness? If the uterus is soft after delivery, think of postpartum hemorrhage from uterine atony If the uterus is tender and soft, think of postpartum infection

Perineal Examination **LOOK** at the perineum How much bleeding do you see? Are there any clots, tissue, placenta, or cord? If there is a foul smelling discharge, think of postpartum infection If the woman is transferred or comes to you, are her clothes and cloths or pads soaked with blood? Did she bring any blood, clots or tissue for you to see?

IDENTIFY THE PROBLEM If the woman is **bleeding and delivered**, think of where the bleeding might be coming from It could be from a ruptured uterus, vaginal or cervical lacerations, or uterine atony sometimes with retained pieces of placenta or membranes **FEEL** if the uterus is well contracted Do a careful vaginal and cervical inspection See Module 4 **Episiotomies and Repair of Lacerations** for a full description of how to do this

TAKE THE APPROPRIATE ACTION IMMEDIATELY!

POSTPARTUM BLEEDING

FINDING Bleeding in the **first 24 hours** after delivery

ACTION **Take action immediately! FEEL** the uterus to make sure it is contracted **FEEL** the bladder to make sure it is empty **LOOK** for the bleeding site **ASK** if the placenta has been delivered

a Uterus soft (poorly contracted) treat as outlined in this module under **Bimanual Compression of the Uterus** (page 5 34)

b Retained placenta or tissue/membranes treat as outlined later in this module under **Manual Removal of the Placenta** (page 5 18)

c Genital tract lacerations, treat as outlined in Module 4 **Episiotomies and Repair of Lacerations**

FINDING Bleeding **24 hours or more after delivery**

ACTION **Take action immediately! FEEL** the uterus to see if it is contracted or tender **LOOK** for retained membranes or clots by vaginal speculum examination **LOOK** for infection by taking the temperature and looking for foul smelling vaginal discharge or swelling in the genital area **LOOK** for signs of shock

Eyes	- dull
Face	- pale, sweaty
Breathing	- shallow, fast
Pulse	- fast, weak
Skin	- cold clammy
Blood pressure	- low

a Uterus soft (poorly contracted) treat as outlined in **Bimanual Compression of the Uterus**, page 5 34

b Signs of infection treat as outlined in Module 7 **Prevention and Management of Sepsis**

c Signs of shock treat as outlined in Module 8 **Hydration and Rehydration**

ACTIVE MANAGEMENT OF THE THIRD STAGE

Goal

The midwife will learn how to decrease the blood loss of the third stage by actively managing the woman's third stage

Objectives

The midwife caring for women during labor and delivery will be able to

1 describe active management of the third stage

2 deliver the placenta, using active management of the third stage

3 explain the procedure(s) to the mother and others so that they understand what is being done, and why

Introduction

When the baby is born, the emptying of the uterus causes it to contract and become smaller This normally causes the placenta to separate from the uterine wall Some of the small uterine blood vessels tear as the placenta pulls away, so bleeding is present until the uterus is completely emptied and can contract

In the past, midwives waited for the placenta to separate and encouraged the mother to deliver the placenta by pushing down during the next uterine contraction Today to limit blood loss, it is recommended that you deliver the placenta promptly by actively managing the third stage

In clinical studies, it has been found that active management of the third stage can decrease postpartum hemorrhage by 40 per cent (Veronikis and O'Grady, 1994) This is very important for mothers who deliver in rural settings far from hospitals and blood transfusion services

An Obstetrician's Experience .

> Giving oxytocin at the birth of the anterior shoulder stops bleeding and blood loss after delivery estimated blood loss is almost nil using the active management of third stage
>
> LSS Obstetrician, Uganda

Common Medical Terms

Active Management of the Third Stage - a treatment routine which attempts to decrease postpartum blood loss by (a) giving oxytocic with delivery of the anterior shoulder, (b) early clamping and cutting of the cord, (c) nipple stimulation usually with breast feeding, and (d) assisted delivery of the placenta through controlled cord traction while supporting or holding the contracted uterus

Brandt-Andrews Maneuver - a method of delivering the separated placenta from the uterus The cord is held with one hand The other hand is placed on the abdomen over the uterus The uterus is pushed gently backward and upward The cord is pulled carefully If the placenta is separated, it slides out easily

Crede Maneuver - a **harmful procedure** of forcefully pushing the placenta out of the uterus by squeezing and pressing on the fundus of the uterus It can cause tearing or rupture of the uterus It may also cause a partially separated placenta to tear and be pushed out of the uterus **Crede maneuver is NOT recommended**

Oxytocic - substances which stimulate uterine contractions They are secreted naturally by the posterior pituitary (for example when the baby nurses) or can be synthetic (man made) Examples are **Pitocin or Syntocinon**, **Syntometrine**, **Ergometrine**, **Methergine**

Postpartum Hemorrhage - blood loss of 500 cubic centimeters (cc) (half a liter) or more from the reproductive organs after the completion of the third stage of labor **Note** that while this is the official definition from the World Health Organization (WHO), women who start labor quite anemic may go into shock and suffer greatly from a hemorrhage (blood loss) of much less than 500 cc

Primary Postpartum Hemorrhage - excessive bleeding from the reproductive tract within 24 hours of the delivery of the baby

Retained Placenta - the placenta has not been delivered within one hour of the birth of the baby (WHO definition) However, when active management of the third stage is used, an attempt is made to deliver the placenta within 15 minutes

Secondary Postpartum Hemorrhage - bleeding from the reproductive tract between 24 hours after delivery of the baby and 6 weeks postpartum

Skill Active Management of Third Stage

For all women who do not fall into the high risk bleeding categories discussed in the history (**ASK and LISTEN**) section, the midwife in a rural maternity with little equipment can play an important role in decreasing the amount of bleeding during their third stage of labor This is called **active management of the third stage** **Active management of third stage** is a life-saving skill

The major causes of hemorrhage in the first hours after birth are uterine atony or retained products of conception

Equipment

Regular delivery pack including gloves
Syringe and needle
Oxytocic

Which oxytocic you choose will depend on what is available locally *Oxytocics, especially Ergometrine and Methergine, may lose their strength (potency) in hot climates It is important that all oxytocics are stored in a cool place and kept out of the sun Keep them in the refrigerator if you have one Do not use an oxytocic if it is cloudy or has color* **Remember that Ergometrine and Methergine should not be given to women with hypertension** Methergine given on a prolonged basis may interfere with lactation

You may give any of the following

- **Pitocin or Syntocinon** (oxytocin) 10 IU intramuscularly (IM) acts fast, within 2 ½ minutes, and lasts about 4 ½ minutes It may be used in an IV infusion of 10 IU in 500 milliliters (ml) or 20 IU in 1000 ml

- **Syntometrine** 1 cc (5 IU synthetic oxytocin plus 0 5 milligram (mg) ergometrine maleate) has fast and sustained action due to the combination

If you have none of the above you can give

- **Ergometrine** 0 2 mg (ergometrine maleate) by IM injection acts within 6 - 7 minutes, and by IV injection it acts within 45 seconds It may be repeated up to 4 times in 24 hours and every 10 minutes if necessary to control hemorrhage after delivery It may be given *slowly* (2 to 3 minutes) by IV injection **Caution** -- give it slowly as it may cause a very painful uterine contraction

- **Methergine** 0 2 mg (methylergonovine maleate) either by injection or in tablet form by mouth It takes longer to act than the other oxytocics It will take 2 to 5 minutes by injection and 5 to 10 minutes by mouth to get the tetanic (continuous) contractions

Procedure

- Prepare the oxytocic in a syringe, BEFORE second stage, so that it is immediately ready when you need to give it
- Ensure the bladder is empty
- Place mother in either a semi-sitting or a squatting position

1 Ask your assistant to give the oxytocic with the delivery of the anterior shoulder If this is not possible, give as soon as possible after the delivery of the baby Complete delivery as outlined in Module 3 **Monitoring Labor Progress**, Learning Aid 2 - Second Stage, page 3 66

2 Clamp and cut the cord

3 Wrap the baby to keep it warm If there is an assistant, let the mother hold the baby, and help it attach and suck the breast

4 Place the side of one hand against the lower half of the contracted uterus This supports the uterus above the symphysis pubis, preventing uterine inversion or prolapse (see Figure 1)

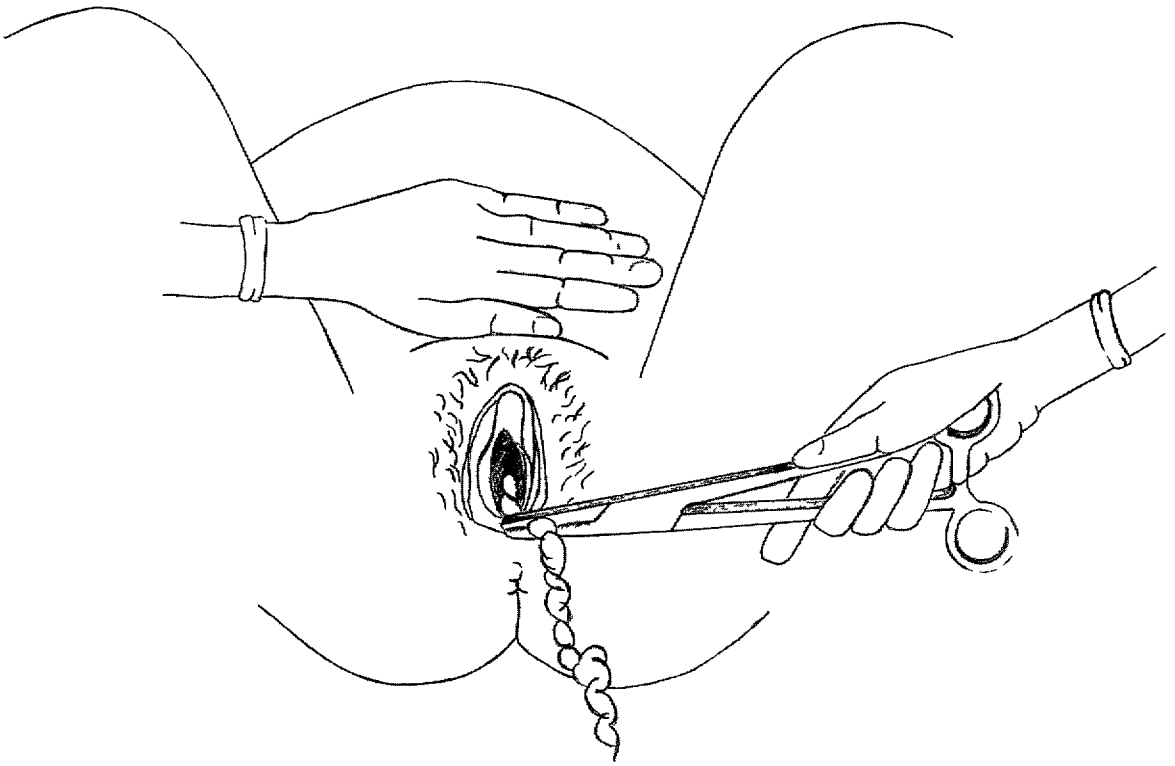

Figure 1 Support the Uterus

5 With the other hand, hold the cord firmly by the clamp or by wrapping the cord around your fingers Pull down towards the mother's back with firm, steady tension on the cord to guide the placenta out **Be patient** -- sometimes the vaginal muscles contract and hold the placenta It takes a few minutes of steady pressure for the vaginal muscles to relax and release the placenta This firm, steady pressure is a skill you learn with practice **Do not pull so hard** that you pull the cord off At the same time, the pressure should not be so weak that it does not work Practice will make you comfortable with what is the proper amount of tension

6 Deliver the placenta slowly, supporting it with both hands Deliver the membranes by gently turning the entire placenta Remember that a very small amount of retained membranes can prevent the uterus from effectively contracting Try to avoid letting the placenta come out suddenly, since this could cause part of the membranes to tear off and be retained **Any retained membranes will decrease the uterine contractions AND cause postpartum hemorrhage**

7 Rub or massage the uterus until it gets hard and pushes out blood and clots Teach the mother what her uterus should feel like

8 Look at the placenta and membranes to see that it is all there (complete)

9 Record information, including the amount of blood loss

WARNING Massage or pressure to the fundus before the placenta delivers is DANGEROUS It can cause tearing of the placenta and rupture or inversion of the uterus

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answer in the module on the pages listed in parentheses ( )

1 What is the purpose of active management of the third stage? (page 5 11)

2 List at least 7 risk factors you can find from a woman's medical history which would indicate to you that she is more likely to have a hemorrhage (page 5 4)

3 List at least 3 risk factors a woman might have during her present pregnancy which would indicate she is at higher risk of having a hemorrhage (page 5 4)

4 List the steps in active management of the third stage in your work situation (pages 5 13 - 5 14)

Skills Checklist - Active Management of Third Stage

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✔ = satisfactory OR X = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
When you **actively manage the third stage**				
Prepare oxytocic in syringe before second stage, ensure empty bladder, place mother in a semi-sitting or a squatting position				
1 Ask assistant to give oxytocic with delivery of anterior shoulder or give as soon as possible				
2 Dry and cover baby Clamp and cut cord				
3 Ask assistant if available to put baby to breast				
4 The side of one hand is placed against the lower half of the uterus just above the symphysis pubis				
5 The other hand pulls with firm, steady tension on the cord with uterine contraction				
6 Deliver placenta slowly, support with both hands, deliver membranes gently with a turning motion				
7 Rub uterus until hard				
8 Expel blood and clots				
9 **LOOK** at placenta and membranes to see that they are complete				
10 Record information				
11 Store oxytocic in a cool place out of the sun to preserve the potency of the medication				

Comments

MANUAL REMOVAL OF A PLACENTA

Goal

The midwife will learn how to diagnose a retained placenta and to manually remove a placenta

Objectives

The midwife caring for mothers during labor and delivery will be able to

1 define postpartum hemorrhage
2 recognize signs and symptoms of the different causes of postpartum hemorrhage uterine atony (tired uterus), retained placenta, and vaginal and cervical lacerations
3 record observations
4 recognize the need for action and referral specific for the different causes
5 manually remove a placenta
6 explain to the mother and others the need for removal of a placenta and dangers of postpartum hemorrhage

Introduction

A retained placenta may cause postpartum hemorrhage, shock, and death Manual removal of a retained placenta is an emergency procedure to prevent the death of a mother

Referral of women with retained placenta and resulting postpartum hemorrhage to the hospital is best In cases where referral is difficult or impossible, the midwife must be prepared to manually remove the placenta

Retained placenta without bleeding does happen There is no immediate danger AS LONG AS THE MOTHER IS **NOT** BLEEDING Make sure that the uterus is not bleeding and slowly filling with blood WATCH FOR rise in the height of the fundus AND/OR the whole uterus getting bigger (increasing in size)

Remember that any amount of blood loss may be significant for the mother The blood may be staying inside the abdomen or coming outside Keep in mind that if a mother has a hemoglobin of 6 grams (gm) and loses 150 cc of blood after delivery, the blood loss is more significant for her than for a mother with a hemoglobin of 12 gm with the same 150 cc blood loss

A Midwife's Experience .

Following a normal delivery, the placenta failed to deliver and the mother was bleeding I rubbed the uterus, had the mother push, sent for transport, started an infusion, and went to the health center with the mother, holding her uterus tightly

The doctor was not there, but a senior midwife manually removed the placenta (I studied retained placenta during midwifery but had never done a manual removal, so I was afraid to try) The bleeding decreased after the placenta was removed, but the mother died

I feel so badly that this happened However, I just successfully completed LSS and am confident that I can competently manually remove a placenta and that I will be able to take the appropriate action

LSS Midwife, Indonesia

Common Medical Terms

Manual Removal of Placenta - taking the placenta out of the uterus using your hand

Postpartum Hemorrhage - blood loss of 500 cc (half of a liter) or more from the reproductive organs after the completion of the third stage of labor **Note** that while this is the official WHO definition, women who start labor quite anemic may go into shock and suffer greatly from a hemorrhage (blood loss) of much less than 500 cc

Retained Placenta - the placenta has not been delivered within one hour of the birth of the baby (WHO definition) However, when active management of third stage is used, an attempt is made to deliver the placenta within 15 minutes

Uterine Atony - tired uterus, soft and boggy uterus, uterine muscles do not contract (squeeze) and retract (shorten)

Retained Placenta: Causes and Actions

1 **Poor uterine contractions** (inertia or tired uterus) Active management of third stage with an oxytocic will usually help the uterus to contract Sometimes the bladder, although empty just before delivery, is now once again filling with urine Voiding by the mother or catheterization often seems to "wake up" the uterus, and contractions begin once again

2 **Membranes stick to the uterine wall** Active management of third stage using controlled cord traction with a contracted uterus and oxytocic will usually help the membranes to separate

3 The **uterine muscle may spasm** (constriction ring) This may happen from too much rubbing of the uterus during second stage The uterine muscle becomes irritable from vigorous rubbing The spasm can prevent delivery of the placenta Refer to the Learning Aid 2 - Management of a Constriction Ring, page 5 63

4 **Placenta accreta** (placenta stuck in to the uterine muscle) This is usually identified when attempting to remove the placenta Placenta accreta begins to bleed **when the removal of the placenta begins** Refer to the Learning Aid 3 - Management of Placenta Accreta, page 5 64

RETAINED PLACENTA *WITH NO BLEEDING* MAY BE PLACENTA ACCRETA ALWAYS REFER, DO NOT ATTEMPT REMOVAL

Diagnose Retained Placenta

A retained placenta may cause postpartum hemorrhage The placenta may be partially or completely separated from the uterus but is not expelled When this happens, the uterus cannot contract well and it continues to bleed The dangers of retained placenta are losing too much blood, shock, and death Uterine atony (tired uterus), retained membranes, and vaginal or cervical lacerations can also cause postpartum hemorrhage

In order to stop the hemorrhage, you must find out what is the cause of the bleeding and decide what to do You must **ASK and LISTEN, LOOK and FEEL, IDENTIFY THE PROBLEM**, and **TAKE APPROPRIATE ACTION** DO NOT WASTE TIME You may not know how much blood the woman lost before you see her SHE MAY BE CLOSE TO DEATH

ASK and LISTEN

If the woman delivered at home or with a Traditional Birth Attendant (TBA) and comes to you, or you go to her

- **ASK** when did you deliver? When did you start bleeding?
- **ASK** how much have you bled?
- **ASK** did anyone try to deliver the placenta?
- **ASK** have you taken any medicines?

LOOK and FEEL

- **LOOK** FOR SIGNS OF SHOCK
  - Eyes - dull
  - Face - pale, sweaty
  - Breathing - shallow, fast
  - Pulse - fast, weak
  - Skin - cold, clammy
  - Blood pressure - low

As soon as you see the blood

- **FEEL** the uterus to make sure it is firm and contracted
- **LOOK** at the genitalia for tears of the cervix or vagina
- **LOOK** at the placenta (if delivered) very carefully, to make sure all of the placenta and membranes are present

IDENTIFY THE PROBLEM

- Find out the cause of bleeding Severe, continuous blood loss leads to shock, coma, and death

This chart can help you find the cause of the hemorrhage

Findings	Uterine Atony	Retained Placenta or Tissue	Lacerations
1 **FEEL Uterus**	soft	sometimes soft then hard	firm and contracted
2 **LOOK at Placenta**	complete	incomplete or retained	complete
3 **LOOK at Genitals**	normal	normal	vaginal or cervical tear

TAKE APPROPRIATE ACTION

Bleeding is a life threatening emergency ***TAKE ACTION IMMEDIATELY !***

SHOCK

FINDING Signs of shock

Eyes	- dull
Face	- pale, sweaty
Breathing	- shallow, fast
Pulse	- fast, weak
Skin	- cold, clammy
Blood pressure	- low

ACTION Raise the woman's feet, keep her covered and warm, start an IV infusion See Module 8 **Hydration and Rehydration** for details of prevention and treatment of shock

UTERUS

FINDING Uterus is soft and boggy

ACTION Rub the uterus until it contracts See **Bimanual Compression of the Uterus,** page 5 34

PLACENTA

FINDING Placenta is out of the uterus
ACTION Check the placenta for placental tissue and membranes

FINDING Placenta, part of the placenta, or membranes are NOT OUT OF THE UTERUS
ACTION Call someone to help you remove the placenta Get ready for manual removal of the placenta, see **Manual Removal of the Placenta**, page 5 18

GENITALIA

FINDING Vaginal or cervical tear
ACTION Get ready to stop bleeding from the tear, see Module 4 **Episiotomies and Repair of Lacerations**

Skill Manual Removal of the Placenta

Manual removal of the placenta is an emergency action taken by the midwife to manage postpartum hemorrhage and prevent death of the woman Time is important Cleanliness is critical Protect the mother from infection If at all possible, change gloves/scrub hands before starting the procedure If gloves are not available, see Module 7 **Prevention and Management of Sepsis** for alternative means of protection

When performing manual removal of the placenta, it is likely that you will get blood on your arm This contaminates your skin When performing manual removal, protect your skin from blood splashes Wear a long sleeved surgical gown if possible If protective gowns are not available, plastic bags such as those often used for fruit or to cover a loaf of bread can be used Push your hand through the closed end and pull the top of the bag to your elbow Then put on your sterile or high-level disinfected glove putting the cuff of the gown or the plastic bag under the cuff of your glove See Module 7 **Prevention and Management of Sepsis**

Important for the midwife the mother may have a disease that you may not know about, such as hepatitis or AIDS It is possible for you to get the disease from her blood This may happen if you get blood in your mouth or eyes The danger is greater if you have a cut or sore on your body Protect your body from splashes of blood Cover all cuts or sores Use soap and water to wash off blood splashes AS SOON AS POSSIBLE

Equipment

Intravenous supplies
Soap and water
Antiseptic lubricant
Analgesia or anesthesia
Gloves sterile or high-level disinfected (HLD)
Delivery pack

Procedure

Before you manually remove a placenta

1 **LOOK** for signs of shock and retained placenta

2 While preparing, ask an assistant to rub or hold the uterus to slow the bleeding Collect equipment

3 Explain to the woman and family what you are going to do

4 Give analgesia IM, such as Pethidine 50 mg or Talwin 50 mg, and a sedative IM, such as diazepam 10 mg, phenobarbital 30 mg, or Phenergan 50 mg to relax the woman If medications and anesthesia are not available, continue with the manual removal of the placenta The woman may not be able to relax and may be uncomfortable, but you may save her life

Start an IV of 5% Dextrose in Normal Saline or whatever IV fluids are available The IV will replace some of the fluid lost by the bleeding It will help prevent shock

5 Tell the woman that you are going to put your hand into her vagina Tell her that you must take out the afterbirth (placenta) so that the bleeding will stop Help the woman to lie on her back with her knees bent Clean the genital area with soap and water If she is unable to void, catheterize and empty the bladder A full bladder can prevent the delivery of the placenta

6 Rub the uterus to make it contract Attempt to remove the placenta with a firm, steady pull on the cord while supporting the contracted uterus Support the uterus by placing one hand above the symphysis pubis Press against the lower part of the uterus Attempt to remove the placenta with a firm, steady pull on the cord Do not pull too hard If this fails, continue with the next step

7 Put on sterile gloves Time is very important, so proceed with the most sterile or high-level disinfected or clean gloves available

If you **do not have gloves, use a plastic bag or even your bare hand** Smear your examining hand with antiseptic lubricant (such as Hibitane or Dettol cream) or use soap and water

If you **have sterile or high-level disinfected gloves,** lubricate the examining gloved hand with clean, cooled, boiled water

When you manually remove a placenta

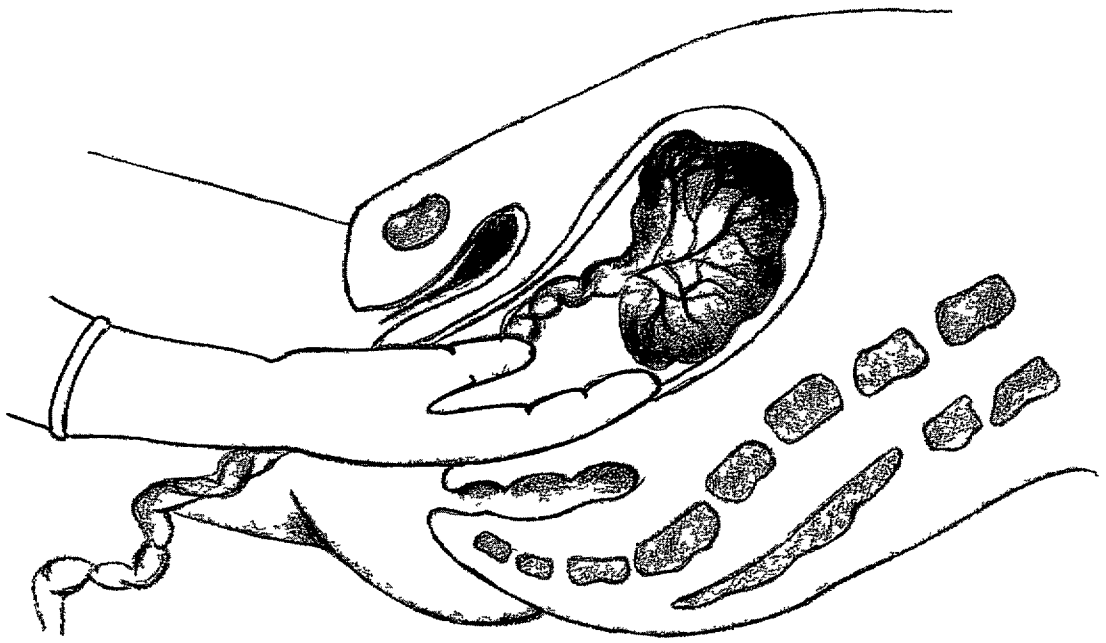

Figure 2 Put Your Hand in the Uterus

8 With the non-examining hand, hold the umbilical cord firmly Place the examining hand (with the thumb folded into the palm) into the vagina Follow the cord up to the placental edge **Once you have put your hand into the uterus, do not bring your hand out until you have separated the placenta and are bringing out the placenta** Do not take your hand in and out of the uterus, because this increases the risk of infection (See Figure 2)

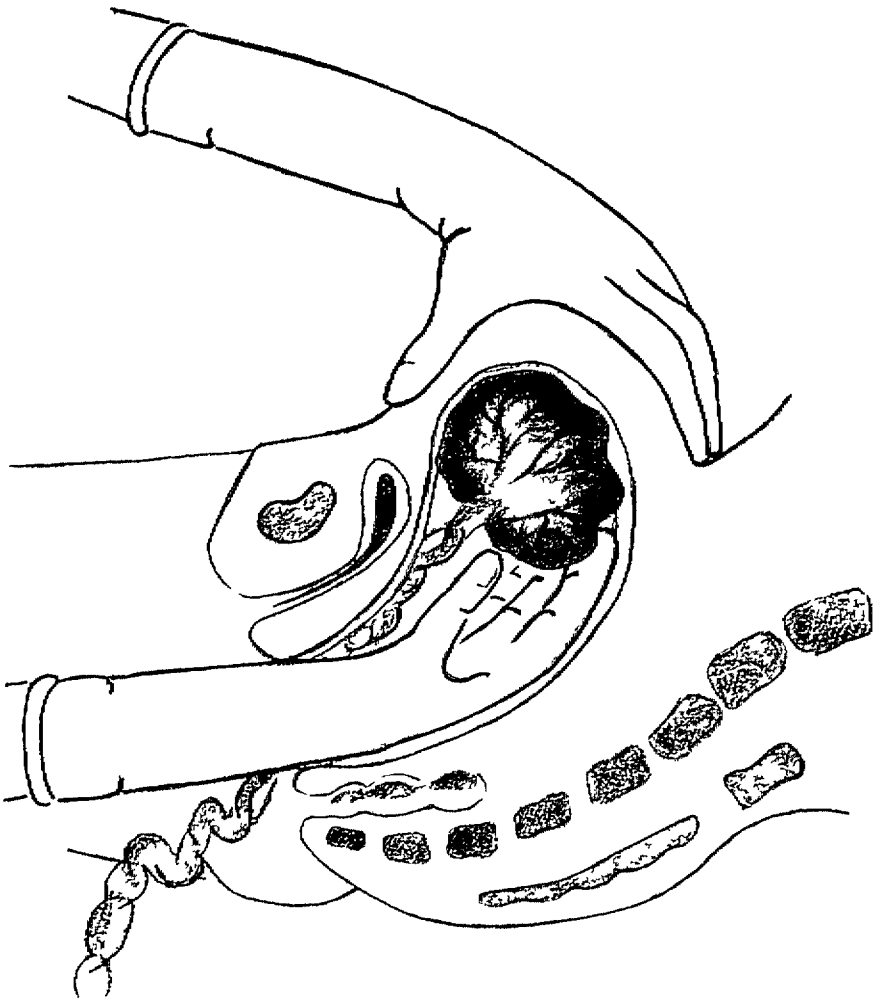

Figure 3 Hold the Uterus and Find the Placenta

9 Let go of the cord and use your hand to hold the uterus firmly through the abdomen This will stop the uterus from moving up and helps to keep it contracted (See Figure 3)

10 Feel the placenta to figure out where it is (exact location) in the uterus Find the edge of the placenta (See Figure 3)

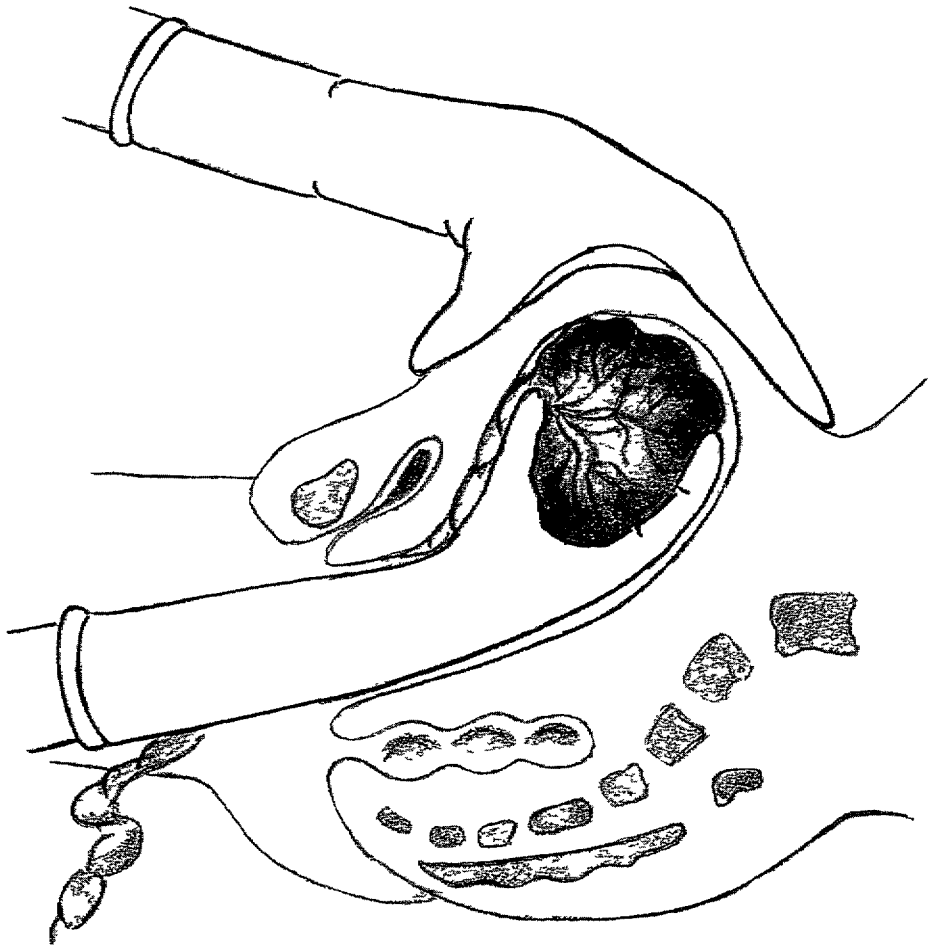

Figure 4 Placenta in Palm of Hand

11 Slip the extended fingers of your hand between the edge of the placenta and the uterine wall With your palm facing the placenta, use a sideways slicing movement to gently detach the placenta with the edge of your hand **NEVER** claw with the tips of your fingers because the placenta may tear You will feel a spongy tissue which will let go as the placenta separates from the uterus (See Figures 3 and 4)

12 When all of the placenta is separated and in the palm of your examining hand, rub the uterus to make it contract

13 Gently remove the placenta with your examining hand during the contraction Do not pull on just a piece of the placenta for it may tear away from the rest of the placenta The membranes need to be slowly and carefully delivered the same way as for any delivery of the placenta and membranes

Even a small amount of membranes left in the uterus may cause postpartum hemorrhage and/or infection

14 Rub the uterus to make sure it is contracted

15 Give the woman an oxytocic IM or IV to help the uterus contract If you do not have injectable oxytocic, oral tablets may be used Put the baby to the breast

16 Examine the placenta well If you think some of the placenta or the membranes are missing, transfer the woman to hospital She may need a curettage to remove the remaining pieces **Refer** IF UNABLE TO REFER THE WOMAN FOR ANY REASON, continue with Step 17

17 Give the woman a broad spectrum antibiotic you have available, such as ampicillin 1 gm stat (immediately) and 500 mg every 6 hours for 5 days Intramuscular medication may be used, but oral treatment is just as effective if the woman is able to take medicines by mouth OR give benzyl penicillin 1 2 mega (million) units IM every 6 hours for 24 hours, and follow with procaine penicillin 1 2 mega units and streptomycin 1 gm IM daily for 5 days This is to prevent serious infection of the uterus

18 Check for vaginal bleeding, contracted uterus, full bladder, and vital signs every hour until normal Then continue to check three times a day for three days Teach the mother how to keep her uterus hard

19 Give a total of 3 liters of IV infusion in 24 hours to replace fluids lost from bleeding and to prevent shock Stop the IV infusion after 24 hours, if the woman is eating and drinking Refer to Module 8 **Hydration and Rehydration**

20 Encourage the baby to breast feed to make sure the uterus stays contracted

21 Give analgesia (such as paracetamol) to lessen abdominal or perineal pain

22 Give perineal care 3 times a day for 3 days Teach the mother the importance of this care to prevent infection, and the need to continue when she goes home

23 Nutrition is important for healing and strength for the mother and her baby Encourage breast feeding as often as the baby requires The mother should drink 8 glasses of fluids daily and eat easily digested food Activity may be increased as tolerated

24 Give iron tablets daily for 6 weeks Check hemoglobin if possible

25 If fever develops, check for the cause You may need to treat for an acute attack of malaria and refer as soon as possible Give an antipyretic (such as paracetamol), plenty of fluids (see Module 8 **Hydration and Rehydration**), and a sponge bath to reduce the fever See Module 7 **Prevention and Treatment of Sepsis**

26 Allow the woman to go home when she has completed her medications and feels well enough to go home Explain to her and her family that a retained placenta is a dangerous problem Show her again how to check the uterus to make sure it is hard Remind her how to rub the uterus if it is not hard Advise her to come back to the midwife **right away** if

- she gets fever
- she starts bleeding more than she is right now
- the bleeding is bright red
- she passes large blood clots
- there is a bad odor to her vaginal discharge
- she has any other problems

If the woman does not feel well enough to go home by 5 days after the delivery, refer her to the doctor to make sure she does not have another problem

27 Give an appointment for a two week checkup for both mother and baby This is a good time to discuss family planning

28 Send a message to the TBA, so that she will visit the mother and baby at home weekly for at least 6 weeks

Review Questions

What did I learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages listed in parentheses ( )

1 List the signs of uterine atony, retained placenta, lacerations (page 5 21)

2 List dangers of a retained placenta (page 5 21)

3 Describe the procedure for manually removing a placenta (pages 5 25 - 5 29)

Skills Checklist - Manual Removal of Placenta

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor use it when evaluating how well the midwife performs

After observing/performing, write a rating ✓=satisfactory OR X = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
Before you manually remove a placenta				
1 Diagnose retained placenta				
• Feel uterus for firmness				
• Check placenta for completeness				
• Inspect genitalia for tears				
2 Collect equipment				
3 Explain to the woman and family what you are going to do				
4 Give medication				
• Analgesia				
• Sedative				
• IV infusion				
5 Tell the woman what you are going to do Help her lie on her back with her knees bent Clean genital area				
• If she is unable to void, catheterize to empty the bladder				
6 Rub the uterus, apply firm, steady pull (traction) on cord				
• Try to deliver placenta				
7 If placenta not delivered, scrub hands and put on gloves				
• Lubricate gloves/hands				

	Date	Date	Date	Date
When you manually remove a placenta				
8 Insert hand into vagina, while holding umbilical cord with other hand				
9 Let go of umbilical cord and hold (steady) uterus through the abdomen				
10 Find the edge of placenta				
11 Separate placenta with slicing motion using the side of your hand				
12 When placenta is separated, rub the uterus to make it contract				
13 Remove placenta and membranes slowly during the contraction				
14 Rub the uterus to make sure it is contracted				
15 Give oxytocic medicine to keep uterus contracted If injectable oxytocic not available, give oral tablets Put baby to breast				
16 Examine the placenta and membranes for completeness				
• Refer to hospital if at all possible				
• If unable to refer, continue with Step 17				
17 Give broad spectrum antibiotic for 5 days				
18 Monitor the following every hour until normal, then 3 times a day for 3 days				
• Vaginal bleeding				
• Contracted uterus, teach mother to feel her uterus and rub up a contraction				
• Empty bladder				
• Vital signs				
19 Continue IV infusion for 24 hours				

	Date	Date	Date	Date
20 Encourage breast feeding				
21 Give analgesic for pain				
22 Give perineal care 3 times a day for 3 days				
• Teach mother perineal care				
23 Encourage 8 glasses of water and adequate food daily				
• Encourage activity as tolerated				
24 If there is fever, treat for malaria and refer Give iron tablets Check hemoglobin				
25 Allow mother and baby to go home after 5 days if medicines are completed and the mother is feeling well enough to go home				
26 Give mother an appointment to come for a checkup at 2 weeks after delivery for the mother and the baby Discuss family planning				
27 Send information to TBA				

Comments

BIMANUAL COMPRESSION OF THE UTERUS

Goal

The midwife will learn to diagnose uterine atony (tired uterus) and perform bimanual compression of the uterus to prevent or treat postpartum hemorrhage

Objectives

The midwife caring for mothers during delivery will be able to

1 define *uterine atony* and *postpartum hemorrhage*
2 describe signs and symptoms of uterine atony
3 describe signs and symptoms of postpartum hemorrhage
4 record observations and actions
5 identify the need for referral and refer
6 perform bimanual compression
7 explain to the mother and others the need for bimanual compression and the dangers of postpartum hemorrhage

Introduction

Uterine atony is the most common cause of postpartum hemorrhage The uterus is tired The uterine muscles can not contract (squeeze) and retract (shorten), so the bleeding continues If the woman loses too much blood, she will go into shock and die

Usually in the case of uterine atony, there is no time to refer the woman to the hospital If the delivery is taking place in hospital, there is no time to wait for the doctor to come The midwife should take action quickly Bimanual compression of the uterus is an emergency procedure used to help the uterus contract and slow the blood loss This can prevent the death of the mother

A Midwife's Experience .

The woman was a 28 year old gravida 7 Labor and delivery were normal Vital signs normal The placenta was delivered

Suddenly while examining the cervix and the vagina, there was a gush of blood I felt the fundus and the uterus was not well contracted I rubbed for a contraction Quickly washed my hands, put on a new glove and inserted my hand into the vagina, and a fist was formed I held my hand in the vagina firmly against the portion of the uterus (lower uterine segment), and I placed my other hand on the fundus

Soon the bleeding stopped The uterus was well contracted The pulse and blood pressure of the mother were checked every 5 minutes for half an hour Blood loss 800 cc As the vital signs were normal, I checked them every half an hour for 2 more hours Beverage 600 cc given by mouth

I was confident and competent because I know what to do and by reading the (Life Saving-Skills Manual) modules regularly

LSS Midwife, Ghana

Common Medical Terms

Bimanual Compression - a procedure to control postpartum hemorrhage where the midwife applies pressure to the uterus with her hands to stimulate the uterus to contract or to slow the bleeding until referral is possible

Postpartum Hemorrhage - blood loss of 500 cc (half of a liter) or more from the reproductive organs after the completion of the third stage of labor **Note** that while this is the official WHO definition, women who start labor quite anemic may go into shock and suffer greatly from a hemorrhage (blood loss) of much less than 500 cc

Uterine Atony - tired uterus, soft and boggy uterus, uterine muscles do not contract (squeeze) and retract (shorten)

Diagnose Uterine Atony

Uterine atony may cause postpartum hemorrhage because the uterine muscles do not contract and shorten The uterine muscle is tired A full bladder may take up room and not allow the placenta to come out The uterine muscles get very tired trying to push out the placenta Even after the placenta delivers, the uterine muscles may not contract, so the uterus continues to bleed Sometimes the uterus is stretched too much from polyhydramnios, twins, or a large baby The uterine muscle is too tired, and the uterus continues to bleed after delivery of the placenta When a woman has a very long labor or has had many deliveries, she is at high risk of developing uterine atony Her uterine muscle has worked too long or too often and is slower to contract and shorten (retract)

As soon as you see the blood coming from the vagina, feel the uterus to make sure it is firm Remember she might be bleeding also from lacerations of the uterus (ruptured uterus), vagina, cervix, or perineum

This chart will help you find out the cause of the hemorrhage

Findings	Uterine Atony	Retained Placenta/Membranes	Lacerations
1 **FEEL Uterus**	soft	sometimes soft, then hard	firm and hard
2 **LOOK at Placenta**	complete	incomplete or parts retained in uterus	complete
3 **LOOK at Genitals**	normal	normal	vaginal or cervical tear

Skill Bimanual Compression of the Uterus

Bimanual compression of the uterus is an emergency procedure performed by the midwife to stop postpartum hemorrhage due to uterine atony Time is important Cleanliness is important If at all possible, change gloves/scrub hands before starting the procedure

Equipment

Prepare for a hemorrhage emergency Make certain the following are available

Sterile or high-level disinfected gloves **or** well scrubbed hands
Oxytocic injection
Intravenous fluids and giving set (tubing)
Needles, butterfly needles, or intracatheters
Adhesive tape
A straight urinary catheter
Blood pressure cuff and stethoscope
Watch or clock
An assistant to help set up IV fluids and go for assistance if needed
An emergency transport system that you have worked out locally with bus union, neighbors, or other source

Procedure for External Bimanual Compression

Prepare and explain to the woman that she is bleeding too much so you must rub her uterus to stop the bleeding Explain that this hurts a little, but you will finish quickly with as little pain as possible Ask her to lie on her back

1 Call to your assistant for help

2 Place one hand on the abdominal wall and rub the uterus to make it contract

3 Check to see if the bladder is full If the bladder is full, rub the uterus to make it contract, express clots, and then catheterize the mother

4 If the bleeding does not stop, first place one hand on the abdomen, pressing down behind the uterus Put your other hand low on the abdominal wall Then press your hands together This compresses the blood vessels at the placental site as the uterus contracts (See Figure 5)

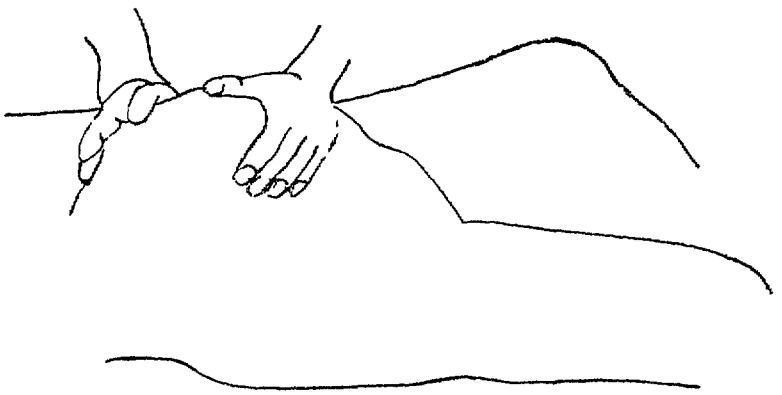

Figure 5 Hand Positions for External Compression

5 Ask your assistant to give the mother 10 units of oxytocic (Syntocinon) IM or IV oxytocic infusion if she is able Or give ergometrine 0 2 mg (Methergine) IM unless the mother had severe hypertension in labor If you have no assistant, show a family member how to hold the uterus while you give the oxytocic Put the baby to breast

6 **If bleeding stops** take vital signs and record, estimate blood loss and record, check for bleeding and contracted uterus every 15 minutes for one hour, then check bleeding and contracted uterus every 30 minutes for 2 more hours, put baby to breast again

Refer if necessary If mother is not referred for any reason, continue with Step 17, page 5 28

7 If **bleeding has not stopped** continue to hold the contracted uterus and prepare for internal bimanual compression

Procedure for Internal Bimanual Compression

1 If external bimanual compression has not stopped the bleeding and the uterus does not remain well contracted when you rub it, ask your assistant to start the IV infusion with oxytocin 10 IU in 500 ml IV solution running fast If your assistant can not start the IV infusion, ask her to do external bimanual compression while you start the infusion If you have no assistant, ask a family member to hold the uterus while you start the IV infusion or give IM oxytocic if unable to start infusion Then, start to do internal bimanual compression

2 Ask your assistant to take the pulse and blood pressure of the mother every 5 minutes or as often as possible until the hemorrhage stops If you have no assistant, you will have to **LOOK** for signs of shock while you are performing internal bimanual compression

3 Rub the uterus to make it contract

4 If there is no contraction and if the bleeding has not stopped or slowed to a trickle, insert your freshly gloved or freshly scrubbed examining hand into the vagina

5 Form your hand into a fist (See Figure 6)

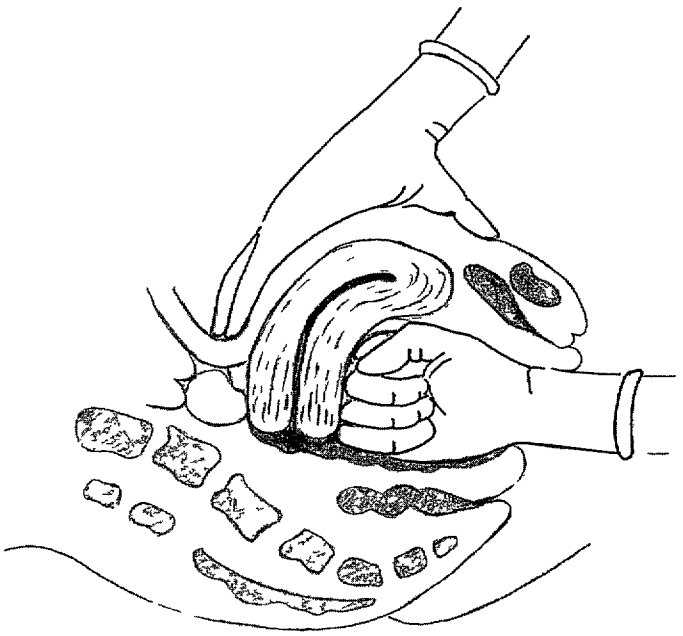

Figure 6 Hand Positions for Internal Compression

6 Press the hand that is in the vagina firmly against the lower portion of the uterus In *grand multiparas, there is often a large, floppy cervix in the way Pressing on the floppy cervix is not effective in stimulating the uterus to contract*

7 Use care to move any loose cervix out of the way before pressing *Occasionally the cervix is difficult to move out of the way If this happens, open your fist and use your fingers to massage the lower anterior part of the uterus This direct massage will frequently stimulate a contraction*

8 Put constant downward and forward pressure with the abdominal hand

9 Continue pressure with both hands for 20 minutes to let the oxytocic take effect and to allow for clotting time to take place at the placental site

10 **LOOK** for bleeding every 15 minutes When the uterus contracts and bleeding slows, remove hand and continue monitoring uterus during referral Take pulse and blood pressure every 15 minutes for half an hour If they are normal, check the vital signs every half hour for 2 more hours

11 Record findings and actions taken Continue to take the mother's vital signs every half hour for 3 hours once she is stable Encourage breast feeding Allow her IV fluids to run another 3 to 6 hours until you are confident the hemorrhage is controlled She may then eat and drink normally

Procedure When Internal Bimanual Compression Fails to Stop Bleeding

If internal bimanual compression does not stimulate the uterus to contract after 10 minutes, remove your hand from the vagina Try to manually empty the uterus as described in **Manual Removal of Clots and Products of Conception,** page 5 49

1 Apply external bimanual compression to slow the bleeding during transfer to the hospital Continue IV with oxytocin Transfer the woman with her family and blood donors

2 If referral is delayed, show someone how to apply external bimanual compression to slow the bleeding Look again for laceration of the cervix or vagina and for clots or membranes in the cervix Treat according to your findings If bleeding continues, manual compression of the abdominal aorta may slow the blood loss as described in Learning Aid 4 - Aorta Compression, page 5 65

DO NOT STOP EXTERNAL BIMANUAL COMPRESSION UNTIL YOU GET TO THE DOCTOR DO NOT GIVE UP CONTINUE IV FLUIDS, REASSURE MOTHER AND FAMILY UNTIL YOU GET TO THE DOCTOR

A Midwife's Experience..

The woman is a 32 year old gravida 3, one live baby, who had been followed in antenatal clinic since 12 weeks of pregnancy She was my friend and came from my very village

The woman came in with labor pains at 9 PM, onset 4 PM PV (Vaginal examination) done Os was 2 cm dilated Membranes intact Labor progressed well She delivered spontaneously a live female infant at 4 15 AM The placenta appeared to be complete but the membranes were ragged She started bleeding

IV (infusion) 500 cc was set up with Pitocin External bimanual compression done without effect Manual removal of clots (uterine exploration) done Only blood clots expelled Internal bimanual compression done without effect Another IV 1000 ml set up, and the woman was transferred

There were transportation difficulties and the road is very bad It took us 4 hours 10 minutes, to travel a 35 km journey The woman received 2500 ml of IV fluids but very unfortunately the IV got infiltrated on the way, and due to the bad road, I could not get the vein All attempts to start the IV again failed

The woman expired at the hospital before the doctor arrived Estimated blood loss 2500 cc

I collapsed at the hospital They gave me Valium 20 mg and put me in a bed I was not aware for some time I cried and felt very bad They talked to me and explained that sometimes such women die at their hospital where everything is available I did not feel confident and competent Sometimes when I think about it now I cry

LSS Midwife, Ghana

Unfortunately not all outcomes have been gratifying Midwives are working under great hardships to provide safe maternity care to very rural women Our best effort will not save every woman

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages listed in parentheses ( )

1 What is the definition of postpartum hemorrhage? (page 5 35)

2 What is uterine atony, and when is it likely to happen? (page 5 36)

3 What are the signs and symptoms of uterine atony? (page 5 36)

4 What are the steps of external bimanual compression? (pages 5 37 - 5 38)

5 What are the steps of internal bimanual compression? (pages 5 39 - 5 40)

Skills Checklist - Bimanual Compression of the Uterus

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills

2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory OR ✗ = needs improvement

Add any other comments in the comments section below

	Date	Date	Date	Date
Preparation for Emergency with Uterine Atony				
A Prepare maternity home or ward with the following				
• 2 liter bottles/bags IV fluids and giving sets/tubing				
• Injectable oxytocics				
• Needles/butterfly needles or intracatheters				
• Arm board to keep arm from moving, tape or strips of cloth				
• Gloves, sterile or high-level disinfected				
• Blood pressure cuff and stethoscope				
• Pulsometer or watch with second hand				
• Midwife and assistant both trained to start IV infusions				
• Alert emergency transport system that you have worked out locally with bus union, neighbors, or other source				
B Prepare the woman				
• Explain to woman she is bleeding too much so you must rub her womb to stop the bleeding				
• Explain this hurts a bit, but you will finish quickly with as little pain as possible				
• Ask her to lie on her back				

	Date	Date	Date	Date
Procedure for External Bimanual Compression				
1 Call to your assistant for help				
2 Rub the uterus to make it contract				
3 Check to see if bladder is full				
• If the bladder is full, rub the uterus to make it contract				
• Express clots and then catheterize if necessary				
4 **If bleeding does not stop, perform external bimanual compression**				
• Place one hand on abdomen behind uterus				
• Place other hand flat and low on abdomen				
• Press hands together				
5 Give oxytocic				
• Hold uterus for 20 minutes				
• Put baby to the breast				
• Look to see if bleeding has slowed or stopped				
6 **If bleeding stops**				
• Take vital signs and record in record				
• Estimate blood loss and record				
• Check for bleeding every 15 minutes for one hour, then every 30 minutes for 2 more hours				
• Put baby to breast again				
• Continue to give broad spectrum antibiotic for 5 days				
• Continue IV infusion for 24 hours				

	Date	Date	Date	Date
• **Monitor** every hour until normal, then 3 times a day for 3 days *vaginal bleeding, contracted uterus, empty bladder, vital signs*				
• Encourage breast feeding				
• Give analgesic for pain				
• Give perineal care 3 times a day for 3 days				
• Teach mother perineal care and uterine monitoring				
• Encourage 8 glasses of water, adequate food				
• Encourage activity as tolerated				
• Fever, treat for malaria and refer				
7 Allow mother and baby to go home after 5 days of medicines are completed and the mother is feeling well enough to go home Give iron tablets, check hemoglobin if possible				
8 Give mother an appointment to come for a checkup for the mother and baby at 2 weeks after delivery Initiate family planning discussions				
9 Send information to TBA				
10 **If bleeding has not stopped**				
• Continue holding uterus				
• Prepare for internal bimanual compression				

Comments

	Date	Date	Date	Date
Procedure for Internal Bimanual Compression				
1 Start IV infusion with oxytocic				
2 Check vital signs **LOOK** for signs of shock				
3 Rub uterus If no contraction or if bleeding continues, put on fresh gloves or quickly scrub your hands				
4 Place your freshly gloved or freshly scrubbed examining hand into the vagina				
5 Form your hand into a fist				
6 Press your fist firmly against the lower portion of the uterus				
7 Use care to move any loose or floppy cervix out of the way before pressing				
8 Press your abdominal hand and your fist together				
9 Continue pressing your hands together for **20** minutes				
10 Observe vaginal bleeding has it slowed or stopped?				
11 **If uterus contracts and bleeding slows or stops**				
• Remove hand				
• Take vital signs				
• Estimate blood loss				
• Check bleeding and uterus every 15 minutes for one hour, then every 30 minutes for 2 more hours				
• Put baby to breast				
• **REFER** as soon as possible				

	Date	Date	Date	Date
12 If **bleeding does not stop**				
• Reapply external bimanual compression				
• Inspect placenta				
• Prepare to transfer mother to hospital with infusion running				
13 Do not stop external bimanual compression until you get to a doctor				
Record Findings				
1 Record progress of vital signs throughout procedure				
2 Record type and amount of IV fluids and time started				
3 Record appearance and completeness of placenta and membranes				
4 Record estimated blood loss				
5 Record time, type, and dose of oxytocic given				

Comments

MANUAL REMOVAL OF CLOTS AND PRODUCTS OF CONCEPTION

Goal

The midwife will learn to diagnose and care for the woman who has clots and/or tissue remaining in her cervix or uterus, and the woman who has lost her pregnancy

Objectives

The midwife will be able to

1 define and recognize dilatation of the cervix
2 define and recognize postpartum or postabortion hemorrhage
3 identify signs and symptoms of uterine atony, lacerations, and retained placenta, membranes, or products of conception
4 record observations and actions
5 identify the need for referral and refer
6 perform digital evacuation of the cervix
7 explain to the woman and others the need for digital evacuation and the dangers of postpartum or postabortion hemorrhage

Introduction

Severe bleeding may happen when a large clot or fetal tissue gets stuck in the cervix, preventing total contraction of the uterus and cervix This can happen after the placenta is delivered or during an incomplete abortion The situation is serious and the cervix must be emptied as soon as possible

There is usually a trickle of fresh, bright red blood, and the uterus feels soft and then hard The woman may complain of abdominal cramping The uterus may get bigger The pulse increases The woman may become pale or faint

Treat women who need your help with kindness Many women who come for help are refused care or treated very poorly Some are made to feel ashamed or unclean Whatever your own beliefs, try not to judge women who have lost a pregnancy, but rather care for them with compassion Losing a pregnancy (planned or unplanned) is something a woman will never forget Many of us could have an unwanted pregnancy or lose a much-wanted pregnancy at some time in our lives Treat others as you would want yourself or your daughter to be treated [1]

[1] Paraphrased from Burns et al (1997) p 259

A Midwife's Experience...

The 22 year old woman was carried to me having delivered her first baby at home about 2 hours ago The placenta followed the baby All of her cloths were covered with blood and she looked very weak

I felt her uterus right away, it was soft and I began to massage it I asked the family to keep rubbing the uterus while I quickly started an infusion with pitocin, scrubbed my hands, and put on gloves I did not take BP or pulse because the blood was coming too much I looked and found large blood clots in the cervix I carefully removed the clots, rubbed the uterus, and cleaned the woman

I then put the baby to suck the breast I felt confident and competent and was so happy that the bleeding stopped

LSS Midwife, Uganda

Common Medical Terms

Abortion - pregnancy loss, fetus is not viable (not able to live outside of the uterus)

Complete abortion - all products of conception come out of the uterus

Digital - with fingers

Evacuation - to remove or take out

Incomplete Abortion - pregnancy loss, fetus is not viable, some or all products of conception (placenta or chorion) remain in the uterus

Inevitable Abortion - stage of pregnancy when it is not possible for the pregnancy to continue

Miscarriage - spontaneous abortion

Postabortion Hemorrhage - bleeding after a pregnancy loss (planned or unplanned) with (1) more than normal menses, (2) more than eight days, or (3) signs of shock

Postpartum Hemorrhage - blood loss of 500 cc (half of a liter) or more from the reproductive organs after the completion of the third stage of labor **Note** that while this is the official WHO definition, women who start labor or a pregnancy quite anemic may go into shock and suffer greatly from a hemorrhage (blood loss) of much less than 500 cc

Spontaneous Abortion (miscarriage) - pregnancy loss, the fetus is not viable, all products of conception come out of the uterus without any assistance

Threatened Abortion - signs and symptoms are so little that it is possible for the pregnancy to continue to term

Unsafe Abortion - pregnancy loss caused by dangerous medicine or instruments used to end a pregnancy in unclean conditions

Diagnose Retained Clots following Delivery (Postpartum)

As soon as you see blood coming from the vagina, feel the uterus to make sure it is firm If the uterus is hard, look for lacerations as described in Module 4 **Episiotomies and Repair of Lacerations** Examine the placenta and membranes to make sure they are complete If there are no lacerations and placenta is complete, ensure an empty bladder, use a vaginal speculum to see if there are clots in the cervix Proceed to empty the vagina so you can see well and in order to remove clots from the cervix and stop the bleeding See **Digital Evacuation**, page 5 56

Diagnose Vaginal Bleeding Caused by an Abortion (Postabortion)

Losing a pregnancy is an emotional and traumatic experience Often, a woman will blame the lost pregnancy on her actions, a death in the family, or other chance happenings The midwife should reassure the woman Sometimes losing a pregnancy is done voluntarily but is also traumatic The midwife should not judge the woman but help her get well

Help her understand that sometimes a pregnancy does not grow normally The woman's body can tell this and knows that the baby will not live The body causes the vaginal bleeding to remove the not normal pregnancy Explain to her that she will be able to have another pregnancy, and that losing the pregnancy usually does not happen again

Make sure that you always explain to the woman what you are going to do Give her an analgesic such as Pethidine 50 - 100 mg IM and fluids for hydration Refer to Module 8 **Hydration and Rehydration** **Save <u>all</u> blood clots and blood stained cloths** so that you can look for products of conception and estimate the amount of bleeding

ASK and LISTEN

- Are you pregnant? When did you see your last menses?
- Do you have any pain? Where is the pain?
- When did you start to see blood? How much? Clots?
- Any fever, chills, foul smelling discharge?

LOOK and FEEL

SHOCK SIGNS	
Eyes	- dull
Face	- pale sweaty
Breathing	- shallow fast
Pulse	- fast, weak
Skin	- cold clammy
Blood pressure	- low

- Take the blood pressure, pulse and temperature
- **LOOK** for signs of shock See Module 8 **Hydration and Rehydration**
- **FEEL** for low abdominal tenderness, *rebound tenderness* To *check for rebound tenderness,* press the abdomen with your hand Then quickly remove your hand, releasing the pressure If removal of your hand causes pain or makes the pain more, *there is rebound tenderness*, a sign of peritoneal infection
- **LOOK** for vaginal bleeding, clots, or foul smelling discharge

Skill Inspection with Vaginal Speculum

Explain once again what you are going to do Help the mother to urinate A full bladder is uncomfortable during a vaginal examination Provide privacy Help the woman lie down and bend her legs back (lithotomy position) as much as possible Sometimes stirrups are necessary in order to see the cervix, although it is more comfortable for the woman not to use them Ask your assistant to prepare the light so that you will be able to see

1 Clean the genital area with soap and water

2 Wash your hands and put on sterile or high-level disinfected gloves, if available

3 Moisten the vaginal speculum to make it easier to put in the vagina

4 Tell the woman you are going to touch her Explain that you are going to **LOOK**, in order to see what is causing the bleeding

5 Gently separate the labia with your thumb and index finger

6 Ask the woman to take a few deep breaths

7 To insert the vaginal speculum, hold it with the handle 30 to 45 degrees to the side and with the blades closed (See Figure 7)

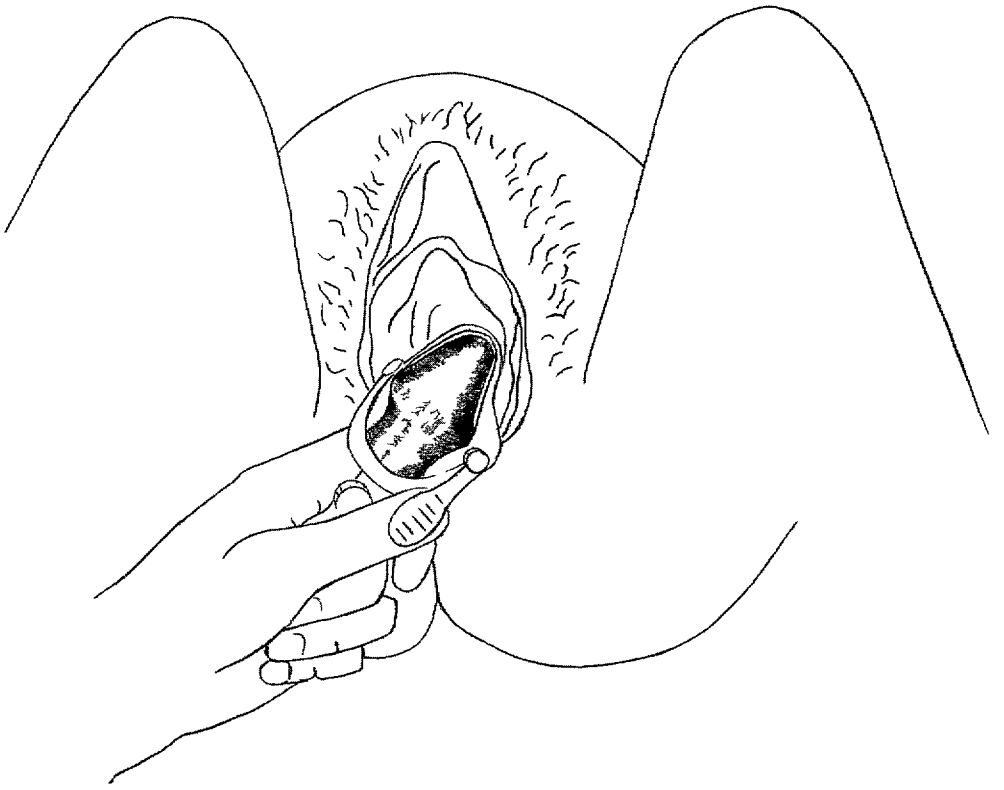

Figure 7 Vaginal Speculum at 30 to 45 Degrees for Insertion

8 Slide the speculum into the vagina, guiding it towards the woman's back

9 When the speculum is in place, turn the handle to the midline (See Figure 8)

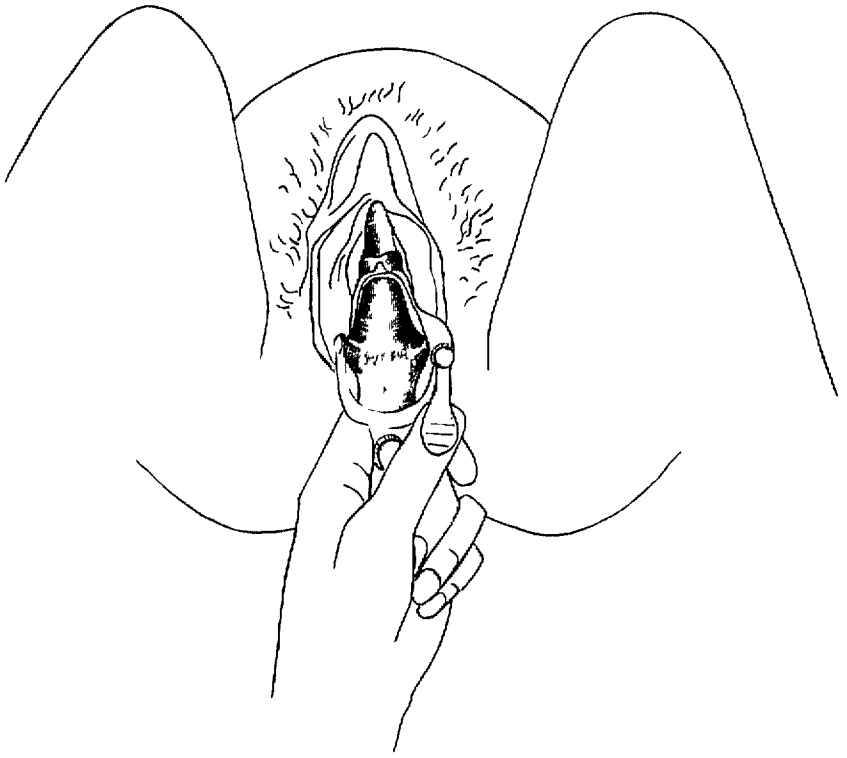

Figure 8 Speculum in Midline

10 Slowly open the blades to show the cervix

11 Lock the blades in place Ask your assistant to adjust the light so that you can look at the cervix

12 **LOOK** for swelling, discharge, tears, tissue, clots, or other materials to **IDENTIFY THE PROBLEM** and **TAKE APPROPRIATE ACTION** as found on page 5 55

13 When you are finished, unlock the speculum, turn the handle to the side and gently remove the speculum

14 Make the woman comfortable and explain your findings to the woman

15 Record the findings and your actions

IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION

1	**FINDINGS**	No periods for 6 weeks or more Slight or no vaginal bleeding Pain and tenderness in the lower abdomen Backache Abdomen may be DISTENDED, and VERY TENDER to touch Abdominal mass felt on vaginal examination, SHOCK may be present Think about ectopic pregnancy See Learning Aid 1 - Bleeding in the Abdomen, page 5 62
	ACTIONS	Refer right away Ask assistant or family to arrange transport and blood donors Treat according to Learning Aid 1 - Bleeding in the Abdomen, page 5 62 Treat for shock as described in Module 8 **Hydration and Rehydration** Go with the woman to the hospital
2	**FINDINGS**	Less than 16 weeks' pregnant, vaginal bleeding with or without clots, has labor like abdominal cramps No or very little low abdominal tenderness On vaginal examination, the CERVIX IS SOFT AND CLOSED with SLIGHT VAGINAL BLEEDING Make sure the woman does not have an ectopic pregnancy
	ACTIONS	The pregnancy will probably continue Tell the woman that she must get extra rest and eat nutritious foods She should not have sexual intercourse until the bleeding has stopped Tell her to come back if the bleeding does not stop in 3 days or if she starts to bleed again
3	**FINDINGS**	Less than 16 weeks' pregnant, vaginal bleeding with or without clots, labor like abdominal cramps No or very little low abdominal tenderness On vaginal examination, the cervix is soft and closed with MODERATE TO HEAVY VAGINAL BLEEDING
	ACTIONS	Go with the woman to the hospital right away There may be a tear high in the cervix or in the uterus Watch her for shock and help the woman stay calm If referral is delayed, treat for shock as described in Module 8 **Hydration and Rehydration**
4	**FINDINGS**	Less than 16 weeks' pregnant, vaginal bleeding with or without clots, labor like abdominal cramps No or very little low abdominal tenderness, on vaginal examination, the CERVIX IS SOFT AND OPEN with clots or tissue in the vagina and cervix
	ACTIONS	Give oxytocic to help the uterus to contract and complete the abortion Perform manual digital evacuation to remove clots and/or tissue See Digital Evacuation, page 5 56

Skill. Digital Evacuation

Digital evacuation is a life saving skill to help a woman who is bleeding too much from retained products of conception or clot(s) that may be felt in the cervix and vagina

Equipment

Delivery equipment and supplies
Sterile or high-level disinfected (HLD) gloves
Vaginal speculum

Procedure

1 Explain to the mother and family what you are going to do Explain that you must remove whatever is in the cervix so that the bleeding will stop

2 Scrub hands and put on gloves if available Clean the genital area Gently separate the labia and insert your examining hand Hold the uterus with your abdominal hand so that it does not move Press the uterus down over the internal fingers

3 Gently slide your index and middle fingers past the clots you feel Gently push your two fingers in the cervix Carefully move your fingers around the inside of the lower uterus and cervix to loosen and gather all clots or tissue Remove the clots as you slowly remove your hand

4 If some of the clots are stuck, use sterile gauze Wrap the gauze around your finger and gently put your finger past the clots in the vagina and cervix Wipe under and around them with your gauzed finger until they become loose Remove them with your finger Rub or massage the uterus to help it contract

5 Give oxytocic to help the uterus contract and stop the bleeding Give broad spectrum antibiotic, such as ampicillin one gram right away and 500 mg every 6 hours for 7 days

6 **LOOK** at the gauze, clots, and blood removed to see if there is tissue or membranes The uterus will contract and the bleeding will stop if the **uterus and cervix are empty**

If there is fever and foul smelling vaginal discharge, treat for infection See Module 7 **Prevention and Management of Sepsis**

If bleeding is heavy or continues for more than 3 days, refer to the hospital

See Postabortion Care in Module 10 **Other Emergencies** for additional information

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages listed in parentheses ( )

1 What are the signs and symptoms of postpartum hemorrhage caused by clots in the cervix or uterus? (page 5 51)

2 How will you decide whether the hemorrhage is postpartum or postabortion? (page 5 51)

3 Why is a vaginal speculum used when a woman is bleeding after a delivery or after an abortion? (page 5 52)

4 What are the steps of digital evacuation? (page 5 56)

5 When all of the clots or products of conception are removed with digital evacuation, the uterus and cervix are empty The uterus will contract and the bleeding usually stops What findings would cause you to refer? (page 5 55)

Skills Checklist - Inspection with Vaginal Speculum

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory OR ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
Inspection with Vaginal Speculum				
Prepare the woman explain what you are going to do, ask her to urinate, provide privacy, help her lie down and bend her legs back				
Prepare equipment including light				
1 Wash your hands, clean the genital area with soap and water				
2 Wash your hands, put on sterile or high-level disinfected gloves, if available				
3 Moisten vaginal speculum to make it easier to put in the vagina				
4 Reassure the woman and explain what you are doing				
5 Gently separate the labia with your thumb and index finger				
6 Ask the woman to take a few deep breaths				
7 Insert the vaginal speculum by holding it with the handle 30 to 45 degrees to the side and with the blades closed				
8 Slide the speculum into the vagina, guiding it toward the woman's back				
9 When the speculum is in place, turn the handle to the midline				
10 Slowly open the blades to show the cervix				
11 Lock the blades in place and ask your assistant to adjust the light so that you can look at the cervix				

	Date	Date	Date	Date
12 Look for swelling, discharge, tears, tissue, and clots				
13 When you are finished, unlock the speculum, turn the handle to the side and gently remove the speculum				
14 Make the woman comfortable, and explain your findings to the woman				
15 Record the findings and your actions				

Comments

Skills Checklist - Digital Evacuation

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ =satisfactory OR ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
Digital Evacuation				
1 Explain to the mother and family				
• What you are going to do				
• That you must remove whatever is in the cervix so that the bleeding will stop				
2 Scrub hands and put on sterile gloves				
3 Clean the genital area				
4 Gently separate the labia				
• Insert your examining hand				
• Hold the uterus with your abdominal hand, so that it does not move				
5 Gently slide your vaginal hand past the clots you feel				
6 Gently push 2 fingers into the cervix				
• Move your fingers around the inside of the lower part of the uterus and cervix				
7 Remove the clots as you slowly remove your hand				
8 If some of the clots are stuck, use sterile gauze				
• Wrap the gauze around your finger				
• Gently put your finger past the clots in the vagina and cervix				
• Wipe under and around the clots with your gauzed finger until they come loose				
• Remove them with your finger				

		Date	Date	Date	Date
9	Rub the uterus to help it contract				
10	Give oxytocic to help the uterus contract and stop the bleeding				
11	Give broad spectrum antibiotic, such as ampicillin one gm right away and 500 mg every 6 hours for 7 days				
12	**LOOK** at the gauze, clots and blood removed				
13	Record action, blood loss, outcome, medications, and condition of woman				

COMMENTS

Learning Aid 1 - Bleeding in the Abdomen (Intra-abdominal Bleeding)

Hemorrhage from an *unsafe abortion* injury to the internal organs is a life-threatening problem The most common injury is uterine perforation (hole in the uterus) Damage can also happen to the ovaries, fallopian tubes, peritoneal tissue around the stomach and intestine, bowel, bladder, and rectum The possibility of infection and death is very **high**

A *ruptured ectopic pregnancy* or *ruptured ovarian cyst* can also cause intra-abdominal hemorrhage The symptoms will be the same Death can be prevented **only** by stopping the hemorrhage Treat for shock and REFER See Module 8 **Hydration and Rehydration**

FINDINGS The woman has fever, abdominal pain, cramping pain, shoulder pain, and nausea or vomiting Her abdomen is swollen, hard, and tender She may have signs of shock

ACTIONS The woman is very sick

1 Ask someone to arrange for **urgent** transport and go with her to the hospital

While you are waiting or if transport is delayed,

2 Make sure her airway is open Do **not** give anything by mouth, as surgery may be necessary

3 Put her in shock position by raising her feet and legs Cover to keep her warm

4 If there is fever, lower the fever by giving sponge bath and fluids Start IV fluids, if they are available If you do not have IV fluids or if you can not start the IV fluids, give fluids in the rectum See Module 8 **Hydration and Rehydration**

5 Give Pethidine 50 - 100 mg IM for pain

6 Take and record blood pressure and pulse every 10 minutes This will help you follow the progress of shock or the woman's recovery from shock

7 Take the woman and her family to the doctor as soon as you can Remember to keep her in the shock position Remember to take her record so that the doctor will know as much as possible about the woman Help the woman and family understand what is happening so that they will not be too afraid and nervous

Learning Aid 2 - Constriction Ring

Constriction (contraction) ring is a spasm of a ring of circular muscle fibers of the uterus This condition happens about 1 in 1,000 labors It may happen during any of the three stages of labor If it is found during third stage, it is called an hourglass contraction

Causes

The most common cause of a constriction ring is uterine manipulation with procedures such as aggressive rubbing or pushing on the uterus, internal version, manual removal of the placenta, manual exploration of the uterus, and so forth The spasm may be caused by uterine dysfunction found with hypertonic uterus, or premature rupture of membranes causing irritation of the uterus

FIRST AND SECOND STAGE OF LABOR

FINDINGS	In first and second stage, there is no advance in the descent of the presenting part Membranes are almost always ruptured The upper segment feels tender to touch The uterus is easily stimulated to contract by gentle palpation The woman feels very painful contractions with little relaxation of the uterus between contractions The constriction ring is identified by vaginal examination or during cesarean section Constriction ring must not be confused with Bandl's retraction ring which can be felt as a transverse ridge across the abdomen, a sign of imminent (immediate) rupture of the uterus
ACTION	Reduce the spasm Give Demerol (Pethidine) 100 mg IM, hydrate, help the mother relax in a comfortable position, explain what is happening to mother and family, monitor mother and baby REFER if any problems according to Module 3 **Monitoring Labor Progress**

THIRD STAGE OF LABOR

FINDINGS	In third stage, there is a retained placenta There may have been early rupture of membranes, or internal version and extraction of a baby The gradual development of a constriction ring may be felt while manually removing the placenta
ACTION	If the midwife is already removing the placenta, a quick, gentle and complete removal of the placenta is possible by an experienced midwife If the spasm is very strong and the woman is **not bleeding**, give Pethidine 100 mg OR Morphine Sulfate 15 mg IM Hydrate, help the mother relax, explain to mother and family what is happening, and monitor vital signs and bleeding Within 4 hours, the spasm will relax and manual removal can be completed If the spasm is very strong and the woman **is bleeding**, refer to Bimanual Compression, page 5 34 REFER if any problems

Learning Aid 3 - Placenta Accreta

After the delivery of the baby, the placenta usually begins to separate, detaching a little more with each contraction In rare cases, the placenta is seriously stuck and does not detach No bleeding is seen The only treatment which can save the mother is hysterectomy

RETAINED PLACENTA *WITH NO BLEEDING*, MAY BE PLACENTA ACCRETA, ALWAYS REFER DO NOT ATTEMPT MANUAL REMOVAL

FINDINGS	Placenta retained for more than one hour, **without** external or internal **bleeding**
ACTION	While waiting the one hour for the placenta to separate, complete the delivery by examining the genitalia and repairing any laceration or episiotomy To prevent blood loss, monitor vital signs, watch carefully for bleeding, and watch for signs of placental separation Stay with the mother *REFER* with family, blood donors, and a written report of the delivery The midwife should go with the woman, in case of bleeding or other problems Give an IV infusion and nothing to eat or drink to prevent choking during the surgery Take time to explain to the mother and family what has happened Reassure them and keep the mother as comfortable as possible

Learning Aid 4 - Aorta Compression

Postpartum hemorrhage is usually controlled with bimanual compression of the uterus and oxytocic medication *In extremely rare cases*, it is necessary to close off (compress) the aorta to reduce the blood supply to the uterus and slow a severe postpartum hemorrhage *If the bleeding is heavy, a woman may bleed to death in less than 2 hours, and if she is also* ***anemic,*** *she may die in less than one hour* By taking the actions described below, the midwife can help save a woman's life in this rare situation

COMPRESSION OF THE AORTA IS ONLY USED WHEN ALL OTHER PROCEDURES ARE NOT SUCCESSFUL

If bimanual compression of the uterus and oxytocic medications do not slow the postpartum hemorrhage and the woman is close to or in shock, take these actions

1 Ask assistants to continue bimanual compression of the uterus, put the woman in shock position, cover her with warm blankets or cloths, keep IV infusion running, give oxygen and blood if available REFER

2 While waiting for the referral, press on the woman's abdomen, just above the umbilicus with all of your hand Press the aorta against the spine to slow the postpartum hemorrhage This is usually easier to do on fairly thin women

Do not stop until you get to the hospital
Do not give up
Reassure mother and family

An Obstetrician's Experience.

We usually apply bimanual compression of the uterine arteries to reduce the blood supply to the uterus and slow a severe postpartum hemorrhage by using the edges of our hands, pressing on the woman's abdomen just above the uterus It seems that it is fairly easy and effective to do so

LSS Obstetrician, Vietnam

Case Study 1 - Problem Solving Method

The Problem Solving Method is an organized way of giving care to women It is a way of thinking about the care you give women This case study helps you review the Problem Solving Method You may use Modules 1 and 5 for reference

We solve problems every day of our lives We usually do not think about the mental steps involved in problem solving though we all follow steps to solve problems The Problem Solving Method is a way to help us follow steps in giving care to women Read, and write your answers to questions in this case

What are the four steps of the Problem Solving Method?

1

2

3

4

(Refer to Module 1, page 1 22)

The Problem Solving Method is used by midwives to identify problems and take appropriate action

ASK and LISTEN

This is the first step in caring for a woman, using the Problem Solving Method Ask questions about the reason she came to see you, the midwife

Mrs R P is brought to you by the TBA, her husband, and her father-in-law The TBA tells you Mrs R P delivered a baby girl 8 hours ago The TBA is holding the baby The TBA also tells you that Mrs R P is bleeding and has pain in her belly Mrs R P did register with you in her fourth month of pregnancy You know that she has a boy 6 years old and a girl 4 years old You know that this pregnancy developed normally to term as she came for regular antenatal clinic visits

After you help the TBA and family get the woman into the maternity, you ask the following questions, listening very carefully to the answers What questions will you ask? Write your answers

1

2

3

4

(Refer to Module 5)

You find out that Mrs R P began bleeding as soon as the baby was born The TBA brought two large cloths soaked with blood and fluid from the delivery The TBA tells you the placenta will not come out She says she did not pull on the cord, but did rub the womb to make it stay hard Mrs R P has taken some weak tea with sugar for strength She has not taken any medicines

You do not waste any time writing down the above information at this time You know that 8 hours is a long time to be bleeding and you must continue with the Problem Solving Method to find out what is causing the bleeding and take appropriate action to stop the bleeding

LOOK and FEEL

This is the second step when seeing a woman, using the Problem Solving Method Do an examination on the woman's body depending on the information you got in step one **ASK and LISTEN** What examination will you do on Mrs R P ? Write your answers

1

2

3

(Refer to Module 5)

You find out that Mrs R P 's skin is warm and dry, her pulse is 100, and her blood pressure is 96/50 The uterus is soft but contracts as soon as you rub it The bladder is empty The cervix and vagina are free of tears The cord is presenting at the vagina, and dark red blood is running from the vagina

IDENTIFY THE PROBLEMS

This is the third step in the Problem Solving Method The midwife must find the problems by using the information from the first two steps It is important that all the problems you identify are treated, not just the problem that brought her to you

Mrs R P came with an EMERGENCY PROBLEM You must take appropriate action for this EMERGENCY first Later you can write in her record all of your other findings and the problems, and take appropriate action for them

Identify the cause of the emergency problem of bleeding You know that continuous blood loss leads to shock, coma, and death

What is the cause of bleeding?

How did you decide the cause of bleeding?

(Refer to Module 5)

Using the information from **ASK and LISTEN** (delivered a normal baby, abdominal pain, placenta has not come out), the **LOOK and FEEL** (uterus sometimes soft, then hard, cord of placenta presenting in vagina, no genital tears, dark bleeding, blood pressure 96/50, pulse 68), you **IDENTIFY THE PROBLEM** that Mrs R P has a retained placenta She is not in shock, but is feeling somewhat weak

TAKE APPROPRIATE ACTION

This is the fourth step in the Problem Solving Method The midwife must decide what should be done to take care of each problem The following areas should be considered for each problem

Medical treatment	Referral
Education	Plans for follow up
Counseling	Recording
Laboratory tests	

Mrs R P may need information on family planning, good nutrition after delivery, how to relieve hemorrhoid pain, and where to go for immunizations for her small children *Education, counseling, and plans for follow-up and routine medical treatment* are **not emergencies** They do need attention, but can wait until Mrs R P is feeling better They may be taken care of at the follow up visit

Mrs R P has a life threatening problem Take **ACTION IMMEDIATELY** *Emergency medical treatment, laboratory tests, referral, and recording need to be done now* The EMERGENCY problem needs action right away What EMERGENCY action will you take? Why will you take each action? Write your answers

(Refer to Module 5)

The EMERGENCY actions should include

1 Make sure there is no shock because Mrs R P 's condition may change from the first pulse and blood pressure reading, remember, she is losing blood and has a retained placenta

2 Call someone, if available, to help you start the IV and manually remove the placenta, and to help watch the woman Collect equipment

3 Explain to Mrs R P and her family what you are going to do so that they will cooperate and not be afraid

4 Give analgesia and sedative, if available, to relax the woman Start an IV infusion to replace some of the fluids lost by the bleeding and to prevent shock

5 Explain to Mrs R P what you are going to do Help her lie on her back with her knees bent Clean the genital area If she is unable to void, catheterize and empty the bladder

6 Rub the uterus to make it contract Try to deliver the placenta If this fails, prepare to manually remove the placenta

7 Scrub hands, put on gloves

8 Hold the umbilical cord and find the placenta by inserting your gloved hand in the uterus

9 Keep the uterus contracted and prevent the uterus from moving

10 Find the edge of the placenta

11 Detach the placenta with a gentle, sideways slicing movement

12 Remove the placenta while you rub the uterus to make it contract

13 Rub the uterus until you are sure it is contracted

14 Give Mrs R P an oxytocic to help the uterus contract Put the baby to breast

15 Examine the placenta well to make sure that all of the placenta and membranes have been removed

16 Transfer Mrs R P to the hospital If some of the placenta or membranes are missing, she may need a curettage to remove the remaining pieces

If the placenta and membranes are completely delivered and YOU DO NOT OR CAN NOT TRANSFER HER TO THE HOSPITAL, what other actions (care) will you take? Write your answers

(Refer to Module 5)

If transfer is impossible, the other actions (care) should include

1 Give broad spectrum antibiotic to prevent serious infection of the uterus

2 Continue the IV infusion, a total of 3 liters in 24 hours, to replace fluids lost from bleeding and to prevent shock Stop the infusion once the woman is eating and drinking normally Nutrition, fluids, and activity are important for healing and strength

3 Check for vaginal bleeding, contracted uterus, full bladder, and vital signs every hour until normal and then, 3 times a day for 3 days to make sure the bleeding stops Teach the mother to monitor her own uterus

4 Continue to put the baby to each breast as soon as the woman is strong enough, give an oral oxytocic to make sure the uterus stays contracted if you did not give injectable oxytocic

5 Give analgesia to lessen abdominal or perineal pain

6 Give perineal care at least 3 times a day, teach the mother the importance of this care and the need to continue it when she goes home

7 Treat for fever according to findings Give iron tablets and check hemoglobin

8 Allow the woman to go home when she has completed the medications She should feel like going home by 5 days after the delivery If she does not, refer her to the doctor to make sure she does not have another problem

9 Give an appointment for a 2 week check up for both mother and baby

10 Send a message to the TBA so that she will visit the mother and baby at home weekly for at least 6 weeks

Case Study 2 - Problem Solving Method

Read the following case and use the Problem Solving Method

Mrs U A has just delivered a large baby girl at your maternity This is her fifth delivery The placenta is delivered very soon after the baby The placenta and membranes are complete The labor and delivery have progressed without any problems As you are caring for Mrs U A , you see a continuous stream of blood from the vagina

Using the Problem Solving Method, you decide what is wrong and how to help Mrs U A Continue reading and write in your answers

ASK and LISTEN

There is not too much to **ASK and LISTEN** Before the delivery or during antenatal clinic visits, you will have found out from the woman if she has had a problem with bleeding after a delivery You may ask the woman how she is feeling Then, explain to her that she is bleeding a little too much Reassure her that you want to find out where the bleeding is coming from and stop the bleeding as quickly as possible You call to your assistant for help

LOOK and FEEL

Mrs U A is feeling fine but would like something to drink She is very excited about her baby girl You ask your assistant to put the baby to Mrs U A 's breast The blood pressure is 100/66 and the pulse is 88 As soon as you see the bleeding, you immediately feel the uterus to make sure it was firm and contracted What else do you do? Write your answers

(Refer to Module 5)

You **LOOK** for signs of shock (low blood pressure, cold and wet skin, weak and fast pulse) You check the bladder and catheterize her if it is full You **LOOK** at the placenta very carefully to make sure all of the placenta and membranes are present You **LOOK** at the genitalia for tears of the cervix or vagina The uterus is still not firm and contracted

IDENTIFY THE PROBLEM

What is Mrs U A 's problem? Write your answer

(Refer to Module 5)

Using the information from **ASK and LISTEN** (delivered normal baby, thirsty), and from **LOOK and FEEL** (vaginal bleeding, uterus not firm and contracted, placenta and membranes complete, no genital lacerations, bladder now empty, B/P 100/66 and P 88), you **IDENTIFY** the problem that Mrs U A has uterine atony She is not in shock, but is thirsty Uterine atony is an emergency, and appropriate **ACTION** must be taken as soon as you know what the problem is When the emergency is over, you can take care of any other problems you find

TAKE APPROPRIATE ACTION

Mrs U A has a life threatening problem Take **ACTION** immediately The EMERGENCY problem will need action right away What EMERGENCY action will you take? Why take each action? Write your answers

(Refer to Module 5)

You have already called to your assistant for help, rubbed the uterus, checked the bladder, rubbed the uterus again, catheterized the woman, reassured the women and explained what is happening to her

You review for yourself the facts that uterine atony may cause postpartum hemorrhage and must be taken care of right away There is not time to refer the woman to a doctor You must take **ACTION** right away

1 External bimanual compression of the uterus (place one hand on abdomen behind uterus, place other hand flat and low on abdomen, press hands together to squeeze blood vessels at the placental site in the uterus and stop the bleeding)

2 Ask your assistant to give an oxytocic while you hold the uterus for 10 minutes to help the uterus contract If you do not have an assistant, show the family how to hold the uterus while you give the oxytocic

3 Look to see if bleeding is slowing or stopping

- **If bleeding has stopped**, record vital signs and estimate blood loss, feel the uterus and check for bleeding every 15 minutes for one hour, then every 30 minutes for 2 more hours to make sure the uterus stays firm and contracted, put the baby to each breast to help the uterus contract, to nourish the baby with the colostrum, and to establish mother/child bonding

- **If bleeding has not stopped**, what EMERGENCY action will you take? Why take each action? Write your answers

(Refer to Module 5)

- **If bleeding has not stopped**, continue holding the uterus and ask your assistant to take vital signs and get ready for internal bimanual compression **If you do not have an assistant, ask the family to help** You may not have time to take vital signs You must **LOOK** for signs of shock as you continue helping the woman

  1 Ask assistant or family to hold the uterus while you start a 500 ml IV infusion with 10 IU oxytocin to prevent shock and help the uterus to contract

  2 Rub the uterus If there is no contraction or the bleeding continues, ask assistant or family to continue to hold the uterus while you put on fresh gloves or quickly scrub your hands

  3 Internal bimanual compression (place your freshly gloved or scrubbed examining hand into the vagina, form your hand into a fist, press your fist firmly against the lower portion of the uterus moving any cervix out of the way, press your abdominal hand and your fist together, hold firmly for 10 minutes)

  4 Watch for vaginal bleeding to slow or stop

  5 **If BLEEDING STOPS**, take vital signs every 30 minutes for 2 hours once she is stable Estimate blood loss, check bleeding every 15 minutes for one hour or until normal, then check bleeding every 30 minutes for two hours, then check bleeding 3 times a day for 3 days, put baby to breast Allow her IV infusion to run another 3 to 6 hours until you are confident the hemorrhage is controlled She may eat and drink normally as she feels able Record findings and actions

  6 **If BLEEDING CONTINUES**, inspect the placenta again If membranes or pieces of placenta are retained in the uterus, prepare for manual removal of the placenta Prepare to transfer to hospital with an IV infusion running

  7 **On the way to the hospital**, continue to hold the uterus to slow the bleeding, hydrate the mother and keep her warm to prevent shock If the blood is really pouring from the woman and if you feel confident and have an assistant to hold the uterus, compress the abdominal aorta to slow the bleeding Do not give up Encourage and reassure the woman and her family

PREPARATION FOR EMERGENCY

So a midwife can be ready for an emergency such as uterine atony, the maternity home, maternity unit or ward must always be READY FOR AN EMERGENCY What must be done to always be ready for an emergency? Write your answers

(Refer to Module 5)

So a midwife may always be ready for an emergency, the following should be available

- Gloves
- Injectable oxytocics
- 2 liter bottles/bags IV fluids
- 2 giving sets/tubing
- Needles/butterfly needles or intracatheters
- Arm board to keep arm from moving
- Tape or strips of cloth
- BP cuff and stethoscope
- Pulsometer or watch with second hand
- Emergency transport such as bus, neighbors, or other source
- Midwife and assistant both trained to start IV infusions

Case Study 3 - What Is the Problem?

Read the **ASK and LISTEN, LOOK and FEEL**, in the following case study Then decide what you think is the **PROBLEM** and what **ACTION** needs to be taken to help the woman Remember that action may include treatment, education, counseling, more laboratory tests, referral, and follow up

It is also important to think about prevention, so you will find a question asking, "How do you think this problem could have been prevented?" Sometimes it is very difficult to decide that a problem might happen before it occurs Sometimes a problem can not be prevented In other cases, it is very easy to see that certain things can be done to prevent the problem

When you finish, look on the next page for suggested answers

What Is the Problem?

ASK and LISTEN

Mrs P T S arrived at the maternity at 10 AM She delivered a baby boy at 10 15 AM The baby boy's mouth and nose were wiped free of mucus as soon as they were seen After delivery he was crying and breathing well He was dried, wrapped in a dry towel to warm him and given to Mrs P T S She put her third child, but first baby boy to the breast and he started to suck

LOOK and FEEL

At 11 15 AM, the placenta was not delivered A little dark red bleeding was seen The uterus continued to feel somewhat firm but not really hard The bladder was palpable and looked full

What is the **PROBLEM**?

What is the **ACTION**?

Was this **PROBLEM** preventable? If preventable, how?

ANSWERS - Case Study 3

What is the **PROBLEM**? Retained placenta with a full bladder

What is the **ACTION**? Ask Mrs P T S to urinate If she is unable to urinate, catheterize her Then rub the uterus to stimulate a contraction

Examine vaginally to see if the placenta is stuck in the vagina Help Mrs P T S into a semi-sitting or squatting position Use controlled cord traction while supporting the uterus to deliver the placenta

Was this **PROBLEM** preventable? If preventable, how?

Yes, it seems likely that if the bladder had been empty following delivery, if there was not time before delivery, the placenta might have delivered

However, we do not know what the midwife did to try to deliver the placenta Active management of third stage may have prevented the problem

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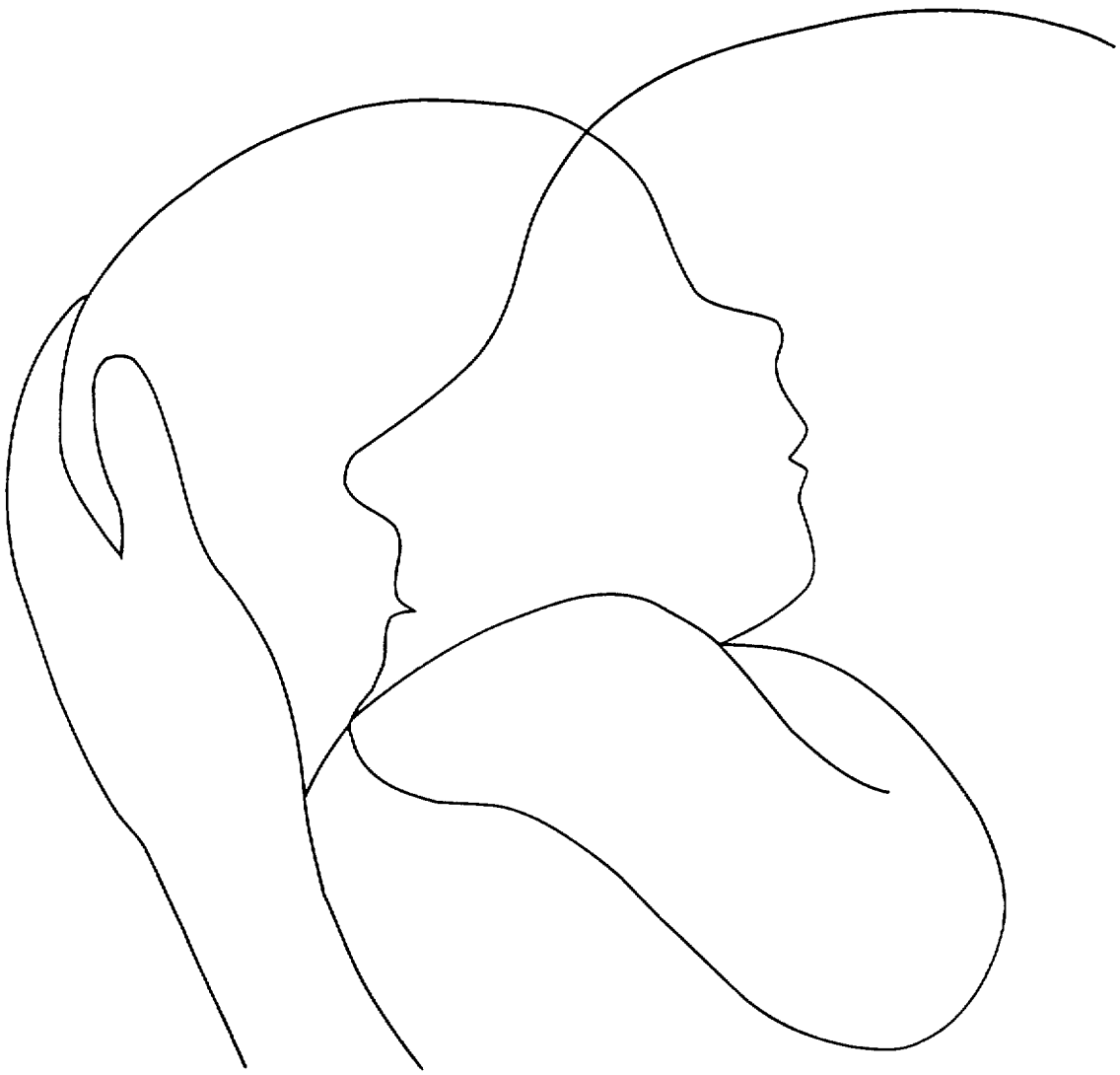
LIFE-SAVING SKILLS MANUAL FOR MIDWIVES

3rd Edition



MODULE 6

RESUSCITATION

Life-Saving Skills Manual for Midwives

Third Edition

Module 6. RESUSCITATION

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MotherCare™
JSI John S w In

USAID

Life-Saving Skills Manual for Midwives

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RESUSCITATION
MODULE 6

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RESUSCITATION

INFANT RESUSCITATION (HELP A BABY LIVE!)

Goal

The midwife will learn the important signs and symptoms of a baby who is having trouble living She will learn to resuscitate a baby

Objectives

The midwife caring for the mother and baby will be able to

1 describe the care of the baby at birth
2 list the signs and symptoms of a baby who is having trouble living
3 describe and demonstrate how to resuscitate a baby
4 list emergencies in the newborn that she must refer to the doctor

Introduction

The baby begins to make changes at the time of birth The most important changes it must make are independent circulation and breathing Both of these changes are necessary so that the baby can get enough oxygen to live and grow Most of the time, when the baby is born, the heart is already beating In order for the circulation changes to take place, the baby needs to begin to breathe on its own Normally this happens **without any problem or assistance** Breathing is very important, because once the baby is born, it can no longer depend on the mother's body for oxygen, warmth, or food

In this section, you will review the care of the baby at birth and learn how to resuscitate the newborn who is not breathing and does not have a strong heartbeat The information here will help you to answer the review questions and case studies and to apply the skills in your work Use the skills checklists as guides when performing infant resuscitation skills The learning aids provide additional information Some of these will help you to review what you already know, while others will have new information that you must learn Sample resuscitation and APGAR scoring charts are included If you already have charts for resuscitation and APGAR, you may want to compare these and adapt them for your situation If you do not have charts, you can use the information provided here to make your own

A Midwife's Experience...

I sucked out mucous, dried and warmed the baby I saw no respirations and felt no heartbeat I positioned the baby, wiped the face, breathed in the mouth, and performed full CPR Soon the heart started beating after a little while, the breathing! I knew I did it!

LSS Midwife, Indonesia

Common Medical Terms

Aspiration - breathe in or suck in material such as meconium, mucus, or liquid into the air passages (trachea or lungs)

Augment - to increase or speed up, as in augmentation of labor

Emergency - a time when action must be taken right away to save a person's life, for instance, if someone is not breathing, you must help the person to breathe right away so that she will not die

Induction - making happen, causing to occur Induction of labor or causing labor to begin

Meconium - A dark greenish, sticky stool (feces or bowel movement) in the intestine of a full term baby This is the first stool passed If the fetus does not have enough oxygen during the pregnancy, labor, or delivery, it will pass some of the meconium stool The midwife may see the stool come from the mother's vagina This will tell her that the fetus is having a problem The meconium stool may be mixed with liquor (amniotic fluid) and look yellowish or light green in color

Oligohydramnios - small amount or not enough of amniotic fluid (liquor) It may be found with fetal malformation and slow growth in the uterus (intrauterine growth retardation) of the fetus

Polyhydramnios - large amount or too much amniotic fluid (liquor) It is often seen with maternal diabetes, congenital abnormalities, and twins

Resuscitation - clearing the airway, getting air (oxygen) into the baby by breathing into it (respiratory resuscitation) and gently moving the heart (cardiac resuscitation) until the baby breathes on its own and the heart beats regularly on its own

Shoulder Dystocia - baby's shoulders get stuck during delivery, fail to rotate (See Module 10 **Other Emergencies**, page 10 12)

Care of the Baby at Birth Five Steps of Immediate Care

As soon as you see the baby's head, wipe the mouth and nose Suction the baby ***if there*** is mucus or meconium in the airway You are *already* **LOOKING** at the color and response of the baby

When the baby is delivered, there are **5 things the midwife must always do to help a baby** begin to breathe and continue to breathe on its own IMMEDIATELY **dry, warm, position, suction,** and **stimulate,** so the baby can breathe As you do these things, you are now **LOOKING** at the baby's *breathing* (respiration), *color*, *response*, and *muscle tone* Each of the following ***actions*** is very important in helping the baby to take its first breath and continue to live

1 **DRY** Wipe the mouth and nose as soon as you see them during delivery Once the baby is born, *dry completely* from the head to the toes with a towel or a cloth, until most of the amniotic fluid (liquor) is gone Replace the wet towel or cloth with a dry towel

2 **WARM** Immediately after removing the wet cloth, cover the baby with another dry cloth or blanket, OR place the baby skin to skin with the mother, and cover the baby's head Cover them both to prevent loss of body heat

3 **POSITION** Lay the baby with head down to drain fluids from air passages This can be done on the mother's body or flat on the bed (See Figure 1)

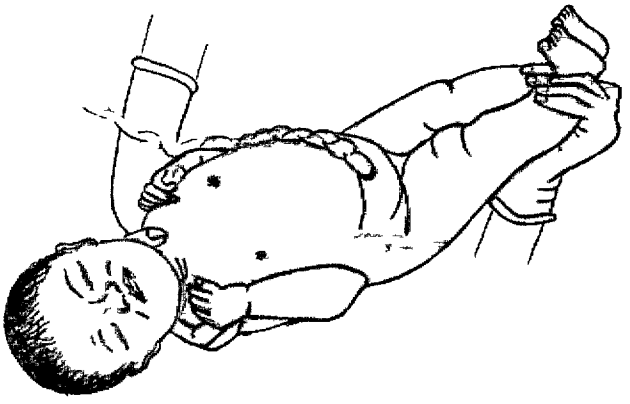

Figure 1 Position to Drain Mucus

4 **SUCTION** Wipe the mouth and nose with your finger or gauze, to clear them of mucus ***If there still is mucus*** *and you have a suction bulb or mucus extractor, use it to clear the air passages*

To use the suction bulb, *first* squeeze the bulb and then insert the tip of the bulb into *the mouth* Release the suction bulb and remove from mouth Squeeze mucus out of the bulb Then insert bulb into each nostril and repeat the whole process until all mucus and fluids are removed from the mouth and nose (See Figure 2)

FIRST SQUEEZE BULB

THEN INSERT BULB INTO MOUTH AND EACH NOSTRIL

RELEASE BULB AND REMOVE SQUEEZE MUCUS OUT OF BULB SYRINGE REPEAT WHOLE PROCESS TO REMOVE ALL MUCUS AND FLUIDS

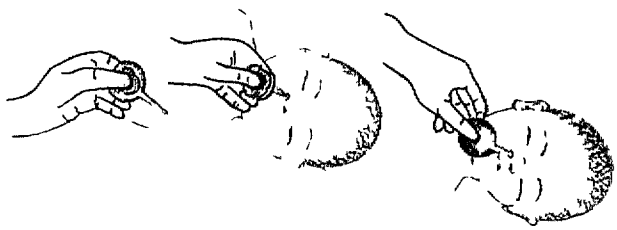

Figure 2 Bulb Syringe Suctioning of Mouth and Nose

5 **STIMULATE** You can best **stimulate the baby by gently rubbing the back** with your hand This can be done while it is wrapped in the cloth, towel, or blanket Stimulation will encourage the baby's new function of breathing to continue smoothly as well as increase the heart rate

When the baby is breathing well and the heart is beating above 100 beats in a minute, tie and care for the cord Put the baby to breast to stimulate uterine contractions, encourage sucking, and provide energy Continue to watch the baby while preparing to deliver the placenta

Caution Never slap the baby's feet or back hard **Never** put hot or cold water on the baby **Never** bend or rub the baby roughly A newborn can get broken bones or injuries to soft tissue if slapped, rubbed, or treated roughly Hot water may burn the baby's skin Cold water can lower the baby's temperature, which can cause death Suction with care Research has shown that aggressive suctioning of the throat can delay the onset of breathing

REMEMBER DRY, WARM, POSITION, SUCTION (if needed), AND STIMULATE

Mother's Problems - Be Prepared for Baby's Problems

Most of the time, newborns do very well in beginning their lives outside of the protective place in their mothers' bodies Many babies need only the support of a midwife or birth attendant to begin this new part of their journey There are other times, however, when the midwife's actions can mean the difference between life and death for the baby she delivers It is most important that the midwife be prepared for any emergency that the newborn may have

A place in the delivery area should be set aside for resuscitation with all necessary equipment kept together in that place If the midwife does home deliveries, a section or small container in her delivery bag should contain all necessary equipment for resuscitation

If the midwife anticipates the emergency, she can be ready for it There are many things that affect the mother that will also warn the midwife that the baby **may have trouble** before and/or at the time it is born These include

Antenatal bleeding
Arrival for delivery during 2nd stage
Cesarean section
Diabetes
Fetal distress
Genetic disorders
Heart disease
Induction / augmentation
Kidney disease
Lack of antenatal care
Malpresentation
Meconium stained liquor
Multiple pregnancy
Oligohydramnios
Polyhydramnios
Pregnancy induced hypertension
Premature rupture of membranes
Preterm labor
Prolonged labor
Shoulder dystocia

It can not be stressed enough that careful monitoring of the baby during labor can help the midwife know when the baby is having trouble getting enough oxygen and will probably need resuscitation For more information, see Module 3 **Monitoring Labor Progress**

ABCS of Resuscitation

The abnormal or emergency situation causes different reactions Panic has no place in an emergency A well prepared and skilled midwife has a cool head and a steady hand A skilled midwife remembers the life saving steps (ABCS) for helping a baby who has trouble living

A **AIRWAY** - make sure the airway is open
- Position the baby
- Suction the mouth and nose, and if there is meconium, the pharynx (back of throat)

B **BREATHING** - make sure the baby is breathing
- Stimulate to initiate breathing
- Use mouth to mouth or ambu bag breathing as necessary
- Give oxygen, if available

C **CARDIAC FUNCTION** - make sure the heart is beating
- Stimulate the baby
- Do chest compressions when necessary

S **SHOCK** - make sure the baby is warm and dry
- Dry the baby
- Warm the baby with a blanket, a light, or the mother's skin

IMPORTANT FOR THE MIDWIFE the mother may have a disease that you may not know about, such as hepatitis, herpes, gonorrhea, or AIDS There is a chance you will get the disease from the baby This may happen if you get blood, mucus or liquids in your mouth while doing mouth to mouth breathing The danger is greater if you have a cut or sore in your mouth

If you have a cut or sore, ask someone else to help with mouth to mouth resuscitation Always make sure to clean the baby's face around the mouth with soap and water before doing mouth to mouth breathing and use gauze or cloth if it is available If you get something in your mouth while doing mouth to mouth breathing, wash your mouth with soapy water and rinse with water as soon as you can

SKILL Infant Resuscitation

The purpose of infant resuscitation is to keep the newly delivered baby warm and dry, the mouth and nose clear, the lungs breathing, and the heart beating so that the blood can carry oxygen all around the baby's body This is done by the midwife and/or assistant doing the delivery **This is a life saving skill**

Resuscitation must be started as soon as the midwife identifies the need If the baby is not breathing or the heart rate is below 100 by the time the midwife has **dried, warmed, positioned, suctioned, and stimulated** the baby, resuscitation must begin The baby is not going to live unless the midwife does something **right away** As mentioned before, a maternal history and physical exam during labor can alert the midwife to a probable need for resuscitation The fetal heart rate may also indicate whether resuscitation will be needed

Equipment

Suction bulb
Mucus suction catheter (DeLee)
Clean dry cloth or gauze
Flat surface (such as a table)
Clean dry cloths to keep the baby warm
Oxygen, if available

Procedure

LOOK, FEEL, LISTEN - Breathing, Heart Rate

While you do the *5 steps of immediate care*, you are **LOOKING** at the baby's **breathing** and COUNTING the **heart rate**

NOTE The baby's heart rate can easily and quickly be figured by counting it for 6 seconds and adding a 0 behind the number you counted For example if you count 12 beats in the 6 seconds, place a 0 behind the 12 and get 120 beats per minute If you count 3 beats in the 6 seconds, the addition of the 0 behind the 3 gives you 30 beats per minute, and so on

IDENTIFY PROBLEM(S) AND TAKE ACTION

FINDINGS I

Airway	Open and clear
Breathing	Present (they can be irregular, shallow or grunting), no cry
Cardiac	Heart rate above 100
Shock	May be limp, may have blue or pale skin

ACTIONS I

Dry and Warm	Continue to keep the baby warm
Position	Continue position to keep the airway open
Stimulate	Continue to stimulate as needed
Oxygen	Give oxygen [1] if available

Remember to check breathing (present) and heart rate (above 100) to make sure they stay good

When baby is pink, have the mother put baby to breast for energy

[1] **Oxygen should be given at a rate of 10 liters in a minute** It is best given in the nose of the baby by a single tube or face mask because babies breathe through their noses and not their mouths When you use oxygen with resuscitation, put it into the baby's mouth while you are breathing for the baby Your breath will carry the oxygen into the baby's lungs When the baby starts breathing on its own move the oxygen to the nose

FINDINGS II

Airway	Clear and open
Breathing	Absent - no breathing
Cardiac	Heart rate below 100
Shock	Limp, blue skin

ACTIONS II You must start breathing (respiratory) resuscitation!

Dry and Warm	Continue to keep the baby warm
Position	Continue position to keep the airway open, so that the head is slightly extended in the "sniffing" position This is the best position to keep the airway open (See Figure 3)
Stimulate	Continue to stimulate as needed
Oxygen	Give oxygen [2] if available
Breathe	Start breathing for the baby by placing your mouth over the mouth and nose Breathe (blow) 1 time **using only the air from your mouth**
LOOK	**LOOK** to see if the chest rises with your breath
	If the chest did not rise, reposition the baby, suction again and try another breath, watching for the chest to rise
	If the chest rises, **LOOK** to see if the baby is making any attempt to breathe on its own

- IF THE BABY IS **BREATHING** Continue to support with warmth, stimulation, and oxygen until the baby is pink and crying Remember to check breathing (present) and heart rate (above 100) to make sure they stay good When baby is pink, have the mother try to put baby to breast for continued warmth, stimulation, love, and energy

[2] **Oxygen should be given at a rate of 10 liters in a minute** For additional information, see footnote 1

- IF THE BABY IS **NOT BREATHING**

Breathe	Blow 5 short, fast, and gentle breaths for the baby (See Figure 3)
LOOK	**LOOK** for breathing (respirations) and **FEEL/LISTEN** for heart beat
Breathe	Repeat these 2 steps until baby breathes on its own and heart rate is more than 100

Continue support with warmth and oxygen until the baby is pink and crying (heart rate more than 100 and breathing) or strong enough to REFER IF POSSIBLE

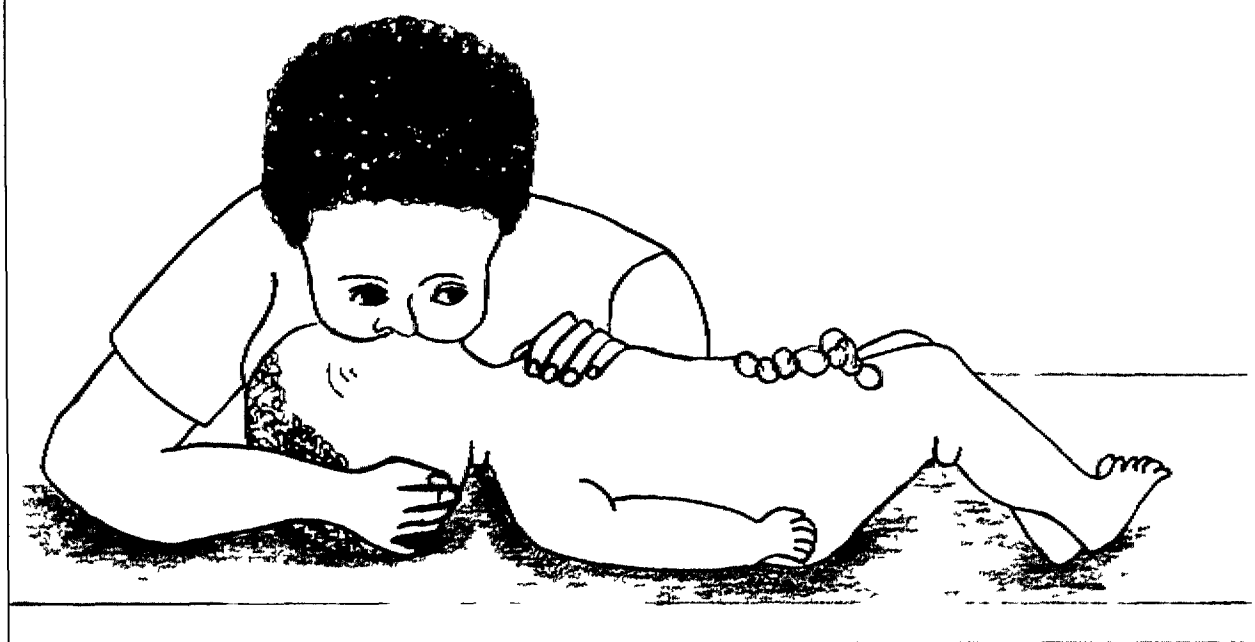

Figure 3 Lay Baby on Flat Surface in "Sniffing" Position Breathe into the Baby's Mouth through Gauze, a Cloth, or Protective Airway if Available

FINDINGS III

Airway	Clear and open
Breathing	Absent - no breathing
Cardiac	Heart rate absent or below 80
Shock	Limp, blue skin, cold

ACTIONS III **Full Cardiopulmonary Resuscitation (CPR)**

Dry and Warm	Continue to keep the baby warm
Position	Continue position to keep the airway open so that the head is slightly extended in the "sniffing" position This is the best position to keep the airway open (See Figure 3)
Stimulate	Continue to stimulate as needed
Oxygen	Give oxygen [3] if available
Breathe	Start breathing for the baby by placing your mouth over the baby's mouth and nose Blow one time **using only the air from your mouth**
LOOK	**LOOK** to see if the chest rises with your breath

If the chest did not rise, reposition the baby, suction again, and try another breath, watching for the chest to rise

If the chest rises place your index and middle fingers on the center of the chest just below the nipple line (an imaginary line drawn between the baby's nipples) This will place your fingers over the baby's heart (See Figure 4)

Push the chest down 1 5 cm (½ to ¾ inch) at a rate of 100-120 heart beats per minute, counting 1 and 2 and 3 and 4 and 5 and

The 6th count should be a breath so that the flow would be 1 and 2 and 3 and 4 and 5 and breathe and so on **Do not lift your fingers off the chest**

REMEMBER Do not push on the chest while breathing for the baby This could cause damage to internal organs

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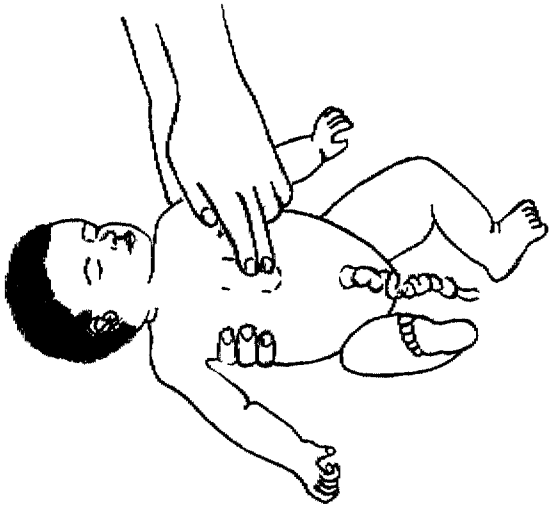
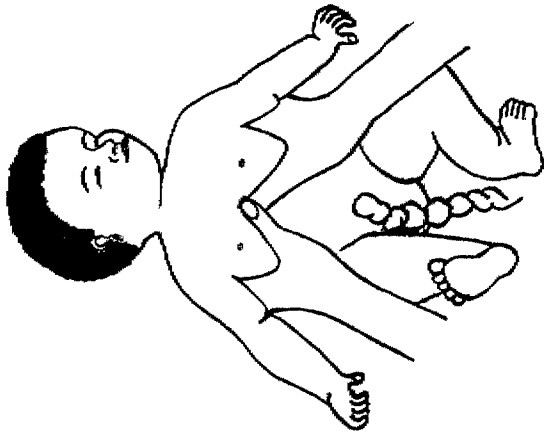
[3] **Oxygen should be given at a rate of 10 liters in a minute** For additional information see footnote 1



Two finger method



Thumb method

Figure 4 Cardiac Massage - Use Two Finger or Thumb Method

A CPR CYCLE
is 5 heart compressions (cardiac massage) and 1 breath (blow)

You should do the **complete CPR CYCLE 5 times** (that is do 5 heart compressions and 1 breath and continue to repeat this **CPR CYCLE** until you have done it five times), then recheck the baby's breathing and heart rate

- IF THERE IS STILL **NO HEART RATE OR BREATHING**
  Continue CPR for 15 - 30 minutes, **or** until the baby has a heart rate more than 80, whichever comes first

- IF THERE **IS A HEART RATE more than 80**
  Stop doing heart massage (compressions) Continue breathing for the baby (see ACTIONS II, page 6 9) until the baby is breathing on its own and the heart rate is more than 100 beats in a minute

  Continue to help the baby with warmth, oxygen, and stimulation until the baby is pink

  REFER IF POSSIBLE

FINDINGS IV

Meconium in the amniotic fluid at the birth of any baby regardless of its condition

ACTIONS IV

When the head is born and before the chest is delivered

- Clear the meconium from the upper airways before the baby takes its first breath A mucus catheter (DeLee) is best If a mucus catheter is not available, use a clean cloth or gauze or bulb syringe

  Suction the mouth first

  Then suction the nose **It is important to suction the nose last as it may stimulate the baby to take a breath**

- After the baby is born

  Suction the mouth again

  Suction the nose down to the stomach if possible

  Follow the **ACTIONS** appropriate to your **FINDINGS**

Learning Aid 1 - Infant Resuscitation

IMMEDIATE AND CONTINUING CARE
AIRWAY KEPT OPEN BY POSITION, SUCTION AND STIMULATE
SHOCK PREVENTED BY DRY, WARM

FINDINGS	I	II	III
BREATHING	YES	NO	NO
CARDIAC (heart rate)	ABOVE 100	80 TO 100	NO OR BELOW 80
ACTION →	→KEEP BABY WARM →POSITION →STIMULATE →OXYGEN, if available →CHECK FOR BREATHING HEART RATE ABOVE 100 →GIVE BABY TO MOTHER WHEN PINK	→OXYGEN, if available →BREATHE 1 TIME **CHEST RISE? NO,** REPOSITION, SUCTION →BREATHE AGAIN **CHEST RISE? YES** →BREATHE (5 SHORT, FAST BREATHS) →**LOOK** FOR BREATHING →CONTINUE TO BREATHE / LOOK UNTIL BREATHING PRESENT AND HEART RATE ABOVE 100 →GIVE BABY TO MOTHER WHEN PINK AND CRYING OR ACTIVE	→OXYGEN, if available →BREATHE 1 TIME **CHEST RISE? NO,** REPOSITION, SUCTION →BREATHE AGAIN **CHEST RISE? YES,** →START CPR 3 CYCLES (1 CYCLE = 5 HEART COMPRESSIONS, 1 BREATH) →**CHECK** BREATHING AND HEART RATE →**CONTINUE CPR until HEART RATE ABOVE 80, IF BREATHING PRESENT, stop breathing for baby** →GIVE BABY TO MOTHER WHEN BREATHING and HEART RATE ABOVE 100 →REFER IF POSSIBLE

Learning Aid 2 - APGAR Scoring Chart

The APGAR Scoring System, developed by Dr Virginia Apgar, is a simple test to help you decide how well the baby is doing after birth As soon as you see the baby's head, wipe the mouth and nose You are already **LOOKING** at the color of the baby When the baby is delivered, IMMEDIATELY **dry, warm, position, suction,** and **stimulate,** so the baby can breathe As you do these things, you are also **LOOKING** at the baby's breathing (respiration) Suction the baby ***if there*** is mucus or meconium in the airway

All of this time, you are LOOKING at the breathing, color, response, and tone of the baby If the color is pink or blue **and** the baby is breathing, you can continue with the APGAR scoring

If the baby needs resuscitation, the APGAR Score will tell you how your efforts are going Give the test by looking at the baby 1 minute after it is born and again at 5 minutes

LOOK, LISTEN and FEEL for

A - **A**ppearance or color of the baby
P - **P**ulse or heart beat of the baby
G - **G**rimace of face or response of baby when you touch the feet (reflex)
A - **A**ctivity or muscle tone of arms and legs
R - **R**espirations or breathing of the baby

The highest APGAR score for a healthy newborn is 10, the lowest is 0, in which case the baby is not alive Decide the baby's score by giving it 0 points, 1 point, or 2 points on each of the 5 parts of the test appearance, pulse, grimace, activity, and respirations The total number of points is the baby's APGAR score

A baby who has breathing problems or whose heart is not beating well needs help **right away** Any baby who scores less than 7 points five minutes after birth should be taken to the doctor/hospital if possible

APGAR Procedure - LOOK and FEEL

A - Appearance (color) Look at the color of the baby's skin

P - Pulse (heart rate) Listen to the baby's heart with a stethoscope if available, or feel the pulse with your fingers Count the number of beats in a minute

G - Grimace (reflex to stimulation) Rub back and forth on the soles of the baby's feet with one of your fingers Observe the reaction on the face Or, notice the baby's reaction when you suck the mucus from the mouth and throat

A - Activity (muscle tone) Watch the newborn move its arms and legs Or, gently pull an arm or a leg away from the body Note how the baby's arms and legs move in response to the stimulation

R - Respirations (breathing) Look at the newborn's chest and abdomen Watch the baby breathe

Total the **APGAR** score Record the score on the mother's labor chart

Normal Signs (Score of 7-10)
Abnormal Signs (Score of 0-6)

	2 Points	1 Point	0 Points
Appearance (color)	Completely pink body and face	Pink body, blue arms and legs	Pale or blue body and face
Pulse (heart rate)	More than 100 beats per minute, strong heart rate	100 beats per minute or less, weak heart beat	No heart beat
Grimace (reflex to stimulation)	Crying, coughing, or sneezing	Grimace or puckering of face	No response
Activity (muscle tone)	Active movement, waving arms and legs, flexion	Some movement, some flexion	Limp arms and legs, no flexion, no movement
Respirations (breathing)	Strong cry, regular breathing	Slow, irregular breathing, retracting of chest wall, grunting or weak cry	No breathing, no cry

Learning Aid 3 - Physical Examination of the Newborn.

The way a baby looks and sounds can tell you a lot about its health **LOOK, LISTEN, and FEEL** everything about the baby **Make sure to wear gloves** while doing the examination and care Prevent heat loss during the examination Explain to the mother and family everything you are doing

Breathing, heartbeat, and temperature can tell you how the baby is feeling The baby should breathe without difficulty The first hours after birth, the breathing may be fast, it should get slower as the baby becomes used to breathing A new baby should take between 40 and 60 breaths per minute while resting A new baby's temperature taken under the arm is usually between 36° and 37 2°C (97° and 99°F) The new baby's heart should beat between 120 and 160 beats in a minute

Weigh and measure the length, if you have the equipment A baby usually weighs between 2 5 and 4 kilograms (5 5 and 8 8 pounds) Measure the baby from the top of the head to the bottom of the feet Most babies measure between 45 and 53 cm (18 to 21 inches)

1 The head **LOOK and FEEL** the fontanelles, molding and any swelling

2 The spine **LOOK and FEEL** for swellings, depressions, or openings

3 The eyes **LOOK** for swelling and discharge

4 The nose and mouth **LOOK** at the lips and palate (top part or "roof" inside the mouth) **LOOK** for the sucking reflex when the baby is breast feeding **LOOK** for breathing from the nose

5 The hips, legs, and feet **LOOK and FEEL** the limbs to see that they move, are smooth (not broken), and that both limbs are the same length

6 The skin **LOOK** at the color, any lumps or birthmarks (stains)

7 Reflexes are the body's natural reactions to things **LOOK** for the Moro Reflex the arms and hands usually open wide if the baby is moved suddenly or hears a loud noise (like clapping hands)

8 The genitalia For a boy, **FEEL** both testicles in the scrotum and **LOOK** for normal appearance of the penis For a girl, **LOOK** for normal appearance

9 The anus and urethra **LOOK** to be sure there are openings To be sure they are functioning, ask the mother to tell you when there is a bowel movement or urine passed

10 The cord **LOOK** to make sure there is no oozing (leaking) of blood Retie the cord if you see fresh blood

EMERGENCIES A baby with any of these problems needs referral to a hospital

- irregular breathing continuing up to 12 hours after delivery
- blueness of lips (cyanosis) or pallor
- jaundice in the first 24 to 36 hours
- unusual cry OR extreme irritability OR sleeps all the time
- watery or dark green stools with mucus or with blood
- unusual actions such as eyes rolling, stiffness, convulsions
- poor feeding or sucking
- fever (hyperthermia)
- cold to touch or armpit temperature is less than 36°C (97° F) (hypothermia)
- eye discharge
- repeated vomiting or vomiting with swollen (distended) abdomen
- no stool by third day (imperforate anus)
- weakness, limp, or cannot seem to wake up (lethargy)
- a premature baby weight of less than 2000 grams (4 4 pounds)

Learning Aid 4 - General Care of the Newborn

For nine months the baby has lived in a warm, clean, and protected place where all needs, including nourishment, were met Now the baby must be kept warm, clean and protected by the mother and the family The baby must suck well to receive the needed nourishment The baby must be well and strong in order to do all of this Make sure to wear gloves when caring for a newborn

1 The **cord** should be kept as dry as possible It may be dabbed (swabbed) with spirits of alcohol or soap and water to help keep it clean It can be covered or left uncovered depending on the practice in your area **It is important that the cord is kept very clean** Teach the mother to tell you about any discharge or foul smell (odor) of the cord right away Teach the mother that normally the cord falls off in 5 to 10 days

2 Wipe the baby's **eyes** with clean cotton cloth, or gauze This prevents infection from germs which may cause blindness If it is your practice to use eye drops, put the solution or ointment into the corners of the eyes as soon as possible after delivery

3 The **skin** of the baby is normally pinkish or dusky pink in color At birth there may be a sticky cream called vernix over the skin Opinions vary about removing the vernix It may be removed very gently with a little oil on the second day It may be left to come off gradually during bathing

The skin should be kept clean It may be washed with clear, warm water and patted dry gently about 12 hours after birth The baby may be put into water after the cord is off and healed Make sure the baby does not get chilled

A slight yellowing of the skin is normal around the third or fourth day (physiological jaundice) It disappears within a week It should not be confused with the more serious form of jaundice, which starts on the first or second day and may be seen in the eyes, bottom of the feet, and the palms of the hands The baby with serious jaundice must be taken to a doctor right away Jaundice is often an early sign of sepsis or blood incompatibility

4 The first **stools** (bowel movements) the baby passes are blackish in color The color of the stools changes to yellow within 2 or 3 days

If the stools become watery, dark green, contain mucus or are explosive (gas), the baby is very sick and should go to the doctor right away Refer to Module 8 **Hydration and Rehydration**, for care while traveling to the doctor

5 Babies come in all sizes A baby **weighing** under 2 5 kg (5 5 pounds) should be treated as a small baby Premature and small babies need more care to keep them warm Give them enough breast milk Help mothers with premature and small babies to go to the doctor/hospital for this extra care

6 Give the **breast** to all babies as soon as possible after birth Let the mother hold the baby close to keep the baby warm This is a good time for the baby to learn to suck The baby may be very alert with a strong sucking reflex or may need to be helped to suck It is normal for a baby to lose a few ounces of weight in the first 4 to 6 days, this is usually regained gradually

Breast feeding right away after delivery helps the uterus contract Sucking stimulates the production of oxytocin, which helps to deliver the placenta and prevent too much bleeding Suckling immediately after delivery makes a mother love and care for her baby (bonding) The baby is more likely to breast feed for a long time If there is a delay of even a few hours breast feeding is more likely to fail

In the first few days, the mother's breasts secrete *colostrum*, a thick, colorless fluid As the baby sucks, it receives protection from infection Babies who drink mother's colostrum have fewer infections during the first 6 months of life Colostrum is rich in protein and antibodies from the mother It protects the baby from infection It is important that the baby take this rich, protective fluid Teach the mother and family about the importance of the colostrum to help protect the baby and make the meconium (first stools) come out of the baby

The baby should feed whenever it wants to from birth The baby should feed for as long as it wants Let the mother pick up her baby and feed it whenever it cries and she feels a need to feed This is called feeding on demand This frequent sucking stimulates the production of prolactin, which helps the milk come in sooner Demand feeding prevents many problems, such as breast engorgement Encourage mothers to give both breasts at each feed, changing which breast is used first

BREAST FEEDING HAS THESE ADVANTAGES

- Helps stimulate milk production
- Makes the uterus contract and reduces bleeding
- Protects the baby from infection, ESPECIALLY COLOSTRUM
- Is a good way for the mother and baby to begin to know each other
- Comforts the baby
- Helps the mother relax and feel good about her new baby
- Can prevent pregnancy in the first 6 months postpartum when all the conditions of Lactational Amenorrhea Method (LAM) are followed [4]

[4] Beck et al (1996) Topic 6 - Postpartum

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in this module on the pages listed in parentheses ( )

1 Describe immediate care of the baby at birth (pages 6 3 - 6 4)

2 List and describe the steps (ABCS) of resuscitation (page 6 6)

3 Describe the action you will take at delivery for the baby who has meconium in the amniotic fluid (page 6 13)

4 What actions will you take for a newly delivered baby with these findings Breathing - absent, Heart Rate - 80 to 100 beats in a minute? (page 6 9)

5 What actions will you take for a newly delivered baby with these findings Breathing - absent, Heart Rate - absent? (page 6 11)

6 List emergencies in the newborn that the midwife must refer to the doctor (page 6 18)

Case Study 1 - Problem Solving Method

The Problem Solving Method is an organized way of giving care to women The Problem Solving Method is a way of thinking about the care you give women This case study helps you review and learn to modify the Problem Solving Method in the case of infant resuscitation

The four steps of the Problem Solving Method are

1

2

3

4

Check your answers by looking in Module 1, page 1 22

The purpose of infant resuscitation is to help keep the newly delivered baby's nose and mouth clear, lungs breathing, and the heart beating so that the blood can carry oxygen all around the baby's body **This is a life-saving skill**

Resuscitation must be started as soon as the midwife identifies the need If the baby is not breathing by the time it takes to clear the fluids from the mouth and nose, or if the baby is born limp and not breathing, the problem must be identified The baby is not going to live unless the midwife does something **right away** Remember, careful monitoring of the fetal heart rate during labor can alert the midwife to the possibility that the baby will need resuscitation

ASK and LISTEN

You just delivered Mrs I R of a baby girl She had a latent phase of 7 hours, an active phase of 10 hours, and an episiotomy

In this case, you will modify the Problem Solving Method You gather the **ASK and LISTEN** (history taking) information during the labor and delivery This is why it is so very important to always get information as soon as you see the mother In case of an emergency, you do not have to go back and ask questions

You know that Mrs I R is a primipara with a long labor She needed an episiotomy to deliver her baby You also know that meconium was passed before delivery, indicating that the baby was having some trouble with the long labor process The fetal heart tones were strong and steady during the labor

LOOK and FEEL

What did you do as soon as the baby's head was delivered? Immediately after delivery? What did you **LOOK and FEEL**?

Refer to Module 6, pages 6 3 - 6 4

You clear the airway with a mucus trap or suction bulb as soon as the head is born but before the shoulders are out, when the body is born, you dry, warm, position, suction, and stimulate the baby You then **LOOK** and see that the breathing is irregular, she is grunting and there is no cry You **FEEL** the heart beat which has a rate of 120 beats in a minute You **LOOK** at the color of the baby and see that it is blue

IDENTIFY THE PROBLEM

What is the problem with the baby?

See Module 6, pages 6 8 and 6 14

You decide that the baby is having trouble breathing (irregular, grunting, and there is no cry), but that she has a good heart rate of 120, with blue color

TAKE APPROPRIATE ACTION

What action do you take?

See Module 6, pages 6 8 and 6 14

You continue to stimulate the baby and keep it warm You give oxygen at 10 liters in a minute if available, and regularly check the heart rate and breathing to make sure they stay good until she is pink and crying You remember that you must never slap hard on the feet or back, put hot or cold water on the baby, roughly rub or bend it

You feel relieved that the baby is breathing on its own You think about what you would have done if she did not breathe after delivery

TAKE APPROPRIATE ACTION

If the baby had not been breathing, what action would you have taken?

See Module 6, pages 6 9 and 6 14

You must start breathing (respiratory) resuscitation! Continue to keep the baby warm Continue position to keep the airway open Place a small towel or cloth under the baby's shoulders so that the head is slightly extended in the "sniffing" position This is the best position to keep the airway open (See Figure 2) Continue to stimulate as needed Give oxygen if available Start breathing for the baby

A while later, you do a physical examination on the baby

What problems might you find that would cause you to refer this baby to the hospital?

See Module 6, pages 6 17 - 6 18

Case Study 2 - What Is the Problem?

Read the **ASK and LISTEN** and **LOOK and FEEL**, in the following case studies Then decide what you think the **PROBLEM** is and what **ACTION** needs to be taken to help the woman Remember that action may include treatment, education, counseling, more laboratory tests, referral, and follow up

It is also important to think about prevention, so you will find a question asking how you think this problem could have been prevented Sometimes it is very difficult to decide before a problem occurs, that it might be about to happen Other times it is very easy to say that a certain action can prevent a problem Sometimes a problem can not be prevented

When you finish, look on the next page for suggested answers

ASK and LISTEN

The mother arrived at your maternity and delivered a baby boy as soon as she reached the labor unit The placenta immediately followed the baby and mother was not bleeding

LOOK and FEEL

The baby was pale He was breathing and his heart rate was 120

What is the **PROBLEM**?

What is the **ACTION**?

Was this **PROBLEM** preventable? If so, how?

ANSWERS - Case Study 2

What is the **PROBLEM**?

There really is no problem, a normal newborn is usually a little blue or pale, is breathing and has a heart rate above 100

What is the **ACTION**?

When the head is visible, wipe the mouth and nose

As soon as the baby is delivered, dry and warm the baby by wrapping him in a cloth or towel

Lay him in a position so that the airway is open, gently rub his back through the cloth to stimulate him, if necessary If there is mucus in the mouth or nose, suction with a bulb syringe

Keep him warm until he is pink and crying

Check his breathing and heart rate to make sure they stay good

Was this **PROBLEM** preventable? If so, how?

There was really no problem, however, the mother could be encouraged to come earlier the next time she is in labor

Case Study 3 - What Is the Problem?

Read the **ASK and LISTEN** and **LOOK and FEEL**, in the following case studies Then decide what you think is the **PROBLEM** and what **ACTION** needs to be taken to help the woman Remember that action may include treatment, education, counseling, more laboratory tests, referral, and follow up

It is also important to think about prevention, so you will find a question asking how you think this problem could have been prevented Sometimes it is very difficult to decide before a problem occurs, that it might be about to happen Other times it is very easy to say that a certain action can prevent a problem Sometimes a problem can not be prevented

When you finish, look on the next page for suggested answers

ASK and LISTEN

A baby girl is born at your clinic after a second stage of 60 minutes The umbilical cord was short

LOOK and FEEL

You immediately see that her skin color is pale She is not breathing You can **FEEL** a strong heart beat (over 100)

What is the **PROBLEM**?

What is the **ACTION?**

Was this **PROBLEM** preventable? If so, how?

ANSWERS - Case Study 3

What is the **PROBLEM**?

The baby is not breathing

What is the **ACTION**?

As soon as you see the baby's head, you wipe the mouth and nose When the baby is delivered, you immediately dry and wrap the baby in a warm cloth When you see the baby is not breathing, you rub the back to stimulate and at the same time position her to keep her airway open You suction her with the bulb syringe

If the baby does not begin to breathe, you stimulate again, give oxygen if it is available, for breathing and count the heart rate, breathe one time for the baby and **LOOK** to see if the chest did rise

If the baby does not begin to breathe, you reposition and suction her again Then you breathe 5 times (short, fast, and gentle), and **LOOK** for breathing

If the baby begins to breathe, keep her warm, continue oxygen, **LOOK** for breathing and count the heart rate to make sure the breathing and heart rate stay good

Was this **PROBLEM** preventable? If so, how?

It is very difficult to say how this problem could have been prevented Sometimes, the fetal heart rate shows no problems and there is no sign of meconium being passed There was no way to know that the umbilical cord would be short and that second stage was going to be 60 minutes

Since she knew second stage seemed to be taking a little longer, the midwife could make sure she is prepared for resuscitation

Skills Checklist - Infant Resuscitation

This checklist has two purposes

1 The midwife uses it for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory OR ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
When caring for a baby at birth				
1 Have equipment ready for infant resuscitation				
2 Find an assistant to help you				
3 DRY As soon as the head is delivered, wipe fluids from baby's mouth and nose using fingers or cloth or gauze				
• Dry with cloth from head to toe				
4 WARM Remove the first wet cloth				
• Cover with another dry cloth or place baby skin to skin with the mother Cover both to prevent heat loss				
5 POSITION With head slightly lower than body to drain fluids from air passage,				
• Hold or lay baby on mother or bed,				
• With head slightly extended (sniffing position) to keep the air passage open				
6 SUCTION Clean the mouth, throat, and nose with finger/cloth/gauze, use suction bulb if available				
• Before delivery of body				
• After delivery				
• Use suction correctly				
7 STIMULATE **Gently** rub the back with your hand while you are drying the baby				
8 After you **dry, warm, position, suction and stimulate** the baby **LOOK, FEEL, AND LISTEN**				
• Breathing				
• Heart rate				

	Date	Date	Date	Date
9 **FINDINGS I** skin color blue, breathing present, heart rate above 100				
ACTIONS I RESUSCITATION				
• Continue stimulation				
• Give oxygen, if available				
• Check breathing and heart rate				
• When skin color is pink, put baby to breast				
10 **FINDINGS II** skin color blue or pale, breathing absent, heart rate below 100				
ACTIONS II BREATHING RESUSCITATION				
• Keep the airway open (sniffing position)				
• Give oxygen, if available				
• Place gauze over mouth if available and start breathing for the baby				
- Place your mouth over baby's mouth and nose				
- Breathe 1 time, using air **only** from your mouth and watch to see chest rise				
- If the chest does not rise, reposition, suction again, and try another breath, then recheck breathing				
• When the chest rises, **LOOK** to see if baby is trying to breathe on its own				
• If the baby **is breathing** continue to warm, stimulate and give oxygen until the baby is pink and crying				
• If the baby **is not breathing**				
- Breathe 5 times (short, fast and gentle) for the baby				
- **LOOK** for breathing (respirations)				
- **FEEL/LISTEN** for heart beat				

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	Date	Date	Date	Date
- Continue until baby breathes and heart beats more than 100 times in a minute				
- Continue until baby is pink and crying OR strong enough to REFER				
11 **FINDINGS III** breathing absent, heart rate absent or below 80 beats in a minute				
ACTIONS III FULL CARDIOPULMONARY RESUSCITATION				
• Keep the airway open (sniffing position)				
• Give oxygen, if available				
• Place gauze over baby's mouth if available and start breathing for the baby				
- Place your mouth over baby's mouth and nose				
- Breathe 1 time, using air **only** from your mouth and watch to see chest rise				
- If chest does not rise, reposition, suction again, and try another breath **LOOK** to see the chest rise				
• When the chest rises				
- Place your index and middle fingers over the heart (center of the chest, just below the nipple line)				
- Push the chest down 1 5 cm (½ to ¾ inch) counting 1 and 2 and 3 and 4 and 5 and				
- Breathe on the 6th count **Do not lift your fingers off the baby's chest while you breathe**				
- Complete the **CPR CYCLE** of 5 beats and 1 breath, 5 times, then recheck baby's breathing and heart rate				
• If there is still **no heart beat or breathing**, continue full CPR for at least 15 to 30 minutes or until the baby has a heart rate above 80 or is breathing				

	Date	Date	Date	Date
• If there is a **heart beat above 80**				
- Stop doing heart compressions				
- Continue breathing until baby is breathing on its own				
- Continue to warm, give oxygen, stimulate until baby is pink				
• REFER				
12 Do APGAR scoring at 1 and 5 minutes				
• **A**ppearance - LOOK				
• **P**ulse - FEEL & LISTEN				
• **G**rimace - FEEL & LOOK				
• **A**ctivity - LOOK & FEEL				
• **R**espirations - LOOK				
• TOTAL THE SCORE AND RECORD				
13 Care for the cord				
14 LOOK at condition of the baby				
• Keep warm				
- Have the baby sleep with mother				
- Cover baby with a dry cloth				
• Air passages clear				
- Wipe any fluids				
- Place baby on side to sleep				
• Nutrition - colostrum through sucking or expression				

Comments

ADULT RESUSCITATION

Goal

The midwife will learn the signs and symptoms of an adult having trouble living She will learn life-saving skills to help the person live

Objectives

The midwife caring for the person will be able to

1 describe and demonstrate the actions she will take to help a person who is not breathing but does have a heart beat

2 list the signs and symptoms of a person who has no heart beat and is not breathing

3 demonstrate the appropriate actions to save the life of a person who has no heart beat and is not breathing

Introduction

Resuscitation is a very important life-saving skill The midwife may need to use resuscitation skills for a woman with hemorrhage, sepsis, reaction to medication or a convulsion (The management of these conditions is discussed in other modules) Resuscitation is necessary when a person is unable to breathe and/or her heart is not beating The skills can be used to help any adult with these life threatening problems You may find a person in need of resuscitation in the market, on the street, or in your maternity or clinic

In this section, you will learn the skill of adult resuscitation Review questions and case studies will help you learn and use the information Skills checklists will guide you while you actually practice the skills There are also learning aids with additional information, some of which you already know and some that you may need to review or learn

A Midwife's Experience ..

One morning very early I was called from my bed A customs worker who works the night shift felt dizzy and fell to the ground She was rushed into my consultation room with no breathing and no pulse When I realized she was not breathing, I pulled her on the sheet onto the floor The room was crowded with people who came to see what had happened They were at the windows too I told them all to move back as the woman needed air to breathe I did CPR She revived She started thrashing around I had her friends organize transport I went with her She had a convulsion on the way to the hospital and died I was happy that I had the skill to try to save this woman, even though she did not live Her friends were very happy with me too (that I tried)

LSS Midwife, Ghana

Common Medical Terms

Choking - a blockage of the breathing passage or the feeling of tightening about the neck The blockage prevents breathing and keeps oxygen from getting to the brain and other vital organs Blockage of the airway may also be caused by spasm of the larynx from an irritating gas or a foreign object like a bone or piece of food

Emergency - a time when action must be taken right away to save a person's life, for instance, if a person is not breathing, you must help the person breathe right away so that she will not die

Heart Attack - when the heart muscle needs more blood (oxygen) than it is getting It usually is caused by severe narrowing or complete blockage of the coronary artery, which causes the muscle of the heart to die from lack of oxygen The usual signal or symptom of a heart attack is a pressure or pain in the chest that lasts for 2 or more minutes The pressure or pain does not get better when the person stops to rest Another term for heart attack is myocardial infarction

Larynx - the large upper end of trachea below the back of the tongue It is the organ of voice

Resuscitation - helping to live, helping to get air (oxygen) into the person by breathing into the person (respiratory resuscitation) and moving the heart (cardiac resuscitation) until the person breathes on her own and until the heart beats regularly

Trachea - the windpipe or tube which connects the larynx and the two bronchial tubes of the lungs

Xiphoid Process - the lowest part of the sternum, made up of cartilage Some abdominal muscles are attached to it

Reasons an Adult May Need Resuscitation

Not Breathing There are many reasons **why an adult might not be able to breathe**, including

1 Blockage of the airway If the airway is completely blocked, air (oxygen) can not get into the lungs and into the blood A couple of minutes after the lungs stop, the heart will stop

2 Injury to the brain Injury from an accident (car accident, falling, and so on), overdose of street drugs and other drugs, stroke, or severe shock can depress the respiratory center in the brain and it stops working

3 Injury to the chest Injury from accidents can cause serious injury to the lungs and ribs The lungs may collapse (pneumothorax)

4 Drugs Some types of drugs can depress the respiratory center in the brain and stop breathing Many of the drugs used for psychiatric patients as well as narcotics have this side effect

5 Electrocution, drowning or suffocation Electrocution can paralyze the breathing muscles Drowning or suffocation will block oxygen from coming into the lungs

6 Cardiac arrest (heart attack, myocardial infarction)

Heart Does Not Beat There are also many reasons **why the heart might not beat** and therefore there is no circulation of blood throughout the body, including

1 Cardiac arrest (heart attack, myocardial infarction)

2 Severe shock due to a large hemorrhage

3 Injury to the heart

4 Drugs which have the side effect of decreasing contractions of the heart

5 Respiratory arrest Breathing stops for any of the reasons listed in the section above The heart will stop after a couple of minutes The heart muscle slowly dies from lack of oxygen

SKILL. Adult Resuscitation

An adult who is unable to breathe or keep her heart beating is in an emergency situation If she does not receive help quickly, she will die **In 4 minutes, she will start to get brain damage In 10 minutes, she will die** A skilled midwife remembers the life-saving steps (ABCS) for helping a person who is having trouble living

Airway - make sure the airway is open
Breathing - make sure the person is breathing
Cardiac Function - make sure the heart is beating
Shock - make sure the person is kept warm

Equipment

You are all that is needed!

Procedure

AIRWAY - make sure the airway is open

1 Speak to the person **ASK,** "Are you all right?" This way you can be certain she is not just sleeping If there is anyone else around, call for help

2 Roll her onto her back on a hard surface (floor) If the person is on a mattress or other soft object, the compressions of the heart will not be effective If the person is an accident victim and may have damage to her spine, neck, or head, it is important that you roll her over as a unit (so her whole body rolls at the same time) Ask for help from anyone who may be close by

3 Look into her mouth to make sure the airway is open

4 With your fingers clear the nose and mouth of anything you can see or feel

5 Move the head into a position that will prevent the tongue from falling into the throat and cutting off the air (oxygen) supply to the lungs Do this by placing one hand on the person's forehead and pressing firmly backward With your other hand, press the fingers under the jaw near the chin, lift the chin forward until the teeth are almost closed This position will keep the tongue out of the throat (See Figure 5) **Remember that until the airway is clear of debris, no resuscitation efforts will be successful** If the person has loose dentures (false teeth), remove them

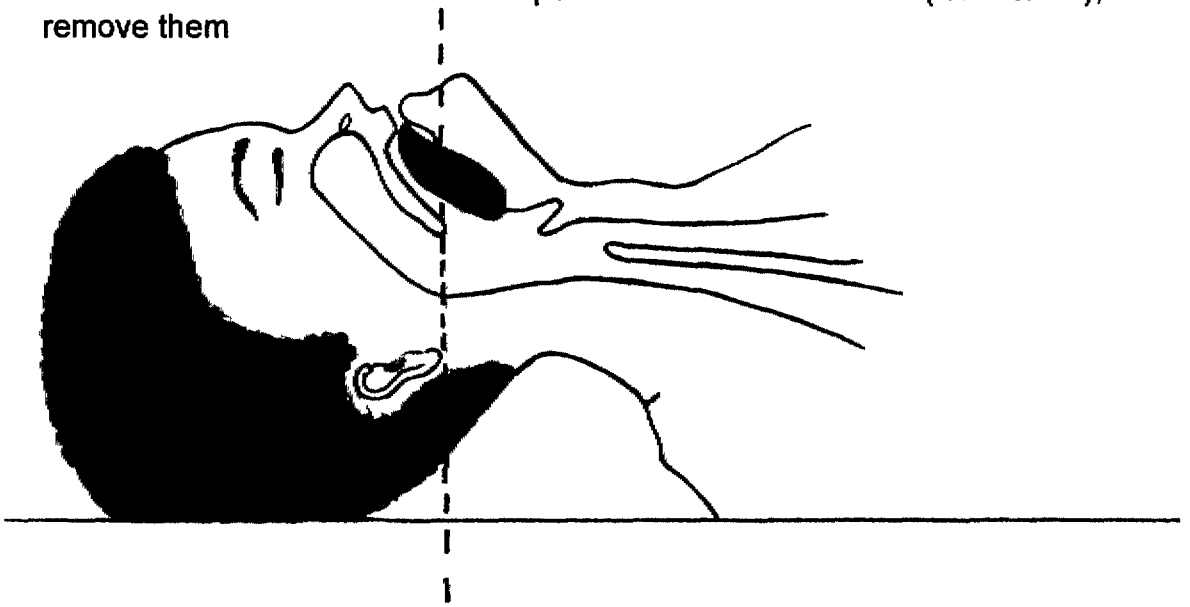

Figure 5 Proper Position of the Head to Open the Airway

BREATHING - make sure the person is breathing

6 Look at the person's chest Now that the head is in a position where the tongue is not blocking the airway, the person may begin to breathe on her own

REMEMBER
THE MOST COMMON CAUSE OF AN OBSTRUCTED AIRWAY IS THE PERSON'S OWN TONGUE YOU MAY HAVE TO REPOSITION THE HEAD SEVERAL TIMES TO CLEAR THE AIRWAY

7 If she is not breathing, quickly kneel at her side Wipe off her mouth and face Place a tube, mask, gauze, or cloth over the person's mouth before breathing into her This will decrease your risk of getting AIDS, hepatitis, tuberculosis, and so forth (For more information, see Learning Aid 6 - Breathing Aids, page 6 44) Pinch her nose closed with your fingers and breathe into her mouth Does the air enter her chest easily? (See Figure 6)

Figure 6 Position for Mouth to Mouth Resuscitation

8 Does the air enter her chest easily? If the *chest does not rise, air is most likely not entering the chest* You still have an obstructed airway

LOOK into the mouth again With your fingers, clear the nose and mouth of anything you can see or feel Adjust the position of her head and try again

Does the air enter her chest easily? If not, try the Heimlich maneuver to remove any object that might be blocking her throat See **Heimlich Maneuver**, page 6 52, to learn the correct steps for this procedure Try to breathe into the person again You should see the chest rise with each breath you blow

CARDIAC FUNCTION - make certain the heart is beating

9 After giving 2 quick breaths, check to see if the heart is beating *Feel* for the person's pulse (heart beat) on her neck at the *carotid pulse* This is the easiest pulse to feel It can still be felt when the person is in shock, and the peripheral (arm and leg) pulses can no longer be felt

FEEL for the carotid pulse On the person's throat, locate her thyroid (Adam's apple) Slide your fingers toward you off the thyroid into the groove on the side between it and the neck muscles You should feel the carotid pulse there

10 **If the person has a pulse, *do not* do cardiac (chest) compressions** You can seriously damage a heart that is already beating by doing cardiac compressions

11 If the person *has a pulse* (heart beat), but is *not breathing*, **do only respiratory resuscitation** Breathe into the person's mouth approximately 12 times per minute (once every 5 seconds)

12 If the person does not have a pulse, *and is not breathing*, you will **need to both breathe for her and help her heart to contract (beat)** You need to perform cardiopulmonary (breathing and compressions) resuscitation

13 Feel on the person's chest for the bottom of her rib cage Slide your fingers along the lower rib cage to the notch in the center (bottom of the sternum, the *xiphoid process*) Place the palm (heel) of your hand above the bottom of the rib cage Good placement of the hands is important to give effective compressions of the chest and to avoid damage to internal organs

The heel of the hand is on the lower half of the sternum Place your other hand on top (either made into a fist or with fingers stretched over your bottom hand) Keep your arms straight and your elbows locked

Press straight down over your hands If the arms are not straight and the thrusting is done at an angle, the compressions of the heart will not be effective and you will tire easily Do not rock as you perform compressions (See Figure 7)

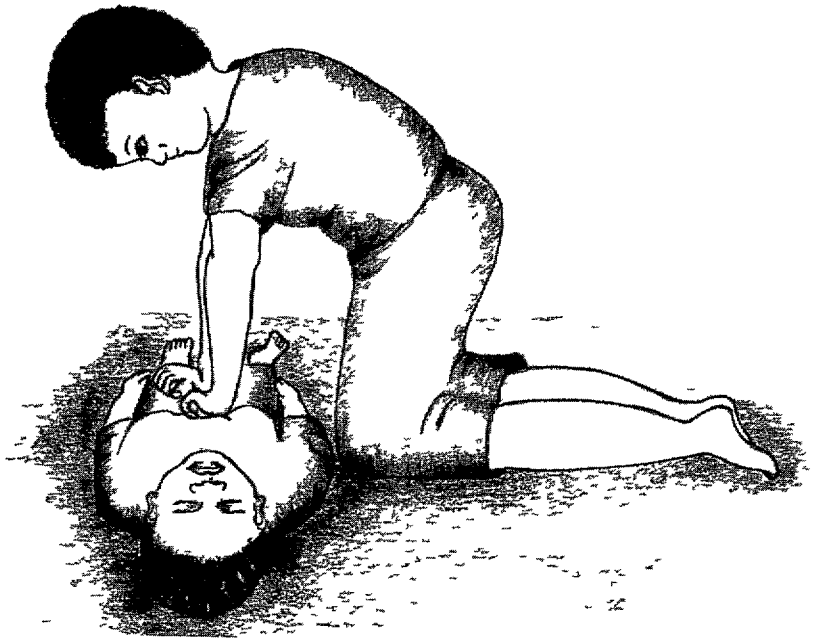

Figure 7 Position to do Chest Compressions, with One Hand Placed on Top of the Other

14 As you lean forward, press the chest 4 - 5 cm (1½ to 2 inches) The time to press down and release should be equal Set a rhythm Do not stop (pause) between compressions

Do not lift your hands up off the chest This will make you lose time and you may change the position of your hands and cause damage to the internal organs Your movements should be smooth and continuous Jerky movements or bouncing on the chest wall will cause damage and will not give effective compression of the heart

Compress the heart at 80 to 100 beats per minute Count one and 2 and 3 and 4 and 5 up to 15 This helps to give you the proper rhythm and pace

15 After 15 heart compressions, stop and give the person 2 breaths Remember to pinch the nose and keep the head in its slightly tipped back position so that the tongue does not block the airway (See Figure 7)

16 After the 2 breaths, locate the proper hand position on the chest and give 15 more compressions Keep repeating the pattern of 15 compressions followed by 2 breaths You should be able to do 4 or 5 complete cycles in one minute

17 After a minute or so, stop and recheck the person's carotid pulse If she has a heart beat, look to see if she is breathing on her own

If there is **no heart beat and no breathing**, continue with the cycle of **15 compressions and 2 breaths**

If there **is a heart beat but no breathing**, continue with the **breathing at the rate of about 12 times per minute**

REMEMBER YOU CAN CAUSE SERIOUS DAMAGE TO THE HEART, IF YOU DO COMPRESSIONS ON A HEART THAT IS BEATING ON ITS OWN

18 It takes a lot of energy to do cardiopulmonary (breathing and compressions) resuscitation You will soon become tired If anyone around you is trained in the procedure, get them to help relieve you Get someone around you to organize transportation After you have successfully resuscitated the person, you will need to travel with her to the hospital for further care

19 Continue to resuscitate the person until you are successful or so exhausted that you can not do it anymore You might be able to perform resuscitation in the back of a truck on the way to the hospital or in an ambulance You will need to do it on a hard surface If the person is on a mattress or other soft object, the compressions of the heart will not be effective

20 The person is in **SHOCK** Make certain she is kept warm Wrap her in a blanket or dry cloths, while resuscitating her This is especially important if she is wet or cold

Learning Aid 5 - CPR Reference Table [5]

This table summarizes resuscitation for the adult and for the newborn/infant Look at the differences

CPR REFERENCE TABLE	Adult	Infant/Newborn
Rescue breathing victim has a pulse - Give 1 breath every	5-6 seconds	3 seconds
No pulse locate compression landmark	Trace ribs into notch, one finger on sternum	One finger width below nipple line
Perform compressions with	2 hands, one on top of the other, heel of one hand on lower half of sternum	2 or 3 fingers on sternum
Rate of compressions per minute	80 - 100	at least 100
Compression depth	4-5 cm (1½ to 2 inches)	1 5 cm (½ to ¾ inch)
Ratio of compressions to breaths with one rescuer	15 compressions to 2 breaths	5 compressions to 1 breath

[5] Adapted from Effron (1992)

Learning Aid 6 - Breathing Aids [6]

Breathing aids are mentioned to overcome objections to direct mouth to mouth contact The midwife can not depend completely upon these aids, however, for someone may need resuscitation and the breathing aid may not be available

1 Using the mouth to oxygen mask (or anesthesia mask) for mouth to airway breathing

   a Tilt the head slightly backwards (sniffing position)
   b Cover the mouth and nose with the correct size mask
   c Prevent air leakage, press firmly against sides of face piece to make a seal
   d Place your mouth on the opening where the hose fits
   e Follow all of the other steps for mouth to mouth resuscitation

2 Using a bag and mask

   The face piece is fitted to a self-inflating bag, with a special valve that allows the bag to refill Without removing the face piece, the person can breathe out A common problem is that the person holding the face piece fails to hold it firmly enough against the person's face, so there is **not a tight seal** Make sure the face piece is **the correct size**

   a Hold the face piece firmly over the person's face with one hand
      - Press your thumb over the rim of the mask
      - Place your index finger over the chin part
      - Use your third, fourth, and fifth fingers to firmly pull the chin upward and backward **Never push the mask down on the person's chin, as this may bend the neck and block the air passage**

   b While holding the mask with one hand (as described above), squeeze the bag with the other hand about once every 5 seconds
      - Squeeze until the chest rises
      - Release to allow breathing out (exhalation) When the bag is released, the air inlet at the bottom of the bag opens to allow it to refill with air The valve at the mask prevents breathing back into the bag
      - Release the bag quickly to allow the valves to work

   c If you hear leakage, hold the mask more tightly and squeeze the bag again

   d Watch for signs of vomiting Vomitus could be forced into the air passage, causing aspiration of the fluids or blockage

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[6] See mouth to mouth resuscitation for baby on page 6 9 and for adult on page 6 37

3 Using the S-tube

This mouth to airway unit prevents direct mouth to mouth contact It can be used **IF** the midwife has been trained in the use of the S-tube, **IF** the S-tube is the correct size, and **IF** the S-tube is available It is more difficult to use than a mask

a Tilt the head backwards (sniffing position)
b Insert the airway as described in mouth to pharynx airway, below
c Pinch the person's nose closed and press the flange firmly over the mouth to prevent air leakage
d Hold the chin up so that the front of the neck is stretched This keeps the air passage straight
e Follow all of the other steps for mouth to mouth resuscitation

4 Using the mouth to pharynx airway (oropharyngeal airway) for mouth to airway breathing This is more difficult to use than mouth to S-tube

a Use one hand, with the thumb and index finger crossed, to open the mouth
b Use the other hand to insert the airway Start with the curve backward
c As you insert it deeper, turn the airway to the proper position (over the tongue) This twisting movement prevents the tongue from being pushed back into the throat If you have trouble with the tongue, hold it forward with your index finger
d Pinch the person's nose closed and hold the jaw firmly to prevent air leakage
e Continue as with mouth to mouth resuscitation

When a breathing aid is used, the AIRWAY MUST BE OPEN, and

A TIGHT SEAL must be formed around the airway or face piece

Review Questions

What Did I Learn? Find out what you know and understand of this section by answering the following questions When you are finished, look for the answers in the module on the pages indicated in parentheses ( )

1 What are the ABCS of resuscitation? (page 6 37)

2 How do you check the carotid pulse? (page 6 40)

3 Why do you place the person on a hard surface before starting the resuscitation? (page 6 37)

4 What are the steps you will take if the person does not have a pulse? (pages 6 40 - 6 42)

5 What is the proper hand position for chest compressions? (page 6 41)

6 Why must you never do chest compressions on a person who has a pulse? (page 6 40)

Skills Checklist - Adult Resuscitation

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills

2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing write a rating ✓ = satisfactory OR ✗ = needs improvement

Add any other comments in the comments section below

	Date	Date	Date	Date
Airway - make sure the airway is open				
1 Speak to the person				
• **ASK** "Are you all right?"				
• Call for help				
2 Speak to the person				
• **ASK** " Are you all right?" Roll her onto her back				
• Roll her over as a unit so her whole body rolls at the same time				
• Ask for help from anyone who may be close by				
3 Speak to the person				
• **ASK** "Are you all right?" Look into her mouth to make sure the airway is open				
4 Clear the nose and mouth with your fingers of anything you can see or feel				
5 Move the head into a position that will prevent the tongue from falling into the throat				
• Place one hand on the person's forehead and press firmly backward				
• With your other hand, press the fingers under the jaw near the chin, lift the chin forward until the teeth are almost closed				
• If the person has loose false teeth, remove them				

		Date	Date	Date	Date
Breathing - make sure the person is breathing					
6	Look at the person's chest Now that the head is in a position where the tongue is not blocking the airway, the person may begin to breathe on her own				
7	If she is not breathing, quickly kneel at her side				
	• Pinch her nose closed with your fingers and breathe into her mouth				
	• If air does not enter, adjust the position of her head and try again				
	• Does the air enter her chest easily?				
	• If not, do the Heimlich maneuver				
	• Then clear the mouth and nose again, reposition the head, and breathe again				
	• Try to breathe into the person again				
	• Take a breath after each breath you blow into the person				
Cardiac Function - make sure the heart is beating					
8	After giving 2 quick breaths, check to see if the heart is beating Feel for the person's pulse (heartbeat) on her neck at the carotid pulse				
9	**If the person has a pulse, do not do cardiac compressions**				
10	If the person has a pulse, but is **not breathing**, do only respiratory resuscitation Breathe into the person's mouth approximately 12 times per minute (once every 5 seconds)				
11	If the person does not have a pulse, breathe for her **and** help her heart to contract				
12	Feel on the person's chest for the bottom of her rib cage (bottom of the sternum or xiphoid process)				
	• Place the palm (heel) of your hand above the bottom of the rib cage				

	Date	Date	Date	Date
• The heel of your hand is on the lower half of the sternum				
• Place your other hand (either made into a fist or with fingers stretched) on top of your bottom hand				
• Keep your arms straight with your elbows locked				
• Press straight down over your hands				
13 As you lean forward, press the chest 4-5 cm (1½ to 2 inches)				
• Press down and release for equal time (set a rhythm)				
• Do not stop (pause) between compressions				
• Do not lift your hands up off the chest				
• Compress the heart at 80 to 100 beats per minute				
• Count one and 2 and 3 and 4 and 5, up to 15				
14 After 15 compressions, stop and give the person 2 breaths				
• Pinch the nose and keep the head in its slightly tipped back position				
15 After the 2 breaths, locate the proper hand position on the chest and give 15 more compressions				
• Keep repeating the pattern of 15 compressions followed by 2 breaths				
• Do 4 or 5 complete cycles in one minute				
16 After a minute or so, stop and recheck the person's carotid pulse				
• If she has a heart beat, look to see if she is breathing on her own				
• **If there is no heart beat and no breathing, continue with the cycle of 15 compressions and 2 breaths**				

	Date	Date	Date	Date
• **If there is a heart beat but no breathing, continue with the breathing at the rate of about 12 times per minute**				
17 Get someone around you to help relieve you				
• Get someone around you to organize transportation				
• Travel with her to the hospital for further care				
18 **Shock - make certain the person is kept warm**				
• Wrap her in a blanket or dry cloths while resuscitating her				

Comments

PREVENTION OF DEATH BY CHOKING (HEIMLICH MANEUVER)

Goal

The midwife will learn the signs and symptoms of choking in an adult, child, or infant, and how to save the life of a person who is choking by using the Heimlich maneuver

Objectives

The midwife caring for a choking person will be able to

1 list the signs and symptoms of a person who is choking

2 describe and demonstrate the appropriate actions to take to help a person who is choking

Introduction

Most commonly, adults choke on bites of food It may be that they inhale or laugh while eating A piece of food gets sucked into the airway Children may choke on food in the same way They often choke on nuts, fish bones, fruit pits, pieces of toys, or small objects found around the home Infants may choke on milk when sucking from a bottle They often choke when taking a bottle while lying on their backs unattended

If a foreign body is blocking the airway (trachea or larynx), the Heimlich maneuver can be used to remove it This action can be used on an adult, child, or infant It can be used on a person who is unconscious or one who is still conscious

If you are with the person when she chokes, you will notice her grab her throat **The person is unable to speak She may become agitated and move her arms wildly The face may become purple The person gradually loses consciousness and is at risk of dying from lack of oxygen to the brain**

Common Medical Terms

Choking - a blockage of the breathing passage or a feeling of tightening about the neck Choking stops breathing and keeps oxygen from getting to the brain and other vital organs Blockage of the airway may also be caused by spasm of the larynx from an irritating gas

Heimlich Maneuver - an action used on a choking person to prevent death The object caught in the throat is pressed up into the mouth by pressing on the abdomen below the xiphoid process

Larynx - the enlarged upper end of the trachea below the back of the tongue It is the voice organ

Trachea - the windpipe or tube which connects the larynx and the two bronchial tubes of the lungs

Xiphoid Process - the lowest part of the sternum, made of cartilage Some abdominal muscles are attached to it

Equipment

Your own two hands are all that is needed!

Procedure

ASK and LISTEN

Ask the person if she can speak If she shakes her head to indicate **no**, or makes crowing sounds when she tries to breathe, or grasps her throat, she may be choking

If the person is coughing or making crowing sounds when she breathes, the airway may be only partially obstructed (blocked)

If the person is unconscious, do not waste time trying to speak to her

LOOK and FEEL

If the person is unconscious, open her mouth and look in **FEEL** the mouth with your fingers to remove anything in the mouth

If you were not with the person when she became unconscious, also check the pulse You may need to prepare to perform complete cardiopulmonary resuscitation See the section on **Adult Resuscitation**, page 6 34, for a complete review of how to do this

IDENTIFY the PROBLEM

It is important that you react quickly Do not waste time checking with family and neighbors to obtain a complete history Save the person's life Later you can find out what caused the choking

TAKE APPROPRIATE ACTION

Conscious Person Choking

1 If the person is conscious, encourage her to cough out the object by herself If a partial obstruction occurs from a fish bone or other small object, have the person swallow or eat some food If this does not dislodge the object, refer her to hospital/doctor for removal

2 If the person is conscious but unable to speak, stand behind her where she is sitting or standing Keep telling the person that you are there to help her This will help control her feelings of panic

3 Place your arms around the person, holding your hands together on her upper abdomen just below the xiphoid process and above her navel (umbilicus)

Figure 8 Make a Fist

4 Make a fist with your hand against the abdomen

5 Grab your fist with your other hand

6 Press your fist into the choking person's abdomen with a quick inward and upward thrust **Note the thrusting action is made with your hands**, not your arms pressing against the person's ribs There is little chance of damaging the person's ribs or internal organs, if your hands are placed properly

7 Continue to make the quick thrusting movements with your fist until you have loosened the object from the throat

8 If the person loses consciousness, help her to the floor or ground and lie her on her back

Unconscious Person Choking

1 Open the person's mouth and see if you can see what is blocking the throat Wipe the mouth with your fingers and try to take it out

2 Tip the person's head back with the jaw brought forward This will prevent the tongue from blocking the airway (See Figure 9)

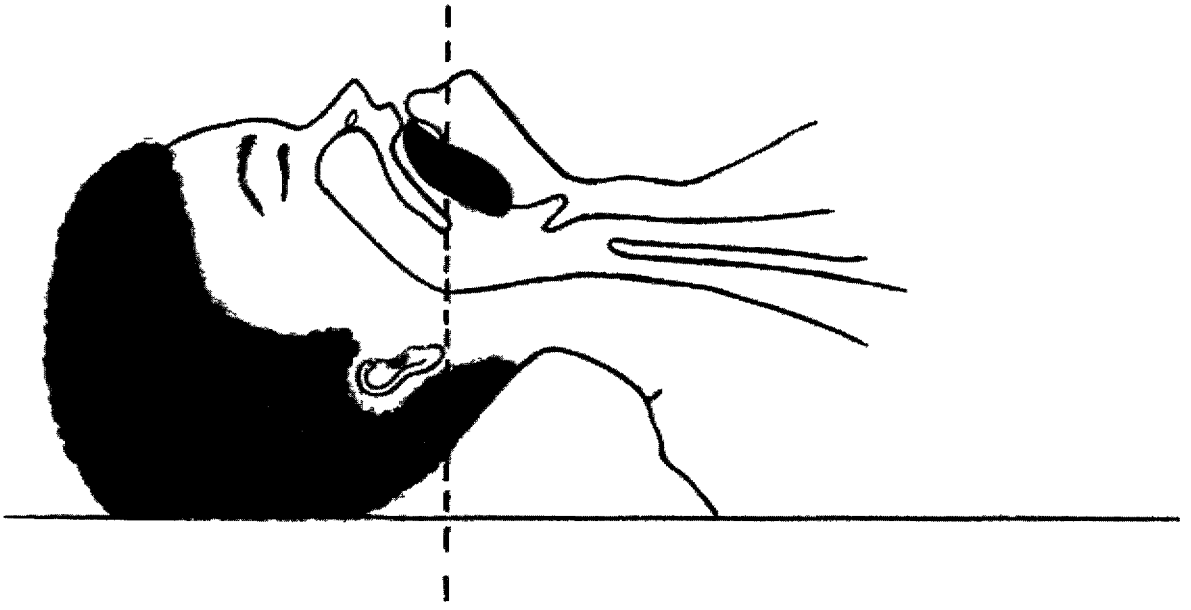

Figure 9 Head Position to Move the Tongue out of the Airway

3 Kneel at the feet of a small child or over the thighs of an adult, facing the person's head (See Figure 10)

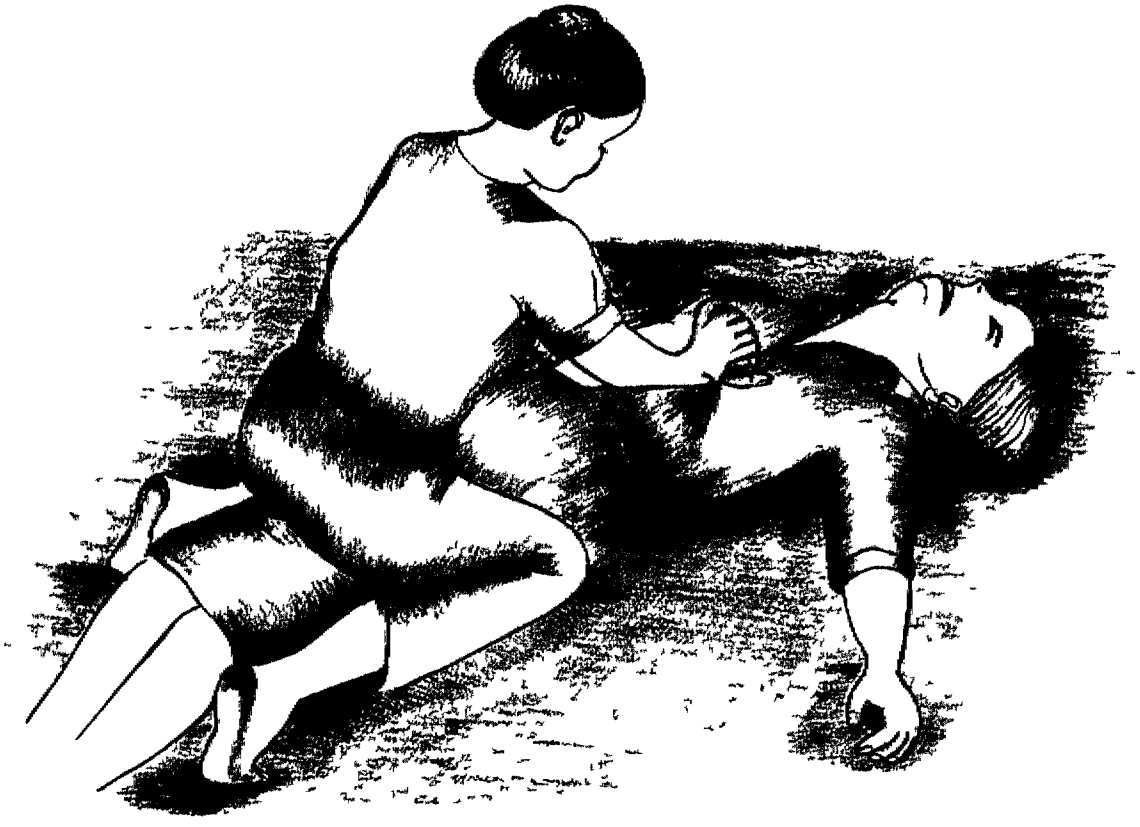

Figure 10 Kneeling and Hand Positions

4 Place one hand over on top of the other Press the heel (palm) of the lower hand in the middle of the person's abdomen a little above the navel (umbilicus) In a pregnant woman, place your hands higher up on the abdomen than the uterus

WARNING MAKE CERTAIN THAT YOUR HANDS ARE *NOT* PLACED TOO HIGH WHERE YOU MIGHT BE PUSHING ON THE TIP OF THE XIPHOID OR THE RIBS

SD1

5 Press quickly into the abdomen and upward toward the head The force of the push (thrust) should be right in the center of the body This will force air from the person's lungs up the trachea and larynx, pushing air against the object that is blocking the airway, so it gets pushed out

6 If necessary, you may thrust (push inward and upward) 6 to 10 times one after the other Thrust more gently in an infant or child You can also turn children upside down to loosen the blockage in the throat Sometimes you need to gently bump the center of the back with the palm of your hand You can also roll an adult to her side and give her a series of bumps (blows) at the center of her back with the palm of your hand

7 The person may now be coughing or making a crowing sound Have her spit the object out if she can Look into the mouth again and see if you can help to remove the object If the person continues to crow (partial blockage of the airway) or gives no response, repeat the series of thrusts

REMEMBER
You must have an *open airway*
before you can perform
cardiopulmonary resuscitation

If you try the cardiopulmonary resuscitation procedure before you have cleared the person's airway, you will fail You can not put air into a blocked airway Remember the ABCS steps for all resuscitation

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages indicated in parentheses ( )

1 List the signs and symptoms of a person who is choking (page 6 52)

2 How will you do the Heimlich maneuver if the person is conscious? (pages 6 54 - 6 55)

3 How will you do the Heimlich maneuver if the person is not conscious? (pages 6 55 - 6 57)

4 Why must you have an open airway before you do cardiopulmonary resuscitation on a person? (page 6 57)

Skills Checklist - Heimlich Maneuver

This checklist has two purposes
1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs
After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any other comments in the comments sections below

		Date	Date	Date	Date
A	**In a conscious person**				
1	Stand behind the person where she sits or stands Keep telling her that you are helping her Help control the person's feeling of panic				
2	Place your arms around the person, holding your hands together on her upper abdomen just below the xiphoid process and above her navel (umbilicus)				
3	Form your hand into a fist against the abdomen				
4	Grasp your fist with your other hand				
5	Press your fists into the victim's abdomen with a quick inward and upward thrust				
6	Continue to make the quick thrusting movements with your fists until you have loosened the object from the throat				
7	If the person loses consciousness, help her to the floor or ground and lie her on her back				

Comments

		Date	Date	Date	Date
B	**In an unconscious person**				
1	Open the person's mouth and see if you can see the obstruction Wipe the mouth to try to take out the object				
2	Position the person's head back to move her tongue out of the way				
3	Kneel at the feet of a small child or over the thighs of an adult				
4	Place your hands over one another Press the heel (palm) of the lower hand in the middle of the person's abdomen a little above the navel (umbilicus)				
	• Make certain that your hands are not placed too high where you might press on the top of the xiphoid or the ribs				
5	Press quickly into the abdomen and upward toward the head The force of the thrust should be right in the center of the body				
6	Thrust (press inward and upward) 6 to 10 times one after the other Thrust more gently in an infant or child				
7	The person may be coughing or making a crowing sound now Have her spit the object out Look into the mouth again to see if you can help remove the object				
8	If the person continues to crow (partial blockage of the airway), or there is no response, repeat the series of thrusts				

Comments

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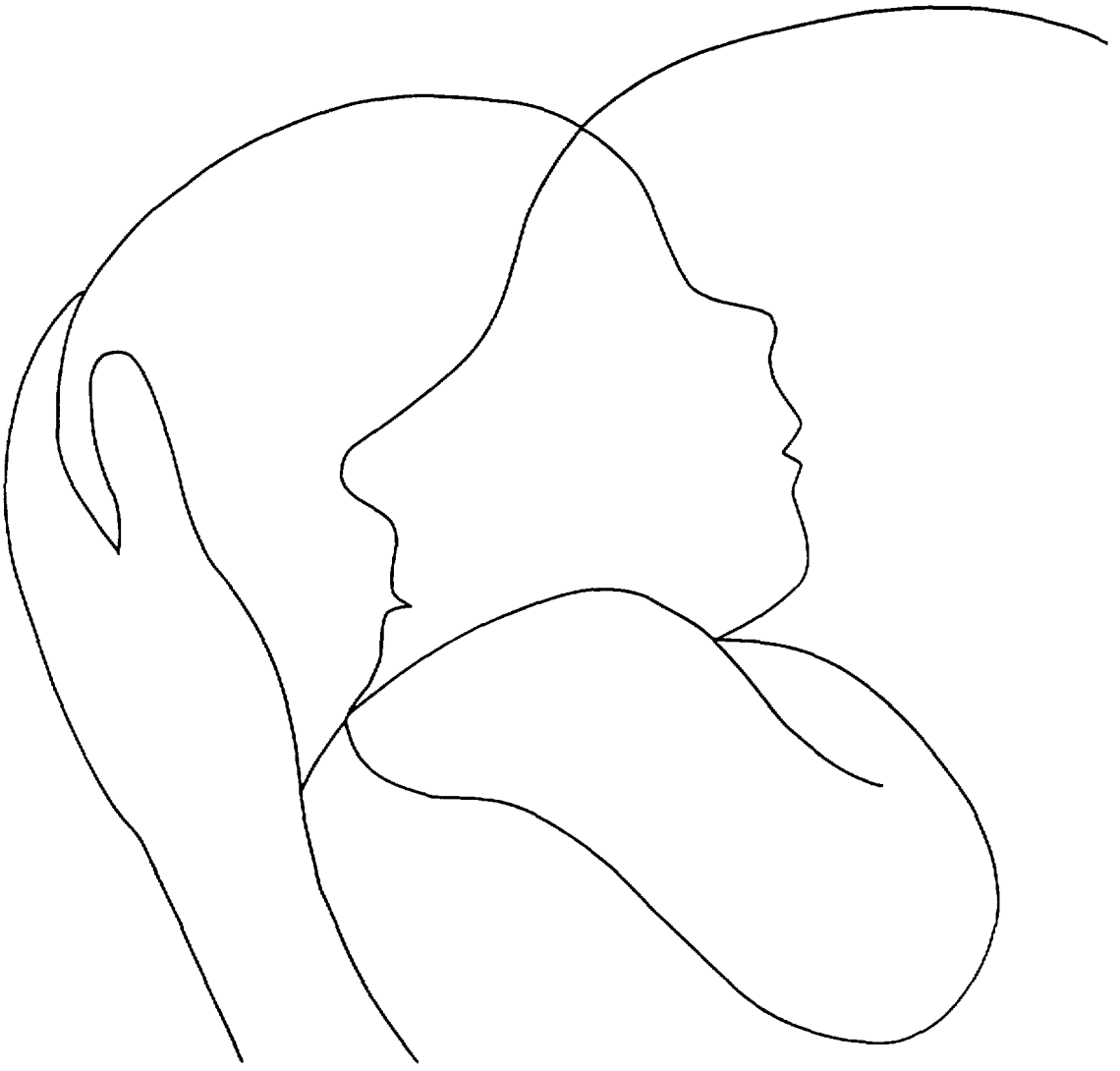
LIFE-SAVING SKILLS MANUAL FOR MIDWIVES

3rd Edition



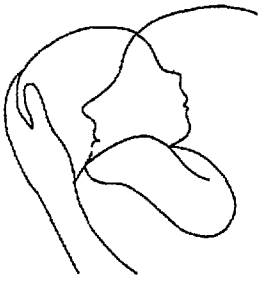
MODULE 7

SEPSIS

Life-Saving Skills Manual for Midwives

Third Edition

Module 7: PREVENTION AND MANAGEMENT OF SEPSIS



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Life-Saving Skills Manual for Midwives

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PREVENTION AND MANAGEMENT OF SEPSIS
MODULE 7

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PREVENTION AND MANAGEMENT OF SEPSIS

Goal

The midwife will learn the signs and symptoms of a woman and/or baby with sepsis (infection) She will learn life-saving skills to help the mother and/or baby live, and ways she can reduce the risk of transmitting germs and blood-borne diseases such as AIDS and hepatitis B

Objectives

The midwife caring for women and babies during and after pregnancy will be able to

1 define sepsis in mother and baby
2 take a history (**ASK and LISTEN**) and do a physical examination (**LOOK and FEEL**) according to signs and symptoms of mother and/or baby
3 recognize signs and symptoms of chorioamnionitis, postpartum infections, and postpartum infections associated with lost pregnancy
4 recognize signs and symptoms of sepsis and tetanus in the newborn and the mother
5 take appropriate action to help the woman and/or baby live, including preventive actions, giving treatment, and referring to a doctor when needed
6 use universal precautions for infection prevention at all times

Introduction

In developing countries, sepsis (infection) is a major cause of death among mothers Sepsis can lead to shock, failure of the kidneys, and death If the woman does not die, sepsis can cause chronic pelvic infection, ectopic pregnancy, and infertility Fetal and infant deaths during late pregnancy, birth, and the first week of life are frequently the result of sepsis Unclean practices during and immediately following childbirth and inappropriate care of the newborn are common causes of deaths due to sepsis in infants Many babies die soon after the death of their mothers

This module emphasizes methods by which midwives can save mothers' and babies' lives by preventing and treating infection You will use the Problem Solving Method to identify the problem and take the appropriate action Skill procedures, review questions, and case studies will help you learn and use the information Skills checklists will guide you while you perform actual skills Learning aids provide additional information Some of the aids will help you to review your knowledge, while others have new ideas you will need to learn Some of the learning aids are procedures you may not perform often, but that help you save a life

A Midwife's Experience.

This midwife is 13 hours to 3 days from a referral hospital depending on the weather and available transport She is the only trained health staff for miles around She cares and is trusted

A 43 year old gravida 11 came complaining of severe lower abdominal pain for the past 2 days Then she had slight dark bleeding, dizziness, and couldn't walk Her BP 110/50, pulse 160, temperature 38 6°C (102°F) and abdomen tender to touch Lucky for me it was on a Tuesday, which is our market day (so there was transportation available), and judging from her age and parity, I thought could this be appendicitis or infection The BP too could not give me a clue as to ectopic But I decided to refer her immediately to hospital Luck was not on my side The only doctor had traveled She was delayed according to her (the patient) to give her some tablets to take home the next day

So they returned to me on a Thursday with a BP 60/0 I set up Dextrose 5% IV, gave antibiotic, and arranged for a boat to take her to the hospital on the river This patient will prefer to die in my clinic if I won't accompany her to the hospital myself, for fear that if she does not meet any doctor, she won't know what to do, and she believes my company will help give her prompt treatment So we got a boat, which took almost my one month's salary Immediately we got there, a blood transfusion was arranged for and I gave a pint of blood I left on the third day for my station I had lost all confidence as I knew this patient was going to die But she survived I had a similar case 2 years ago We went by rowing canoe all night This woman had an operation and she too survived

LSS Midwife, Ghana

Common Medical Terms

Amnion - the inside layer of membranes (bag of waters) covering the fetal side of the placenta and the chorion

Aseptic Technique or Asepsis - the steps to prevent germs going into any part of the body where they may cause infection The goal of asepsis is to **reduce to a safe level**, or **eliminate**, the number of germs

Chorioamnionitis - inflammation (swelling and redness) of the chorion and amnion It is the inflammation of all of the amniotic sac (bag of waters)

Chorion - the outside layer (mother's side) of placenta and membranes (bag of waters) holding the amniotic fluid (liquor) and the baby

Chronic Pelvic Infection - an infection that has been in the reproductive tract for a long time, it causes swelling, pain, redness, and foul smelling discharge Sometimes the infection has not been adequately treated, or has not been treated for a long enough time A long term or chronic infection will make the woman very weak, malnourished and not able to carry on normal functions of life A chronic infection is very serious and can lead to infertility It can become acute, leading to death

Cleaning - the process that physically removes all visible blood, body fluids, and any other foreign material such as dust or dirt

Decontamination - the process that makes objects safer to be handled by staff, before cleaning Objects to be decontaminated include large surfaces (such as pelvic examination or operating tables), surgical instruments, gloves, and other items contaminated with blood or body fluids

Ectopic Pregnancy - a pregnancy in which the fertilized egg becomes implanted (attached) outside the uterus It can also be called an extrauterine pregnancy (outside of the uterus) The fertilized egg attaches in the abdominal cavity, ovary, or fallopian tube

High-Level Disinfection (HLD) - a process that kills all germs except some bacterial endospores The methods used are boiling, steaming, or soaking in special chemicals

Infertility - the inability of a couple to conceive despite regular and unprotected sexual intercourse for a period of at least one year

Mastitis - infection of the breast

Microorganisms (germs) - very small (micro) living things (organisms) which can be seen only with a microscope When bacterial germs enter a person's body and multiply (grow in number), they cause sickness such as puerperal sepsis, tuberculosis, or tetanus Tetanus organisms are *endospores*, the most difficult microorganisms to kill

Postpartum Infection (puerperal sepsis) - an infection that causes swelling, pain, redness, foul smelling discharge in the reproductive tract during labor or after delivery The germs (usually bacteria) enter the body through the vagina or a tear (wound) Germs may go from the infected reproductive tract through the lymph or bloodstream to cause infection of the breasts, fallopian tubes, ovaries, peritoneum, blood vessels, and the whole body

Reproductive Tract - the female pelvis, including pelvic bones, pelvic floor, vulva, vagina, uterus, fallopian tubes, and ovaries

Sepsis - a serious infection that happens when germs go into a person's body and multiply (grow), causing sickness Fever (temperature above 100 4°F or 38 0°C) and chills are signs of sepsis Pain and swelling at the place in the body where the germs go in and grow will cause other signs and symptoms For example, if the germs are in the uterus, the woman may have abdominal pain or cramping and foul smelling vaginal discharge

Septic Abortion - associated with loss of pregnancy (abortion), foul smelling vaginal bleeding, abdominal cramping, and/or backache following pregnancy loss during first 2 trimesters of pregnancy These symptoms are followed by fever, chills, and possibly signs of shock, including a fast pulse beat, low blood pressure, and cool, clammy skin The germs may enter one or many organs

Septic Shock - a very serious infection of the blood which causes high fever, low blood pressure, fast heart rate, and fast breathing Untreated septic shock leads to coma and death

Sterilization - the process that kills **all** microorganisms, **including** endospores, through steam or dry heat

Tetanus Infection - an infection caused by a bacterium endospore (bacillus) which produces a deadly poison The bacteria grow in dirty conditions The tetanus bacteria can be carried on unwashed hands and unclean equipment A newborn may get tetanus infection if the umbilical cord is cut with an unclean instrument (such as knife, blade, scissors, glass) or is touched with dirty hands or covered with dirty materials Tetanus infection causes fever, repeated convulsions, and death within 2 weeks

Universal Precautions - infection prevention actions to prevent transmission of blood borne diseases to and from health workers and also between patients

Virus - very small germs, not visible with a regular microscope, which live on nutrients inside of cells

OVERVIEW OF SEPSIS

Most diseases and sepsis (infection) are caused by germs Germs are very small living things that can not be seen Germs can be passed from a midwife to a woman, baby, or a family Or, the family, the baby, or woman can pass germs to a midwife The midwife can reduce the chances of passing or receiving germs through cleanliness and good clean technique in her own practice The midwife can teach mothers and their families, as well as traditional birth attendants (TBAs), about preventing the spread of germs during pregnancy, childbirth, and postpartum

Causes of Sepsis (Infection)

Germs that cause sepsis are most often

1 germs normally found in the lower genital tract or bowel,
2 germs from the nose, mouth, or hands of those caring for the woman and baby, or
3 germs from blood and body fluids

Sepsis can occur any time germs go into the body of a woman or child Sepsis can occur any time unclean hands, instruments, cloth, medicines, herbs, and so forth, touch an opening in the body The opening may be a wound (tear), a natural opening to the body (vagina, uterus, or bladder), or an injection The opening may be a newborn's umbilical cord, circumcision, or scarification

Sepsis Can Be Prevented

Sepsis can occur if there is

- rupture of membranes, prolonged or premature (early)
- prolonged labor
- episiotomy, laceration or traumatic delivery
- poor hand washing technique
- frequent or unclean vaginal examinations
- improper perineal care during or after pregnancy
- an unclean delivery
- **anything is put in** the birth canal, such as hands, instruments, or medicine
- **anything put on** the perineum after membranes have ruptured
- sexual intercourse after rupture of the membranes
- retained tissue of placenta, membranes, or abortion (planned or unplanned)
- hemorrhage
- sickness of the mother, such as anemia, tuberculosis, or vaginal infections
- **anything not clean** put on newborn's cord, circumcision, or scarification before it is completely healed

Prevent sepsis with cleanliness guidelines

- Use very clean or sterile procedure when doing a vaginal examination
- Do a vaginal examination **only when it is necessary**
- Wash your hands very well before and after caring for **each** woman or baby
- Keep the perineal area clean
- Teach all pregnant women to come to the midwife as soon as membranes rupture
- Teach pregnant women they should not have intercourse after rupture or leaking of the membranes
- Teach women how to do good perineal care before and after delivery
- Teach clean cord care and tetanus immunization
- Be an example and teach people about good hygiene practices It is very important that midwives teach others about the importance of cleanliness to prevent sepsis See the section on **Infection Prevention**, page 7 25

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Treat Sepsis

Sepsis can be treated Medicines (antibiotics) that kill the germs will help the person get better Hydration will lower the fever Surgery may be needed to empty the uterus or drain abscesses Many cases of sepsis must be referred to a doctor/hospital The midwife should help arrange transport and go with the woman and/or baby It is very important that sepsis be treated as soon as possible Remember that sepsis can lead to death Even with treatment, sepsis may cause serious problems

DECIDE WHAT IS CAUSING THE FEVER IN THE MOTHER

You must **ASK and LISTEN, LOOK and FEEL, IDENTIFY THE PROBLEM**, and **TAKE APPROPRIATE ACTION**

- When a mother comes to you with fever, first **LOOK** to see if she is in **shock**
- **Do not waste time** you do not know how long the woman has had fever before you see her She may be close to shock
- **LOOK** for **signs of shock** If the woman is in or near shock, she will **LOOK** restless and nervous (anxious) She will have
  - low blood pressure (BP) (below 90/60)
  - weak and fast pulse (above 90 beats per minute)
  - shallow and fast respirations (above 40 breaths per minute)
  - cold and wet skin
- Take action and treat her for shock Review information on shock in Module 8 **Hydration and Rehydration**, page 8 4

SHOCK IS AN EMERGENCY!

After you have treated the woman for shock and she is stabilized (BP above 90/60, pulse and respirations lower, skin warm and dry), follow the problem solving steps to identify the problem and **TAKE APPROPRIATE ACTION** If the woman was not in shock, you must determine how to take care of her and help her get to the doctor as soon as possible Refer to History and Physical Examination in Module 3 **Monitoring Labor Progress**

ASK and LISTEN (History)

When you first see the woman, **ASK** the following questions, and **LISTEN** to the answers

- How long has your body been hot (fever)? Do you have chills? Do you think you have malaria?

- Are you having pain? Show me where you have the pain

- When was your last menstruation (period)? Was it a normal menstruation?
- Have you seen any fluid, mucus, or pus (discharge) from your birth canal? Have you seen any blood? Have you had a bad smell?
- When did you lose the pregnancy? When did your membranes start to leak/rupture?
- Did you deliver the placenta (afterbirth)? Did you pass any tissue or clots from abortion?
- Did you use any medicines or herbs? What did you use? What happened after using the medicine or herb?
- Do you urinate often? Is there pain when you pass urine? Is there any backache or back pain?
- Is there any pain, swelling, bleeding, or discharge from your breast?
- Do you have pain in your leg(s) or thigh(s)?
- Do you have catarrah (a runny nose), cough, or sore throat?

LOOK and FEEL (Physical Examination)

- Examine the woman using the information she told you (**LOOK and FEEL**)
- Is the skin hot? Take her temperature (oral temperature above 38 0°C or 100 4°F)
- **FEEL** the breasts for temperature, tenderness, and swelling, and **LOOK** for redness
- **FEEL** the uterus
  - If the woman *has not delivered*, **FEEL** for tenderness, **FEEL** the baby's activity, and **LISTEN** to the baby's heart rate
  - If she *has delivered or* if she has *had a spontaneous abortion*, **FEEL** the uterus for size, tenderness, softness (not contracting)
- **FEEL** the lower abdomen for tenderness
- **FEEL** the lower legs for tenderness

- Tap the back for kidney tenderness (See Figure 1) If the woman feels pain when you tap over the kidney area, it is a sign of kidney infection

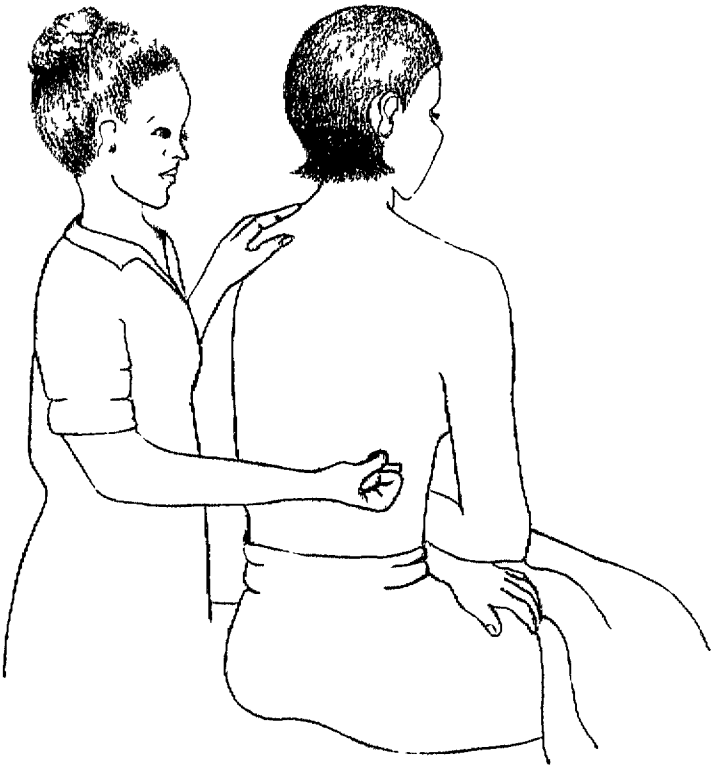

Figure 1 Tap the Lower Back over Each Kidney Using Your Fist

- **LOOK** at the genitalia
  - If she *has not delivered*, **LOOK** for foul smelling vaginal discharge, or foul smelling liquor (amniotic fluid) **FEEL** the cervix for dilatation
  - If she *has delivered*, **LOOK** for bleeding, foul smelling vaginal discharge, or tears of the perineum, vagina, or cervix

- **LOOK** at the placenta/tissue very carefully to make sure the placenta and membranes are complete, if she has just delivered

IDENTIFY THE PROBLEM AND TAKE ACTION RIGHT AWAY

- Find the cause of the fever and take action

- Talk to the woman as you are taking care of her Help her feel that you are trying to make the situation better Have one member of the family stay with her if possible

Infection Associated with Abortion (Complete or Incomplete)

FINDINGS The woman has fever, weak and fast pulse (above 100 beats per minute), expelled (passed) pregnancy tissue before 28 weeks of pregnancy, uterine tenderness, lower abdominal pain, and foul smelling vaginal discharge The cervix may be open or closed, with or without vaginal bleeding

ACTIONS The woman is very sick Ask someone to arrange transport and go with her to the hospital Surgery may be needed, remove any remaining tissue in the uterus While you are waiting or if transport is delayed

1 Lower the fever by giving fluids and a sponge bath Refer to Module 8 **Hydration and Rehydration** for information on how to hydrate the woman

2 Give an oxytocic (such as Ergometrine 0 5 milligram (mg) intramuscular (IM), Syntocinon or Pitocin 10 IU IM) to help the uterus contract

3 **Give broad spectrum antibiotics**, such as ampicillin 1 gram (gm) (1000 mg) right away and 500 mg every 6 hours **and** streptomycin 1 gm IM daily for 7 days

If you do not have ampicillin, you may use benzyl penicillin 2 4 mega or million units IM every 4 hours for 24 hours At 24 hours, give procaine penicillin 1 2 mega units **and** streptomycin 1 gm IM daily for 7 days

If you do not have streptomycin, you may use another broad spectrum antibiotic you have available, such as doxycycline 100 mg twice daily for 14 days, cotrimoxazole 800 mg daily for 10 days, chloramphenicol 500 mg 4 times a day for 14 days, or tetracycline 500 mg 4 times a day for 14 days

4 **Also give** metronidazole (Flagyl) 500 mg stat (right away) and every 6 hours for 7 days to treat postpartum infection associated with abortion

5 **LOOK** for shock, bleeding, and anemia while you wait for the transport and on the way to the doctor Check vital signs and amount of bleeding Give fluids according to the condition

Refer to Module 8 **Hydration and Rehydration**, to review signs and management of shock, and Module 5 **Prevention and Treatment of Hemorrhage,** Digital Evacuation or Module 10 **Other Emergencies**, Postabortion Care, for how to remove any tissue which may be left in the cervix or uterus that is causing hemorrhage or infection

6 Remember to go with the woman to the doctor/hospital It is very important that you watch the condition of the woman and help her on the way to the doctor You can also help the woman and family to keep calm during the trip

PREVENTION of Postpartum Infection Associated with Abortion

Unplanned and unwanted pregnancy can happen when (1) the woman and her partner do know how pregnancy happens, (2) health workers think some women are too young to get family planning, (3) women are forced to have sex, or (4) family planning is not available, is not used correctly, or fails When a mother gets pregnant too quickly or too often, she may not be strong enough to carry the pregnancy and may lose the baby (abortion) There is the danger that she may not be ready or prepared for the pregnancy

Any time a woman loses a pregnancy, she goes through a serious experience both physically and emotionally The *bleeding and exposure to infection can cause the woman to become sick* Having children too close together, or having too many children, can also cause a woman to become sick or die Acceptable, affordable, and accessible health care services are a necessity to prevent this loss of life and cause of excessive tiredness and sickness of women

During or after an abortion (planned or unplanned), the mother is at risk for an infection and anemia Remember that even though infection can be treated to prevent death, sometimes infection can cause chronic pelvic infection, future ectopic pregnancy, or infertility

Until the woman's body is ready, couples can prevent pregnancy by using family planning methods Teach people in the community about family planning Provide health education and counseling about human reproduction and family planning methods

Family planning information for a woman treated for an abortion

1 She will be at risk for getting pregnant again as soon as two weeks after the abortion

2 There are safe contraceptive methods that can be used immediately to avoid pregnancy

3 Where and how to get family planning services

Help your clients to protect themselves and their babies from infection and anemia Teach mothers the importance of keeping their bodies, clothing, and surroundings clean to prevent sickness Advise use of condoms and one partner relationships Advise all women to come to you as soon as they see any unusual vaginal bleeding or discharge

Help to protect your clients from infection Make your maternity, your home, and surroundings an example of cleanliness Keep everything in your maternity clean and ready for use

Protect yourself from exposure to infection, including AIDS, by reducing the way germs can get into your body Wash your hands before and after caring for each person Keep your skin in very good condition Keep your nails short, and treat any small cuts or sores right away When you use gloves, make sure they do not have any holes, and that they are sterilized or high-level disinfected between patients If gloves are not available, clean plastic (polyethylene) bags which have been decontaminated and washed can be used as hand covers

Chorioamnionitis (Intrauterine Infection)

FINDINGS The woman has fever, fast pulse (above 90 per minute), tender uterus, foul smelling, purulent (pus) amniotic fluid The baby has a fast heart beat (above 160 per minute)

ACTIONS The woman must get to the doctor as quickly as possible The woman and her baby are both in danger of losing their lives Delivery should take place as soon as possible Be prepared for a delivery on the way to the doctor The baby will be sick and may need resuscitation Be ready to resuscitate the baby Get transportation arranged very quickly Review Module 6 **Resuscitation**

Lower the fever by giving intravenous (IV) fluids, giving a sponge bath and fanning

Give a broad spectrum antibiotic (ampicillin 1 gm stat and 500 mg every 6 hours for 7 days) to treat chorioamnionitis

LOOK for shock while you wait for transport and on the way to the doctor

PREVENTION Early rupture of the membranes is a break or tear in the bag of waters before regular contractions start The cervix is opened a little because of the fluid coming out of the uterus The danger is that the fluid and membranes remaining in the uterus will get infected and infect the placenta, baby, and mother Chorioamnionitis is very serious and must be prevented if possible If the membranes are ruptured, not term, and the woman is not having contractions, **do not do a vaginal examination**

If *labor does not begin* or the mother *has not delivered* within ***12 hours after the membranes rupture***, treat the mother with a broad spectrum antibiotic (such as ampicillin 1 gm stat and 500 mg every 6 hours for 7 days) Watch the mother for fever or signs of shock Watch the baby carefully for increased heart beat (more than 160 beats per minute) If any of these signs are found, arrange transportation and take the mother to the doctor right away Be prepared for a delivery and infant resuscitation as you travel to the doctor

If the woman has a fever or if the amniotic fluid (liquor) has a foul odor, give her a stat dose of ampicillin 1 gm and go with her to the doctor Be prepared for a delivery and infant resuscitation

Advise all pregnant women to come to you for treatment as soon as they have any fluid (leaking or ruptured membranes) or discharge (sexually transmitted infections) from their birth canal Help them to understand that they and their babies could get very sick if they delay

Postpartum Infection

FINDINGS The woman has recently delivered a baby and has fever, fast pulse (above 90 per minute, if above 120 per minute, the woman is seriously ill), lower abdominal pain with uterine tenderness and foul smelling, blood tinged, and sometimes purulent (pus) vaginal discharge The woman may have chills and look very sick

ACTIONS

1 Ask someone to arrange transport and accompany her to the doctor
2 While waiting for transport, help her rest in a semi-seated position
3 Keep her in a semi-sitting position to help drain discharge from the uterus and vagina
4 Give a broad spectrum antibiotic (such as ampicillin 1 gm stat and 500 mg every 6 hours for 7 days)
5 Lower her fever and hydrate her by giving at least one glass (8 ounces) of water or other liquid every hour She may not be able to drink this much water if she is too sick If she cannot take this much fluid by mouth or if she is vomiting, start IV fluids
6 **LOOK** for shock as you take the woman to the doctor Remember, untreated postpartum infection (sepsis) can spread from the uterus into the abdomen An abscess may form in the abdomen The infection may go into the bloodstream, causing septic shock (shock due to infection) and death Refer to Module 8 **Hydration and Rehydration** for the management of shock

Untreated postpartum infection (sepsis)
can cause septic shock and result in death

PREVENTION Postpartum infection may start with the premature (early) rupture of membranes, during prolonged or traumatic delivery, or after the delivery **Remember the importance of cleanliness and hand washing** Evaluate labor progress using as few pelvic examinations as possible Review the Module 3 **Monitoring Labor Progress**

When you have clean equipment, clean surroundings, and use aseptic technique before and during a delivery, you will prevent almost all cases of postpartum infection

Teach others about germs and infection Include in your teaching why

1 A pregnant or laboring woman must be clean
2 All persons caring for a pregnant woman must be clean and wash their hands often
3 All equipment and materials used for the pregnant woman must be very, very clean
4 Those who use traditional delivery practices must use this information to help prevent infection in women

Other Causes of Postpartum Fever

Dehydration

Loss of water from the body Fever is caused by decreased intake of fluids during labor especially if labor is prolonged

FINDINGS Low fever (99 6° F or 38 0°C) after delivery, mouth and lips may be dry, urine may be dark with a strong odor (concentrated) and small in amount

ACTIONS Give one glass (8 ounces) or more of water or locally available fluids every hour Refer to Module 8 **Hydration and Rehydration** if the woman is unable to take fluids **LOOK** for signs of infection

PREVENTION Give water and locally available fluids to women during labor

Malaria

This is a serious illness with chills, fever, anemia, and an enlarged spleen, caused by the bite of an infected Anopheles mosquito Malaria can infect the placenta of a pregnant woman Malaria can cause low birth weight of the newborn and infant death

FINDINGS Chills, sweating, high fever (104°F or 40°C), headache, or flu-like symptoms

ACTIONS Treat for an acute attack of malaria Make sure the protocol you use is up to date, as research continues to provide new information on the treatment of malaria Check the **milligrams base** of your stock of chloroquine to be sure you give the correct dose The World Health Organization (WHO) suggests the following schedule give large first dose of chloroquine 1 gm = 600 mg base, give second dose in 6 hours of chloroquine 500 mg = 300 mg base, and then give once a day, for 2 days 500 mg = 300 mg base

A total of 1500 mg chloroquine base in 3 days is necessary for effective treatment of malaria not resistant to chloroquine If no improvement after 24 hours, help the woman to go to the doctor/hospital She may have a chloroquine resistant type of malaria She may need a different medicine

PREVENTION Malaria prophylaxis is very important to prevent acute malaria during pregnancy, labor, and postpartum Refer to your country's malaria policy and teach all pregnant women and their families the importance of preventing malaria

Teach the people in the community to take protective measures to reduce contact with mosquitoes, especially when mosquitoes are feeding Explain that at night, people should stay in well screened areas, use mosquito nets when sleeping, and wear clothes to cover the body if they must be outside Health care providers can set an example of how to protect themselves from the risk of malaria If there is an impregnated bed net program in your area, encourage people to take advantage of it

Mastitis

It is important that mastitis is prevented It is important that a breast abscess be treated early A breast abscess is an infection in the breast Infection (sepsis) is one of the major causes of maternal death We must save mothers from getting sepsis and from dying from sepsis

Infection of the breast must be treated to prevent breast abscess Breast infection may be caused by milk staying in the breast (stasis), by the breast not completely emptying after nursing, or by bruising of breast tissue as a result of rough or prolonged expression of milk A cracked nipple will also let germs into the breast

FINDINGS Fever slight at first, but may increase to 104°F (40°C) Increased pulse (above 90 beats per minute), chills, headache, pain usually in only one breast, area of breast hard, red, swollen and *very* tender

ACTIONS Prevent breast abscess through early treatment

1 Give antibiotic (such as penicillin V 500 mg or erythromycin 400 mg 4 times a day for 10 days or co-trimoxazole 2 tablets twice a day for 7 days)

2 Apply wet, warm compresses to the painful area, 30 minutes 4 times a day

3 Support breasts with a loose fitting brassiere or sling

4 If breast feeding is too painful for the mother, wait 24 hours after beginning antibiotic treatment and try breast feeding again Explain to the mother that the breast milk from the sore breast will not hurt the baby

5 If she has a high fever for 48 hours and a soft yellow center area of the breast showing location of pus filled abscess, drain out the pus Refer to Learning Aid 4 - Incision and Drainage of Breast Abscess, page 7 45

6 Continue the antibiotic and give analgesics as needed for pain

7 Reassure the mother that the pain will lessen with the treatment

PREVENTION is the best treatment for a breast infection Teach the mother to pick up her baby and feed the baby whenever she feels a need to feed This is **demand feeding** Babies may feed very irregularly at first They may feed very often for a day or two, they may take only a few feeds each day for a few days Every baby is different, but most get a routine after a week or two Frequent sucking stimulates the production of prolactin, which helps the milk to come in sooner Demand feeding prevents engorgement and helps the breasts to empty Proper positioning of the baby when breast feeding prevents sore/cracked nipples

Prevent breast infection through very good hand washing with soap, good breast care including gentleness, cleanliness with special attention to the nipple, good support for the breasts, and watching the baby for skin, eye, or cord infection

A Midwife's Experience

The woman was a 29 year old gravida 4 My friend She came to my house at 3 AM As soon as I saw her, I remember that she had delivered just 3 weeks ago on the first day of Ramadan Labor and delivery were normal I could see that the pain she was suffering was terrible She did not talk, only opened her dress and showed me her left breast

Her breast was very swollen and red There was a soft yellow center I give her an injection for pain, give her antibiotics and apply a wet, warm compress I fix her some tea with sugar and try to reassure her After 30 minutes, I drain out 600 cc of pus from her breast The drain was left in the incision, dressing applied, and the baby put to the other breast I reassure the mother that the pain will get less I ask that she return the next evening for me to change her dressing and so that I could make sure the baby is getting enough breast milk I remember that a cause of child death is poor maternal health I must help this mother get well, so that she can continue to provide food security and protection against illness through exclusive breast feeding of her baby I must make sure this mother receives appropriate family planning

LSS Co-author

Thrombophlebitis

Hormonal changes during pregnancy may cause blood vessels to relax Then the blood may not move well through the vessels, allowing blood clots to form or infection to develop in the blood vessels

FINDINGS Fever, pain, and tenderness in the lower leg or thigh

ACTIONS Help the woman get to the doctor Give aspirin 625 mg to help with the pain and decrease the chances of clots (thrombosis) Wrap the entire leg with a bandage or cloth Start wrapping around the foot and wrap all of the way to the groin using even pressure to give a little support to the veins **Do not wrap too tightly, take care not to cause edema or to stop circulation**

PREVENTION Teach and encourage the mother to exercise during pregnancy, labor and postpartum Advise elevation of her feet when sitting The midwife should prevent exhaustion, dehydration, and hemorrhage of the woman in labor If stirrups are necessary during delivery, prevent pressure and bruising on legs

Upper Respiratory Infection

An upper respiratory infection may cause fever Most upper respiratory infections (common colds) are caused by a virus and are contagious *Antibiotics will not help a common cold caused by a virus*

FINDINGS Headache, fever, nonproductive (dry) cough, sore throat, and runny nose

ACTIONS Paracetamol or Tylenol and cough mix will help the woman feel better Encourage her to drink plenty of liquids If her cough is productive with purulent sputum, treat her with a broad spectrum antibiotic (such as ampicillin 500 mg 4 times a day for 10 days)

PREVENTION The mother may continue to breast feed with little risk to her baby The mother should wash her hands with soap and water before handling her baby If the midwife or anyone has a cold, sore throat, cough, fever, or flu, they should try to stay away from the birth and the baby, or wear a mask

Urinary Tract Infection

Infection of the urinary tract is usually caused by germs from outside the body going into the urethra

FINDINGS Fever and frequent, painful urination, usually with lower abdominal tenderness or back tenderness

ACTIONS

1 Start broad spectrum antibiotic (ampicillin 500 mg 4 times a day for 10 days) or (co-trimoxazole - one double strength (DS) tablet every 12 hours for 10 days)

2 Have the woman drink one glass (8 ounces) of water or other fluid at least 8 times in 24 hours

3 Advise the woman to empty her bladder every 2 hours

4 If she does not start to feel much better in one or 2 days, refer her to the doctor

PREVENTION Cleanliness during pregnancy, labor, and delivery

Teach women the importance of good perineal care after delivery, including how to wipe their bottoms after toileting Women should always wipe (clean) their bottoms from front to the back after using the toilet, so that they do not bring germs from the anus to the urethra

Try to avoid catheterization unless very necessary If catheterization is necessary, use aseptic technique

DECIDE WHAT IS CAUSING SICKNESS IN THE BABY

The death of a child is a common experience for millions of parents Each year, 5 million babies die within the first month of life (Nurture, 1996) Many of the newborn deaths during the 4 weeks following birth are the result of or related to infections The midwife, through early identification, appropriate action, and prevention of infections, can save the life of a baby

Ophthalmia Neonatorum

Ophthalmia neonatorum is an infection of the eyes caused by several kinds of germs, including chlamydia and gonococcus The most dangerous is gonococcus, because it can cause blindness A pregnant woman with gonorrhea will infect her baby during birth

FINDINGS Thick, greenish, yellowish discharge usually in both eyes of the baby, eyelids may be swollen and red

ACTIONS

1 Boil one half liter (500 cubic centimeters)(cc) of water with a pinch of salt if available Cool the solution Use a syringe filled with the solution to wash the baby's eyes Wash the eyes from the nose outward toward the ear Wash the eyes until all of the discharge is gone Wipe eyes with dry cotton or gauze

2 Put antibiotic eye drops or ointment (tetracycline or penicillin G) in both eyes **Never use eye medications that contain steroids as this can cause blindness in the baby**

3 Wash eyes and apply antibiotic medicine every 15 minutes for the first hour Then treat every hour for the first 24 hours Frequent treatment is needed because discharge washes out the eye medicine quickly After the first 24 hours, continue to treat the eyes 3 times a day for 3 days or more, until the eyes are normal

4 Give antibiotic IM such as crystalline (aqueous) penicillin G 50,000 units per kilogram (kg) of body weight every 12 hours for 7 days **or** erythromycin 50 mg/kg/day by mouth in 4 divided doses for 14 days **or** a one time dose of ceftriaxone 125 mg IM Give IM in the anterior (front) lateral side part of the thigh This is the largest and most developed muscle in children under 2 years of age

5 Check the mother and father of the baby for gonorrhea, and treat according to your routine

Remember to wash your hands before and after taking care of the baby The baby requires a great deal of care However, the complication of life long blindness can be prevented

For Example

Antibiotic Treatment

A baby weighs 3 kg Give 50,000 units of crystalline penicillin G for each kg of weight You figure 3 X 50,000 = 150,000 units Give 150,000 units of crystalline penicillin IM right away If it is now 12 noon at the first injection, give 150,000 units again at 12 midnight Remember, babies of different weights will require different dosages Figure the dosage required for each baby At 12 noon on the second day, give the baby crystalline penicillin IM, 150,000 units Continue giving every 12 hours for 7 days

Eye Care

After giving the first dose of crystalline penicillin G, clean the eyes with the cooled solution, wipe dry, and put in the eye ointment Help the mother breast feed the baby and keep the baby comfortable Clean the eyes and put in eye ointment at 12 15, 12 30, 12 45 and 1 00 PM

After the first hour, clean the baby's eyes and put in antibiotic eye ointment every hour for 24 hours

PREVENTION Reproductive tract infections which may come from chlamydia, gonorrhea and others can be prevented by teaching about the dangers of reproductive tract infection

Teach women and their family and friends about the importance of care during pregnancy so that all sickness can be treated before the time of delivery

Routine use of 1% silver nitrate will prevent ophthalmia neonatorum due to gonorrhea Put 2 drops into each of the baby's eyes after delivery Antibiotic eye ointments (erythromycin or tetracycline) may be used if silver nitrate is not available

Explain to the parents the importance of cleaning the eyes and using the medicines Teach the parents the need for them to wash their hands and to be careful not to touch their own eyes

Septicemia

Septicemia is an infection of the whole baby The infection is caused by germs in the blood The germs may enter the baby if membranes rupture too early The germs may get into the baby through the umbilical cord, respiratory tract, circumcision, or scarification The baby may become very sick and may die

FINDINGS The mother may say that the baby is not sucking well, has been vomiting, or just looks sick The temperature may be **above** or **below** normal The baby may be limp, sleepy, irritable, have bleeding spots on skin, jaundice, grayish skin color, or may have convulsions The cord may be smelly and draining pus The circumcision or scarification may be swollen and draining pus The baby may be coughing and the nostrils flaring

ACTIONS

1 Explain to the family the baby is very sick and needs a doctor's care Ask someone to get transport right away

2 Give antibiotics right away Give intramuscularly ampicillin 50 mg/kg or crystalline penicillin G 25,000 units/kg every six hours **AND** gentamicin 5 mg/kg/day IM in 2 divided doses

3 Keep the baby warm if the temperature is below normal Babies with septicemia usually have trouble keeping warm Sponge bathe if there is fever

4 Continue to feed the baby If the baby is too weak to suck, help the mother express her breast milk Give the milk with a spoon or use a nasogastric feeding tube if the baby cannot take the milk from a spoon The newborn baby needs 40 to 50 cc of fluid every 3 hours If the mother does not have enough breast milk, try to get expressed breast milk from another nursing mother

5 Go with the family to the doctor The doctor will give antibiotics to the baby for 10 days or longer

PREVENTION Septicemia can be caused when germs get on the cut and open cord Make sure the delivery area is clean Teach everyone helping with deliveries to tie the cord with very clean string, to cut the cord with a very clean instrument and to keep the cord as clean as possible The cord should be open to the air to stay dry Teach the mother to clean the cord 2 times per day with soap and water She may use spirits (alcohol) if it is available

If circumcisions and scarification are done in your area, teach the importance of using very clean instruments and how to care for the baby afterward

Watch the baby who had a difficult delivery or a low birth weight Babies who are born more than 12 hours after the bag of waters ruptured are much more likely to become infected than other babies

Postpartum Tetanus: Baby and Mother

Postpartum tetanus is an infection of the baby (tetanus neonatorum) or the mother The tetanus germs get into the baby usually through the umbilicus, circumcision, scarification, or ear piercing The tetanus germs get into the mother most commonly through the genital tract Tetanus almost always comes from the use of unclean instruments when cutting the cord, from unclean herbs, or using cow dung to dress the cord

Tetanus is more likely to happen when a baby is delivered or cared for in an unclean place The mother may get tetanus when unclean hands, cloths, herbs, or instruments are put into the genital tract

TETANUS IS A DEADLY DISEASE

A Midwife's Experience

A frightened and crying young mother holds her 2 week old baby girl She says her child has been vomiting since morning The child was healthy until about 3 days ago when the mother noticed the infant was hot to touch Last night the infant had a fit (convulsion) which lasted about 5 minutes She is not feeding well at the breast and has vomited twice already today

The mother had a full term delivery at home She is alone with her baby I saw that the baby is very weak I hug the mother and tell her I will help her She is so afraid and so am I I ask her to let me hold her baby so that I can find out what is wrong

When I hold the baby, her skin almost burns my hands The baby looks very ill and does not move I hold her on my lap and quickly look and feel (as I learned in LSS) Her anterior fontanelle bulges Her mucous membranes are pink and dry Her abdomen is swollen (distended) A pussy discharge comes from the umbilicus The umbilicus is wet and red

I put wet cloths on the baby, gave crystalline penicillin 100,000 units intramuscular, cleaned the umbilicus, and explained to the mother that we must go to the hospital right away! We sent the gardener to tell her family We expressed breast milk and spoon fed the baby until transport arrived The baby was cooler by the time we reached the hospital

LSS Midwife, Uganda

FINDINGS The mother usually says the baby cannot suck The baby has generalized muscle spasms and stiffness of the neck and jaw, and is unable to swallow Spasms and stiffness spread to all muscles of the body The most frequent complaint is of stiffness in the jaw (lockjaw)

ACTIONS The most important action is to prevent tetanus by making sure every pregnant woman gets tetanus toxoid immunizations during her pregnancy This protects both the mother and the baby from tetanus infection

1 Take the mother and baby to the doctor/hospital right away

2 **Sedation** While waiting for transport, **if the baby has tetanus,** give the baby sedation IM (such as diazepam 1 mg or 15 mg of amobarbital sodium every 4 hours) to lower the chance of tetanus convulsions

3 **If the mother has tetanus,** give her **sedation** for tetanus spasms IM such as diazepam (Valium) 20 mg or amobarbital sodium 200 mg to lower the chance of tetanus convulsions

Sometimes the baby or mother will have tetanus convulsions (tetany) before sedation Give the sedation to lower the chance of continuous convulsions Do not expect all of the convulsions to stop, they will just be fewer or not as strong Remember that light and touching and moving of the baby or mother may cause the tetanus convulsions to increase Keep the airway open Keep the baby or mother turned to the side so that any fluids in the mouth will run out of the mouth and not cause choking Go with the family to the doctor/hospital right away

4 **Infection** Clean the source of infection (usually cord in newly born baby) with soap and water

Give a *baby* with tetanus crystalline penicillin G 50,000 units/kg IM every 6 hours until you can get the baby to the doctor

If the *mother* has tetanus, give 2 4 million units crystalline penicillin IM every 4 hours for 24 hours Continue with procaine penicillin 1 2 million units and Streptomycin 1 gm IM daily until you get the mother to the doctor

5 Tetanus is a very difficult sickness to treat It cannot be stressed enough that the midwife **must get the baby and mother to the doctor/hospital** for care The patient with tetanus will need feeding, temperature monitoring, urinary and bowel care, turning, bathing, protection from direct lights, noise, and unnecessary touching, and protection during severe tetanus convulsions This care is beyond what can be offered without the help of a doctor

6 **Feeding** Many tetanus patients die because of aspiration during feeding Never try to force feed with the hand or a spoon Feeding can usually be done with a nasal gastric feeding tube

It is very important to always make sure that the tube is in the stomach before feeding the baby You can do this by trying to withdraw fluid from the stomach If you can't, change the position of the baby and move the feeding tube a little If you are still not able to withdraw any stomach contents, place the stethoscope just below the xiphoid process (over the stomach) Push in about 5 cc of air A whooshing sound means the tube is open and the tube is in the stomach

7 **Care** The temperature must always be taken under the arm The strong tetanus convulsions may break a thermometer when used in the mouth or the rectum Adults with tetanus usually are catheterized Babies must be kept clean and dry after they urinate Enemas may be needed to keep the bowels functioning Bathing and frequent turning are important to prevent the skin from becoming sore and ulcerated The patient must be kept in a darkened, quiet place Try to plan all of the care at one time so the patient will not need to be touched too often Every time you touch a tetanus patient, you may cause a tetanus convulsion

PREVENTION Give DPT (diphtheria, pertussis, and tetanus) to all infants Give tetanus toxoid to adolescent girls and pregnant women Tetanus toxoid protects mother and baby **At least 2 doses are required for 80 per cent protection**

WHO TETANUS TOXOID IMMUNIZATION SCHEDULE

DOSE	WHEN TO GIVE	PER CENT PROTECTION	DURATION OF PROTECTION
TT-1	at first contact or as early as possible in pregnancy	Nil	None
TT-2	at least 4 weeks after TT-1	80	3 years
TT-3	at least 6 months after TT-2 or during subsequent pregnancy	95	5 years
TT-4	at least one year after TT-3 or during subsequent pregnancy	99	10 years
TT-5	at least one year after TT-4 or during subsequent pregnancy	99	Throughout childbearing years

Experience has shown that pregnant women receiving one injection of tetanus toxoid are more likely to survive when they become infected **It is the responsibility of every health worker to make sure every girl and woman is immunized against deadly tetanus** Immunity is not gained by having tetanus, therefore a full course of tetanus toxoid must be given to the tetanus victim after recovery Teach all who do deliveries, help with deliveries, do circumcisions, or scarification to wash their hands carefully and to use very clean equipment

INFECTION PREVENTION [1]

Background

When caring for women and babies during and after pregnancy, there is a risk (chance) that women and babies, providers and other staff may have contact with blood and other body fluids that carry blood borne diseases, such as hepatitis B and AIDS To reduce the risk, **universal precautions** (blood and body fluid precautions) must be carried out at all times while giving care, using equipment, and disposing of waste The infection prevention practices discussed here can be used in any country or health facility

Protective Barriers

Placing "something" (physical things such as gloves, mechanical things such as a needle holder, or chemicals like soap and water) between germs and a person, whether a client or health care worker, creates a barrier that can prevent the spread of disease

Protective barriers in infection prevention include

- hand washing (remove rings, watch, bangles, and so forth)
- wearing gloves (both hands), when caring for mothers and babies, or when handling contaminated waste materials or soiled instruments
- using antiseptic solutions, including soap and water, for cleaning the skin before procedures
- using drapes during surgical procedures
- wearing protective clothing (goggles, mask, apron, feet covering) when in contact with blood or body fluids if possible (such as when rupturing membranes, cleaning instruments, and so forth)
- decontaminating, cleaning, and sterilizing or high-level disinfecting instruments, gloves, and other items

Protective barriers will help prevent the spread of infection from

- person to person
- equipment, instruments, and surfaces (walls, floors, furniture, and so forth) to people

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[1] This section Infection Prevention is adapted with permission from Winkler et al (1995)

All health workers should use protective barriers such as gloves, gowns, aprons, masks, and goggles to prevent the exposure of skin and mucous membranes to blood and other body fluids Uniforms or clothing worn when giving health care should be changed before leaving work to prevent transferring germs from the work setting into the home

Hand Washing

All midwives should wash their hands **before** direct contact with women, **before** putting on high-level disinfected or sterile gloves, immediately **after** any contact with blood, body fluids, or mucous membranes, and **after** removing gloves Always wash hands immediately after giving care to each woman or baby

Hand washing with plain soap for about 15 to 30 seconds followed by rinsing in clean, running water is usually enough

Germs grow and multiply in moisture and in standing water Therefore

- If bar soap is used, use small bars and soap racks that drain moisture away
- Avoid repeatedly dipping hands into basins containing standing water, even if an antiseptic agent such as Dettol® or Savlon® has been added
- When no running water is available, use a bucket with a tap that can be turned off Wash hands with soap and turn the tap on again for rinsing, OR ask someone to pour water while you rinse, OR use an alcohol hand rub that does not require water
- Dry hands with a clean towel or air dry, shared towels are contaminated
- Collect used water in a basin and discard in a drain or in the latrine

Glove Use

Disposable examination gloves, if available, can be used for pelvic examination, normal delivery, and nonsurgical procedures Use new examination gloves for each procedure, these gloves cannot be reused because they are too thin to be processed

If **surgical gloves** are used, new gloves are best If gloves are reused, they must be decontaminated, cleaned, high-level disinfected, or sterilized They must be checked for peeling, cracking, holes, or tears Gloves with any signs of wear must be discarded See Learning Aid 2, page 7 35, for information on care of surgical gloves

Use **utility gloves** or clean decontaminated surgical gloves or disposable examination gloves for cleaning chores These chores include decontamination and instrument cleaning procedures Utility gloves may be decontaminated and reused, however, cracked or torn gloves should be discarded

Skin Preparation

Infection from minor surgical procedures, such as manual vacuum aspiration (MVA) or episiotomy, may be caused by germs from the skin, cervix, or vagina of the woman or from the hands of the health care worker Wash hands before and after each procedure Washing the woman's perineal area prior to a procedure is an important infection prevention measure See Module 10 **Other Emergencies** for information on preparing a woman for MVA

Many chemicals are safe skin antiseptics The following antiseptic solutions are commonly available in different parts of the world

- Chlorhexidine gluconate (4%) (for example, Hibiclens®, Hibiscrub®, Hibitane®)
- Chlorhexidine gluconate and cetrimide, various concentrations (for example, Savlon)
- Iodophors, various concentrations (for example, Betadine®)

For vaginal and cervical surgical preparation, use a water based antiseptic, such as an iodophor or chlorhexidine gluconate Do not use alcohol or alcohol containing preparations, for example, Dettol or tincture of iodine Alcohols burn, all of them dry and irritate mucous membranes, which encourages the growth of germs Do not use Hexachlorophene (pHisoHex®), as it causes nerve damage and is absorbed by mucous membranes

Antiseptics do not have the same killing power as the chemicals used for high-level disinfecting (HLD) Antiseptic solutions should **never** be used for high-level disinfection of instruments

No-Touch Technique

In procedures such as manual removal of placenta, cervical laceration repair, or manual vacuum aspiration (MVA) germs can be carried into the uterus, causing a serious infection To prevent infection, midwives and doctors should always use the no-touch technique during the entire procedure and only use gloves and instruments that are sterilized or high-level disinfected

Using the no-touch technique means that the part of the gloves or any other instrument that enters the cervix or uterus should not touch anything before insertion through the cervix During procedures, separate the labia to allow the gloved hand to have very little contact with the vulva before going in the uterus The sponge holding forceps, cannula, and so forth should not touch unsterile areas, gloves, or vaginal walls before they are inserted in the cervix Midwives and doctors should handle the instruments only by the parts that do not touch the woman Remember to enter through the cervical os as few times as possible This reduces the contamination of the uterus

Processing Equipment

To minimize the risk of transmitting infection to both women and midwives, instruments and gloves need to be decontaminated, cleaned, and then either sterilized or high-level disinfected Other surfaces such as the examination table or bed should also be decontaminated and cleaned after you care for each woman

For either the sterilization or HLD process to be effective, items must first be decontaminated and thoroughly cleaned

Steps for Infection Prevention

STEP 1 The first infection prevention step is **decontamination** of floors, beds, instruments, equipment, linen, gloves, needles, syringes, and other things used in caring for women and babies The aim of decontamination is to loosen blood or other substances to reduce the chance of blood borne transmission **Always wear gloves during this step**

Decontamination

- Put on gloves and apron Make a 0 5% chlorine solution, see Module 10 **Other Emergencies**, page 10 62
- Place the gloves, instruments, needles, syringes, all rubber articles, and linens in the solution so that they are completely covered
- Make sure syringes, needles, and tubing are flushed and filled with solution Make sure instruments are opened wide
- Soak for 10 minutes

STEP 2 Cleaning is the second infection prevention step Wash items with soap and water Rinse off all of the soap Cleaning removes blood, dirt, and other materials Cleaning improves the effectiveness of the third step **Always wear clean gloves for this step**

After decontamination, clean

- **Gloves** by washing with soap and water, turning gloves to ensure both sides are free from all soil See Learning Aid 2 - Care of Surgical Gloves, page 7 35

- **Instruments, needles, and syringes** by taking them apart and opening them wide to ensure all blood, dirt, and other materials are removed even from joints and hidden areas A brush is useful in cleaning instruments Make sure tubing and needles are flushed well with soap and water, then rinsed

- **Linen** with soap and water Hang in the sun to dry Depending on your situation, a laundry may take responsibility for the linen

STEP 3 Either **High-Level Disinfection (HLD)** or **Sterilization** is used as the third infection prevention step **High-level disinfection** is used to destroy all viruses, bacteria, parasites, fungi, and some endospore in clinics and maternities with a small number of clients Before HLD, everything must be **decontaminated** (see Step 1) and **cleaned** (see Step 2) Instruments are opened and syringes disassembled Flush all tubing

Boiling and steaming are the simplest and most reliable high-level disinfection methods Some chemical disinfectants may also be used Instruments, needles, syringes, and gloves that are high level-disinfected by boiling, steaming, or chemical disinfection need to be used within one week If more than one week has passed since disinfection, they need to be disinfected again before they are used

Note Eusol, Hibitane, Savlon, Dettol, PhisoHex, Lysol, Zephiran, gentian violet, cetrimide, phenol, and mercury compounds are not appropriate to use for high-level disinfection (HLD) or sterilization

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Methods of High-Level Disinfection (HLD)

1 Make sure everything is decontaminated and cleaned, and that instruments are open and syringes disassembled Flush all tubing

2 Do not add any more equipment after covering container

3 Three ways to HLD are

Boiling
- Cover equipment completely with water
- Bring water to a boil
- Cover pot and boil for 20 minutes
- Remove equipment from the pot with HLD transfer forceps
- Air or sun dry in an HLD covered container
- Store in an HLD covered container

Steaming
- Put equipment in steamer with a pot of boiling water
- Cover pot and steam for 20 minutes
- Remove the steamer containing equipment from pot
- Air or sun dry in the HLD covered steamer
- Store in an HLD covered container

Chemical disinfection
- Put equipment in container
- Cover equipment completely and soak in either glutaraldehyde 2-4% (Cidex) for 10 hours, or formaldehyde 8% for 24 hours
- Rinse with boiled water after soaking
- Discard soaking solution
- Air or sun dry in an HLD covered container
- Store in an HLD covered container

A **high-level disinfected (HLD) container and transfer forceps** can be prepared by steaming, boiling, or soaking with newly prepared decontamination solution for 20 minutes If decontamination solution is used, rinse with boiled water after soaking Let it air or sun dry Cover with HLD lid HLD transfer forceps can also be stored in a HLD covered container

Sterilization is used in hospitals and is preferred for surgical equipment It destroys all microorganisms, including all endosopores Make sure that everything is **decontaminated** and **cleaned** All instruments must be open and the syringes disassembled

For additional information on infection prevention procedures, see Learning Aid 2, page 7 35, and Learning Aid 3, page 7 42 See also Module 10 **Other Emergencies** Learning Aid 4, page 10 60

Handling Needles and Syringes

Take precautions to prevent injuries from used needles and sharp instruments, which may carry hepatitis B (HBV) or HIV/AIDS These injuries may happen during surgical procedures, while cleaning instruments, during disposal of needles, or when handling sharp instruments after procedures Although some may feel that processing used needles and syringes is an **inappropriate reuse of disposables**, in some circumstances it is the only available option Disposable syringes and needles are recommended, when available, for use in all patient care and surgical procedures However, the problem of needle stick injuries is always present

If **disposable needles and syringes are available,** use each needle and syringe only once Do not break needles after use Do not remove needles from disposable syringes, if you are going to destroy them Do not **put the cover (cap)** back on a needle after use, for you might accidentally stick (puncture) yourself with the needle Dispose of needles and syringes in a puncture-proof container You can burn or bury used needles and syringes

Where **disposable needles are not available**, recapping (putting the cover back on the needle) should be discouraged Once an injection is prepared, it should be given immediately This way, there is no need to put the cover back on the needle This will prevent you from accidentally getting a needle stick

If **recapping is practiced**, the "one-handed" recap method must be used

1 Lay the cap on a table, counter, or flat surface

2 Hold the syringe and needle in one hand

3 Guide the needle into the cap, **without** touching the cap **Do not touch the cap until the needle is in it**

4 When the needle has entered the cap **all the way**, pull the cap tight on the needle

Safe disposal of needles and syringes may not be easy Used needles and syringes are dangerous to children and adults When children or adults find them, they like to play with them, sell them, or use them It is very important that midwives and other health workers make sure that all wastes are disposed of **safely** Think about how you can do this at your work place

Waste Disposal

After completing a procedure, and while still wearing gloves, dispose of contaminated gauze, cotton, and other waste items in a properly marked, leak proof container or plastic bag Waste should be disposed of by burning or burying

Dispose of **needles and syringes** or other sharp items in a separate puncture proof container *If you do not have a puncture proof container*, use a thick plastic bag **Carefully** wrap all sharp items in paper, plastic, leaves, or anything else you may have to throw away **and then wrap tightly** in a plastic bag **Mark the bag** so that everyone can tell the bag has sharp items Needles and syringes must be disposed of by burning or burying

Disposal of **blood, placenta, or tissue** must be done carefully in order to reduce the chance of transmitting blood borne diseases to the health care worker, other patients, or the community After a procedure is complete and the blood, placenta, or tissue inspected, it must be disposed of carefully If possible, empty the liquid waste products into a flushable toilet which empties into a sewage system, latrine, or covered container Be careful to avoid splashing If there is no sewage system, the waste products must be disposed of by burning or burying Wrap them tightly in a plastic bag before burying Bury the bag deep enough so that animals will not find it

If culturally appropriate, the placenta may be given to the family If the family takes the placenta home, advise them on how to protect themselves from exposure to the blood The placenta may be disposed of by burning or burying The placenta must be wrapped tightly in a plastic bag before burying Bury deep enough so that animals will not find it The placenta may be put into a placenta pit with a heavy lid (cover) if placenta pit is dug deep enough (at least 1 meter or about 4 feet)

Guidelines for Infection Prevention

The midwife is responsible for making sure that everything used in the care of the woman or baby is properly cleaned or high-level disinfected The midwife is responsible that the waste disposal is done correctly and safely Infection prevention steps are used to remove blood and body fluids from surroundings and equipment and to prepare for the next client Gloves should be worn throughout all procedures You may wish to review Steps for Infection Prevention, page 7 28

- **Spills** should be decontaminated for 10 minutes by pouring decontamination solution on the spill Then the spill and solution are wiped up with a cloth The entire area should then be cleaned with soap and water

- **Linens** should be soaked in decontamination solution for 10 minutes, then washed with soap and water, rinsed with clean water, sun dried, and stored in a clean area

- **Gloves, rubber, and plastics**, including bulb syringes, mucus extractors, rectal tubes, and urinary and suction catheters should be soaked in decontamination solution for 10 minutes, washed with soap and water, rinsed with clean water, checked for holes, and discarded if holes are found They should be dried on both sides, high-level disinfected or sterilized, and stored in a covered container

- **Instruments and equipment** used for delivery, artificial rupture of membranes, injections, episiotomy, manual vacuum aspiration, and so forth should be decontaminated, cleaned, high-level disinfected, or sterilized and stored in a covered container

- **People** attending a birth or assisting with a procedure must wash their hands at appropriate times and wear clean, protective clothing The midwife is responsible for teaching those around her -- delivery assistants, cleaners, trash handlers, family members, and others -- how to protect themselves The midwife is responsible for supervising the handling of blood and body fluids in her work areas and community

Learning Aid 1 - History of Puerperal Infection

Puerperal infection (postpartum infection) has been well known throughout written history Hippocrates, for example, wrote that puerperal infection was caused from the slowing down of discharge from the vagina in the weeks after delivery Its true cause was not known until Louis Pasteur found germs (bacteria) using a microscope Puerperal infection continues to be a common cause of maternal death, even though we know how to prevent infection

In 1847, Dr Ignaz Semmelweiss, while working at a maternity hospital in Vienna, noticed the very low mortality (deaths) from puerperal infection in a ward managed by midwives, compared to the high mortality in a ward managed by doctors The doctors went directly from dissecting dead bodies to examining patients who were recovering from childbirth He decided that the doctors were spreading this fatal infection on their unwashed hands He got real proof of this when he saw a co-worker die of septicemia after accidentally cutting himself with a scalpel used during the autopsy of a woman who had died of puerperal infection Because of this accident, Semmelweiss required his staff to wash their hands with an antiseptic solution before examining maternity patients

During the first year of hand washing by doctors, mortality from puerperal infection at Semmelweiss' hospital dropped sharply from almost 12% to 3 8% Even with this demonstration, most doctors did not believe that invisible bacteria could do such a thing Twenty years later, Pasteur's studies with the microscope and Lister's research with aseptic methods made doctors take note of and believe what Semmelweiss had been telling them

Learning Aid 2 - Care of Surgical Gloves[2]

The risk in reusing surgical gloves is that they are likely to contain more invisible holes or tears than new ones Therefore, reused gloves may provide less protection to the midwife Autoclaving (sterilization) and high-level disinfection (steaming or boiling) of gloves, when correctly performed, can sterilize gloves Double gloving gives more protection during high-risk procedures Processing of gloves is an **appropriate reuse of disposable items**

How to *Decontaminate* and *Clean* Surgical Gloves before Sterilization or High-Level Disinfection (HLD)

STEP 1 Before removing soiled gloves, put your gloved hands briefly in a container filled with decontamination solution (0 5% chlorine solution)

STEP 2 Remove gloves by turning them inside out and soak in the chlorine solution for 10 minutes Performing **Steps 1 and 2** decontaminates both sides of the gloves

STEP 3 Clean gloves by washing them in soapy water, inside and out (Always wear gloves for Steps 3 to 6)

STEP 4 Rinse gloves in clean water until no soap remains Soap left on the glove can interfere with sterilization or high-level disinfection (HLD)

STEP 5 Test gloves for holes To test a glove for holes, blow air into it holding the glove 10 to 20 cm (4 to 8 inches) from your mouth, and close off the cuff Then hold the glove under water Air bubbles will appear if there are holes

STEP 6 Gently dry gloves inside and out before proceeding with sterilization or HLD **When gloves remain wet for a long period of time, they absorb water and become sticky**

STEP 7 When gloves are to be steam sterilized, package them (see next page) before further processing

Note It is suggested that gloves should be discarded after processing them 3 times because invisible tears may occur with use and reprocessing If this is not possible, double-glove for high-risk procedures

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[2] This section Care of Surgical Gloves is adapted primarily from Winkler et al (1995)

How to *Sterilize* Surgical Gloves

After decontamination, cleaning, and drying, gloves must be packaged in cloth or paper before sterilizing by autoclaving

The cuffs should be folded up, so that after sterilization the gloves can be put on easily without contaminating them Put gauze or paper inside each glove and under the fold of the cuff to prevent sticking together Glove powder can be used if available Wrap them as shown in Figure 2 Do not tie tightly or wrap glove packs with rubber bands Finally, place the glove packs in a wire basket on their sides to allow optimum steam penetration If gloves are stacked in piles, penetration of steam under the cuffs may be poor Autoclave at 121°C (250°F) for 30 minutes and at a pressure of 106 kPa[3] (15 lb/in^2) Higher than recommended temperatures and pressures are destructive to gloves

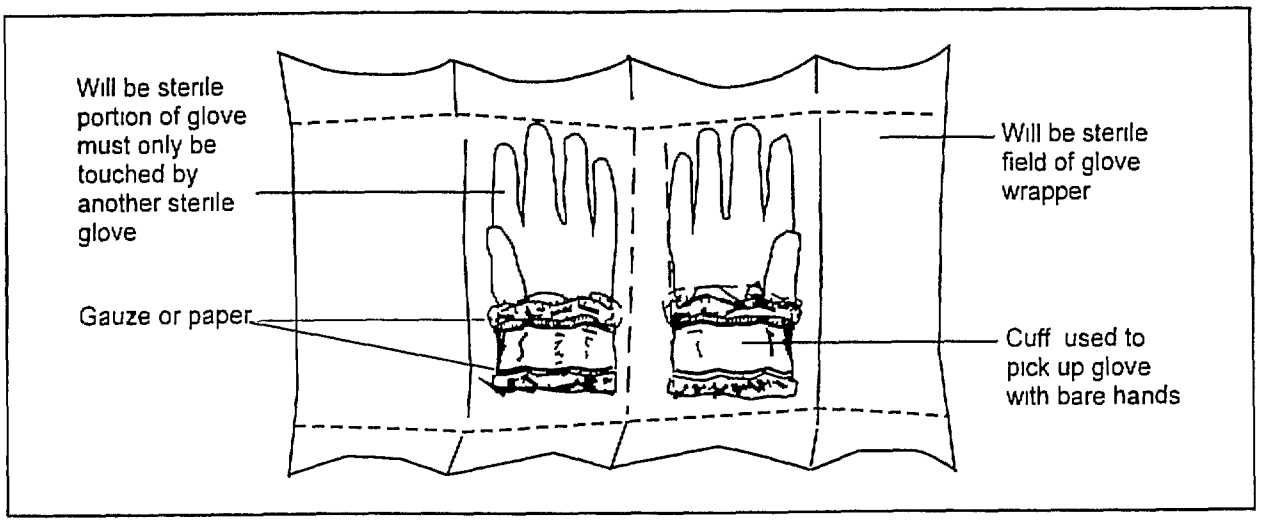

Figure 2 Preparing Gloves for Autoclaving
Source South East Asia Office/World Health Organization (1988)

Immediately after autoclaving, gloves are extremely fragile and tear easily Do not use the gloves immediately Wait 24 to 48 hours to allow the elasticity to be restored and to prevent stickiness

[3] kPa kilopascal a term to measure presssure

How to High-Level Disinfect Surgical Gloves by Steaming

After gloves have been decontaminated and thoroughly washed, they are ready for HLD by steaming

STEP 1 Fold up the cuffs of the gloves so that they can be put on easily and without contamination after HLD

STEP 2 Place gloves in a steamer pan The pan may be metal, bamboo, or other material A flat pan is best If making your own pan with holes, push the holes from top to bottom so that rough edges are on the bottom To make removal from the pan easier, the cuffs should be facing outward toward the edge of the pan (Figure 3) Five to 15 pairs can be put in each pan depending on the size (diameter) of the pans

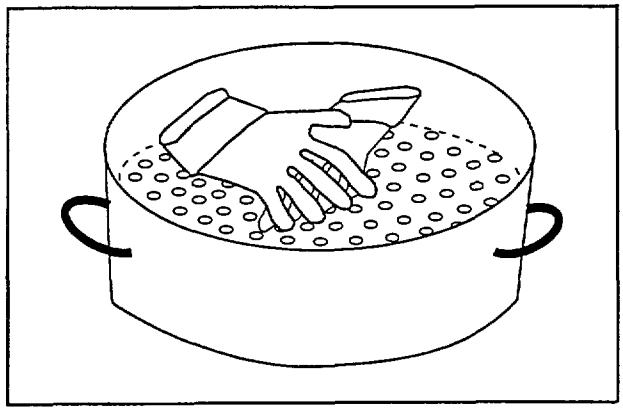

Figure 3 Gloves in Steamer Pan
Source Tietjen et al (1995)

STEP 3 If you are using a stack steamer, repeat this process until up to 3 steamer pans have been filled with gloves Stack the filled steamer pan(s) on top of a pan containing enough water for 20 minutes of boiling A second (empty) pan without holes should be placed on the counter next to the heat source (see **Step 9**)

Be sure there is sufficient water in the bottom of the pan for the entire 20 minutes of steaming

STEP 4 Place a lid on the top steamer pan Bring water to a full **rolling** boil When water only simmers, very little steam is formed and the temperature may not get high enough to kill microorganisms

STEP 5 Reduce the heat so that water continues to boil at a rolling boil When water boils too violently, it evaporates quickly and wastes fuel

STEP 6 When steam begins coming out between pans, start a timer or note time on clock and record time in the HLD log (book) or on a paper

STEP 7 Steam gloves for 20 minutes

STEP 8 If you are using a stack steamer, remove the top steamer pan and place the cover on the top pan remaining on the stack If you are using a single steamer, remove the steamer pan Gently shake excess water from the gloves in the steamer pan you have just removed

STEP 9 Place the pan containing gloves on the pan you placed next to the heat source in step 3 (see **Step 3**) Repeat until all pans containing gloves are restacked on this empty pan This step allows the gloves to cool and dry without becoming contaminated Never place the pans of newly steamed gloves directly on a table, counter, or other surface, as they will be contaminated

Do not place pans containing gloves on a table top, counter, or other surface as gloves will be contaminated

STEP 10 Allow gloves to cool for 5 to 10 minutes before wearing them "wet " Gloves should be used within 30 minutes if possible After this time, the fingers of the glove stick together and are hard to put on despite being damp Any gloves that were removed from the steamer pan(s) to be used "wet" or "damp," but that were not used during the clinic session, should be reprocessed before use

STEP 11 Another option is to allow gloves to air dry in the covered steamer pan 4 to 6 hours Using high-level disinfected gloves, turn the gloves so that they dry on both sides Using a high-level disinfected forceps without teeth, transfer the gloves, dried on both sides, to a dry, high-level disinfected container with a tight-fitting lid For postabortion procedures, store for up to one week For pregnancy procedures, see page 7 40 Gloves also can be stored in the stacked and covered steamer pan(s)

To prepare a high-level disinfected container, boil or fill the container with decontamination solution, soak for 20 minutes, rinse with boiled water, and air dry The chlorine solution can then be transferred to another container and reused

How to High-Level Disinfect Surgical Gloves by Boiling

After surgical gloves have been decontaminated and thoroughly washed, they are ready for HLD by boiling for 20 minutes For postabortion procedures, boiling surgical gloves should be done **only** if the gloves are to be used immediately (i e , worn "wet" after being boiled and cooled) For pregnancy procedures, air dry after boiling, and store in a covered HLD container (see page 7 40)

STEP 1 Place gloves in a bag made of plastic or nylon netting

STEP 2 Place a weight in the bag so that all gloves and the bag will be at least 2 5 cm (1 inch) below the surface of the water

STEP 3 Place the lid over the pan and bring water to a full, **rolling** boil (When water only simmers, the temperature at the surface may never get high enough to kill microorganisms)

STEP 4 Reduce heat so that water continues to boil at a rolling boil When water boils too violently, it evaporates quickly and wastes fuel **Be sure there is sufficient water in the pan to cover items for the entire 20 minutes of boiling**

STEP 5 When rolling boil begins, start the timer or note time on a clock and record in HLD log (book) or on a paper **No objects or water should be added after timing starts**

STEP 6 Boil gloves for **20 minutes** If you do not have enough water, add water, bring to rolling boil, and start timing again for the full 20 minutes

STEP 7 After boiling for 20 minutes, remove bag of gloves with **high-level disinfected**, dry forceps Never leave boiled objects in water which has stopped boiling As the water cools and steam condenses, air and dust particles are drawn down into the container and may contaminate the gloves **Never leave boiled objects in water which has stopped boiling**

STEP 8 Allow excess water to drip off gloves (shake the bag gently) Place the bag in a high-level disinfected container, cover, and allow to cool (about 5 to 10 minutes) before use

STEP 9 Wear high-level disinfected gloves to untie the bag Remove the gloves from the container using high-level disinfected forceps without teeth Gloves which are worn "wet" may be weakened and less stretchy (elastic) Therefore, put on "wet" gloves very carefully **Note** After boiling, gloves should be used within 30 minutes, if possible After this time, the fingers of the gloves stick together and the gloves are hard to put on despite being damp

STEP 10 Gloves remaining in the bag (not used) at the end of the clinic session should be reprocessed because they will not dry completely (inside and outside)

For labor, delivery and postpartum procedures in low volume health centers, maternities, and clinics, midwives can use **high-level disinfected** gloves which are air dried on both sides and stored in a high level disinfected covered container

When they are used, the midwife washes her hands before she puts on the gloves Since these gloves have been air dried, the midwife should wash her gloved hands before she provides care *If the gloves have been stored for one month and the container has been opened,* the midwife should wash the stored gloves with soap and water, and high-level disinfect them *again*, before she uses them to provide care

Ways to Help Avoid Glove Problems	
PROBLEM STICKY GLOVES	
Probable Cause	**Recommended Solution**
Residual liquid soap	Reduce amount of liquid soap or detergent used when washing gloves Rinse gloves at least three times in clean water
Heated to high temperature for too long	Use **30 minutes** sterilizing exposure at 121°C (250°F) and remove gloves from sterilizer as soon as cycle is completed
Gloves sterilized with other goods	Sterilize gloves separately
Gloves not allowed to dry completely after steaming	Wear "wet" within 30 minutes or allow to dry for 4 to 6 hours before using
Poor powdering	Use absorbable glove powder and follow manufacturer's instructions to insure a film of powder on all surfaces
Surfaces of gloves touching each other	Gauze or paper should be inserted between the palm and back of hand of each glove and between the hand of the glove and the turned-back cuff This allows steam to contact all surfaces during sterilization and prevents surfaces from sticking to each other
Breakdown (deterioration) of rubber (latex) (Rubber gloves deteriorate while stored even though they have not been used They become soft sticky and unusable)	Store in a dry cool area Do not store in direct sunlight
PROBLEM EXCESSIVE TEARING OR RUPTURING	
Gloves used too soon following *sterilization*	**Do not** use gloves for 24 to 48 hours after sterilization This allows gloves to regain their elasticity before use

Source Tomlinson (1991)

Accidental Contamination of Sterile or High-Level Disinfected Gloves

There are several ways to contaminate sterile or high-level disinfected surgical gloves including

- tearing or puncturing the glove
- touching any nonsterile object with the sterile glove
- touching the outside of a sterile glove with an ungloved hand

Midwives wearing sterile or high-level disinfected gloves should be careful **not** to contaminate gloved hands accidentally by touching nonsterile objects, unprepped skin, or mucous membranes

Re-gloving after Contamination

To re-glove after contaminating a glove during a procedure, remove the contaminated glove by the cuff, and place it in chlorine solution for decontamination (if reusing) or in waste container The re-gloving procedure will depend on whether the glove is sterile or high-level disinfected

Sterile glove

Have your assistant open a sterile glove pack, laying the glove package on a clean surface Put on the replacement glove in the usual manner

OR

Have a *gloved* assistant open the sterile glove package, remove a sterile glove, and hold the glove open by the cuff Put your hand into the glove without touching the outside of the glove Adjust the glove after the assistant lets go of the cuff

High-level disinfected glove

Have an assistant pick up a replacement glove with high-level disinfected forceps Grasp the replacement glove by the turned-down cuff Put on the glove in the usual manner

OR

Have assistant remove a replacement glove from the high-level disinfected container with forceps and hold the glove open by the cuff Put your hand into the glove without touching the outside of the glove

Learning Aid 3 - Sterile Technique and Sterile Supplies

Sterile technique is used to prevent contamination For example, sterile technique is used when doing a cesarean section or a symphysiotomy, to stop germs from getting into the incision (cut) All of the area and anything touching the area where the cut is made must be sterile (having no germs)

General Rules

1 Everything that touches broken skin, is used to cut (such as scissors), or goes through the skin (like a needle) must be sterile

2 Sterile wrapped articles (such as cotton, gauze, gloves, instruments) are not sterile if
- there are holes in the wrappers Holes let germs inside of the wrapper
- they are damp or wet Germs can go inside through the wet places
- they fall on the floor The floor is always very contaminated

3 Sterile gloved hands and sterile objects (supplies and equipment) must always be kept in view or above your waist The area below the waist or table top is considered not sterile For that reason, do not let your sterile gloved hands hang down Always hold your sterile gloved hands higher than your elbows

4 A sterile article touched by something not sterile becomes not sterile

5 **It is not wrong to contaminate something It is very wrong to know an area or something is contaminated and not correct the situation**

6 Sterile equipment is not sterile if
- it is uncovered in a sterile container
- it is touched with unsterile hands, instruments, or materials

Hand Washing - is the best way to keep from passing germs Germs are carried on your hands as you touch things Germs are on your hands and under your fingernails

1 Hand washing should be the most frequent activity of the midwife

2 Hand washing must be done
- when starting and leaving work
- before and after doing any procedure such as catheterization, giving an injection, bathing a baby, and so forth
- after doing tests such as urinalysis and hemoglobin

3 Keep your fingernails short and clean Use soap and water Dry your hands with a clean and dry towel or dry them in the air

Surgical Hand Washing - must be done for 3 minutes before any procedure in the operating room You need a brush (surgical or local sponge), a stick to clean your nails, soap, or antiseptic solution and water to wash your hands Sterile gloves should also be used when available

First Scrub

1 Wash your hands with soap and water
2 Wet your hands and forearms
3 Put soap on your hands and then your arms to your elbows
4 Hold your hands above elbow level as much as possible The hands are always cleaner than your arms during and after a surgical scrub Water should always run from your finger tips to your elbows
5 Clean your nails with a stick or nail file
6 Rinse your hands and arms (holding your hands above your elbows) with running water from a tap or poured by an assistant

If you do not have an assistant, you must have three containers of water Use one container to wet and make soapy lather Use one container to rinse the first two times and the third container to do a final rinse Rinse by putting your hands in first, then with a continuous motion, pull your arms (to the elbows) through the water Always keep your hands above your elbows so that water runs from the tips of your fingers to the elbows

Second Scrub

1 Wash your hands and arms with soap and water
2 Scrub each hand and arm with a brush or local sponge Make sure to scrub every side of each finger Scrub between the fingers Be careful not to rub so hard that you scratch the skin
3 Rinse hands and arms with running water
4 Remember to keep your hands above your elbows at all times

Third Scrub

1 Repeat scrubbing with brush and rinse again with running water Air dry
2 A sterile towel may be used if you are putting on sterile gloves
3 Remember to keep your hands above your elbows at all times

Practice the surgical hand washing technique under the supervision of a co-worker Practice until you no longer have to time yourself With practice you should be able to do a surgical hand wash in **3 minutes** Time is very important in an emergency It is necessary for midwives to be skilled in surgical hand washing to prevent contamination when assisting in the operating room

Sterile supplies such as instruments, cotton, gauze, towels, suture, and so forth are protected from contamination by the sterile paper or cloth in which they are wrapped Supplies that are sterilized by autoclave or pressure cooker may be protected in stainless steel drums or canisters with lids Remember that it is the inside of any sterile container or package that is sterile

There is a special way to use sterile containers An assistant with clean hands can open the containers, touching only the outside If there is a lid and you need to lay it down, always lay it down with the sterile side **not touching anything** With your sterile gloved hands, touch on the inside of the container Sterile supplies can be removed from a container or package with a sterile transfer forceps

Methods of Sterilization

1 Make sure that everything is **decontaminated and cleaned**, that instruments are open and syringes disassembled Flush all tubing

2 Two ways to sterilize are

Wet Heat (autoclaving) - the method of choice for reusable instruments, needles, syringes, and gloves Operate autoclave according to the instructions, at 121°C (250°F) equivalent to a pressure of 101 kPa (15 lb/square inch) for a minimum of 20 minutes If equipment is wrapped, 30 minutes is necessary

Dry Heat requires that equipment be heated at 170°C (340°F) for 2 hours An ordinary household oven is satisfactory for dry heat sterilization Dry heat can NOT be used for rubber or plastic equipment

3 Storage should be in a clean dry place if equipment is wrapped If the equipment is not wrapped for sterilization, store in a sterile container with a lid

For more information, review fundamentals of nursing procedures on sterilization

Learning Aid 4 - Incision and Drainage of Breast Abscess

A breast abscess is a localized collection of pus which at first is a painful, hard red swelling in the breast Over time, or with the application of hot compresses, the swelling softens and forms a soft yellow center The swelling (abscess) is ready to be cut open (incise), and the pus drained, to help healing and relieve the pressure and pain

Equipment

Scalpel, size 11 blade if possible
Soap and water
Sterile gloves or artery forceps
Gauze squares and bandage
Analgesia/anesthesia
Container for waste

Procedure

1 Start the woman on a broad spectrum antibiotic such as penicillin V 500 mg or erythromycin 400 mg 4 times per day for 10 days or co-trimoxazole 800 mg tablets twice a day for 7 days

2 Get all the equipment ready

3 Tell the woman what you are going to do Help the woman sit on a chair with her breast resting on a table

4 **Very gently** wash the breast with soap and water **LOOK and FEEL** to know where the pus (soft, most painful and tender to touch) area is on the breast

5 Give analgesia intramuscular (IM), (such as Pethidine 50 mg, Talwin 50 mg) or local anesthesia (spray ethyl chloride on the soft and painful part of the breast)

If analgesia or anesthesia is not available, continue with the incision and drainage The woman may not be able to relax She will have pain and be uncomfortable Explain to her that the pus must be taken out of her breast so that she will be able to breast feed her baby Help her to understand that the pus in the breast can spread to other parts of her body and make her more sick than she is right now

6 Wash your hands Put on sterile gloves if you have them

7 Cut the abscess with the point of the blade Make sure the cut is big enough to put your finger into the opening Make the cut all at one time Cut in a straight line towards the nipple Thick yellow, green, blood stained, foul smelling drainage (pus) will usually run from the opening

8 If you are wearing sterile gloves, gently push your finger into the opening so that you will break up the pockets (sections) of the abscess and the pus will drain out See Figure 4

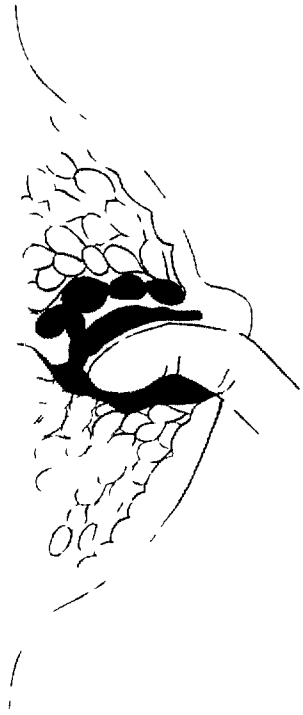

Figure 4 Breaking up the Pockets of the Abscess

If you do not have sterile gloves, gently push the hemostat (artery forceps) into the opening Open the hemostat to break up the pockets of the abscess so that it will drain Let the pus drain until it stops **Do not press or squeeze the breast,** this will be too painful for the woman

9 Open a 4 x 4 sterile gauze square Start with one corner and gently push the gauze into the opening as far as it will go Let a little of the gauze stick out of the opening The gauze packing will help to drain the pus

10 Cover the opening with gauze and wrap with a bandage Help the woman put on a loose fitting brassiere If she does not have brassiere, use a sling, head tie, or other cloth to support the breast

11 Change the dressing every day Pull the gauze out a little each day to help the pus drain Take the gauze all the way out in 4 days Continue antibiotics for 10 full days Continue to breast feed on the breast that is not affected If breast feeding was stopped, start again as soon as the woman can tolerate it, see Prevention of Mastitis on page 7 15

12 Continue to see the woman until there is no pus drainage and the opening is closed

Review Questions

What Did I Learn? Find out what you know and understand of this module section by answering the following questions When you are finished, look for the answers in the module on the pages shown in parentheses ( )

1 Define sepsis (page 7 4)

2 List 5 ways germs can get into a pregnant woman or her newborn baby (page 7 5)

3 How can you, the midwife, prevent sepsis? (page 7 5)

4 List 4 findings that will help you decide if a woman has postpartum infection after a complete abortion (page 7 9)

5 What actions will you take to help a woman who has postpartum infection after a complete abortion? (page 7 9)

What actions by a midwife could have prevented this woman's infection? (pages 7 10 - 7 11)

6 List findings that will help you decide if a woman has chorioamnionitis (page 7 12)

7 How will you decide that a breast abscess is ready to be cut and drained? (page 7 15)

8 How does tetanus infect a newborn? (page 7 22)

9 How can you prevent tetanus in the newborn? (page 7 24)

10 Septicemia is an infection of the whole baby, caused by germs in the blood How can these germs get into the blood of a newborn baby? (page 7 21)

11 What actions will you take to help a baby with septicemia? (page 7 21)

12 Ophthalmia neonatorum can cause blindness in the new baby Describe the actions you will take to care for a baby with ophthalmia neonatorum (page 7 19)

13 List and explain each of the infection prevention steps for equipment and supplies (pages 7 28 - 7 30)

14 Describe the high-level disinfection steaming process for gloves (pages 7 37 - 7 38)

Case Study 1 - The Problem Solving Method

The Problem Solving Method is an organized way of giving care to women The Problem Solving Method is a way of thinking about the care you give to women This case study will help you review the Problem Solving Method

We all solve problems every day of our lives We usually do not think about the steps involved in problem solving, though we all follow steps to solve problems The Problem Solving Method is a way to help us follow steps in giving care to women

The four steps of the Problem Solving Method are

1

2

3

4

Check your answers by looking in Module 1, page 1 22

The Traditional Birth Attendant (TBA) sees you at the market and asks you to visit Mrs P I She delivered 5 days ago This morning she feels very hot and does not feel like bathing or eating

ASK and LISTEN

What do you **ASK** the TBA on the way to see the woman?

You find out that Mrs P I received antenatal care at the hospital, this is her second delivery, the baby girl is sucking, moving around and looks healthy, the labor was about 1/2 day, the perineum is intact, placenta and membranes are complete

What do you **ASK** Mrs P I ?

You find out that she has abdominal pain, foul smelling bloody vaginal discharge, and chills She has taken a little tea, but does not feel like taking any food She has not taken any medicine

Before you **LOOK and FEEL,** think about the information you have been told For example, Mrs P I has chills, therefore you want to find out if she has fever

LOOK and FEEL

What examination do you do **(LOOK and FEEL)** on Mrs P I using the **ASK and LISTEN** information?

Refer to Module 7, page 7 6

You find out that she is very hot to the touch, her pulse is 108 beats in a minute, she is flushed, looks sick, and has foul smelling, blood-tinged, purulent vaginal discharge The uterus is firm, contracted, and very tender

IDENTIFY THE PROBLEM

Using the information from **ASK and LISTEN, LOOK and FEEL**, what is the problem with Mrs P I ?

Refer to Module 7, page 7 13

You **IDENTIFY THE PROBLEM** that Mrs P I has an infection of the uterus You know that untreated postpartum infection (sepsis) can spread from the uterus into the abdomen An abscess may form in the abdomen The infection may go into the blood-stream, causing septic shock (shock due to infection) and death

TAKE APPROPRIATE ACTION

What **ACTION** will you take to help Mrs P I ?

Refer to Module 7, page 7 13

You explain to the TBA, the woman, and the family, that the woman is very sick and must get to the hospital as soon as possible Ask the family to arrange transport, and go with the mother and baby to the hospital While waiting for transport, help her rest in a semi-seated position Keep her pelvis low to help drain discharge from the uterus and vagina

Since you were called from the market, you probably do not have any antibiotics with you **IF** you have antibiotics with you, give her a broad spectrum antibiotic such as ampicillin 1 gm by mouth

Lower her fever and hydrate her by giving at least one glass (8 ounces) of water or other liquid every hour If she is very sick, feed her the liquid with a spoon If she begins to vomit, wait a little while and begin giving her liquids again Reassure her and explain to her that the fluids will help her to get better and that she must try to take them

If it is possible to get IV fluids from your maternity, what IV fluid do you give and in what amount?

Refer to Module 8, pages 8 17 and 8 18, for IV solutions and how to mark containers with the hours

Give Ringer's Lactate when a woman is in shock or near shock If you do not have Ringer's Lactate, choose Dextrose 5% in Water, or any other fluid you may have

Give 500 ml of fluid as fast as it will go You should stay beside the woman while the IV is running in so fast Take the blood pressure and pulse every 5 minutes When the blood pressure begins to go up and the pulse come down, slow the IV fluid Give 100 ml every hour Mark the IV solution container, with the hour for each 100 ml Watch the solution going in so that you can regulate it to 100 ml in each hour

Always watch carefully for swelling around the needle when you are giving IV solution If you see swelling, slow the IV down and watch the woman very carefully If the swelling increases, stop the IV solution, and remove the needle Try to start the IV in another place

Look for shock as you take the woman to the doctor

What signs of shock will you **LOOK** for, as you go with the woman to the doctor?

Refer to Module 8, page 8 4

If Mrs P I is in shock or near shock, she will **LOOK** restless and nervous (anxious) The respirations will be shallow and fast (above 40 per minute) The pulse may be hard to feel (weak) and fast (above 90 per minute) The blood pressure will be low (below 90/60) The skin will **FEEL** cold and wet If the fever is very high, the hands and feet may feel cold and the whole body wet

What will you do when you reach the hospital?

Help the hospital staff move Mrs P I and make her comfortable Introduce the family to the staff and explain that the staff will now be caring for Mrs P I Write down everything that you have done for Mrs P I , including any medicines given and explain to the staff Ask the family to tell you when Mrs P I comes home so that you can see her and follow up on anemia

Case Study 2 - Newborn What Is the Problem?

ASK and LISTEN

An eight day old baby is brought to your clinic The mother says the baby does not suck She says the baby is very hot The mother tells you that the baby has a seizure (fit) every time she touches her

LOOK and FEEL

The baby is hot to touch The jaw is tight in spasm and the body is stiff (rigid)

What is the PROBLEM?

What is the ACTION?

Was this PROBLEM preventable? If so, how?

ANSWERS - Case Study 2

What is the PROBLEM? Tetanus is probably the problem, but think about sepsis too

What is the ACTION? REFER as soon as possible Give 150,000 units penicillin to prevent infection and a sedative such as 1 mg Valium or 15 mg amobarbital sodium Give both IM If referral takes some time, help the mother to express breast milk and feed the baby with a spoon or a nasal gastric tube, if available Give cool compresses for fever, try not to touch the baby any more than you have to in order to prevent convulsions

Was this PROBLEM preventable? If so, how? Yes, it was preventable Give 2 injections of tetanus toxoid to the mother at least 4 weeks apart during her pregnancy Teach birth attendants and mothers to wash their hands carefully and to use boiled or sterile equipment at deliveries Teach them that the umbilical cord is tied with a sterile or boiled string/thread and cut with a sterile or boiled knife or a new razor blade Teach those who perform circumcisions to use boiled or sterile instruments Teach them to wash the cut area with soap and water every day and every time the child *urinates or passes stool*

Case Study 3 - Newborn: What Is the Problem?

ASK and LISTEN

Mother says her three day old baby's eyes are red and swollen The baby was delivered at home and had no eye care Mother had a vaginal discharge during pregnancy and has it now

LOOK and FEEL

The baby's eyes are swollen When the eyelids are lifted, much thick, greenish discharge is seen

What is the PROBLEM?

What is the ACTION?

Was this PROBLEM preventable? If so, how?

ANSWERS - Case Study 3

What is the PROBLEM? Conjunctivitis, possibly gonococcal

What is the ACTION? Using a syringe, wash eyes with cooled boiled water with a pinch of salt in one-half liter of water Wash from the nose outward toward the ear Wash until all discharge is removed Apply antibiotic eye drops or ointment Wash eyes and put in antibiotic eye medicine, every 15 minutes X 1 hour, every hour X 24 hours After first 24 hours, 3 times a day until eyes are normal Give antibiotic IM Treat both parents for gonorrhea, if testing is not available Explain to the parents that the infant became infected from the birth canal during delivery

Was this PROBLEM preventable? If so, how? Yes, teach birth attendants and mothers-to-be that antibiotic eye medicine at birth can prevent this sickness Teach mothers at antenatal clinic that vaginal discharge can be treated and that gonorrhea can be prevented by the use of condoms

Case Study 4 - Mother What Is the Problem?

ASK and LISTEN

Mother complains of fever and chills and a bad smelling vaginal discharge She delivered 5 days ago

LOOK and FEEL

The temperature is 39°C (102 6°F), pulse is 104 The lower abdomen is tender when you **FEEL** (palpate) You see and smell foul smelling bloody purulent (pus) discharge when you **LOOK** When you do a vaginal examination (**FEEL**), the uterus is very tender to touch and it is soft

What is the PROBLEM?

What is the ACTION?

Was this PROBLEM preventable? If so, how?

ANSWERS - Case Study 4

What is the PROBLEM? Postpartum infection

What is the ACTION? REFER the mother and her baby Until referral can happen, place her in a semi-seated position, give a broad spectrum antibiotic Help the baby attach and breast feed

Give oral hydration, at least one glass of liquid in an hour If the mother is too sick to drink or is vomiting, give intravenous infusion Reassure and explain to mother and family

Was this PROBLEM preventable? If so, how? It is difficult to know in this situation, as we do not know where the mother delivered or the conditions surrounding her delivery General cleanliness and boiled/sterile gloves and equipment should always be used for a delivery Hand washing before examinations and washing of the mother's genital area before vaginal examinations and before delivery are very important

Case Study 5 - Mother: What Is the Problem?

ASK and LISTEN

Mother complains of painful swelling of her left breast She also has fever and chills

LOOK and FEEL

Her temperature is 38 6°C (102°F), pulse is 92, left breast is warm to touch and tender One area is firm and reddened

What is the PROBLEM?

What is the ACTION?

Was this PROBLEM preventable? If so, how?

ANSWERS - Case Study 5

What is the PROBLEM? Breast abscess

What is the ACTION? Tell the mother to continue to breast feed from both breasts Continued breast feeding will help healing of the breast and will not make the baby sick Tell the mother to apply wet, warm compresses to the affected area for thirty minutes four times a day Give the mother an oral antibiotic such as ampicillin If the reddened area forms a soft yellow center, the breast abscess will need to be drained

Was this PROBLEM preventable? If so, how? This breast abscess may have been prevented Breast infection may be caused by milk staying in the breast, by the breast not completely emptying after nursing, or by bruising of breast tissue as a result of rough or prolonged expression of milk An abscess may develop from cracks on nipples Cracks on nipples develop sometimes because the baby does not attach to the nipple correctly Help the mother learn how to hold her baby so the entire nipple and areola is in the baby's mouth, this position will prevent sore nipples Sore nipples lead to cracks on nipples and cracks lead to abscesses Help the mother learn how to empty her breast either by encouraging the baby to suck or by gentle manual expression of breast milk after nursing

Prevent breast infection through very good hand washing with soap, good breast care including gentleness, cleanliness with special attention to the nipple, good support for the breasts, and watching the baby for skin, eye, or cord infection

Skills Checklist - Incision and Drainage of Breast Abscess

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ =satisfactory OR ✗ =needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
When doing an incision and drainage of a breast abscess				
1 Start the woman on a broad spectrum antibiotic				
2 Collect all equipment				
3 Prepare the woman and explain what you are going to do				
• Help her sit on a chair, with her breast resting on a table				
4 Gently wash the breast				
5 **LOOK and FEEL** for the soft place on the breast				
6 Give analgesia/anesthesia if available				
7 Wash your hands, put on high-level disinfected (HLD) or sterile gloves				
8 Cut the abscess				
• Use the point of the blade Cut in a straight line towards the nipple				
• Make the cut big enough to put one finger in				
• Cut all at once				
9 Break up the pockets of the abscess				
• with gloved finger or artery forceps (hemostat)				

	Date	Date	Date	Date
• **DO NOT PRESS OR SQUEEZE BREAST**				
10 Keep the cut open to drain pus				
• Open a 4 x 4 gauze square				
• Start with one corner				
• Push gauze into the opening				
• Let a little gauze stick out of opening				
11 Change the dressing every day, until there is no pus drainage				
• Pull the gauze out a little more each day				
• Remove gauze packing on 4th day				
12 Follow up				
• Continue to give antibiotics for 10 days				
• Continue to see the woman until no more pus drains from the cut and the opening is closed				
• Help the woman with breast feeding if she has stopped				
13 Record what you have done				

Comments

Skills Checklist - Infection Prevention

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor use it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ =satisfactory OR ✗ =needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
1 Use protective clothing and gloves				
• Wear apron/gown for delivery, put on before washing hands				
• Change shoes in delivery area, before washing hands No bare feet or sandals				
2 Wash hands for 3 minutes				
• Have ready soap, clean water, clean and dry towel				
• Remove jewelry from hands and forearms				
• Wet hands, forearms Put on soap and wash Clean nails Rinse with running water				
• Soap hands, forearms again - Use brush if available - Wash every side of each finger				
• Rinse hands, forearms with running water				
• Repeat wash with soap and water and rinse				
• Remember to keep hands above elbows				
3 Use gloves				
• When touching anything with blood or body fluids				
• When you have a cut on your hand				

	Date	Date	Date	Date
• When washing up after delivery including - Equipment - Instruments - Delivery furniture or floors				
4 Prevent splashes				
• When artificially rupturing membranes				
• Milk (push blood out of section of cord) the baby's cord before cutting				
5 Prevent needle sticks place used needles in appropriate container				
6 Use infection prevention process				
• **Decontamination** - Make solution correctly				
- Open instruments like scissors				
- Fill and flush syringes/tubes with solution				
- Completely cover and soak for 10 minutes				
• **Clean** - Wash with soap and water				
- Use brush on instruments				
- Clean joints on instruments				
- Flush tubes and syringes				
- Rinse with water				
• **High-level disinfect**				
- **If boiling**, cover opened instruments completely with water Cover pot				
Bring water to boiling Boil 20 minutes				

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	Date	Date	Date	Date
Remove transfer forceps, use transfer forceps to remove instruments				
Place in high-level disinfected covered container				
- **If Steaming**, boil water				
Place opened instruments in steamer with boiling water Cover pot				
Steam for 20 minutes				
Remove steamer with instruments Open lid slightly				
Allow instruments to air dry				
Remove instruments with HLD transfer forceps				
Place instruments in HLD covered container				
• **Sterilization**				
- Prepare for autoclave - Prepare for dry heat				

Comments

Skills Checklist - Care of Surgical Gloves

This checklist has two purposes
1 The midwife uses it as a guide for checking her own skills
2 The supervisor use it when evaluating how well the midwife performs
After observing/performing, write a rating ✓ = satisfactory ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
1 Before removing gloves, put hands in decontamination (0 5% chlorine) solution rinsing all soil from the gloves				
2 Remove gloves by turning inside out, soak in chlorine solution 10 minutes				
3 Wear clean gloves to wash used gloves with soap and water				
• Rinse gloves with clean water				
• Test gloves for holes by filling with water				
• Throw away gloves with holes				
• Air dry				
4 **If sterilizing**, fold cuffs				
• Pack gauze or paper inside each glove so the glove does not stick				
• Wrap gloves				
• Sterilize using autoclave for 30 minutes				
5 **If high-level disinfect (HLD)**				
• Fold cuff on gloves				
• Lay gloves in steamer so they can be easily removed without contamination				
• Place steamer on pot with water boiling				

	Date	Date	Date	Date
• Place lid on top of steamer				
• Steam for 20 minutes (rolling boil)				
• Remove steamer rack with the gloves - shake to remove water				
• Place steamer rack with gloves on an empty HLD pan, - Cover - Allow to cool Use cool, wet gloves for postabortion procedures - Air dry on both sides Use air dried gloves for pregnancy procedures in low volume maternities and clinics (wash gloved hands, before providing care)				
• Store in a HLD covered container				
• Reprocess if not used - In one month (pregnancy procedures in low volume maternities and clinics) - During a single clinic session (postabortion procedures)				
• Steam only number of HLD gloves needed for one month (or one clinic session) to avoid repeated steaming of gloves which wears them out				

Comments

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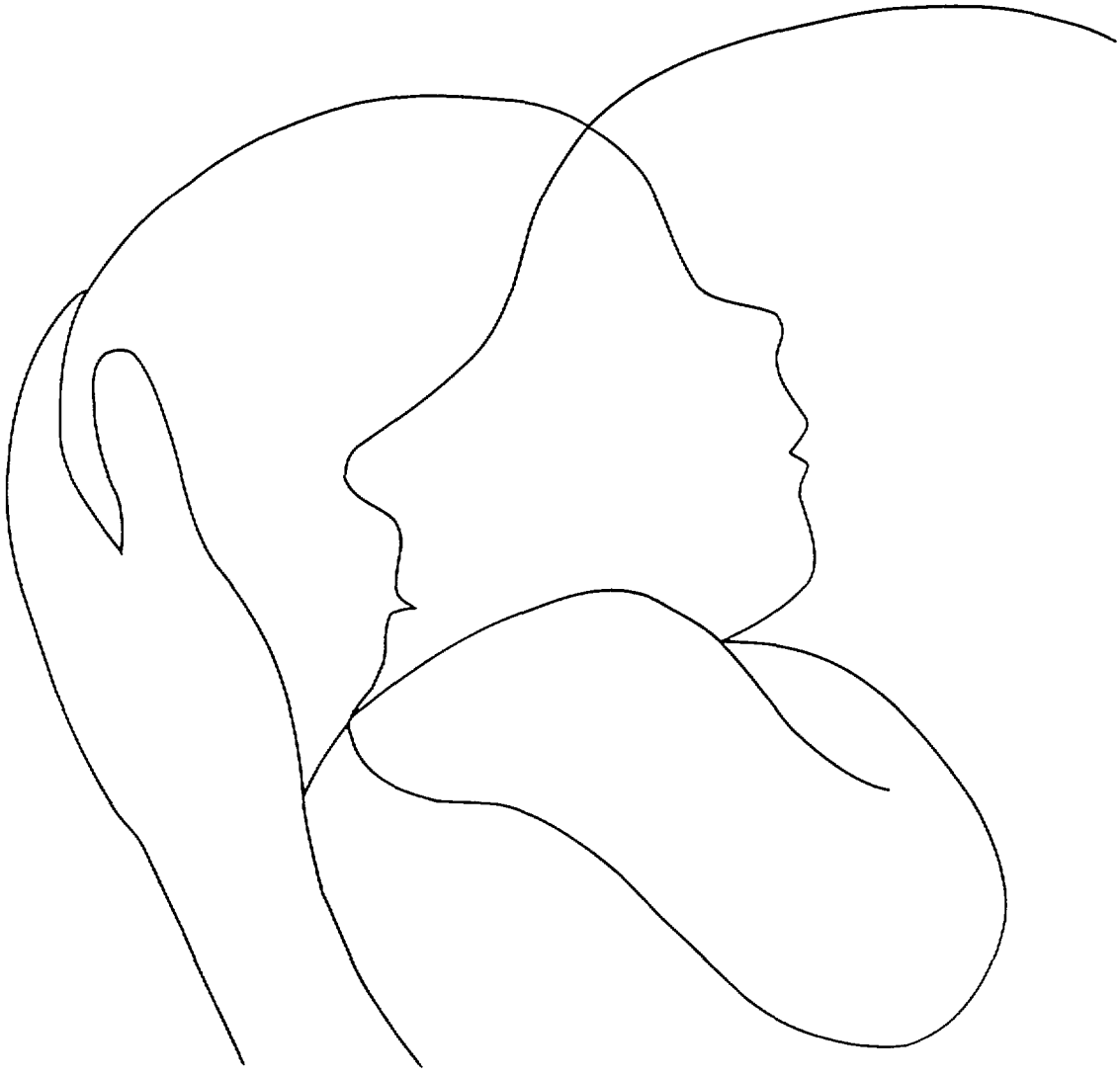
3rd Edition



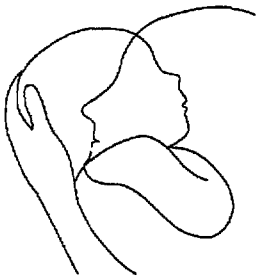
MODULE 8

REHYDRATION

Life-Saving Skills Manual for Midwives

Third Edition

Module 8. HYDRATION AND REHYDRATION



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Life-Saving Skills Manual for Midwives

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HYDRATION AND REHYDRATION
MODULE 8

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HYDRATION AND REHYDRATION

Goal

The midwife will learn to monitor the mother's fluid intake and judge when she needs more fluids, especially when she is at risk for shock The midwife will learn how to give appropriate fluids orally, intravenously, rectally, or intraperitoneally as needed

Objectives

The midwife caring for mothers will be able to

1 describe normal daily fluid needs
2 define *shock* and *dehydration*
3 identify common causes of shock and dehydration in mothers
4 record observations of hydration status
5 identify signs that indicate a need for emergency referral
6 identify the best intravenous solution to use in a specific emergency situation and the amount to be given
7 list potential dangers of giving fluids intravenously
8 describe and demonstrate how to give intravenous (IV) fluid
9 describe and demonstrate how to give fluid in the rectum
10 describe and demonstrate how to give intraperitoneal (IP) fluid
11 describe and demonstrate how to prepare oral rehydration solution (ORS) and give oral rehydration therapy (ORT)

Introduction

People normally take in the water and salts their bodies need through the food they eat and the fluids they drink Water and salts leave the body through stools, urine, breathing, and sweating When a person is healthy, water and salts pass from the bowel (intestines) into the blood When there is sickness, the bowel does not work normally, and less water and salt go into the blood More than the normal amount of water and salts may be lost if the person has fever, vomiting, hemorrhage, or diarrhea When a person works hard, the water and salts are lost more quickly through sweating and breathing

A larger than normal loss of water and salts from the body causes **dehydration** Dehydration happens when the output of water and salts is more than the intake of water and salts The output may be due to sickness, hard work, or too small an intake of fluids

The mother in labor is working very hard, and she loses water and salts quickly The midwife must help the mother to drink and eat, so that her body has the energy, salts, and water it needs The midwife should be sure the mother drinks at least one cup of liquid every hour During labor, she must record the fluids the mother takes See Module 3 **Monitoring Labor Progress,** page 3 34, for where to record the fluid the mother drinks

To **prevent dehydration, the mother must drink plenty of fluids during pregnancy and early labor** Advise her to drink locally available fluids such as rice water, fruit juice, weak tea, or drinking water During early labor, help the woman to drink fluids for rehydration and energy Fluids such as fruit juice and weak tea with sugar are good Make a note of the fluids that women in your area like to take during early labor for energy and strength If the laboring mother is vomiting and can not drink one whole cup of liquid at a time, have her take small sips after every contraction

The problems of **dehydration** and **shock** are closely linked In this module, you will learn life-saving steps you can take to prevent shock, and actions that will save the life of a woman in shock, including **rehydration** You will learn how to start an intravenous infusion in a peripheral vein, how to give rehydrating fluids in the rectum and the peritoneal cavity, and how to rehydrate the mother who is able to drink, using oral rehydration therapy Review questions will help you measure your knowledge Learning aids provide information on IV solutions, ORS, and care of a woman with convulsions Skills checklists will guide you as you practice the skills

A Midwife's Experience...

A 20 year old primigravida attended antenatal clinic and was advised to deliver at hospital because of pre-eclampsia She delivered at home, and was carried to my clinic with her newborn son She was bleeding, felt cold, and her pulse was hard to feel I asked someone to keep talking to her I covered her and put her bottom and legs higher than her head (shock position) while I rubbed her uterus The placenta delivered at home, too After the placenta came out, the grandmother said she started bleeding It took 4 hours to carry her to my clinic

I showed the grandmother how to massage the uterus and I started an infusion with Pitocin The bleeding slowed a little BP 70/40, pulse 110, temperature 36 8° I told the family we must take her to the hospital The family had no money to go We had to carry the woman and her baby one hour to the river The infusion infiltrated on the way The woman was very restless I got the vein again in the canoe It took us 3 hours to get to the road to the hospital The taxi took 30 minutes more and the infusion again infiltrated At the hospital, the woman was taken right in to the theater (operating room) I was so happy I started to cry The woman and her baby stayed at the hospital for 5 days I felt confident and competent to be a LSS midwife

LSS Midwife, Vietnam

Common Medical Terms

Anaphylactic Shock - a reaction caused by taking into the body a substance the person is allergic to, such as a toxin (poison) from a bee sting, a snake bite, or a medicine For example, some people are allergic to penicillin and will go into anaphylactic shock if they receive it

Dehydration - dryness of the body when the output of water and salts is greater than the intake of water and salts

Hemorrhage - abnormal bleeding (bleeding too much), usually from a ruptured (torn) blood vessel Abnormal bleeding may be external (outside of the body, such as abnormal bleeding from the vagina), internal (into the body, such as abnormal bleeding into the abdominal cavity), into the skin (such as a bruise), or into other tissues (such as into the muscle, causing a deep bruise)

Infiltration - fluid going into tissue (such as IV fluid going into the tissue under the skin instead of into the vein)

Infusion - a liquid being put into the body through a vein for medical treatment

Intraperitoneal - in the peritoneal cavity (area)

Intravenous - into a vein

Peripheral Veins - vessels away from the center of the body (such as veins on the arms and legs)

Peritoneal Cavity - area (sac) lined by a membrane covering all of the abdominal organs except the kidneys

Rehydration - giving water and salts to replace what has been lost in the process of dehydration

Shock - an emergency in which the body's circulation does not work normally, and organs such as the heart and lungs do not work well because they lack oxygen For example, when a woman is bleeding too much, there is not enough blood to carry the oxygen to the important organs of the body Therefore, the organs stop or do less of their normal activities such as when the heart can not pump as much, so the blood pressure is very low

Thrombophlebitis - infection of the wall of a blood vessel due to an irritation of the vessel wall

Life Saving-Steps to Prevent Shock

When a mother needs extra fluids, it is usually because she is very sick She may be in or nearly in shock The most common causes of shock are severe bleeding (hemorrhage), fluid loss (diarrhea), oxygen loss (stopping breathing), infection (septic shock), heart attack, or allergic reaction (anaphylactic shock)

Shock most often occurs during the third stage of labor when the mother bleeds too-much (see Module 5 **Prevention and Treatment of Hemorrhage**) When blood loss is fast and too much (severe), the mother may die The midwife must act quickly to prevent this from happening A newly born baby with a low APGAR may also be in shock (see Module 6 **Resuscitation**, page 6 15)

Shock is a life threatening emergency! Before you find out what is causing the shock, you must make sure you keep the woman alive It can never be stressed enough that the immediate responsibility of the midwife is to identify signs of shock (low blood pressure and/or fast, weak pulse and/or cool, wet skin) and **take action right away** Follow these life-saving steps of helping a woman

Life-Saving Steps

1 **Airway** - make sure the mouth and nose are clear and open Lay the woman on one side with head tilted back to keep the airway open (See Module 6 **Resuscitation**, page 6 37)

2 **Breathing** - do mouth to mouth breathing if the woman is not breathing (See Module 6 **Resuscitation**, page 6 37)

3 **Heart** - if the heart is beating and the woman is hemorrhaging, stop the bleeding (See Module 5 **Prevention and Treatment of Hemorrhage**, pages 5 5 - 5 7) If the heart is not beating, do cardiac resuscitation (See Module 6 **Resuscitation**, page 6 40)

4 **Shock** - cover the woman and keep her warm Raise the feet and legs about 10 centimeters (cm) (4 inches) Do not give anything to eat or drink Keep calm Reassure the woman and her family when you have time Handle her gently as body movement can make shock signs stronger (faster pulse, lower blood pressure)

5 **Give fluids** - do not wait for severe shock, which will end in death Start IV fluids, if they are available (see page 8 7) If you do not have IV fluids or if you can not start the IV fluids, give fluids in the rectum (see page 8 13) Do not give anything by mouth until the signs of shock are less

6 **Take blood pressure and pulse** - ask your assistant to take and record the blood pressure and pulse every 10 minutes This will help you follow the progress of shock or the woman's recovery from shock

7 **Transport** - take the woman to the doctor as soon as you can Keep her warm, but do not let her get so hot that she sweats and loses more fluid Keep her feet and legs a little higher than her head Continue the IV fluids if this is possible Remember to take the woman's record so that the doctor will have as much information as possible about the woman Help the woman and family understand what is happening so that they will not be too afraid and nervous

Find Out the Cause of Shock

In order to stop the shock, you must find out what is the cause and decide what to do You must **ASK and LISTEN**, **LOOK and FEEL**, **IDENTIFY THE PROBLEM**, and **TAKE APPROPRIATE ACTION** Depending on your situation, you may not be able to take the time to find out the cause of the shock For example, you may just be able to try to stop bleeding from the vagina and help get the woman to the doctor, or if you think the woman is allergic to a medicine, you may be able to give her some antihistamine and help get her to the doctor The following Problem Solving Steps will help you learn the appropriate actions that are needed, in case there is a delay in getting the woman to a doctor

ASK and LISTEN

ASK how she feels If she is in or near shock, she may tell you that she is weak, nervous or afraid She may be thirsty She may say she can not breathe enough air (short of breath) She may say her skin itches **ASK** about pain in her chest She may be too sick to answer She may be unconscious

LOOK and FEEL

If she is in or near shock, the woman will **LOOK** restless and nervous (anxious) Her respirations will be shallow and fast (above 40 per minute) The pulse may be hard to feel (weak) and fast (100 or above per minute) The blood pressure (BP) will usually be low (below 90/60) The skin will **FEEL** cold and wet (clammy) The skin may be raised in places (welts) and she may be scratching her skin The nails and lips may look pale The face and lips may be swollen **LOOK** for bleeding **FEEL** the uterus to make sure it is contracted

SHOCK SIGNS AND SYMPTOMS

Eyes	- dull
Face	- pale, sweaty
Breathing	- fast, shallow
Pulse	- weak, fast
Skin	- cold, clammy
BP	- low (below 90/60)
Others	- nausea, weak vomiting, anxious, restless, or thirst

IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION RIGHT AWAY

IDENTIFY the cause of the shock, and take **ACTION**

Talk to the woman as you are taking care of her Help her feel that you are trying to make the situation better Try to look calm and show that you know what you are doing This will help the woman not be too afraid Have one member of the family stand beside her if at all possible

If the woman is bleeding from the vagina, try to stop the bleeding, give fluids, and refer her as soon as possible If there is a delay in the transportation, and the blood pressure is continuing to fall (go lower), firmly wrap the lower limbs, from the feet to the thighs, with a bandage or other cloth, and keep the legs elevated to direct more blood to the brain, heart, and lungs (See Module 5 **Prevention and Treatment of Hemorrhage**, page 5 7)

SHOCK CARE

Keep airway open
Keep woman breathing
Keep heart beating
Monitor shock position
Control bleeding
Keep woman hydrated
Move gently
Prevent loss of body heat
GIVE NOTHING BY MOUTH
Keep calm and be reassuring

If the woman is losing fluids from diarrhea, replace fluids quickly and refer See Learning Aids 1, 2, and 3 in this module

If the woman has a severe infection (may have foul smelling vaginal discharge, fever, and so forth), give fluids slowly and refer (See Module 7 **Prevention and Management of Sepsis,** page 7 13)

If the woman has a heart attack causing shock (she may have severe substernal chest pain lasting 15 minutes or more, clammy skin, nausea, vomiting, difficulty breathing), give 2 aspirin right away to help reduce heart damage Also give an available intramuscular (IM) analgesic such as Morphine Sulfate 1/6 grain, Demerol 50 milligram (mg) or by mouth Tylenol with Codeine, and refer

If the woman has an allergic reaction (difficulty breathing, wheezing, feels faint, swelling, rash, nausea, and so forth), give an injection of 1 1000 solution of epinephrine subcutaneous (0 5 cc for adults and children over 40 kilograms) If the signs of shock continue, repeat the injection in 5 minutes If there is swelling and itching of the skin, give an antihistamine (such as Benadryl 25 mg IM or Phenergan 25 mg IM) Give fluids and refer

It is important for the midwife always to go with the woman to the doctor or hospital The midwife can take care of the woman during the trip She can help the woman and family so that they do not become too afraid The midwife is the *best* person to tell the doctor what is wrong with the woman

SKILL. Start an Intravenous Infusion in a Peripheral Vein

This skill of placing a needle into a vein and making a steady flow of fluid into the woman's bloodstream can help you prevent shock and death Start IV fluid when body fluid is lost because of bleeding, infection, dehydration or shock **This is a life-saving skill** Use Learning Aid 1, page 8 17, as a guide for choosing the type of IV fluid and the amount of the fluid to be given

Equipment

Adhesive tape (plaster)
Padded arm board
Sterile IV tubing
Clamp for IV tubing
Intravenous fluid
Antiseptic solution (such as alcohol, Savlon, or soap and water)
Cotton, gauze, or cloth
Sterile needle (20 gauge or whatever is available)
Rubber tourniquet
Intravenous stand or nail in the wall
Clean gloves

Procedure

1 Collect equipment Place the equipment where you can reach it easily

2 Cut a 3 cm piece of tape and an 8 cm piece of tape Stick the tape to your clothes or some other place you can reach it easily when you need it

3 Wash your hands with soap and water

4 Explain to the woman what you are going to do

5 **ASK** the woman to lie in a comfortable position

6 Connect the IV fluid to the tubing

7 Hang the IV fluid on the stand or nail

8 Fill the tubing with the IV fluid from the bottle to make sure there is no air in the tubing Clamp the tubing Leave the sterile plastic end on the tubing until you are ready to use it

9 **LOOK** for a vein Veins are placed somewhat differently in each person Veins are usually easiest to see on the back of the hand, the forearm, and the ankle (See Figures 1 and 2) You should **LOOK** for a vein as far from the heart as possible Then if your attempt fails, you can select a new place further up the arm or leg Do not use a vein that crosses a joint (such as a wrist or elbow), as a needle placed over or at a joint will move every time the joint moves and may come out Whenever possible, use veins in the arms rather than in the legs

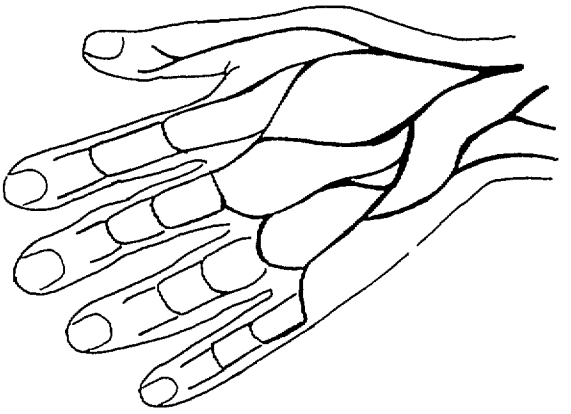

Figure 1 Veins in the Hand

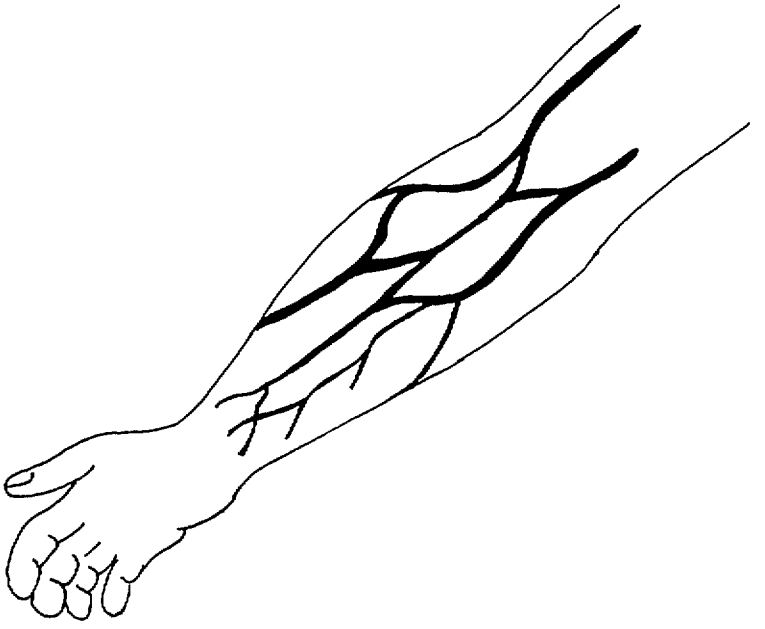

Figure 2 Veins in the Forearm

10 If the veins are still hard to see, place the rubber tourniquet around the upper arm (See Figure 3) You may also use a blood pressure cuff, a rubber glove, or ask an assistant to squeeze the arm by circling the arm with both of her hands to stop the flow of blood in the veins The veins will puff up If the woman has very low blood pressure or is losing too much blood, you may not be able to **FEEL** the veins Place a warm cloth over the veins and pat the area gently to make the veins fill up

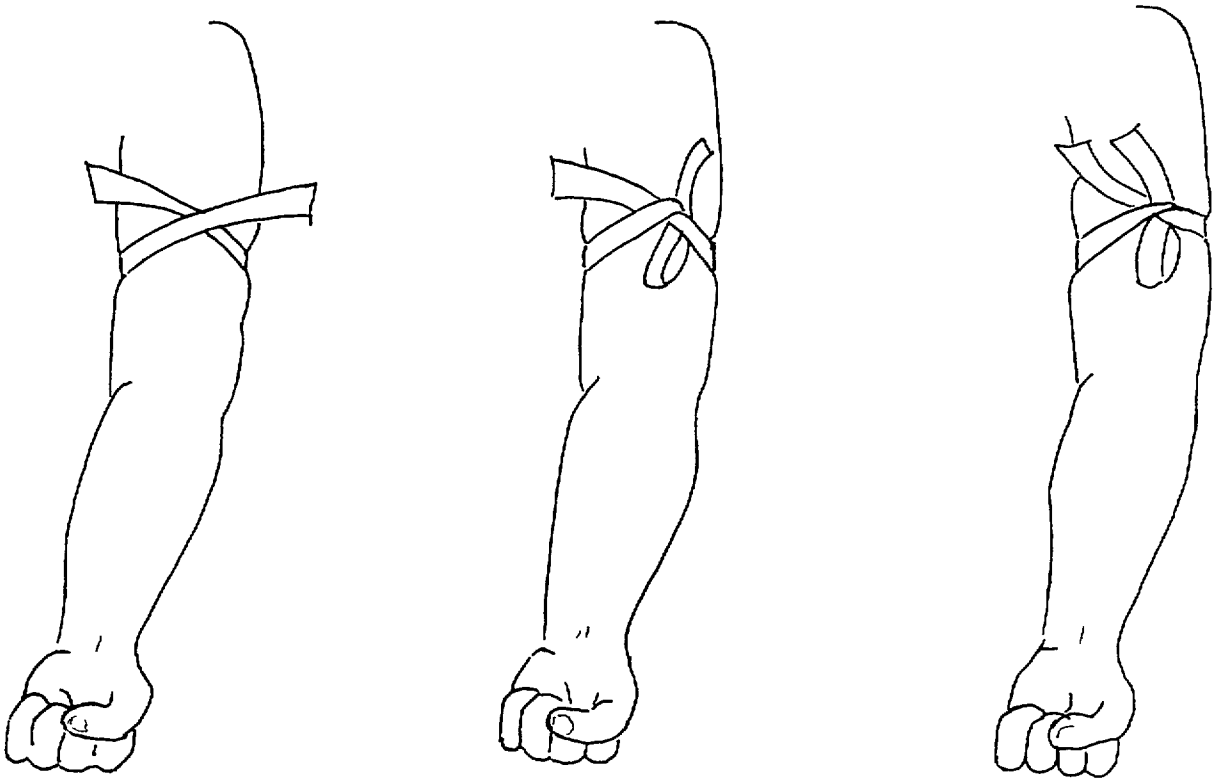

Figure 3 Applying a Tourniquet to Find a Vein

11 Once you have found a vein, loosen the tourniquet Wash your hands Put on gloves to protect yourself from germs which may be in the blood

12 Clean the skin over the area where you found a vein, using soap and water or antiseptic solution

13 Put the tourniquet back on the arm

14 Make sure the skin is dry to prevent pushing soap or antiseptic solution into the vein

15 Hold the needle with the hand you use for giving injections

16 Use the thumb of your other hand to gently pull or stretch the skin over the vein and hold the limb still (See Figure 4) This prevents the woman from moving, and the stretched skin will hold the vein so that it does not move Remember to not touch the area you have scrubbed

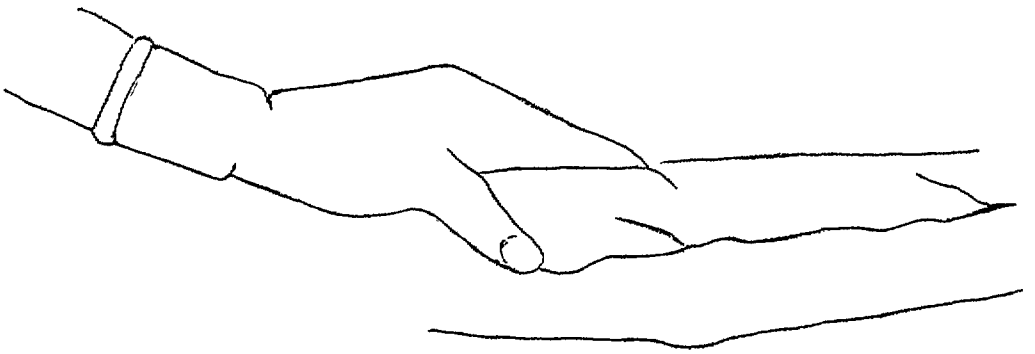

Figure 4 Pulling or Stretching the Skin

17 Push the needle through the skin, about 1 cm below the point where you want it to go into the vein (See Figure 5) Position the needle along the side of the vein

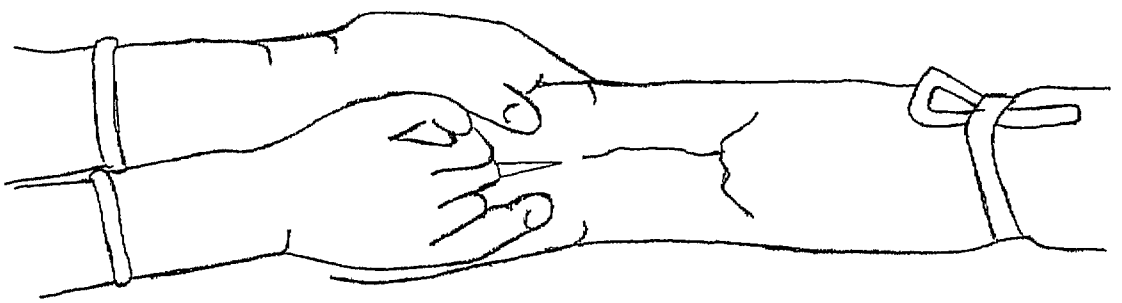

Figure 5 Push the Needle Through the Skin

18 Gently push the needle into the vein Use a quick, steady push Blood should come back into the needle If you see no blood, gently turn the needle or push it a little more into the vein

19 When you see blood, carefully loosen the tourniquet Attach the IV tubing to the needle

20 Check that the needle is in the vein by slowly running IV fluid into the vein If the area around the needle swells, stop the flow of fluid and remove the needle Apply pressure with a cotton swab to the area where the needle was Continue pressure until the bleeding stops Start the procedure again further up the arm or in a different location

21 If the area around the needle does not swell, use the 3 cm piece of tape to fasten the needle where it enters the skin

22 Loop the 8 cm piece of tape, with its adhesive side up, under the needle Fold each end of the tape diagonally across the needle to hold the needle in place (See Figure 6)

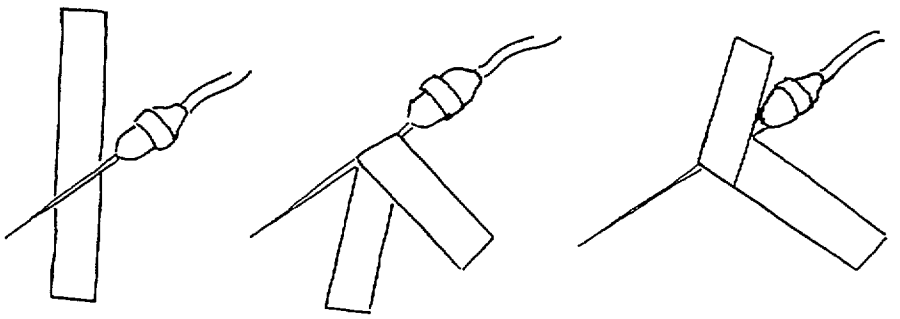

Figure 6 Tape the Needle in Place

23 Check again to make sure that the needle is still in the vein Clean off any blood that may have come from the needle before you connected the tubing

24 Use an arm board or a splint to keep the joint nearest the vein from moving Place adhesive tape over the limb above and below the joint Stick the ends to the board Do not wrap the tape all the way around the limb Make sure the board does not stop circulation Loop the tubing once or twice Fasten the tubing to the limb

25 Regulate the flow (see Learning Aid 1, page 8 17) Check the needle every hour to make sure the fluid is running in the vein Lower the IV solution container below the woman You will see blood come into the tubing This means that the needle is still in the vein Watch carefully for swelling There could be a leak of fluid from the needle or the needle may come out of the vein

26 Make sure the woman is comfortable and that someone is with her in case she needs help

27 Clean up all the equipment and prepare it for the next time you will need it It is important to be able to carry out all of these steps very quickly in an emergency Take time to practice and review the skill from time to time

Dangers of Giving Fluids in the Vein

Dangers of IV therapy can be either local (at the place of the injection) or general (throughout the body)

Local problems happen more often and must be taken care of right away to prevent serious problems An irritation to the wall of the vein can cause infection of the vein (thrombophlebitis) To prevent this, (a) avoid many needle sticks into the vein, (b) avoid veins in the lower limbs (legs), and (c) avoid veins that are small and crooked If the area around the needle gets painful, swollen, or hot to touch, clamp the tube and remove the needle right away Start the IV fluid in another area of the body

A second local problem is infiltration of the IV fluid This happens when the IV fluid leaks into the tissue either because the vein is cut or because the needle gets moved Infiltration can be prevented by careful and frequent checks of the needle and the IV fluid If there is a swelling at the injection area, clamp the tube and remove the needle right away Restart the IV fluid in another place

General problems are a more serious threat to the life of the woman They happen less often than the local problems, but the midwife must know about them and watch carefully to prevent them

Infection of the blood happens when germs are allowed to go into the bloodstream This **must** be prevented by using sterile needles, tubing, and IV fluids

Giving too much IV fluids too fast can cause the heart to weaken (heart failure) and the lungs to fill up with fluids (pulmonary edema) This can be prevented by giving IV fluids according to the rate needed (See Learning Aid 1, page 8 17) The midwife must also remember to watch for swelling of the face and eyelids when giving IV fluids These are signs of too much fluid

SKILL Give Fluids in the Rectum

If the midwife is unable to give IV fluids for any reason, fluids may be given rectally The woman with severe bleeding will be dehydrated and her body will absorb the liquid In a shock emergency, it is not advisable to give fluids by mouth, even if the woman is thirsty, because she may vomit and aspirate Fluid given rectally may save the woman's life This is a life-saving skill

Equipment

Enema can with tubing
600 cc or milliliters (ml) of tepid drinking water, or ORS, or IV fluid
Cloth to serve as a pad under the buttocks
Soap and water to wash hands
Gloves

Procedure

1 Gather the equipment

2 Tell the woman what you are going to do

3 Wash your hands

4 **ASK** or help the woman to lie on her **left** side if at all possible This helps the water to flow into the sigmoid and descending colon, helping with the absorption of the fluid You will already have positioned the lower part of her body a little higher than her head because of the shock Place a cloth pad under her buttocks to catch any fluid that might run out

5 Lubricate the end of the tubing with water so that it will slide through the anus without irritation

6 Put on clean gloves

7 Run water to the end of the rectal tube and clamp off Insert the rectal tube into the anus slowly and gently **ASK** the woman (if conscious) to take a deep breath and let the air out slowly This will help her to relax and not try to push the rectal tube out

8 Push the rectal tube about 10 cm (4 inches) in the rectum

9 Hold the enema can just high enough that the water runs into the woman The water should run very slowly, so the woman does not get abdominal cramping or feel the urge to push the water out It usually takes about 30 minutes for the water to run into the woman

10 When 600 ml has run in, remove the rectal tube gently

11 Help the woman to breathe deeply and relax Remind her to try not to let the water come out The water will absorb soon and she will not have the urge to push or go to the toilet

12 Remove your gloves

13 Clean and dry the woman

14 Clean up the equipment

15 Wash your hands

16 Record the fluid intake

> The authors' experience is that once some of the rectal fluid absorbs, it is usually possible to start an IV infusion

17 If it is not possible to get an IV infusion running and transfer (referral) is delayed, the rectal infusion can be repeated after 2 hours

18 Try very hard to organize transport and take the woman to a doctor for continued care

SKILL Give Fluids into the Peritoneal Cavity (Intraperitoneal)

If the midwife is unable to give IV fluids or clean fluid in the rectum, or if the woman is unable to keep the fluid in the rectum, IV fluids may be given into the peritoneal cavity It is not advisable to give fluids by mouth, even if the woman is thirsty She may vomit and aspirate Once she has absorbed some fluids from the peritoneal cavity and the signs of shock are less, oral rehydration therapy can be started (See Learning Aid 2, page 8 19, for information on oral rehydration therapy) Intravenous fluid given in the peritoneal cavity may save the woman's life This is a life-saving skill **Use this method only if the woman has delivered, and if she is in shock and if you can not give fluids in the vein or rectum** ***Do not use this method for a woman who is pregnant***

A Midwife's Experience

A grand multipara was carried in, in the early morning She had delivered at home and had a very severe postpartum hemorrhage We could not find her pulse or blood pressure It was impossible to start a drip (IV infusion) on her

I took the largest needle I could find and inserted it into her peritoneal cavity I ran in one liter of fluids as fast as they would go Several minutes later, I was able to start an IV infusion in her arm We saved her life!

Many years ago, I can remember putting fluid into the peritoneum I don't know why we got out of the habit (practice) of using this life-saving procedure I have used it twice since the training (Life-Saving Skills), and both times the woman lived

LSS Midwife, Nigeria

Equipment

Antiseptic or soap and water
Adhesive tape
Gauze pads (2 x 2)
Gloves
Intravenous fluid at room temperature
Sterile IV tubing with clamp
Sterile needle (18 or 19 gauge is best, smaller needles will take longer in giving the fluid)

Procedure

1 Gather the equipment

2 Tell the woman what you are going to do

3 Wash your hands

4 Attach the giving set and needle to the IV fluid container Fill the giving set and needle with fluid Clamp the tube Carefully place the needle cover over the needle to keep it sterile

5 Help the woman to lie on her back Put on gloves

6 Cleanse the abdomen well with antiseptic or soap and water

7 **FEEL** the abdomen to make sure it is soft **If the abdomen feels hard or tender to touch, do not give the fluid in the peritoneal cavity as the fluid may not absorb**

8 Pinch the skin of the abdomen just below the navel (umbilicus) in the midline with your non-injecting hand

9 Push the needle **horizontally through the skin**

10 Ask your assistant to unclamp the tubing so that the fluid will run as soon as the needle enters the peritoneal cavity

11 Gradually and firmly, push the needle **vertically into the peritoneal cavity** As soon as the needle has gone in, the fluid will run, and the stream of fluid will push the internal organs out of the way of the sharp needle

12 Tape the needle to the abdomen so that it does not move

13 Run 500 ml of IV fluid into the peritoneal cavity as fast as it will go, usually about 10 to 15 minutes The fluid will absorb through the intestines and pass into the bloodstream at a slow rate Since you are running the fluid into the peritoneal cavity where absorption is controlled by the body, the rate of flow can be fast

14 Remove the needle after the 500 ml has run into the peritoneal cavity

15 Cover the puncture site with a dry gauze dressing

16 Help the woman get comfortable, she may feel sleepy

17 Clean up your equipment

The danger of the woman getting peritonitis is very low when compared to the woman dying from dehydration or shock It is very important for the midwife to use sterile equipment and good aseptic technique See Module 7 **Prevention and Management of Sepsis**, page 7 25

Note that the procedure *can be repeated every 4 hours if you can not get an IV infusion started, and the woman can not take ORS by mouth* Every effort must be made to get the woman to a doctor for continued care

Learning Aid 1 - Intravenous Solutions Types and Dosages

Intravenous solutions are given directly into a blood vessel to help replace fluids lost by the body Use the suggested IV solution for the problem identified, if you have that solution available If you do not have the suggested IV solution, choose Dextrose 5% in Water, or any other that you have Try to keep a supply in case you have an emergency, so that you will be able to manage the emergency and give good care to women Any other IV solutions your doctor may want you to use should be added to this list

1 Dextrose 5% in Water
Give this solution to provide the body with energy and water Give *2500 ml (milliliters) in 24 hours for a 45 to 70 kilogram (kg) (99 to 154 lb) person* [1]

2 Dextrose 5% in ½ Normal Saline
Give this solution to provide some energy for the body and to help maintain the body's water and salts balance Give 2500 ml in 24 hours for a 45 to 70 kg person [1]

3 Normal Saline (Sodium Chloride 0 9%, Isotonic Saline)
Give this solution to replace blood loss and in fluid loss during diarrhea, when the woman is not able to take enough oral rehydration fluids by mouth Give 1000 ml of Normal Saline first and follow with 1500 ml of Dextrose 5% in Water Give 2500 ml in 24 hours for a 45 to 70 kg person [1]

4 Ringer's Lactate
Give this solution to replace fluid loss due to diarrhea or when a woman is in shock Give 1000 ml of Ringer's Lactate first and follow with 1500 ml of Dextrose 5% in Water Give in 24 hours for a 45 to 70 kg person [1]

Remember that *too much* IV solution *infused too fast* can cause heart failure because there is too much fluid in the blood vessels Make sure the fluid is running at the speed (fast or slow) that you want it to run

If the woman (any weight) is near shock or bleeding very much, run *500 ml* of fluid into her vein as fast as it will go Watch the woman carefully for swelling around the needle site You should stay beside the woman while the IV is running in fast Check her blood pressure and pulse every 5 minutes

---

[1] If the **person weighs less or more than 45-70 kg, figure 50 ml per kg in 24 hours** For example, if a person weighs 40 kg (88 lb), figure 50 ml times 40 kg, which equals 2000 ml in 24 hours, you would give 80 ml every hour

When the first 500 ml has been given, slow the fluid down Give the remaining 2000 ml at the rate of 100 ml every hour for a 45 to 60 kg person Mark the IV solution container with the hour for each 100 ml as in Figure 7 A strip of tape can be put on the container and the hours marked with a pen Watch the solution going in so that you regulate it to 100 ml in one hour

Always watch carefully for swelling, especially around the needle site when you are giving IV solution If you see swelling, slow the IV down and watch the woman very carefully If the swelling increases, stop the IV solution

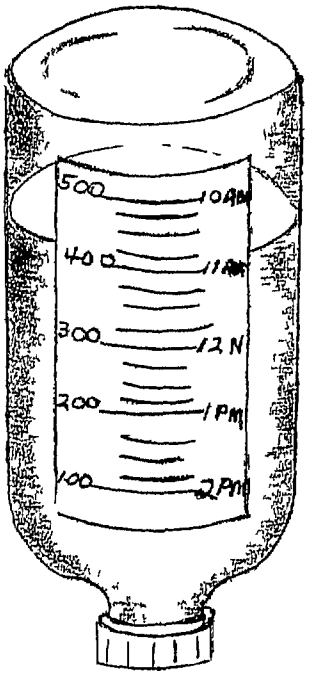

Figure 7 Mark the IV Solution Container with the Hour for Each 100 ml

Learning Aid - 2 Preparing Oral Rehydration Salts (ORS) Solution from a Packet (Sachet)

LOOK at your ORS packet Read the directions Find out how much clean drinking water you must measure into a clean container Use the cleanest drinking water available

Pour all the ORS powder from one packet into the water and mix well until the powder is completely dissolved Taste the solution before giving it to the woman Remember the **solution should never taste saltier than tears**

Mix fresh ORS solution each day in a clean container

An adult should take at least 2000 ml (2 liters) of ORS solution in a day Advise the adult to take other fluids or ORS solution as much above 2000 ml as she wants in a day

Sometimes while you give the woman an IV infusion, she will ask for something to drink ORS solution is an ideal drink while the woman is recovering from dehydration because she needs the salts and water

If the woman does not like the taste of the ORS solution, add some citrus juice (orange, lime, lemon) to change the taste If the woman vomits the ORS solution while the IV infusion is running, give her any locally available liquids she will drink (such as coconut water, light soup, weak tea, or water left after cooking starches such as rice, yam, potato, maize, and so forth)

Explain to the woman and her family the importance and need for her to drink liquids to prevent dehydration Show them how to make the ORS solution Explain that ORS solution can be used to replace fluid lost from diarrhea

Record the time and amount of fluids taken

Learning Aid 3 - Preparing Sugar and Salt Solution from Locally Available Materials

There may be times when the woman can take fluids by mouth and you do not have any locally available liquids or the ORS packet You can make sugar and salt solution for the woman to drink There are different ways of making sugar and salt solution If your way is not written here in this module, add it at the bottom of the page As long as the solution **does not taste more salty than tears,** the solution can be used for hydration and rehydration

You will need drinking water, sugar, salt, a container to measure (such as a soft drink or a beer bottle), a container for mixing, a cup, and a teaspoon

Wash your hands Wash all utensils so that they are clean Take the measuring container and measure 1000 cc (I liter) of drinking water Pour this water into the container for mixing

Add 8 level teaspoons of sugar and 1 level teaspoon of salt to 1000 cc of drinking water

Stir the mixture well Taste the mixture **Sugar and salt solution should never taste more salty than tears** Pour the mixture into a cup Give the solution to the woman to drink She can drink as much as she wants If she does not like the taste, encourage her to add fruit juice to the solution to improve the taste

Mix fresh solution every day in a clean container Record the amount of fluid taken

Explain to the woman and her family the reason to drink liquids to prevent dehydration Show them how to make sugar and salt solution Explain that sugar and salt solution can be used to replace fluid lost from diarrhea

Learning Aid 4 - Life-Saving Convulsion Care

Convulsions are uncontrolled, strange jerking movements of the muscles Many times there is loss of consciousness Convulsions come from an irritation (problem) to the brain Convulsions may be caused by pregnancy (eclampsia), poisoning, infection (meningitis), high fever, severe dehydration, and so forth A convulsion may last a few seconds to many minutes Many pregnant women who have convulsions will die or lose their babies A convulsion is an emergency Give the woman quick and careful treatment

Convulsion Care

1 **Stay calm** and reassure the family

2 CLEAR AIRWAY Keep a clear airway by helping the woman to lie on her side on the floor or a flat surface so that anything in her mouth can run out

3 PROTECT FROM INJURY Try to keep the woman from hurting herself by moving away hard or sharp objects Try to protect her tongue and teeth with a padded stick or tongue blade or soft towel Do not try to stop the jerking movements, just make sure she does not hurt herself Do not pour anything into the woman's mouth as she is not able to swallow

4 TREAT CAUSE Try to find out the cause of the convulsion and treat it, if possible See Module 2 **Quality Antenatal Care**, page 2 10 for identification and management of pregnancy induced hypertension

After the convulsion, the woman may be confused and sleepy If she has not delivered, she may be ready to deliver very quickly Find out the progress of the labor by monitoring the contractions and descent of the baby Confirm the dilatation of the cervix, for if the cervix is fully dilated, you will need to prepare to deliver the woman **before** you take her to the hospital

Go with her to the hospital as soon as possible after the convulsion Be prepared for a delivery and more convulsions on your way to the hospital Explain to the woman and her family what you are doing Tell them that you are doing everything you can to help the woman

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages shown in parentheses ( )

1 List the life saving steps you will take to help a woman who is in shock (pages 8 4 - 8 5)

2 List three common dangers of giving fluids in the vein (page 8 12)

3 Describe how you will give an IV fluid (pages 8 7 - 8 11)

4 Describe how you will give fluid in the rectum (pages 8 13 - 8 14)

5 Describe how you will give fluid into the peritoneal cavity (pages 8 15 - 8 16)

6 Why is it important to prevent dehydration in a woman during labor? (pages 8 1 - 8 2)

How can you prevent dehydration during labor? (page 8 2)

Case Study - Problem Solving Method

The Problem Solving Method is an organized way of giving care to women It is a way of thinking about the care you give women In this case study, you will use the Problem Solving Method to decide how to care for a woman who has an emergency Read the case study You may need to refer to modules 1, 5, 7, and 8 for information in this case study

The 4 steps of the Problem Solving Method are

1

2

3

4

Check your answers by looking in Module 1, page 1 22

ASK and LISTEN

You see Mrs C A at your maternity She tells you she is bleeding and has abdominal pain What do you **ASK** Mrs C A ?

See Module 5, page 5 3

You find out that she had her last menses 14 weeks ago She has lower abdominal pain, started bleeding 3 days ago and passed clots and tissue She feels cold and nervous She has not taken any medicine

LOOK and FEEL?

What examination do you (**LOOK and FEEL**) on Mrs C A using the **ASK and LISTEN** information?

See Module 5, pages 5 5, 5 6, and 5 8

You find her BP 80/40, pulse 120 and weak, temperature 39°C (102°F) She has lower abdominal tenderness with a contracted tender uterus She has expelled clots and tissue and has a foul smelling bloody purulent (pus) vaginal discharge, closed cervix, hot skin, and cold and moist hands and feet She is restless

IDENTIFY THE PROBLEM

Using the information from **ASK and LISTEN** and **LOOK and FEEL**, **IDENTIFY THE PROBLEM** of Mrs C A

Refer to Module 7, page 7 13

You decide the woman has a postpartum infection associated with complete abortion because you found expelled clots and tissue, contracted and tender uterus, foul smelling bloody purulent vaginal discharge, temperature of 102°F (39°C), BP 80/40, pulse 120 and weak She is nervous and weak, and her hands and feet are cold and moist She is very sick You see that she is close to shock You **ASK** someone to arrange transport right away

TAKE APPROPRIATE ACTION

While you wait for transportation, what **ACTION** will you take to help Mrs C A ?

See Module 7, page 7 13

You lower the fever by giving a sponge bath with room temperature water You start an IV You put the mother in a position so that the pelvis is a little lower than her upper body to help drain discharge from the uterus and vagina You explain to the mother and her family that this semi-sitting position will help let the discharge come out of her body

What IV solution will you give and how much will you give to Mrs C A ?

See Module 8, page 8 17

You give Ringers Lactate because the woman is in or near shock If you do not have Ringers Lactate, choose Dextrose 5% in Water or any other fluid you may have

You give 500 ml of fluid as fast as it will go and watch the woman very carefully for swelling around the needle You stay beside the woman while the IV is running in fast

You take the blood pressure and pulse every 5 minutes When the blood pressure begins to go up and the pulse comes down, you slow the IV fluid

You control the IV fluid, to give 100 ml every hour You mark the IV solution container with the hour for each 100 ml You watch the solution carefully so that you regulate it to 100 ml in each hour

You watch carefully for swelling around the needle when you are giving IV solution If you see swelling, you will check to see if the needle is in the vein You watch this woman very carefully

You are not able to get the IV started in Mrs C A Her BP is now 50/30, her pulse is difficult to count, she is very weak and dehydrated You know it is not advisable to give fluids by mouth, even if she is thirsty, for she may vomit and aspirate the fluids

What emergency **ACTION** will you take?

See Module 8, pages 8 4

You know that Mrs C A is dehydrated and must have fluids quickly to increase her blood pressure and lower her temperature You quickly prepare 600 ml of drinking water and give to Mrs C A rectally You know that when someone is dehydrated, absorption can take place from the colon

What do you do after giving the 600 ml of water in the rectum?

See Module 8, page 8 4

Five minutes after giving the fluids, the BP is 70/34, pulse 118 but a little stronger Mrs C A is looking around and asking for water

What do you do?

See Module 7, page 7 9, and Module 8, pages 8 19 - 8 20

In 15 minutes after giving the fluids by rectum, the BP is 72/36, pulse 110 and still a little stronger You give an oxytocic to help the uterus remain contracted Give a broad spectrum antibiotic Give Mrs C A ORS if you have it, or any other available drinking fluid

What do you do on the way to the hospital?

On the way to the hospital, you continue to give Mrs C A fluid to drink You take the blood pressure and pulse, watch for bleeding, and keep the uterus contracted You tell her and her family what is happening

Skills Checklist - Starting an Intravenous Fluid in a Peripheral Vein

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing ,write a rating ✔= satisfactory OR ✗ = needs improvement
Add any other comments in the comments section below

		Date	Date	Date	Date
Starting an IV fluid in a peripheral vein					
1	Collect equipment				
2	Wash your hands with soap and water				
3	Tell the patient what you are going to do				
4	Help the woman to get comfortable				
5	Attach intravenous fluid set to bottle and hang it from stand/nail				
	• Get tape ready				
6	Run fluid through tubing and clamp				
7	Look for vein between wrist and elbow				
	• Avoid any vein that crosses a joint				
8	If you have trouble finding a vein, tighten the tourniquet				
9	After you find vein, loosen tourniquet				
10	Wash your hands, put on gloves to protect you from germs from the blood				
11	Clean the skin with soap, water or antiseptic				
12	Tighten the tourniquet				
13	Hold the needle in the hand you use for injections				
14	Use the other hand to stretch the skin with the thumb, push in the needle through the skin and parallel to (beside) the vein				
15	Push the needle gently and quickly into the vein Blood will flow out of the needle				

	Date	Date	Date	Date
16 When you see blood in the needle, attach the tubing to the needle and loosen the tourniquet				
17 Let the fluid run into the vein If the area around the needle swells, clamp off the tubing, remove the needle, put pressure on the area until the bleeding stops Restart the IV in another place				
18 When fluid is going in the vein, tape the needle to the skin Loop the tubing and attach it to the arm with tape				
19 Tape the arm to an arm board so that it can not bend and move the needle				
20 Regulate the fluid rate and check for infiltration every hour to make sure that the fluid is not running into the skin				
21 Record the type, amount and time of infusion				

Comments

Skills Checklist - Giving Fluids in the Rectum

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing ,write a rating ✔= satisfactory OR ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
Giving fluids in the rectum				
1 Gather the equipment				
2 Tell the woman what you are going to do				
3 Wash your hands				
4 Ask the woman to lie on her left side Place cloth pad under buttocks				
5 Lubricate the end of the tubing with water				
6 Put on clean gloves				
7 Run water to the end of the tube and clamp off				
8 Ask the woman to take a deep breath and breathe slowly				
9 Push the rectal tube about 10 cm (4 inches) in the rectum				
10 Hold the enema can just high enough so the water runs in Run 600 ml of water very slowly				
11 Remove the rectal tube				
12 Help the woman breathe and relax				
13 Remove your gloves				
14 Clean and dry the woman				
15 Clean up the equipment				
16 Wash your hands				
17 Record the fluid amount, time, and type				

Comments

Skills Checklist - Giving Fluids into the Peritoneal Cavity

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when they evaluate how well the midwife performs

After observing/performing, write a rating ✓= satisfactory OR ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
Starting an intraperitoneal infusion				
1 Gather the equipment				
2 Tell the woman what you are going to do				
3 Wash your hands with soap and water, put on gloves				
4 Get the giving set, needle and fluid attached				
5 Fill the giving set and needle with fluid				
6 Ask the woman to lie on her back				
7 Cleanse the abdomen with antiseptic or soap and water				
8 Feel the abdomen to make sure it is soft				
9 Pinch the skin just below the navel				
10 Push the needle horizontally through the skin				
11 Ask assistant to unclamp tubing				
12 Push needle vertically into peritoneal cavity				
13 Tape needle to abdomen, so it does not move				
14 Run 1000 ml fluid into peritoneal cavity				
15 Remove needle after fluid has run in				
16 Cover puncture site				
17 Help the woman get comfortable				
18 Clean up the equipment				
19 Remember, only give when a woman **is not pregnant**				
20 Use good aseptic technique				

	Date	Date	Date	Date
21 Repeat procedure in 4 hours if the woman is still in shock and you are unable to start IV infusion or to transfer				
22 Transfer as soon as possible				
23 Record the type, time, and amount of fluid				

Comments

Skills Checklist - Preparation and Giving of Oral Solutions

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills

2 The supervisor use it when evaluating how well the midwife performs

After observing/performing, write a rating ✔ = satisfactory OR ✗ = needs improvement

Add any other comments in the comments section below

	Date	Date	Date	Date
Giving fluids by mouth				
1 Gather the equipment				
2 Tell the woman what you are going to do				
3 Wash your hands				
4 Wash the containers, cup, and spoon				
5 Help the woman to get comfortable				
6 Review the recipe				
7 Measure 1000 ml (one liter) of drinking water				
8 Pour the water into a clean mixing container				
9 Add the ORS packet or the 8 level teaspoons of sugar and 1 level teaspoon of salt				
10 If available, add citrus juice to improve the taste Mix well with a spoon				
11 Taste the mixture Remember, **the mixture should not taste saltier than tears**				
12 Give to the woman at least 2000 cc (2 liters) to drink in one day				
13 Help the woman take as much ORS or other fluid as she wants, in addition to the 2 liters a day				
14 If she is thirsty, give ORS to the woman to drink while she is getting the IV infusion				
15 Throw away any unused solution remaining from the day before				
16 Mix fresh solution every day				
17 Clean up equipment				

	Date	Date	Date	Date
18 Teach the woman and family how to make the rehydration solution				
19 Teach the woman and family to use locally available fluids to prevent dehydration				

Comments

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PN-ACF-276

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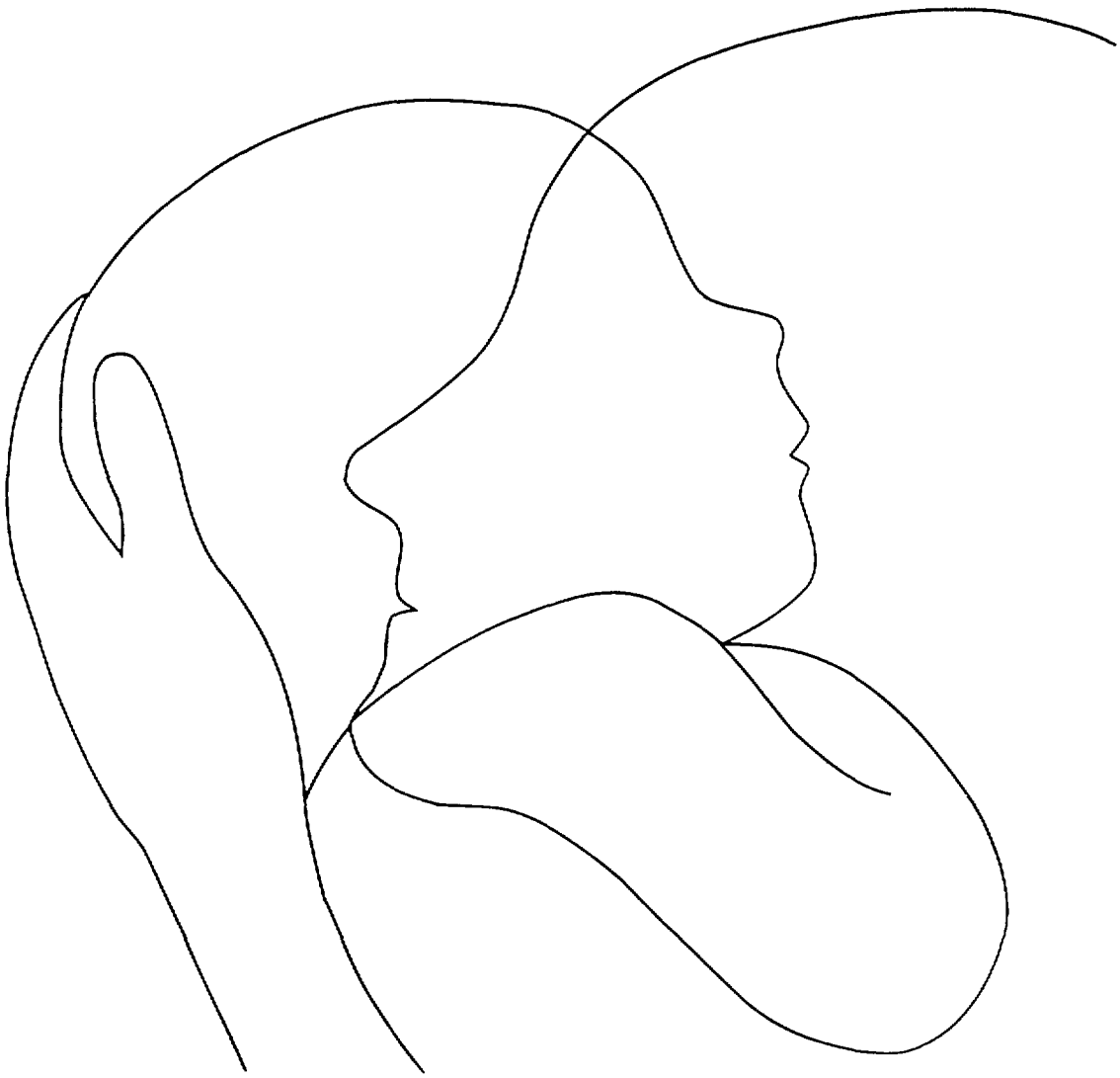
3rd Edition



MODULE 9

VACUUM EXTRACTION

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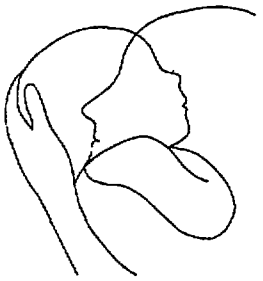
Life-Saving Skills Manual for Midwives

Third Edition

Module 9: VACUUM EXTRACTION



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Angeline Hale, Illustrator

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Life-Saving Skills Manual for Midwives

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VACUUM EXTRACTION
MODULE 9

Contents

VACUUM EXTRACTION

Goal

The midwife will learn when and how to use vacuum extraction to assist a mother in the delivery of her baby

Objectives

The midwife caring for a mother during delivery will be able to

1 list indications for using the vacuum extractor
2 prepare the vacuum extractor for use
3 explain to the mother and others the need for vacuum extraction
4 list situations in which vacuum extractions should not be used
5 describe potential dangers for mother and baby when the vacuum extractor is used
6 explain the procedure for performing vacuum extraction
7 use the vacuum extractor to help a mother deliver her baby
8 demonstrate good care and cleaning of the vacuum extractor

Introduction

In this module, you will learn when the vacuum extractor should be used to assist a mother in delivering her baby You will learn to prepare the equipment and how to use the vacuum extractor to help a mother deliver her baby You will learn to identify the problems that can be helped using the vacuum extractor Learning aids give additional information on equipment and how to clean and care for the vacuum extractor The checklist will help you to evaluate your skills in using a vacuum extractor during a delivery

A Midwife's Experience.

A 20 year old primigravida non-attendant (at antenatal clinic) with established labor 3 days ago, came to my clinic at 1 45 AM My village is 25 kilometers away from the referral hospital and we only travel by canoe on the lake She was admitted Findings included temperature 40°C, blood pressure 110/70, pulse 86, reflexes +2, edema nil, last normal menstrual period unknown The uterus measured 38 weeks, hemoglobin 50% (7 5 gm), presentation cephalic, descent 1/5, os cervix 8 cm dilated, membranes ruptured with offensive odor Uterine contractions were 4 in 10 minutes, lasting 20 to 40 seconds Management cool bath and enema, 2 tablets of Paracetamol, 1000 mg chloroquine and 5 mg diazepam were given stat (right away) Contractions became stronger, cervical dilatation 10 cm in 1½ hours' time I gave an episiotomy and did a vacuum extraction Mother and infant did well She was kept for 5 days to complete her antibiotic course and to start treatment for her severe anemia

LSS Midwife, Ghana

Common Medical Terms

Caput Succedaneum - a swelling on the fetal skull, caused by serum and blood infiltrate into the scalp tissue

Cephalhematoma (subperiosteal hemorrhage) - a swelling on the fetal skull, the periosteum tears from the bone, causing the bleeding

Cephalic - head

Engagement - the presenting part of the fetus is in the true pelvis, or, in a vertex presentation, when only 2/5 of the head can be felt abdominally

Pelvic Brim (Inlet) - the upper opening of the pelvic cavity, the rounded opening that the presenting part of the baby goes into on its way to delivery In measuring the progress of labor and the descent of the baby, the top of the pubic bone area of the pelvic brim is used as a landmark

Pelvic Cavity - the curved canal between the brim and the outlet

Pelvic Outlet - the lower opening of the pelvic cavity The diamond shaped opening has the greatest measurement from the apex of the pubic arch to the tip of the coccyx

Periosteum - a membrane covering bone

Sagittal Suture - the junction of the parietal bones

Subperiosteal Hemorrhage - see cephalhematoma

Transverse Arrest - the fetal head is stuck in the pelvic cavity with the sagittal suture in the horizontal position

Vacuum - suction

Vertex - the top of the head, the crown, the area of the head between the anterior and posterior fontanelle

The Vacuum Extractor

The vacuum extractor is used in many parts of the world for assisting in deliveries and is considered a safer method than forceps Sometimes the mother needs help in delivering her baby The midwife can use the vacuum extractor to assist the mother in her efforts to vaginally deliver her term baby

A vacuum (suction) inside the vacuum extractor cup pulls against the skin of the baby's head It pulls the skin of the scalp into the suction cup This skin forms a caput succedaneum which fills up the inside of the suction cup The caput succedaneum gives a grip or hold on the scalp without hurting the skull bone The suction from the vacuum extractor may cause the periosteum to pull away from the skull bone a little, sometimes causing a very small amount of bleeding (sub-periosteal hemorrhage) The midwife uses the vacuum extractor to guide the head of the baby while the mother pushes

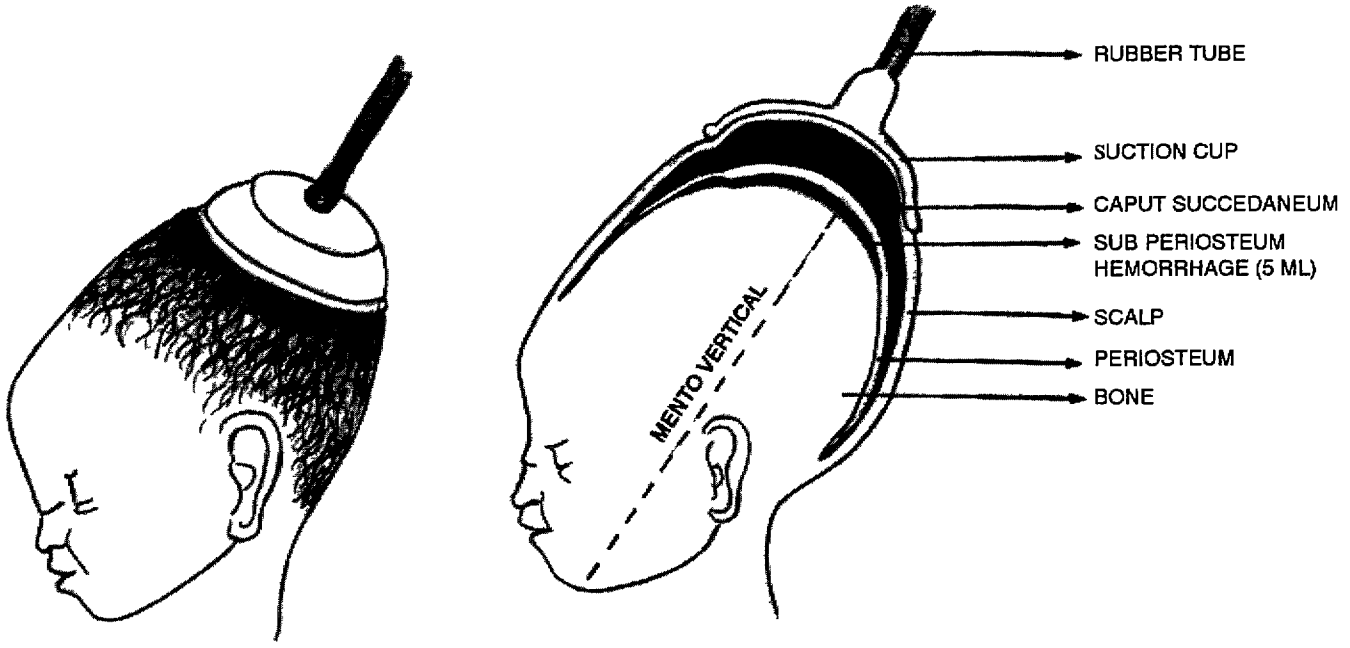

Figure 1 Effect of Vacuum Extractor Cup

Indications for Using a Vacuum Extractor

The midwife continues to monitor both the mother and the baby during second stage of labor Sometimes the mother needs help in delivering her baby The vacuum extractor can help a midwife when there is

- **Delay in the second stage of labor** The mother must actively push without progress for 30 minutes in the primigravida, or 20 minutes in the multigravida

- **Fetal distress in the second stage of labor** The baby is alive or newly dead (fetal heart stopped during labor)

- **Other indications** that *should be managed by a doctor if at all possible* include
  - maternal distress, severe anemia, heart problem, hypertension (toxemia), diabetes, asthma, malnutrition, or tuberculosis
  - small or rigid pelvic outlet
  - transverse arrest of fetus
  - large baby
  - disproportion due to deflexion of the fetal head

Conditions for Using a Vacuum Extractor

When deciding if a woman can be helped by using a vacuum extractor, the midwife must carefully **LOOK and FEEL** The abdominal and vaginal findings must always include

1 Term (full size) baby

2 Vertex presentation

3 Ruptured membranes

4 No cephalopelvic disproportion Conditions necessary include (a) no fetal skull molding, (b) no caput, and (c) 1/5 or 0/5 on abdominal palpation Refer to Module 3 **Monitoring Labor Progress,** pages 3 18 and 3 69

5 Baby is alive or fetal heart stopped during labor

6 Contractions present

7 Full dilatation of the cervix

Contraindications

Do not try to do a vacuum extraction if any one of the following is present

- No contractions
- Cephalopelvic disproportion/fetal pelvic disproportion (large infant)
- Fetal skull molding 2+ or more
- Large amount of caput
- Non-vertex presentation (all types)
- Incomplete cervical dilation
- Gestational age less than 37 weeks
- Unengaged presenting part
- Disengagement of the vacuum extractor (the cup pops off) 3 times
- Failure of efforts after 15 minutes or 5 contractions, whichever comes first

SKILL Use a Vacuum Extractor

The midwife should use the vacuum extractor on 5 to 8 normal deliveries, to gain experience Choose primiparas at the end of the first stage, when the cervix is fully dilated and the head is just visible at the perineum This will help you learn the vacuum extraction skill well before you attempt more difficult deliveries

Equipment

Delivery set up
Vacuum extractor

Procedure

1 Examine (**LOOK and FEEL**) the woman abdominally and vaginally to make sure the following **conditions are present for a vacuum extraction** Your findings should include
   - Term (full size) baby
   - Vertex presentation
   - Full dilatation of the cervix (anterior lip may be an exception)
   - Ruptured membranes
   - No fetal skull molding, no caput, and 1/5 or 0/5 on abdominal palpation which indicated no cephalopelvic disproportion
   - Baby is alive or fetal heart stopped during labor (If the infant is mascerated, the vacuum will not work well)
   - Contractions

2 Explain to the mother and her family what you are going to do, why you are going to do it, and how it will help her Help her to understand that you will use the vacuum extractor to help her deliver the baby more easily and/or quickly

3 Prepare equipment In addition to routine delivery supplies, add the vacuum extractor Connect pump, tubing, mucus trap, and cup Use the largest cup you have available Test vacuum on the palm of your hand by squeezing the pump handle to start the vacuum Hold the cup on your hand, you should feel the suction on your hand Release the pressure

4 If the mother is not able to urinate, catheterize her to make sure that a full bladder is not delaying the second stage

5 The mother should lie on her back with her legs bent If a split delivery bed is not available, help the woman to move her buttocks to the edge of the bed/table Her feet should be supported by assistants

6 Do a vaginal examination to determine the baby's position and presentation Find the posterior fontanelle Place the cup on a well flexed head If the head is not well flexed, apply the cup anyway With correct direction of pull, the head will flex

7 Wipe the baby's scalp clean with dry gauze

8 Apply the cup (See Figure 2)
- Hold the extractor cup in your most skilled hand
- Separate the labia with the fingers of your other hand
- Gently pull down on the perineum to make space for the cup
- Hold the extractor cup with your fingers
- Insert the cup gently into the vagina
- Remember the positions of the posterior fontanelle, press the cup downward and inward into the vagina until the cup touches the scalp
- Press the cup up against the part of the baby's scalp that is easiest to reach
- **Pass a finger gently around the edge of the cup to be sure none of the mother's tissue has been caught under the cup**

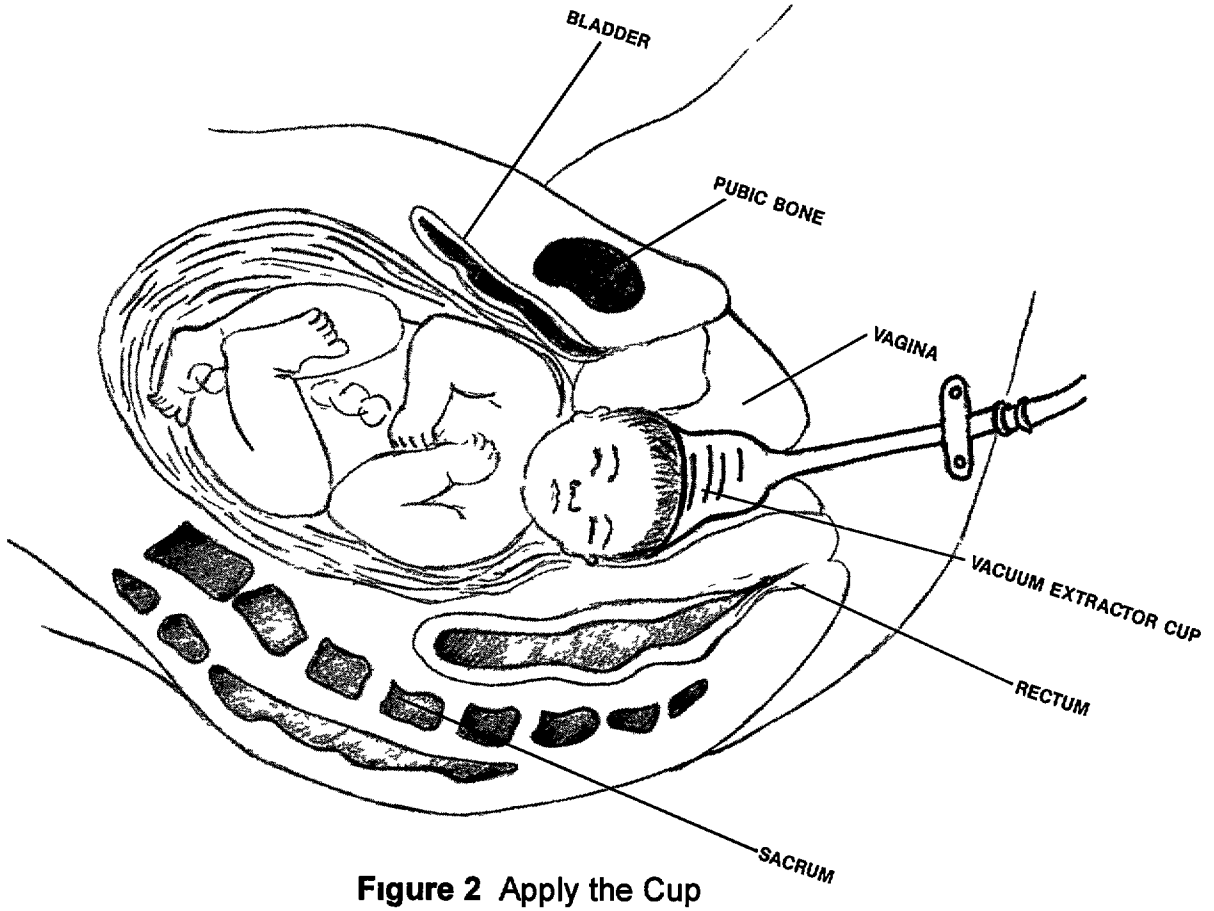

Figure 2 Apply the Cup

9 Raise the pressure [1]
- Squeeze the pump handle to raise the pressure to 100 mm Hg (millimeters of mercury) See the vacuum conversion table in Learning Aid 3, page 9 16

[1] **Note** If you are using a metal cup vacuum extractor (Malmstrom) see Learning Aid 2 page 9 15 for information on how to raise and manage the pressure

- Recheck to make sure no maternal tissue has been drawn under the edge of the cup, because this will cause the cup to pull off and damage the mother's tissues
- Wait for the next contraction
- As the next contraction begins, raise the vacuum pressure to 400 mm Hg (15 inches Hg) **The maximum pressure of 600 mm Hg (22 inches Hg) should never be exceeded**

10 Bring the fetal head **down** *with a contraction*

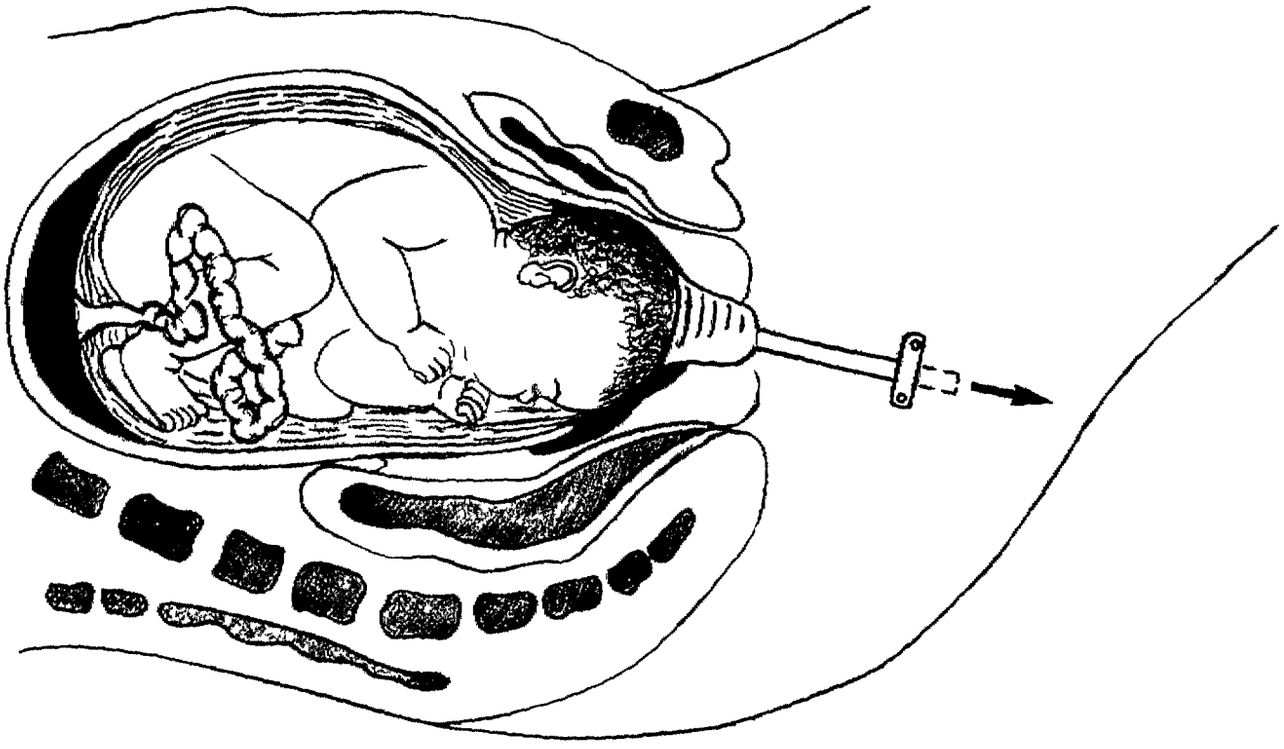

Figure 3 Correct Direction of Pull before the Vertex Clears the Symphysis Pubis **Pull Downward**

Pull downward toward your knees until the vertex clears the symphysis pubis

- Encourage the mother to push long and steadily with a contraction
- As the mother pushes, **pull downward** on the handle firmly and straight (See Figure 3) The baby's head will rotate at the speed and direction of a normal delivery
- Do not twist and turn the cup or the handle, this will cause the cup to pop off The baby's scalp can be injured (bruising, bleeding, swelling) when the cup pops off

When a contraction stops

- Reduce the pressure 100 mm Hg
- **Do not pull**
- Encourage the mother to breathe slowly and deeply to relax
- Have an assistant check the fetal heart rate

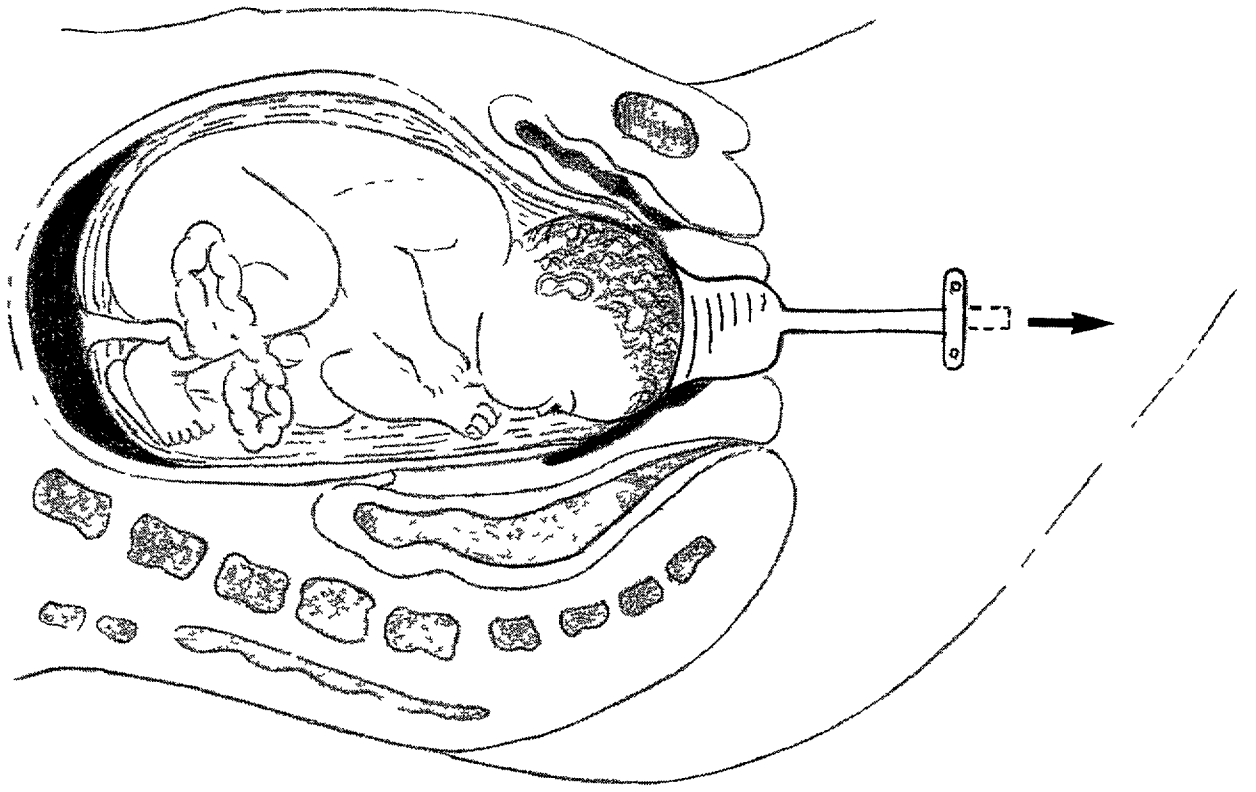

Figure 4 Correct Direction to Pull When the Vertex Clears the Symphysis Pubis **Pull Straight Out**

11 Repeat step 10 until the head clears the symphysis pubis Usually 2 or 3 times is sufficient Progress must be seen with each contraction With each contraction, guide the head **straight out** (See Figure 4) The head should progress over the perineum Do not allow pressure to remain at maximal levels (600 mm Hg) for more than 10 minutes total Too much pressure can cause bleeding into the skull or serious scalp damage (See the illustration of sub-periosteal hemorrhage in Figure 1, page 9 3)

12 Deliver the baby
- An episiotomy may be necessary in the primipara, to decrease resistance of the perineum before the baby's head has crowned (Review Module 4 **Episiotomies and Repair of Lacerations**, page 4 4)
- When the head begins to crown, during the next contraction, with the pressure at 600 mm Hg, **pull upward** (See Figure 5)
- After the head has delivered, release the pressure and continue with the delivery

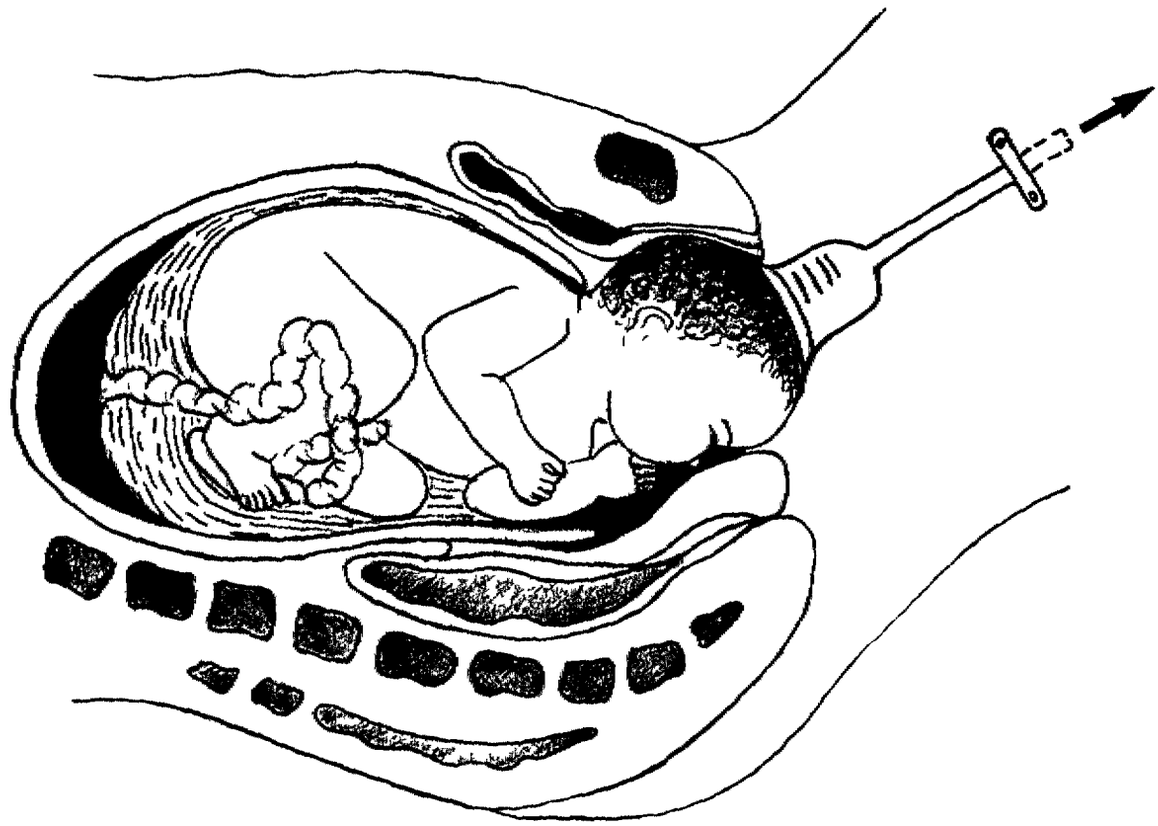

Figure 5 Pull upward as the Head Crowns

A vacuum extractor in capable hands is much safer for both the mother and baby than a long delay in the delivery and/or a long journey to hospital

13 After the delivery, care for the equipment See Learning Aid 4, page 9 17 See Module 7 **Prevention and Management of Sepsis**, page 7 25, for information on infection prevention

Learning Aid 1 - Types of Vacuum Extractors

Metal Cup Extractor (Malmstrom)

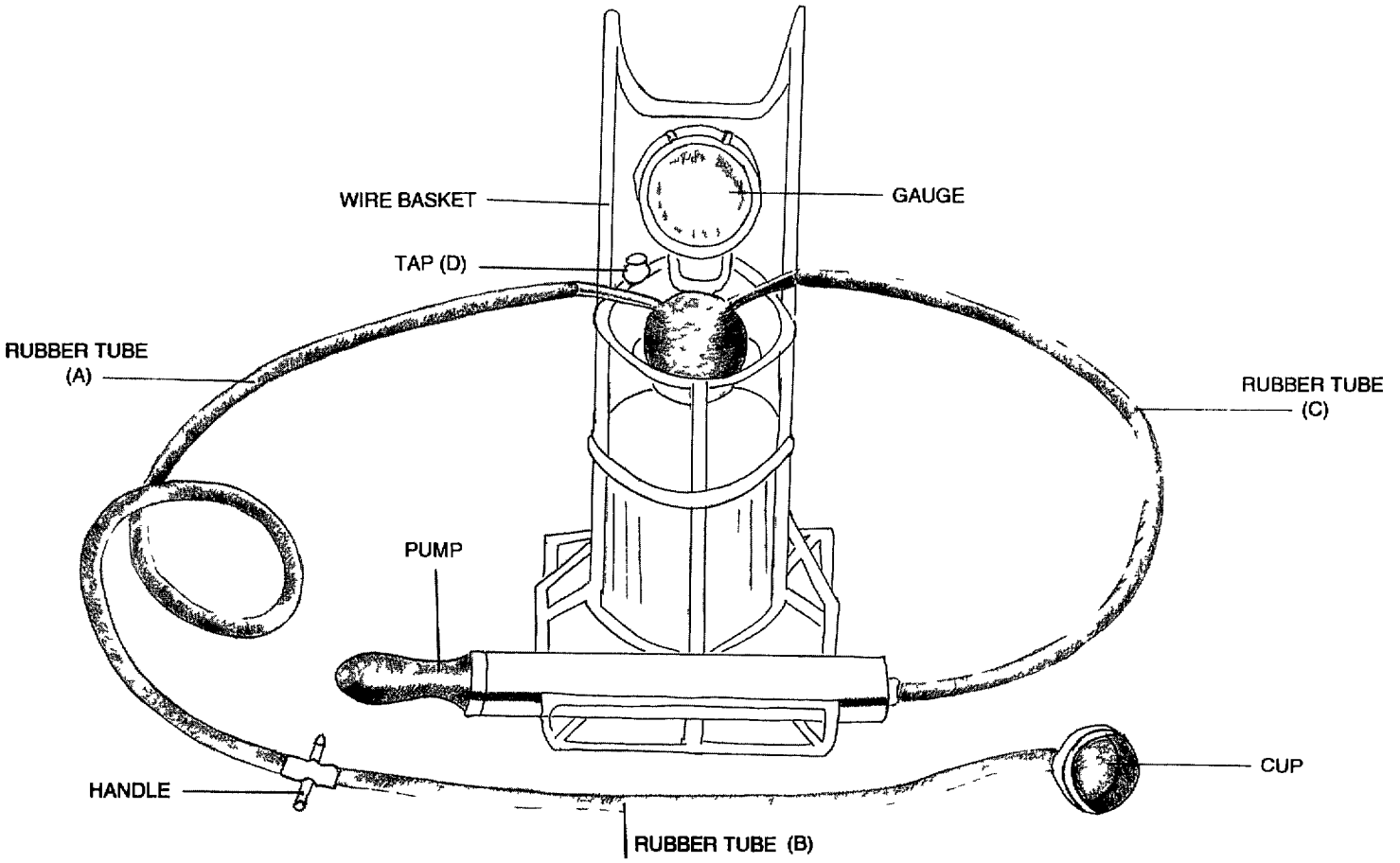

Figure 6 The Malmstrom Vacuum Extractor

The metal cup extractor includes a rubber tubing (B) containing a metal chain that ends in a handle connected to the cup The rubber tubing (A) goes through the handle and into a glass container which is fitted with a pressure gauge A hand pump (Figure 6) takes out air and makes the vacuum The pump (hand, foot or electrical) is attached to a short piece of rubber tubing (c) and the glass container A wire basket supports and protects the vacuum bottle The pump pulls air from the glass bottle, creating a vacuum The vacuum pressure is reduced by loosening the tap (D) The handle is used to pull with each contraction See Learning Aid 2, page 9 15, for more information on the metal cup extractor

Soft Cup Extractors (Mityvac, Silastic, CMI)

The soft cup extractors, see Figure 7, include a plastic vacuum tubing (B) connecting the cup to the mucus trap The rubber vacuum tubing (A) connects the mucus trap to the pump To create a vacuum with the hand held pump, squeeze the pump handles together (Electrical pumps are also available) To reduce vacuum pressure, pull the vacuum release trigger (D) toward you and hold until you get the pressure you need Use the traction handle to pull with the contraction (E)

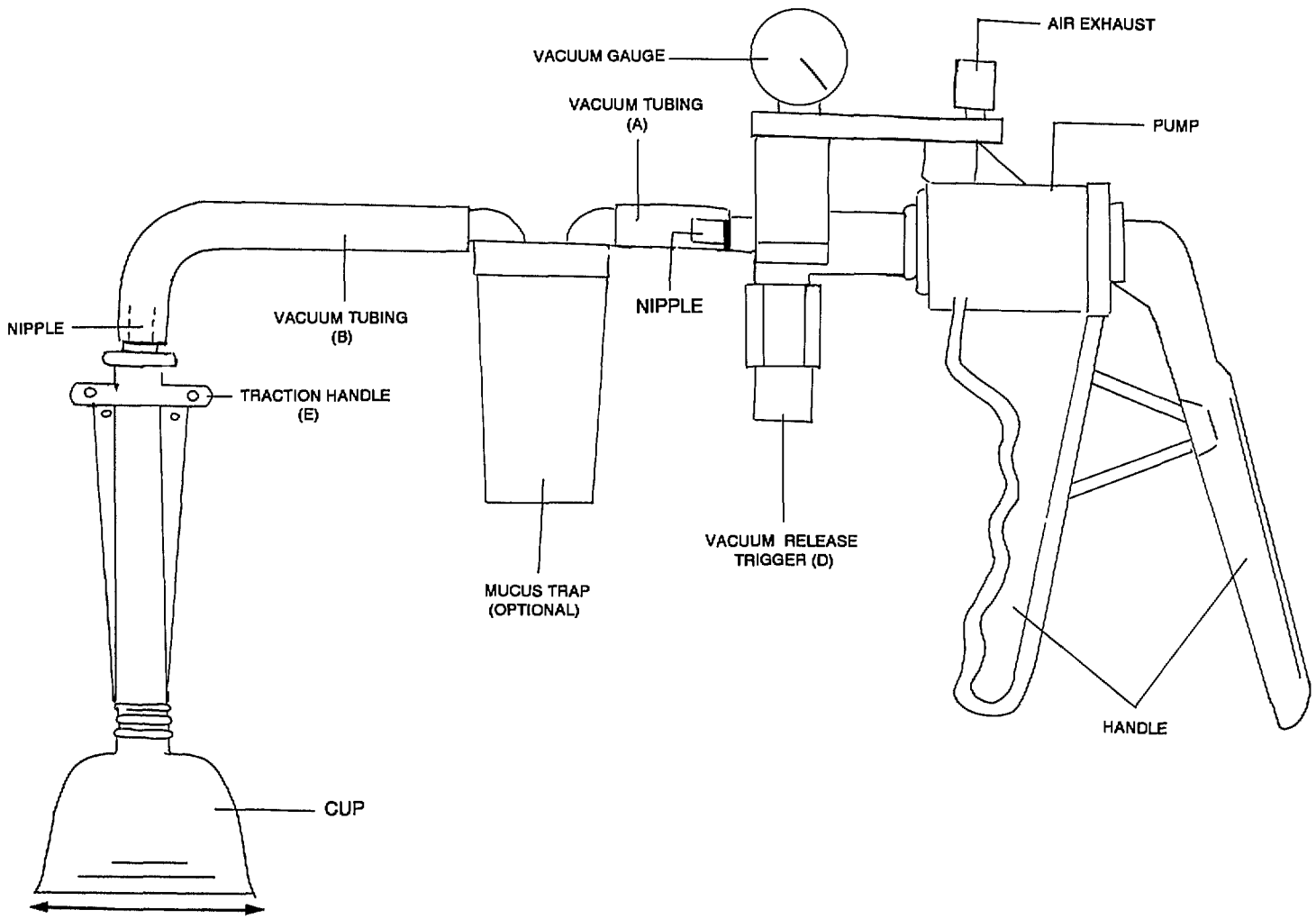

Figure 7 The Mityvac Vacuum

The Mityvac cup is dome shaped, soft, and reusable about 5 times Other soft cups can fit on the Mityvac Vacuum pump Test the cup each time before using it as described on page 9 6

The Silastic cup, can be fitted to various pumps, is trumpet shaped, soft, and may be reused up to 5 times The cup must be tested each time before use, as described on page 9 6 (See Figure 8)

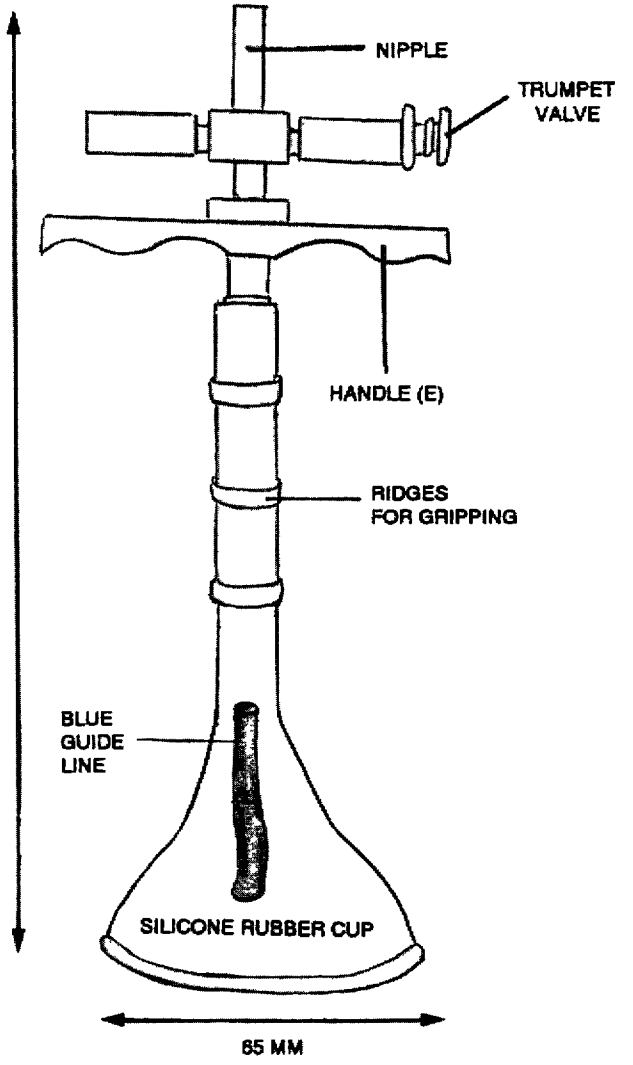

Figure 8 The Silastic Obstetrical Vacuum Cup

The Columbia Medical, Inc (CMI) hand held vacuum pump is autoclavable by gas or steam methods An electric model is also available The mucus trap on the hand held model is optional The cup shown on this model (Figure 9) is dome shaped, soft, and pre-packaged sterile and disposable A cup which is trumpet shaped and soft is also available A cup model with a shape similar to the Malmstrom cup is now available in both stainless steel and rigid polyvinyl Any cup, either reused or new, must be tested prior to use as described on page 9 6

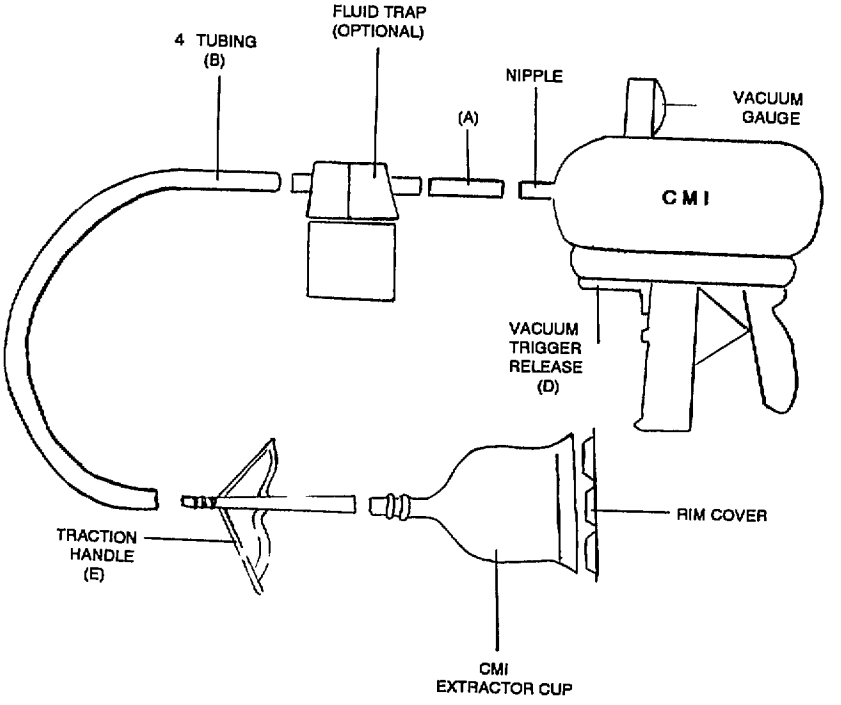

Figure 9 CMI Vacuum Pump

Learning Aid 2 - Metal Cup Extractor (Malmstrom)

The Malmstrom vacuum extractor is used with continuous pressure in the cup (The plastic cup extractors use pressure only with a contraction) The procedure described here is for use **only** with the Malmstrom type of extractor

Procedure

1 Close the pressure release valve

2 Ask your assistant to pump the pressure and carefully watch the gauge

3 Raise the pressure to 200 mm Hg

4 Recheck to make sure no maternal tissue has been caught under the cup

5 After 2 minutes, raise the pressure to 300 mm Hg, increase the pressure 100 mm Hg every 2 minutes until the pressure reaches 600 mm Hg Recheck to make sure no maternal tissue has been caught under the cup At this time the scalp is sucked into the cup and a caput succedaneum is produced If the pressure is increased too quickly with the metal cup, the suction will be poor, and the cup will pull off

6 **Never exceed the maximum pressure of 600 mm Hg**

7 Bring the fetal head down with a contraction, as the mother pushes long and steady Pull on the handle firmly and straight Do not twist or turn the cup or handle for this will cause the cup to pop off See Figures 3, 4, and 5 on pages 9 8-9 10 showing the correct direction of pull with a contraction

ONLY PULL WITH A CONTRACTION AND WITH THE MOTHER PUSHING	
First pull	**downward** to move the head by flexion under the symphysis and to reach the perineum as in Figure 3
Second pull	**downward**, same as for first pull, progress must be seen
Third pull	**straight out** for the head to progress over the perineum as in Figure 4
Fourth pull	**pull up** to help the mother deliver the head of the baby

8 When the contraction stops, do not pull, however, continue the pressure at 600 mm Hg

9 Encourage the mother to breathe slowly and deeply to relax between contractions

10 Have an assistant take the fetal heart tones

11 Pull with contractions until the head begins to crown **Do not allow the pressure to remain at maximal levels (600 mm Hg) for more than 10 minutes**

12 Deliver the baby

Learning Aid 3 - Pump Gauges and Measures

Some pump gauges show the safe pressure zones with different colors Red means the pressure is too high and is dangerous - **Not Safe** On this chart, the **maximum pressure line** is marked to remind you that this is the highest pressure you can use with a vacuum extractor

Look at this chart and circle the measures that are on your vacuum extractor

VACUUM CONVERSION TABLE

mm Hg	inches Hg	lb/in squared	kg/cm squared	
760	29 9	14 7	1 03	
700	27 6	13 5	0 95	
600	23 6	11 6	0 82	**MAXIMUM PRESSURE LINE**
500	19 7	9 7	0 68	
400	15 7	7 7	0 54	
300	11 8	5 8	0 41	
200	7 9	3 9	0 27	
100	3 9	1 9	0 13	

Learning Aid 4 - Cleaning and Care of the Vacuum Extractor

- The vacuum extractor is a delicate instrument Handle it with care Avoid dropping it on hard surfaces Store the vacuum extractor in a clean, dry, and covered area

- After you finish a delivery using the vacuum extractor, decontaminate and clean so that it is ready the next time you need to use it Wipe the pump, tubes, and dial with a soft, clean cloth that has been dampened with decontamination solution

- Clean out any fluids that went into the pump during the delivery by pumping warm water through the pump It is important to do this as soon as possible If the blood dries or clots in your pump, it will destroy the pump

- **Do not allow fluids to dry inside the pump** This may stop your pump from working To dry it, pump air until the inside of the equipment is completely dry

- If you are using a reusable cup or tubing, decontaminate it, then wash with soap and water Rinse very well, drain tubing, and dry completely Sterilize or high-level disinfect the cup and tubing before using for a delivery See Module 7 **Prevention and Management of Sepsis,** for information on Infection Prevention, page 7 25

Review Questions

What Did I Learn? Find out what you know and understand of this module by answering the following questions When you are finished, look for the answers in the module on the pages shown in parentheses ( )

1 What are the indications for the midwife that the vacuum extractor should be used? What will you see? (page 9 4)

2 List the seven conditions necessary for using a vacuum extractor (page 9 4)

3 Describe the dangers to mother and baby when using a vacuum extractor (page 9 5)

4 Describe how to prepare the vacuum extractor for use (page 9 6)

5 Explain the procedure for using the vacuum extractor to assist a mother to deliver (pages 9 6 - 9 10)

Skills Checklist - Using a Vacuum Extractor

This checklist has two purposes
1 The midwife uses it for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs
After observing/performing, write a rating ✓ = satisfactory ✗ = needs improvement
Add any other comments in the comments section below

	Date	Date	Date	Date
Using a vacuum extractor				
1 **LOOK and FEEL** for conditions necessary for using a vacuum extractor				
• Term (full size) baby				
• Baby alive or heart stopped during labor				
• Full dilatation				
• Vertex presentation				
• Ruptured membranes				
• No cephalopelvic disproportion no molding or caput, descent 1/5 or 0/5				
• Contractions present				
2 Explain to mother and family what you are going to do, why you are doing it, and how it will help her				
3 Prepare delivery and vacuum extraction equipment				
• Test vacuum extractor on palm of your hand				
4 Be sure bladder is empty (have mother urinate or catheterize her)				
5 Position mother on her back, at edge of table/bed				
6 Do vaginal examination to decide baby's position again				
7 Dry baby's scalp				
8 Apply the cup				
• Separate labia				
• Pull perineum down				
• Hold cup				

	Date	Date	Date	Date
• Insert cup down and in				
• Press cup against scalp of baby				
• Check for maternal tissue under cup				
9 Raise the pressure				
• Recheck for absence of maternal tissue under cup				
• Never exceed recommended maximum pressure for your type of vacuum extractor				
10 Pull fetal head through pelvis **with contraction Use correct direction of pull depending on level of head**				
• Before head clears symphysis pubis, **pull down**				
• When the head is clearing the symphysis pubis, **pull straight out**				
• When head crowns, **pull up**				
11 When the contraction stops				
• Reduce pressure (unless using Malmstrom vacuum extractor)				
• **Do not pull**				
• Encourage mother to breathe slowly and relax				
• Check fetal heart rate				
12 Repeat 10 and 11 above until head crowns				
13 Deliver head of baby				
14 Release pressure				
15 Complete the delivery				
16 Care for mother and baby				
17 Care for vacuum extractor				
• To wipe off vacuum extractor, use soft, clean cloth dampened with decontamination fluid				

	Date	Date	Date	Date
• If fluids are in pump, clean by pumping warm water through pump Clean pump quickly after birth so that blood does not clot in pump Use infection prevention steps				
• Dry pump by pumping air until equipment is dry inside				
• If cup and tubing are reusable, decontaminate, wash with soap and water, rinse, and dry, and sterilize				
• Store assembled vacuum extractor in clean, dry, and covered area				

Comments

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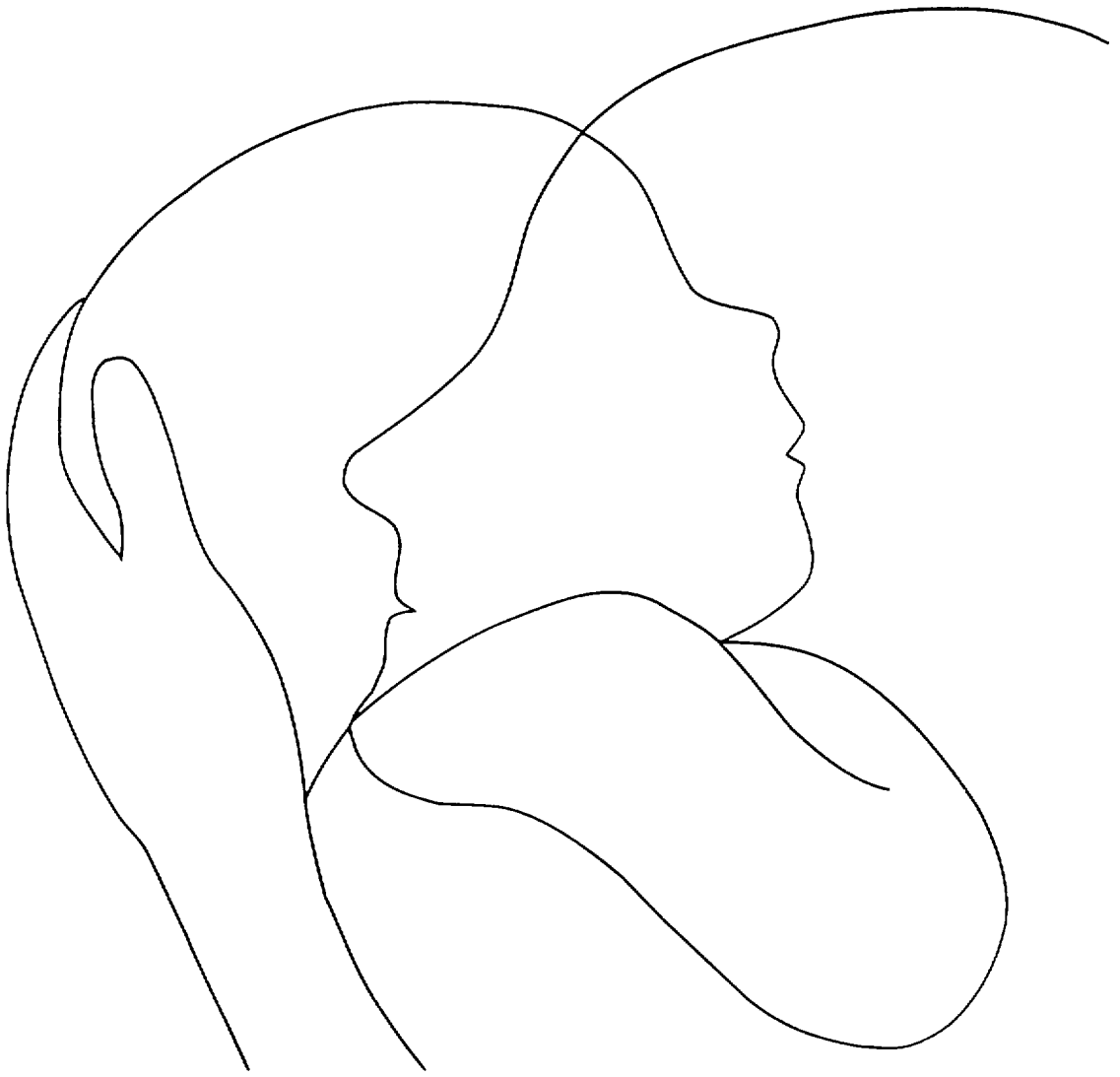
LIFE-SAVING SKILLS MANUAL FOR MIDWIVES

3rd Edition



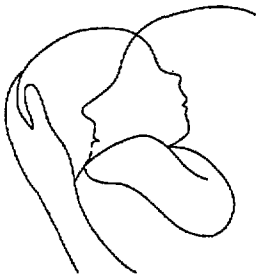
MODULE 10

OTHER EMERGENCIES

Life-Saving Skills Manual for Midwives

Third Edition

Module 10: OTHER EMERGENCIES



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Life-Saving Skills Manual for Midwives

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OTHER EMERGENCIES

Overview

In *Life-Savings Skill Manual for Midwives*, Edition 2, this module was titled Symphysiotomy As Life-Saving Skills (LSS) were taught, the need to change the name and add content was recognized Skills identified as problems by many midwives were not addressed in the second edition LSS trainers and LSS midwives identified topics or skills that would help them in their work This module attempts to provide information to meet the needs of midwives working in clinics, health centers, and hospitals The information is offered in a separate module so that each program may choose the topics that are appropriate for its situation

This module emphasizes methods by which midwives in rural or urban settings can help save mothers' lives by using the Problem Solving Method to **IDENTIFY THE PROBLEM** and **TAKE APPROPRIATE ACTION** The problems in this module do not occur often, so it will not be possible to gain clinical skill competency in a training course During your training, make sure you are called every time any of these problems occur, so that you can increase your opportunities to learn through observing, assisting, and performing In order to gain skill competence, you may need to make time for additional clinical experience The skills checklists and learning aids can serve as guides for you not only during training but also when you return to your clinic or unit

The *Labor and Delivery Problems* section outlines the management of *persistent occiput posterior position, umbilical cord prolapse, uterine inertia, shoulder dystocia, breech presentation, and other abnormal presentations* The management for these problems is included for the midwife who can not possibly get the mother to a doctor In the hands of a skilled and competent midwife, these procedures can save both the mother and her baby A procedure for the administration of oxytocin infusion is also included

The *Postabortion Care* section builds on the early pregnancy loss (abortion) problems identified in Module 5 **Prevention and Treatment of Hemorrhage**, and Module 7 **Prevention and Management of Sepsis** This section includes using the Problem Solving Method to diagnose and care for incomplete abortion, doing manual vacuum aspiration, postabortion follow-up and counseling, and family planning You will also find learning aids on equipment, and on the management of problems and complications during manual vacuum aspiration (MVA)

The *Symphysiotomy* and *Other Learning Aids* sections, including *Assist at Emergency Blood Transfusion* and *First Assist at Cesarean Section*, offer some rarely needed but life-saving skills There are times or places where cesarean sections can not be performed There are times when a midwife is the only assistant for a cesarean section The information in these sections was written from the experience of midwives and physicians who have worked in difficult situations Some of these skills were used during times of disruption of normal health services (war, floods, storms) Hopefully, this information will be useful to those who may need it to save a mother or her newborn

Before you study this module, review Module 3 **Monitoring Labor Progress**

LABOR AND DELIVERY PROBLEMS

Goal

The midwife will learn to identify and manage several special problems during labor and delivery, to save the lives of mothers and their babies

Objectives

The midwife caring for a mother during labor and delivery will be able to

1 identify abnormal positions or presentations, including occiput posterior position, face presentation, breech presentation, transverse lie presentation, incomplete rotation of the shoulders, and multiple pregnancy

2 describe the management of each abnormal position or presentation

3 describe and outline the action that must be taken for uterine inertia (tired uterus) and umbilical cord prolapse

Introduction

Some labor and delivery problems can be identified during an antenatal visit If this is the case, the mother can be referred to hospital for care Other labor and delivery problems are missed or can not be identified until after labor begins These problems can cause labor to go on for several days The mother can be exhausted, dehydrated, demoralized, she may even die The risk of fetal distress is increased The baby may also die Postpartum hemorrhage is likely in the third stage of labor Active management of labor problems can save the lives of the mother and her baby

In this section, you will use the Problem Solving Method to **IDENTIFY PROBLEMS** in labor and delivery and to **TAKE APPROPRIATE ACTION** Learning aids provide additional information on abnormal presentations and positions, and on giving an oxytocin infusion under the supervision of a doctor Review questions will help you discover how much you have learned or understood and skills checklists will guide you as you perform the skills

Common Medical Terms

Breech - buttocks presentation, may be with flexed or extended legs

Brow - the forehead, a brow presentation, the forehead of the baby is lying against the cervix, is a possible cause of obstructed labor

Face - the baby is lying with its face against the cervix, is a possible cause of obstructed labor

Footling Breech - one foot, or both feet presentation

Inertia - weak or tired, as in uterine inertia In uterine inertia, the uterus is tired, not able to contract effectively

Occiput - the back of the head

Occiput Posterior - the occiput of the baby is towards the sacrum of the mother

Position - the relationship of a particular part of the fetus to a particular part of the mother's pelvis For example, when the fetal head is presenting and the back of the fetal head is towards the symphysis pubis, the position is occipitoanterior When the fetal buttocks are presenting and the sacrum is towards the symphysis pubis, the position is sacroanterior

Presentation - the part of the baby to go first into the pelvis, normally the head, sometimes the buttocks, occasionally the brow or shoulder

Shoulder - shoulder presentation In shoulder presentation, the shoulder of the fetus is pushed into the mother's pelvis, this is a cause of obstructed labor This may happen during delivery of a second twin or when the lie of the fetus is oblique when labor begins

Shoulder Dystocia - following a normal delivery of the fetal head, the shoulders do not rotate and delivery of the baby's body is difficult

Transverse - transverse lie, the length of the fetus lies across the mother's uterus It can cause shoulder presentation and obstructed labor

Occiput Posterior Position

Most babies deliver head first, looking toward the back of their mother (occiput anterior position) One of 10 babies comes head first, looking toward the front of their mother (occiput posterior position) An occiput posterior position may prolong the mother's labor

With an occiput posterior position, the head does not flex forward This causes a longer and slower labor because the baby's head is not coming in good contact with the mother's cervix to help the cervix dilate The cervix dilates more slowly, labor is longer and there is a danger of fetal and maternal distress

A Midwife's Experience

One day there was a primigravida, 9 cms dilated with a persistent occiput posterior The vital signs were normal and the contractions were good Her back was very painful The baby just did not move down Remembering my LSS training, I helped the mother onto her hands and knees, resting her head on a cloth between contractions After 2 contractions, the mother was fully dilated and delivered a crying baby I felt a little afraid delivering the baby with the mother in this position, but there was no time!

LSS Midwife, Uganda

ASK and LISTEN

The mother will complain of a backache and seem restless as she tries to find a comfortable position She will want to walk, sit, lie and turn, sometimes all at the same time

LOOK and FEEL

LOOK at the abdomen When there is an occiput posterior position you will often see a depression at or below the umbilicus Sometimes it will look like the bladder is full The high head with the depression above it looks like a full bladder

FEEL the head The most common cause of a high head in a primigravida during the later weeks of pregnancy and labor is posterior position The head feels very large because the deflexed head is presenting a larger circumference The back is difficult to **FEEL** Limbs are felt on both sides of the abdomen **FEEL** the position when you do a vaginal examination You will **FEEL** the diamond shaped anterior fontanelle towards the pubis with the sagittal suture oblique or anterior-posterior

The first stage of labor may be slow even when there are good uterine contractions Good contractions help the head flex and descend The head then rotates and the occiput is delivered anteriorly Sometimes, flexion does not occur The front of the baby's head reaches the pelvic floor first and rotates forward The baby is born with the face to the pubis

IDENTIFY THE PROBLEM AND TAKE APPROPRIATE ACTION

The **danger** of a occiput posterior position is that **flexion does not take place and sometimes the head stops descending**

If you cannot take the woman to the doctor with cesarean section facilities, try to help the baby rotate *before* it is time for delivery

1 Explain to the mother and family what the problem is and what you are doing to help her

2 Ask the mother to try to urinate every hour and drink frequently

3 Help the mother to get in a knee chest (knee arm) position

4 Encourage her to relax between her contractions by rubbing her back and what ever will help her to be comfortable

5 Help her to change position at least every half hour, for example, to her left side, to standing, sitting, or walking

6 Monitor her according to Module 3 **Monitoring Labor Progress**, pages 3 10 and 3 74

7 Be prepared for a depressed baby Have resuscitation equipment ready See Module 6 **Resuscitation**, page 6 7

If you **can not take the woman to the doctor with cesarean section facilities *or* if the cervix is fully dilated and the mother is ready to push, *try to increase flexion***

1 Make sure the bladder is empty

2 Explain to the mother and family what you are doing

3 Help the mother to get in a knee chest (knee arm) position If this position is difficult for the mother, help her to lie on her left side Put a pillow or folded cloth under her hip and ask an assistant to hold the mother's right leg

4 Insert your fingers into the vagina under the symphysis pubis

5 Press on the baby's forehead before the next contraction

6 Hold this position during a contraction to help flex the baby's head

7 The baby's head should flex and deliver with 2 or 3 contractions

8 If the baby's head does not flex and deliver, **between contractions** push the baby's head up above the ischial spines with your hand and try to help the head rotate If this is successful, be prepared for a **very fast** delivery Try to prevent the head from delivering too quickly

9 If the baby does not deliver, and you still can not get to the hospital, help the mother into a squatting position and try to flex the head between contractions Encourage the mother to push well with each contraction If this does not work, sedate the mother with Pethidine 100 milligrams (mg) to stop contractions Hydrate and reassure her The baby will probably not live at this point, but you can not give up Help the mother and family Try to get transportation as soon as possible

10 Be prepared for a depressed baby See Module 6 **Resuscitation**, page 6 7

11 Be prepared for bleeding from lacerations in the mother See Module 4 **Episiotomies and Repair of Lacerations**, page 4 10

12 When you complete the delivery, care for the mother and her baby Be prepared for postpartum hemorrhage See Module 5 **Prevention and Treatment of Hemorrhage**, page 5 8

13 Record your actions and outcome

Umbilical Cord Prolapse

When the membranes (bag of waters) rupture, the cord will sometimes come down the birth canal **in front** of, or **beside** the baby Any problem that keeps the presenting part from fitting well into the birth canal can also make room for the cord to slip down past the baby This is more likely to happen in multiparity when the presenting part may not be engaged when the membranes rupture or are artificially ruptured (ARM) Other problems such as polyhydramnios (a lot of water or liquor), a long cord, a very large or very small size baby, a breech, or malpresentation may cause a prolapsed cord If the cord is outside the vulva, the umbilical blood vessels will spasm because of the cooler temperature This spasm slows or stops the flow of blood and thus oxygen to the baby Prolapse of the cord occurs about once in every 400 deliveries Cord prolapse is an **emergency**

A compressed cord is also an **emergency** We often do not know the cord is compressed If the cord is around the baby's neck/body, has a knot, or gets caught in front of the baby or on the side of the baby, it can be compressed (pinched or squeezed) In any of these situations, it is difficult for blood to get through the cord and bring oxygen to the baby The baby may die if the blood can not move through the cord

ASK and LISTEN

LISTEN to the fetal heart beat routinely during labor Any change in the fetal heart rate during labor, especially slowing of the heart rate during first stage, may be a sign of **fetal distress**

LOOK and FEEL

LOOK for cord at the vulva when doing a vaginal examination, after spontaneous rupture of membranes, or when there is a sign of fetal distress Every time you do a vaginal examination, **FEEL** for cord, note presentation of the baby and dilatation of the cervix

IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION

Early identification of the problem and **fast action** may save the baby's life The midwife must always **LISTEN** and **FEEL** for the possibility of problems each time she monitors a woman's labor See Module 3 **Monitoring Labor Progress**, page 3 29

If the midwife **IDENTIFIES** that the cord is in the vagina, or lying outside of the vulva, **ACTION** must be taken If the baby's heart beat drops suddenly, especially right after the waters break, and does not return to normal, **ACTION** must be taken If the baby's heart beat gets very slow during each contraction, **ACTION** must be taken

If you **can see the cord**

1 Using gloves, **FEEL** for cervical dilatation and touch the cord gently to **FEEL** for a cord pulse (beat) If the *cervix is fully dilated, deliver as soon as possible* with the woman in a knee chest position Make an episiotomy and use a vacuum extractor, if available See Module 9 **Vacuum Extraction**

2 If the *cord has a beat and the cervix* ***is not*** *fully dilated*, help get the mother to the hospital A cesarean section is needed to save the baby

3 While waiting for transportation, explain to the mother and family what you are doing

4 Gently wrap the cord in a clean cloth to prevent chilling ***Try not to handle the cord***, because handling can produce a spasm of the umbilical blood vessels A spasm will slow the supply of oxygen to the baby Attempts to replace the cord inside the uterus usually fail To replace the cord, you must handle it, and the cord can easily prolapse again, wasting valuable time

5 Help the mother get into a position with her hips higher than her chest A knee chest position is good but may be difficult during travel

6 With sterile or high-level disinfected gloves, do a vaginal examination and try to push the baby's presenting part up, away from the cord to reduce the pressure on the cord Continue this position during travel to the hospital

7 Ask your assistant to prepare equipment for delivery and infant resuscitation See Module 6 **Resuscitation**, page 6 7 Take delivery and resuscitation equipment with you to the hospital

If you **cannot see the cord and the baby is in distress**

1 If you cannot see the cord, do a vaginal examination wearing sterile or high-level disinfected gloves

2 **FEEL** inside the vagina for cervical dilatation and to see if you can feel a cord in front of the baby If the *cervix is fully dilated, deliver as soon as possible* with the woman in a knee chest position Make an episiotomy and use a vacuum extractor, if available

3 If you **FEEL the cord and the cervix is not fully dilated**, put your hand on the baby's presenting part and gently try to push it up, away from the cord **Try to prevent spasms of the cord by not moving the cord**

4 While you travel with the mother and family, keep the mother in a position with her hips higher than her chest Keep your gloved hand in the vagina pushing up on the baby's presenting part

If it is **not possible to get the mother to the hospital**

1 Position the mother so that her hips are higher than her chest, changing her position often (left lateral position with pillows under the buttocks, hands and knees, knee arm, or knee chest position) and monitor the labor Keep trying to get transportation, do not give up Midwives have reported cases in which they kept pressure off the cord for 3 hours, and a live baby was delivered by cesarean section

2 Keep the cord protected from cool air Do not handle the cord

3 Continue to push up on the presenting part with your gloved hand, especially during contractions

4 Deliver the baby as quickly as possible, doing an episiotomy and using a vacuum extractor, if one is available **Be prepared for infant resuscitation** See Module 6 **Resuscitation**, page 6 7 Sadly, there is a good chance the baby will die

5 Be prepared to help the mother and her family the best you can

6 When the delivery is completed, record actions and outcomes

If the **cord has no pulse *and* transverse lie**

1 Explain to the mother and family

2 REFER to doctor with cesarean section facilities

3 Offer care and support to the mother and her family

4 Record all actions taken

If the **cord has no pulse *and* vertex or breech**

1 Explain to the mother and family

2 Continue to monitor the mother and support her during the labor

3 Prepare the mother to deliver a stillborn baby

4 Offer care and support to the mother and her family

5 Record all actions taken

Uterine Inertia (Tired Uterus)

Uterine inertia refers to low or poor tone in the uterine muscle fibers This causes weak uterine contractions which are not frequent and are not painful The contractions are not effective Cervical dilatation is slow and labor is prolonged If labor goes on for many hours without progress, the mother will be too tired for the active phase of labor, and giving birth Uterine inertia is more frequent when a woman has had many children Prolonged labor increases the risk of maternal distress, hemorrhage, and if the membranes are ruptured, infection Uterine inertia can happen at the beginning of labor or once labor is established

ASK and LISTEN

The woman will tell you that the contractions are **not** painful The woman feels good in the beginning because she is able to rest Later she becomes tired and distressed because no progress is being made

LOOK and FEEL

Contractions are not frequent They are of short duration and mild The uterus can be indented (pressed into) even at the height (peak) of a contraction See Module 3 **Monitoring Labor Progress**, pages 3 12 and 3 74 Abdominal examination shows slow or no fetal descent The vaginal examination confirms lack of progress in cervical dilatation and fetal descent The contractions are not effective

IDENTIFY THE PROBLEM

The labor is not progressing The findings include

- Normal fetal heart rate, engaged vertex presentation but no descent If occiput posterior, see actions in this module
- If membranes are ruptured, there is clear amniotic fluid (liquor)
- Normal maternal blood pressure, pulse, and temperature
- No signs of infection
- Contractions are not frequent, they are of short duration and mild
- Cervix is dilated some, but there is no progress with thinning or opening
- Pelvic assessment is adequate, See Module 3 **Monitoring Labor Progress**, Learning Aid 3 - Measuring the Pelvic Size, page 3 69

TAKE APPROPRIATE ACTION

1 Prevent maternal exhaustion by giving fluids (rehydration) and food Help her to get comfortable, maybe have a wash, take a walk Give a back massage to help her relax and rest Reassure the woman and her family Sometimes emotions such as fear or not wanting another baby can slow a labor Talk with the mother, support and encourage her

2 Give an enema If the enema is effective, uterine contractions should improve within an hour or so

3 Help the mother learn how to stimulate her nipples, explaining that this may help to encourage the contractions The nipple can be stimulated by rolling the nipple between your thumb and finger, pulling a little on the nipple

4 If a vertex presentation is *engaged* and the woman is in *active phase of labor*, artificially rupture membranes (ARM) Continue to monitor labor as described in Module 3 **Monitor Labor Progress**

5 If labor progresses and delivery is accomplished, **remember** to actively manage the third stage and be prepared for a postpartum hemorrhage The uterus may fail to contract well after delivery See Module 5 **Prevention and Management of Hemorrhage**, page 5 36

6 If you find fetal or maternal distress, cloudy or bad smelling amniotic fluid, signs of infection, or if the labor crosses the alert line on the partograph, REFER to a facility with the capability of performing cesarean section

7 Explain to the woman and her family that at the hospital the doctor may help to stimulate her labor by giving medicine (oxytocic infusion) to help her uterus contact

8 Record all actions

Shoulder Dystocia (Shoulders Are Stuck)

Shoulder dystocia is difficulty in delivering the shoulders at the time of a vertex birth The shoulders are stuck The baby is in **danger!** The baby may be injured or even die The mother is in **danger!** She may get perineal and vaginal lacerations The delivery is traumatic and painful It is important for you to be able to manage shoulder dystocia, because you can only identify this problem *after the head is born* The head seems to pull back against the mother, almost like it wants to go back inside

ASK and LISTEN

The best way to be ready to manage shoulder dystocia is to think about it and plan ahead for it It is likely to occur if there are any of these conditions

- Maternal diabetes
- History of delivering large babies
- Family history of large siblings
- Maternal obesity
- Previous shoulder dystocia
- Large fetus weighing 0 5 kilogram (kg) or more than the woman's largest previous baby This delivery can have the most difficult shoulder dystocia especially if the last baby was 2 2 to 2 7 kg [1] If the mother says this unborn baby feels much bigger than her other babies, be prepared for shoulder dystocia

LOOK and FEEL

LOOK Sometimes it is possible to tell that the shoulders might get stuck by the way the head is born The head may be born only after a lot of hard pushing, instead of coming out easily The retraction of the baby's head against the perineum makes it look as if the head is going back into the vagina This is called the turtle sign

FEEL for an abnormal baby (large abdomen, tumor, or edema), locked or joined twins, Bandl's retraction ring, or the cord, which may be short or around the neck If the *cord is tight*, clamp and cut Make sure the *bladder is empty* ***at the beginning of second stage*** for all deliveries so that there is as much room as possible for the baby The delivery is more comfortable for the woman Since this is in an emergency, you do not have to try to catheterize her

IDENTIFY THE PROBLEM

The shoulders are stuck The baby's shoulder bone is stuck over the mother's pelvic bone (symphysis pubis) The baby's chin does not quite come out The baby can not turn to face the mother's thigh Even hard pushing by the mother will not bring the shoulders out **The baby is in danger**

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[1] Varney's predictive factor from Varney (1997) p 495

TAKE APPROPRIATE ACTION

1 **Quickly get ready** You must work calmly but quickly and direct your helpers You may need all of the help you can get

Explain to the mother and her family that the baby's shoulders are stuck Tell them what you are going to do Explain that you will be asking the mother to work very hard, probably harder then she has ever worked Her effort is very important as you help her baby get out Everyone must concentrate and listen very carefully

Position to have the mother's buttocks higher than for a normal delivery when you are ready for her to push again While she is waiting for preparations to be completed, ask the mother to lie on her back, plant her feet firmly on the bed, and elevate (lift) her buttocks This may make more space and allow the shoulders to move

Refer as appropriate Ask someone to call the doctor or transportation It is really impossible to try to transport the mother at this time, however, you may need the transportation after the delivery If available, you want the doctor to come as soon as possible You may need help with resuscitation of the baby and caring for the mother She may have a postpartum hemorrhage and/or lacerations to be repaired

Prepare for resuscitation Ask an assistant to prepare resuscitation equipment as in Module 6 **Resuscitation**, page 6 7

Prepare for hemorrhage Ask an assistant to prepare the oxytocic An over distended uterus from a large baby or a tired uterus from a long first or second stage increases the chance that the woman will bleed too much after delivery See Module 5 **Prevention and Management of Hemorrhage**, page 5 12

2 **Cut or enlarge the episiotomy** Cut or enlarge the episiotomy If you have not cut an episiotomy, this is the time to do so This is an emergency, you need as much space as possible This is to give you more room to help deliver the baby See Module 4 **Episiotomies and Repair of Lacerations**, page 4 4

Try to deliver with the mother's legs back

3 **Help the mother move her position** Bring the mother's hips to the edge of the bed If you are at a home delivery and she is on the floor, put something under her hips to raise them This will give the baby's head more space when you deliver

4 **Explain and show** the mother how to spread her legs wide and pull her knees back as far as she can towards her ears Tell her this will make more space for the baby

5 **Press down hard above the pubic bone** Ask your assistant or any other person in the room to press down hard just above the mother's pubic bone releasing the baby's anterior shoulder CAUTION DO NOT PUSH ON THE MIDDLE OF THE MOTHER'S ABDOMEN (ON THE BABY), this only makes the situation worse

6 **Mother push hard** At the same time, ask the mother to pull her legs very wide and push as hard as she can

7 **Midwife pull with cupped hands** Cup your hands around the sides of the baby's head (do not hold the baby's neck) and deliver the shoulders with downward and outward pressure while counting to 15 Pull hard and firmly, **be careful** not to pull, jerk, twist, or bend the baby's neck The pressure should be firm but not too much If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15

If the baby does not deliver, ask the mother to take long and slow breaths Explain to her that she will have to get in a different position to deliver the baby

Try to deliver with mother on hands and knees

8 **Help the mother change her position** Ask your assistant to help the mother to the hands and knees position with her head higher then her hips

9 **Mother push hard** Ask the mother to push as hard as she can

10 **Midwife pull with cupped hands** Cup your hands around the sides of the baby's head (do not hold the baby's neck) and deliver the shoulders with downward and outward pressure while counting to 15 Pull hard and firmly, **be careful** not to pull, jerk, twist, or bend the baby's neck The pressure should be firm but not too much If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15

If the baby does not deliver, ask the mother to take long and slow breaths Explain that she should remain in the same hands and knees position

Try to deliver the posterior arm of the baby

11 **Explain** to the mother that she needs to remain on her hands and knees, that you must put your hand inside her to try to help the baby You will try to be gentle, but it still may hurt her

12 **Deliver posterior arm** Put your gloved hand *inside* the vagina and along the baby's lower back to bring out the posterior arm Move your hand around the baby Grasp the baby's arm Bend its arm Pull the arm out of the vagina by *pulling the baby's hand* If you pull using the baby's arm, there is a greater chance of breaking it This may be a little difficult

13 **Ask the mother to push**, while you cup your hands around the baby's head and deliver the shoulders with downward and outward pressure while counting to 15 If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15

If the baby does not deliver, the mother can stay on her hands and knees, lie on her side, or her back Encourage her and tell her that you will need to try something else to deliver her baby

Try to deliver by using the corkscrew method

14 **Try to turn the baby** With your hands in the vagina, turn the baby one half circle so that the posterior shoulder is where the anterior shoulder was located *Always turn the body of the baby so that the back is anterior* Try to deliver as in number 13

If the baby does not deliver, *turn the baby back to the original position and at the same time gently pull downwards*

If the baby does not deliver, the mother can stay on her hands and knees or lie on her side, or her back Encourage her and tell her that you will need to try something else to deliver her baby

Try to deliver by breaking the clavicle of the baby

15 **Break the baby's clavicle** (collar bone) Reach in with your fingers of both hands and find the anterior clavicle *Pull up* (so as not to puncture the baby's lung) on the middle of the clavicle between your two thumbs and break it This will take much pressure This will allow the anterior shoulder to become free from behind the symphysis pubis

16 **Ask the mother to push**, at the same time, cup your hands around the baby's head and deliver the shoulders with downward and outward pressure while counting to 15 If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15

17 Continue with infant care and resuscitation as needed Prepare for the third stage care of the mother

18 When you have cared for the mother and infant, record actions taken

Breech Presentation

In a breech presentation, the baby delivers with the buttocks or legs first Breech delivery occurs in about 3 per cent of pregnancies A breech presentation has 2 major dangers The first danger is that the head can get stuck (cannot deliver) This may happen when the cervix dilates enough to deliver only the body of a small baby, but not enough to deliver the head Also, the woman's pelvis may be wide enough to admit the body of the baby, but not the head

The second danger is a prolapsed cord The umbilical cord, coming before the shoulders and the head of the baby, may be compressed, cutting off the baby's oxygen supply Both dangers may cause the death of the baby For these reasons, it is best for a woman with a breech presentation to deliver where surgery can be done, in case it is necessary

A Midwife's Experience

A gravida 3 with complete breech on the perineum was brought to me The mother was pushing all of the time I advised my assistants to help position the mother on her back with her buttocks at the edge of the table I quickly scrubbed, put on gloves, cleaned the perineal are, and advised the mother to push long and hard with each contraction I kept my hands together "like I was praying" and actually I was! I knew that I should not touch the baby until the hairline on the back of the neck was seen I watched the buttocks, then the stomach, then the legs fell out I felt the cord to make sure it was not tight Then the mother pushed, the baby turned and the anterior arm delivered and then the posterior (It all seemed like a dream) I kept wanting to hold the baby, but was patient until the hairline was showing Then I held both feet, extended the legs and body, and slowly delivered the head I felt confident using this new delivery way

LSS Midwife, Indonesia

ASK and LISTEN

When a breech is identified during antenatal examination at 34 to 37 weeks and modified cephalic version is not successful, the woman should be advised to go to a hospital for the delivery If the woman has not had antenatal care, you will not discover the breech presentation until she is already in labor

The family may call you when the woman has already started labor or is already delivering at home You may be called, or the woman may be brought to you, when the body is delivered and the head is stuck This baby will not live

LOOK and FEEL

LOOK at the abdomen It *may* look like a normal head presentation

FEEL the abdomen At the pelvic brim (lower part of the uterus), you will feel a large, soft mass (buttocks) In the fundus (top part of the uterus), at one or the other side, you will feel a round hard mass (head) which can be balloted (moved), independent of the back The fetal heart beat is usually heard around the mother's umbilicus until descent has progressed

FEEL the dilatation of the cervix and the presenting part After the membranes rupture, do a vaginal examination to **FEEL** for prolapse of the umbilical cord, dilatation of the cervix, presentation, position, and descent of breech See Module 3 **Monitoring Labor Progress**, pages 3 11 and 3 18

IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION

FINDING	Prolapsed cord This is an **emergency**
ACTION	See the section on umbilical cord prolapse, page 10 7
FINDING	Complete breech (thighs and legs flexed) or incomplete breech (frank/with extended legs) Footling presentation is rare and knee presentation is rarer still
ACTION	**Antenatal** 34 to 37 weeks, not in labor, membranes intact attempt modified cephalic version Ask the mother to rest, lying down with her feet a little higher than the rest of her body and her hips on a pillow or rolled up cloth, for one hour 3 times a day beginning with the 34th week of pregnancy If the presentation remains breech after 2 weeks, ask that she get in the knee chest or knee arm position at least 2 times in a day Explain to her and her family the importance of a hospital delivery
FINDING	**Term, breech, and not in labor**
ACTION	Refer to hospital *if at all possible*
FINDING	**Term, breech, and in labor**
ACTION	Refer to hospital *if at all possible*, otherwise continue with breech delivery procedure

Procedure for breech presentation

1 Assess the progress of labor Decide whether you can transfer the mother to a hospital for delivery If you cannot, then you must proceed Explain to the mother and her family what you are doing and what you are going to do Reassure them as best you can

2 Gather supplies and equipment for a normal delivery with episiotomy You must have a delivery bed or a table for second stage Be prepared for infant resuscitation (see Module 6 **Resuscitation**, page 6 7) and postpartum hemorrhage (see Module 5 **Prevention and Treatment of Hemorrhage**, page 5 8)

3 Confirm full dilatation before she starts to push (See Module 3 **Monitoring Labor Progress**, pages 3 18 and 3 65) Encourage the woman to push in any position that is comfortable *Make sure her bladder is empty*

4 When you see the baby's buttocks distending the perineum, help her into the lithotomy (lying on her back with legs bent) position She should be at the edge of the table or bed Her feet should be supported, or she may want to spread her legs and pull them back when she pushes

5 Wash your hands and put on gloves Wash the genital area

6 Perform an episiotomy as the baby's buttocks distend and thin the perineum See Module 4 **Episiotomies and Repair of Lacerations**, page 4 5 The episiotomy makes more space for the breech delivery

7 The breech will begin to pass through the outlet **Now is the time for self control** Keep your hands off the baby until you see the umbilicus

8 When you can see the umbilicus, it is okay to touch the baby for the **first** time Use one finger to flex the baby's knees and pull down a loop of umbilical cord This will bring the feet and legs out

9 As the buttocks and legs deliver, the body usually hangs downwards and the back turns from oblique to directly upwards (anterior) The face is looking downward towards the mother's back **Do not push on the uterus or the baby** Encourage the mother to push with each contraction

10 The body slowly rotates (turns) as first one and then the other shoulder delivers The arms become visible They are usually folded across the chest If the arms do not deliver with the next contraction, free the posterior arm first

Insert 2 fingers into the vagina, **FEEL** the baby's humerus and follow it to the elbow Splint and support the arm between your fingers and bring it downward The anterior arm will usually deliver

11 As the mother pushes, the baby is born to the neck Allow the baby to hang by its own weight, which brings the flexed head down to the pelvic floor The occiput and back rotate forwards (anterior)

12 The baby can hang for one or 2 minutes Gradually the neck delivers, and you can see the hairline and feel the suboccipital region You may now attempt to deliver the head

13 If you are **right handed**, stand with your back to the woman's left leg and take the baby's legs in your right hand (If you are **left handed**, stand with your back to the woman's right leg and take the baby's legs in your left hand)

Pull firmly outward (stretch) on the legs to prevent the baby's neck from bending backwards and breaking The suboccipital region, and not the neck, should pivot under the apex of the pubic arch

14 Use one hand to guard the perineum and at the same time prevent the head from delivering too quickly

15 With your other hand, hold the feet Keep the body straight by pulling a bit (traction) and lift in a circular movement (an arc of 180 degrees) until the chin, mouth, and nose are free at the vulva

If the airway is clear, the baby will breathe Clear away any mucus or liquor (amniotic fluid) in the mouth and nose The baby can now breathe

16 Slowly and carefully deliver the rest of the head

Allow 2 or 3 minutes for the head to be pushed out Ask the mother to take deep breaths, explain to her that it is best not to push but let the baby's head come out slowly Patience will protect the head from injury and prevent tearing the episiotomy Sometimes suprapubic pressure may be needed to deliver the head

17 When the baby is delivered, note the time and proceed as you do for a normal delivery See Module 3 **Monitoring Labor Progress**, page 3 66 for the delivery routine See Module 6 **Resuscitation**, page 6 3 for immediate care of the newborn

18 The third stage is usually very quick in breech delivery Be prepared for hemorrhage See Module 5 **Prevention and Management of Hemorrhage**, page 5 8

19 When the mother and baby are comfortable, record your actions and outcomes

Learning Aid 1 - Abnormal Presentations and Positions

Face Presentation - usually occurs during the labor rather then before the labor When you do a vaginal examination, the presenting part is high, soft, and irregular The chin becomes the leading part

The labor may be prolonged The cord may come first Usually the baby is born spontaneously when the chin is anterior Do an episiotomy to give more space for the delivery

If the chin is posterior, the woman must be taken to the hospital for delivery She can not deliver spontaneously from this position Sedate the woman to try to stop the contractions and ask your assistant to help get transport as soon as possible

Brow Presentation - is almost never diagnosed before labor begins The presenting part will be high The anterior fontanelle may be felt on one side and the orbital (eye) ridges felt on the other side of the presenting part Sedate the woman to try to stop the contractions and help her get to the hospital as soon as possible

Shoulder Presentation - happens with a transverse lie The presenting part does not fit well into the pelvis The membranes usually rupture early The cord may prolapse If the woman is in labor, sedate her Help her get to the hospital as soon as possible

Multiple Pregnancy - diagnosis is not always easy After 20 weeks, the uterus is larger than usual for dates When you palpate, finding more than one head is diagnostic For this reason, always palpate the entire uterus of a pregnant woman even though a head is found immediately at one or the other end of the uterus The head may feel small in relation to the size of the uterus Many baby parts may be felt At times the presence of more than one baby is not known until it is realized that the uterus is still large and high after delivery of the first baby

Labor is often premature in multiple pregnancy The babies may be premature or immature Because the babies are small, abnormal presentations are common For these reasons, multiple pregnancies should be referred to the doctor

Remember that abnormal presentations or positions in labor often occur when the woman has cephalopelvic disproportion If you attempt to deliver or delay your referral to the hospital, the mother and baby may be injured, damaged, or even die

Learning Aid 2 - Oxytocin (Pitocin) Infusion, DOCTOR'S SUPERVISION

The midwife must only use oxytocin infusion in an emergency situation The midwife must never decide **on her own**, to use oxytocin infusion for augmentation (to speed up) or induction (to start) labor The doctor decides when to use oxytocin during labor The doctor may decide to use oxytocin infusion during labor when there is pregnancy-induced hypertension, prolonged gestation, maternal diabetes, premature or prolonged rupture of membranes The midwife is responsible for managing the oxytocin infusion and for monitoring the mother and baby

The doctor supervising the midwife is responsible for giving her guidelines for using an oxytocin infusion during emergencies If possible, oxytocin infusion should only be used during labor where *facilities for cesarean section are available* **There is always the danger of a ruptured uterus during an oxytocin infusion For this reason, all midwives and doctors must use caution when making the decision to use an oxytocin infusion**

The hormone oxytocin stimulates contraction of uterine smooth muscle and causes cervical dilatation Oxytocin must **always be given intravenously (IV) to induce or strengthen labor contractions** Review Module 8 **Hydration and Rehydration**, page 8 7, Starting an Intravenous Infusion in a Peripheral Vein

Oxytocin must be given in a way that allows for very close regulation (control) of the dosage The oxytocin dosage depends on the response of the uterus to the oxytocin Hyperstimulation (too strong, too hard contractions) of the uterus must be prevented during labor as it may cause fetal distress or ruptured uterus with death of the mother and baby Oxytocin should not be given into the muscle or under the tongue, because you can not carefully control how fast the body absorbs it You could easily cause the uterus to rupture

Refer to Module 3 **Monitoring Labor Progress**, page 3 54, to review abnormal labor progress Use the partograph to identify complications in labor **Early identification of complications will allow the midwife to get the woman to the hospital doctor**

Oxytocin infusion is contraindicated when placenta previa, fetal distress, or moderate or severe cephalopelvic disproportion is identified Oxytocin infusion should be given only under doctor's supervision in a woman with an over distended (too large) uterus, grand multiparity, or history of cervical or uterine surgery

Discuss the guidelines suggested on the following pages with your supervising doctor, and make changes accordingly

Equipment

Two bottles of intravenous fluid are used to give an oxytocin infusion Use one bottle to start an intravenous infusion Prepare the oxytocin in a second bottle In addition to the equipment for starting an intravenous infusion you will need a second sterile intravenous tubing (giving set), clamp, needle, and intravenous solution You will also need oxytocin (such as Pitocin)

Preparation of equipment

Start the intravenous infusion (first bottle) Get the oxytocin solution ready (second bottle) Put *2 5 units of oxytocin in one liter* of 5% Dextrose in Water *If you have 500 milliliter (ml) infusion containers, put in one unit of oxytocin* Put a piece of tape on this bottle Write the date, time, name, and amount of oxytocin on the tape Record the amount of oxytocin on the labor record Attach the tubing and needle to the bottle Attach the needle to the first intravenous tubing (piggyback) (See Figure 1)

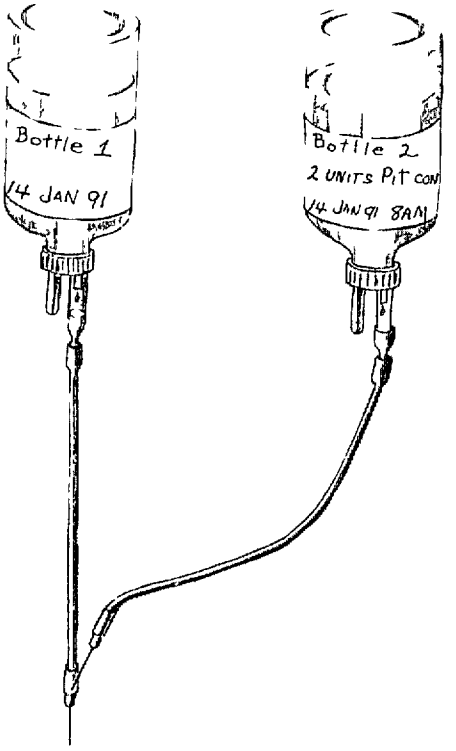

Figure 1 Two Bottle Method for Oxytocin Infusion

Procedure

1 Explain to the woman and her family what you are going to do Wash your hands Help the woman get comfortable Do not let her lie flat on her back (supine) The pressure from the pregnant uterus may cause low blood pressure (hypotension) in the mother and reduce blood circulation to the uterus

2 **LISTEN** and record the fetal heart rate every 5 minutes for 20 minutes FEEL, time, and record the uterine contractions continuously for 20 minutes This will give you baseline information on what is happening before you start Refer to Module 3 **Monitoring Labor Progress**, page 3 31 for monitoring information

Remember to continue all routine monitoring of labor progress in addition to monitoring fetal heart rate and uterine contraction at least every 10 minutes

3 When you are ready to begin the oxytocin, clamp the tubing to the first bottle (the one without oxytocin) Open the tubing to the bottle with oxytocin and regulate the drops to 15 drops in a minute Listen and record the fetal heart rate every 10 minutes Feel, time, and record the uterine contractions every 10 minutes

The goal is to slowly build the labor pattern to 3 to 4 contractions of 40 to 50 seconds' duration every 10 minutes, with the fetal heart rate remaining within the normal range of 120 to 160 beats in a minute The cervix will completely dilate and the mother will deliver a healthy baby

- After 30 minutes, if there is no change in contractions and the fetal heart rate is within normal range, increase the drip rate to 30 drops in a minute

- After another 30 minutes, if there is no change in contractions and the fetal heart rate is within normal range, increase the drip rate to 60 drops a minutes

- After another 30 minutes, if there is no change in contractions and the fetal heart rate is within normal range, *add the remainder of oxytocin (2 5 units) to the oxytocin infusion if you are using 1000 ml container for a total of 5 units*, and **reset your drip rate to 15 drops a minute** Remember to record the time and amount of oxytocin added on the bottle and the labor record **Note** *if you are using 500 ml container, add one unit to the oxytocin infusion for a total of 2 units*

Carefully monitor and record on the partograph fetal heart rate and uterine contractions every 10 minutes as long as oxytocin infusion is being given

- If the contractions are less then 2 minutes apart and last 50 seconds or longer, or if the uterus does not relax between contractions, stop the oxytocin by clamping off the piggyback bottle Open the tubing to the first bottle and regulate the drops to 30 drops in a minute Change the mother's position and let the first intravenous infusion run until the uterus is relaxed between contractions

- If the mother's and baby's conditions are within normal ranges, try a second time with the oxytocin infusion you have been using, beginning with 15 drops in a minute and continue with monitoring until the goal is reached

Remember that oxytocin infusions can cause almost continuous contractions or the uterus does not relax between contractions This overstimulation can cause tetanic (hard and continuous) contractions Overstimulation can cause fetal distress, abruptio placenta, or rupture of the uterus

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages shown in parentheses ( )

1 In most cases of an occiput posterior position, the baby rotates to occiput anterior and the delivery is normal However, if rotation does not occur and labor is prolonged, what can you do to help? (page 10 4)

2 When the presenting part is not engaged at the time the membranes rupture, there is a greater risk (chance) of a prolapsed cord Why does this happen and what emergency action can you take to save the baby's life if you can see the cord? (page 10 7)

3 What is the presentation called when a fetus is lying sideways in the uterus with the head on one side of the abdomen and the buttocks on the other side? (page 10 20)

What care will you give when you identify this presentation and the mother is term? (page 10 20)

4 Uterine inertia can happen at the beginning of labor or once labor is established The uterine contractions are not frequent, of short duration, and mild The cervix is dilated some, 6 centimeters (cm) or more, but does not continue to progress with thinning (effacement) and opening (dilatation) What can you do and why will you do each action? (page 10 10)

5 Shoulder dystocia is difficulty in delivering the shoulders at the time of a vertex birth What are the possible dangers to the baby and the mother? (page 10 12)

6 Breech deliveries occur in about 3 out of 100 pregnancies What are the 2 major dangers? (page 10 16)

7 When a mother has a multiple pregnancy, what problems will you be alert for? (page 10 20)

8 Oxytocin infusion should only be used under the supervision of a doctor with cesarean section facilities In what situations is oxytocin infusion not to be used? (page 10 21)

9 A face presentation usually develops during the labor rather then before the labor If the chin is anterior and the woman wants to push, what can the midwife do? (page 10 20)

If the chin is posterior and the woman wants to push, what can the midwife do? (page 10 20)

10 Describe the following positions and demonstrate each on a model if available

a Occiput posterior (page 10 3)

b Occiput anterior (page 10 3)

c Sacroanterior (page 10 18)

Skills Checklist - Persistent Occiput Posterior Position

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills

2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement

Add any comments in the section below

	Date	Date	Date	Date
When a woman is in labor and the baby is **occiput posterior position**				
1 **LOOK, FEEL** to confirm position of baby				
• Abdominal exam - Head looks high, head feels large - Back difficult to feel, limbs felt on both sides				
• Vaginal exam - Diamond shaped anterior fontanelle towards mothers front (pubis)				
• Contractions, woman in labor				
2 **IDENTIFY PROBLEM** and **TAKE ACTION** • Danger if flexion does not happen, descent stops • Decide whether REFERRAL is possible				
3 If **you can not REFER,** *try to help the baby rotate before* it is time for delivery • Explain to mother and family • Ask mother to - Urinate every hour, drink frequently - Relax between contractions, change positions - Get in knee chest or knee arm position often • Monitor labor (See Module 3 **Monitoring Labor Progress**, page 3 66) • Prepare for depressed baby				
If you CAN NOT REFER, CERVIX IS FULLY DILATED, and WOMAN READY TO PUSH, try to increase flexion of head				
1 Make sure the bladder is empty				
2 Explain to mother and family what you are doing				

		Date	Date	Date	Date
3	Help mother raise hips, using either knee chest or knee arm position while assistant holds her right leg				
4	Insert your fingers into vagina under symphysis pubis				
5	Press on baby's forehead before contraction				
6	*Hold this position during contraction* to help flex and deliver the baby's head				
7	If the head does not flex after 2 or 3 contractions, • *Between contractions* push the baby's head up above the ischial spines with your hand to try to help the head rotate • If this is successful, be **prepared for a very fast delivery** Try to prevent the head from delivering too quickly				
8	If the baby's head does not flex, and you still can not get to the hospital, help the mother squat, try to flex the head, encourage the mother to push with each contraction				
9	If this is not successful after 5 contractions **OR** there are signs of distress in the mother or baby • Sedate the mother with Pethidine 100 mg • Hydrate and reassure her Help the mother and family • Try to get transportation as soon as possible				
10	Be prepared for depressed baby See Module 6 **Resuscitation**, page 6 7				
11	Be prepared for bleeding from lacerations in the mother See Module 4 **Episiotomies and Repair of Lacerations**				
12	Care for the mother and her baby				
13	Be prepared for postpartum hemorrhage See Module 5 **Prevention and Treatment of Hemorrhage**				
14	Record your actions and outcome				

Comments

Skills Checklist - Umbilical Cord Prolapse

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments in the section below

	Date	Date	Date	Date
When caring for a woman in labor				
1 **LISTEN** to the fetal heart beat routinely during labor, if any change **LOOK** for cause of change in heart beat				
2 When doing a vaginal examination **LOOK and FEEL** • For cord at vulva - after rupture of membranes, or - when signs of fetal distress • Note presentation of baby • Note dilatation of cervix				
3 **IDENTIFY PROBLEM** and **TAKE ACTION**				
If you can see the cord				
1 Using gloves, **FEEL** for cervical dilatation and touch the cord to **FEEL** pulse (beat)				
2 *If cord has a beat and the cervix is fully dilated,* deliver with an episiotomy and vacuum extractor, if available				
3 *If the cord has a beat and the cervix is NOT fully dilated,* help get mother to hospital				
4 While waiting for transport, explain to mother/family				
5 Prevent chilling or handling of cord • Gently wrap in cloth • **Do not attempt to replace cord**				
6 Position mother with hips higher than chest				
7 Keep presenting part away from cord • Use gloved hand in vagina to push baby up • Continue position and pushing head up while traveling to hospital				

		Date	Date	Date	Date
8	Take delivery and resuscitation equipment with you to hospital Be prepared for delivery				
If you can not see the cord and the baby is in distress					
1	Do vaginal exam, if cervix fully dilated, deliver as soon as possible with the woman in knee chest position, do episiotomy, and use vacuum extractor, if available				
2	**FEEL** for cord in front of baby				
3	If you **FEEL** *cord and the cervix is not fully dilated* • Position mother with hips higher then chest • Push presenting part up, away from cord • Try not to touch cord				
4	REFER • Keep presenting part away from cord while traveling • Be prepared for delivery and infant resuscitation				

Comments

	Date	Date	Date	Date
If it is not possible to get the mother to the hospital				
1 Monitor labor according to routine and • change mother's position often, **always** hips higher than chest and left lateral as much as possible • continue trying to get transport • encourage and explain to mother and family				
2 Protect cord from cool air and handling to prevent spasm of cord				
3 Keep gloved hand pushing up on presenting part to prevent compression of cord until ready to deliver				
4 Deliver baby as quickly as possible • Position mother left lateral with hips on pillow and assistant holding her right leg or in knee chest position • Encourage mother to push with contraction • Perform episiotomy • Use vacuum extractor, if it is available • Be prepared for infant resuscitation, but the baby may die				
5 Help the mother and family the best you can				
6 Record actions and outcomes				

Comments

	Date	Date	Date	Date
If the cord has no pulse *and* there is a transverse lie				
1 Explain to the mother and family				
2 REFER to doctor with cesarean section facilities				
3 Offer care and support to the mother and her family				
4 Record all actions taken				
If the cord has no pulse *and* vertex or breech				
1 Explain your findings to the mother and family				
2 Continue to monitor labor and support mother				
3 Prepare the mother to deliver a stillborn				
4 Offer care and support to mother and her family				
5 Record all actions taken				

Comments

Skills Checklist - Uterine Inertia (Tired Uterus)

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments in the comments section below

	Date	Date	Date	Date
When caring for a woman with **uterine inertia**				
1 Decide the progress, **ASK and LISTEN** • **Early labor** contractions are **not** painful and mother feels good, as she can rest • In **later labor**, mother is distressed and tired as there is no progress				
2 **LOOK and FEEL** • Contractions - frequency, duration, strength • Abdominal exam - slow or no fetal descent • Vaginal exam - no progress in cervical dilatation - pelvic assessment is adequate				
3 **IDENTIFY PROBLEM** and **TAKE ACTION**				
4 Prevent exhaustion of mother and baby • Give oral fluids, food, help her to get comfortable, wash, relax, rest • Reassure mother, support, encourage				
5 Give an enema Be prepared for delivery				
6 If enema does not work, help mother to stimulate nipples explaining that this may encourage contractions				
7 If ***vertex presentation is engaged*** and the woman is in ***active phase of labor***, artificially rupture membranes (ARM)				
8 If this is effective, **remember** to actively manage third stage and be prepared for postpartum hemorrhage				

	Date	Date	Date	Date
9 REFER at any time for • Fetal or maternal distress • Cloudy or bad smelling amniotic fluid • First stage of labor crossing the alert line				
10 Explain to woman and family that the hospital doctor may help stimulate labor by rupturing membranes, augmentation of labor, and so forth Encourage and support, be prepared for delivery on way to hospital				
11 Record all actions				

Comments

Skills Checklist - Shoulder Dystocia

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments in the comments section below

	Date	Date	Date	Date
When helping a woman in labor*				
1 **Prevent** shoulder dystocia by anticipating and referring • Mother with diabetes • History of delivering large babies • Family history of large siblings • Maternal obesity • Large fetus • Previous shoulder dystocia • Fetal weight estimated as 0 5 kg (1 pound) more or much larger than the previous pregnancy				
2 **LOOK**				
• Head may be slow to deliver with much pushing and effort by the mother				
• Head delivers and looks as if it wants to go back in the vagina (turtle sign)				
• Head is very tight against the perineum				
3 **FEEL**				
• If hard pushing by mother, does not turn or move the shoulders, **FEEL** for an abnormal baby, tumor, locked or joined twins, Bandl's retraction ring Sedate and REFER				
• For tight cord (may be short or around the neck) If cord tight, clamp and cut				
• Bladder If full, ask mother to urinate **Note** It is very important that the bladder is empty at the beginning of second stage for all deliveries				

	Date	Date	Date	Date
IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION				
1 Quickly get ready				
• *Explain* to the mother and family what you are going to do				
• *Position* to have the mother's buttocks higher than for a normal delivery Ask mother to plant her feet firmly on the bed and elevate (lift) her buttocks *Be ready to deliver* as this may allow the shoulders to move				
• *Refer* as is appropriate Ask someone to call doctor/get transportation Be prepared for resuscitation of baby, postpartum hemorrhage, laceration/episiotomy repairs				
2 Cut or enlarge the episiotomy				
Try to deliver with the mother's legs back				
3 Position the mother to move Bring her hips to the edge of the bed This will give the baby's head more space when you deliver				
4 Explain and show how to spread her legs wide and pull her knees back as far as she can towards her ears				
5 Press down hard above pubic bone Ask someone to press down hard just above the mother's pubic bone, releasing the baby's anterior shoulder				
6 Mother push hard At the same time, ask the mother to pull her legs very wide and push as hard as she can				
7 Midwife pull with cupped hands Cup your hands around the sides of the baby's head (do not hold the baby's neck), and deliver the shoulders with downward and outward pressure while counting to 15				
If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15				

	Date	Date	Date	Date
If the baby does not deliver, ask the mother to take long and slow breaths Explain to her that she will have to get in a different position to deliver the baby				
Try to deliver with mother on hands and knees				
8 Change position Help the mother to the hands and knees position with her head higher then her hips				
9 Mother push as hard as she can				
10 Midwife pull with cupped hands, see step 7 above				
Try to deliver the posterior arm of the baby				
11 Explain to the mother to remain on her hands and knees, that you must put your hand inside her to help the baby You will try to be gentle, but it still may hurt her				
12 Deliver posterior arm				
• Put your gloved hand inside the vagina, along the baby's lower back to bring out the posterior arm				
• Move your hand around the baby				
• Grasp the baby's arm Bend its arm				
• Pull the arm out of the vagina by pulling the baby's hand				
13 Ask the mother to push while you cup your hands around the sides of the baby's head, and deliver the shoulders with downward and outward pressure while counting to 15				
If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15				
If the baby does not deliver, the mother can stay on her hands and knees or lie on her side or her back Encourage her and tell her that you will need to try once more to deliver her baby				

	Date	Date	Date	Date
Try to deliver by using the corkscrew method				
14 Try to turn the baby				
• With your hands in the vagina, turn the baby one half circle so the posterior shoulder is where the anterior shoulder was located				
• Always turn the body of the baby so the back is anterior				
• Try to deliver as in number 13				
• If the baby does not deliver, turn the baby back to the original position and at the same time gently pull downwards				
If the baby does not deliver, the mother can stay in any position she would like to be Encourage her and tell her that you will need to try once more to deliver her baby				
15 **Break the baby's clavicle (collar bone)**				
• Reach in with your fingers of both hands and find the anterior clavicle				
• Pull up (so as not to puncture the baby's lung) on the middle of the clavicle between your two thumbs and break it This allows the anterior shoulder to become free from behind the symphysis pubis				
16 Ask the mother to push				
• At the same time cup your hands around the sides of the baby's head, and deliver the shoulders with downward and outward pressure while counting to 15				
• If the baby does not deliver, change the direction and deliver the shoulders with upward and outward pressure while counting to 15				
17 Continue with infant care and resuscitation as needed				
• Prepare for third stage care of the mother				

	Date	Date	Date	Date
18 When you have cared for the mother and infant, record actions taken				

Comments

Skills Checklist - Breech Management

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments in the comments section below

	Date	Date	Date	Date
When helping a mother deliver a baby with **breech presentation**				
1 Assess the progress of labor to decide if there is time to REFER If no time to refer				
• Explain to the mother and family what you are doing				
• Reassure as best you can				
2 Gather supplies and equipment for delivery with episiotomy				
• Have delivery bed or a table for second stage				
• Be prepared for infant resuscitation and postpartum hemorrhage				
3 Confirm second stage (complete cervical dilatation) **before** she starts to push				
• Encourage woman to push in any comfortable position				
• Make sure her bladder is empty				
4 When baby's buttocks are seen distending perineum				
• Help woman to lithotomy position (lying on her back with her legs bent), at edge of table or bed				
• Her feet should be supported OR she may want to spread her legs and pull them back when she pushes				
5 Wash your hands and put on gloves				
• Wash the genital area				

	Date	Date	Date	Date
6 Perform episiotomy (to make more space for the breech delivery) as the baby's buttocks distend and thin the perineum				
7 **Keep hands off the baby's body, until the umbilicus is seen,** as the breech passes through the outlet				
8 When the umbilicus is seen • Use one finger to flex the baby's knees and pull down a loop of umbilical cord This will bring the feet and legs out				
9 As the buttocks and legs deliver, the body usually hangs downward Watch as				
• The back turns from oblique to anterior (upwards)				
• The face is looking downward				
• **Do not push on the uterus or pull on the baby**				
• Encourage mother to push with each contraction				
10 With each contraction, watch as				
• The body slowly rotates as shoulders deliver				
• The arms become visible				
If the arms do not deliver with the next contraction, free the posterior arm				
• Insert two fingers into the vagina				
• Follow humerus to elbow				
• Splint and support arm between your fingers				
• Bring arm down to deliver				
• Anterior arm will usually follow				
11 As the mother pushes, the baby is born to the neck				
• Allow the baby to hang by its own weight for up to 1 to 2 minutes				

	Date	Date	Date	Date
- Watch as the flexed head moves down to pelvic floor				
- Watch as the occiput and the back rotate forward/anterior				
12 Watch as the neck gradually delivers				
• The hairline can be seen				
• The suboccipital region (hairline) can be felt				
13 The delivery of the head can now be attempted				
• If **right-handed**, stand with your back to the woman's left leg				
• Take the baby's legs in your right hand				
- Pull firmly outward (stretch) on the legs to prevent the baby's neck from bending backwards				
- The suboccipital region (hairline), and not the neck, should pivot under the apex of the pubic arch				
14 Use one hand to guard the perineum and prevent the head from delivering too quickly				
15 With the other hand, hold the feet and keep the body straight by pulling a bit (traction)				
• Lift the feet in a circular movement (an arc of 180 degrees) until the chin, mouth, and nose are free at the vulva				
• Wipe the mouth and nose to clear away any mucus or liquor The baby can now breathe				
16 Deliver the head slowly and carefully in 2 to 3 minutes				
• Ask the mother to take deep breaths				
• Explain that the baby's head must deliver slowly				
• Protect the head from injury and prevent tearing the of episiotomy				
• Suprapubic pressure may be needed				

	Date	Date	Date	Date
17 When baby is delivered, note time proceed as for a normal delivery Be prepared for depressed baby				
18 The third stage is usually very quick, be prepared for postpartum hemorrhage				
19 When mother and baby are cared for, record actions and outcomes				

Comments

Postabortion Care[2]

Goal

The midwife will learn how to care for a woman with an incomplete abortion

Objectives

The midwife caring for a woman with incomplete abortion will be able to

1 identify possible problems with incomplete abortion and hemorrhage from the medical history (**ASK and LISTEN**) and vaginal examination (**LOOK and FEEL**)

2 **IDENTIFY PROBLEM/NEEDS** of a woman with incomplete abortion and take **APPROPRIATE ACTION**, including appropriate referral

3 explain to the woman and her family the need for using the Manual Vacuum Aspiration (MVA) in incomplete abortion care, and the dangers of hemorrhage and infection

4 perform the step by step procedure and safely use MVA by IPAS (International Projects Assistance Service) for incomplete abortion

5 record progress of vital signs during the MVA procedure, type and amount of fluids given, estimated blood loss, products of conception, and medication given

6 describe how she will do post abortion follow up and family planning counseling

7 demonstrate infection prevention practices that reduce disease transmission to clients, family, midwives, and other health care staff, including cleaners according to Module 7 **Prevention and Management of Sepsis**, Infection Prevention, beginning on page 7 25

Note Before you begin this topic, review normal anatomy and physiology of the female reproductive system Also review in Module 5 **Prevention and Treatment of Hemorrhage**, Find the Cause of Bleeding, page 5 3, Digital Evacuation Skill, page 5 56, and Learning Aid 1 - Intra-abdominal Bleeding, page 5 62 In Module 7 **Prevention and Management of Sepsis**, review Infection Associated with Abortion, page 7 9, and Infection Prevention, page 7 25

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[2] This Postabortion Care section is adapted primarily from Winkler et al (1995)

Introduction

Recent estimates are that at least 15% of all pregnancies end in spontaneous abortion (miscarriage) The World Health Organization (WHO) estimates that one in 8 pregnancy-related deaths are due to *unsafe abortion* Every midwife and health worker must give **quality emergency care** to every woman who has lost (complete abortion) or is losing (incomplete abortion) her pregnancy Emergency care will vary depending on the situation This critical emergency care is life saving for spontaneous abortion and for unsafe abortion As a midwife, it is important to give life-saving care and meet the woman's needs in a respectful, non-judgmental way

In this section, you will use the Problem Solving Method to determine the problem You will learn how to perform a manual vacuum aspiration and to care for the woman with an incomplete abortion

WHO offers guidance in the provision of care by level of health care facility and staff, (see Learning Aid 3 - Provision of Postabortion Care, page 10 59) Guidelines should be established according to local conditions, availability of drugs, instruments, training, and national standards and regulations

A Midwife's Experience

I was called by friends of a young and scared woman Her name was Stella I followed them from my clinic across the road to a farm In the grass we found Stella She was lying on the ground in a pool of dark blood Flies were all around She was awake, very hot, and unable to stand

We carried her to the clinic An intravenous infusion was started, antibiotics given, and we tried to clean her and at the same time find out what had happened She was about 3 months' pregnant and so ashamed Her parents told her to leave Her boyfriend said he did not believe that she was pregnant All she could think to do was to remove the pregnancy She had tried home medicines, douches, boiling baths, and finally used a coat hanger Stella died

LSS Co-author

Common Medical Terms

Abortion - pregnancy loss, fetus is not viable (not able to live outside of the uterus)

Complete Abortion - all products of conception come out of the uterus

Equal to Dates - when the *size of the uterus* on bimanual examination gives the same age as the *weeks of amenorrhea or gestation* (pregnancy) by history

Incomplete Abortion - some or all products of conception remain in the uterus

Inevitable Abortion - stage of pregnancy when it is not possible for the pregnancy to continue

Miscarriage - see spontaneous abortion

Spontaneous Abortion (miscarriage) - pregnancy loss, the fetus is not viable, all products of conception are passed (come out of the uterus) without any assistance

Threatened Abortion - signs and symptoms are so few that it is possible for the pregnancy to continue to term

Unsafe Abortion - pregnancy loss caused by dangerous medicine or instruments used to end a pregnancy in unclean conditions

Stage of Abortion				
Diagnosis	**Bleeding**	**Cervix**	**Uterine Size**	**Other Signs**
Threatened Abortion	Slight to moderate	Not dilated	Equal to dates by last normal menstrual period (LNMP)	Positive pregnancy test Cramping Uterus soft
Inevitable Abortion	Moderate to heavy	Dilated	Less than or equal to dates by LNMP	Cramping Uterus tender
Incomplete Abortion	Slight to heavy	Dilated (soft)	Less than or equal to dates by LNMP	Cramping Partial expulsion of products of conception Uterus tender
Complete Abortion	Little or none	Soft (dilated or closed)	Less than dates by LNMP	Less or no cramping Expulsion of products of conception Uterus firm

Source Adapted from Clinical Management WHO 1994

Use the Problem Solving Method

ASK and LISTEN

Losing a pregnancy is something a woman will always remember The woman may be afraid to answer questions She may have become pregnant due to rape, failed contraception, or lack of contraception She may be afraid you will turn her in to the police, tell her family or friends She may be afraid of expulsion from family, marriage, or school She may fear being beaten Help her understand that you want to help her and that you are ready to listen to her Gentle and kind attention from you before, during, and after the care helps the woman feel better Refer to Module 5 **Prevention and Treatment of Hemorrhage**, page 5 3

Find out the following information, **ASK**

- Are you pregnant? When did the bleeding start? How much bleeding? Any clots? *If the condition* of the woman is *serious* (example shock, heavy bleeding), **take action immediately**
- When did you see your last menses? Was this last menses normal? (Length, frequency, amount of bleeding) See Module 2 **Quality Antenatal Care**, Menstrual History, page 2 16 Determine weeks of gestation (pregnancy) by using the first day of the last normal menstrual period (LNMP) to determine the weeks of gestation Compare the weeks of gestation information with the fundal height measurement when you are doing the examination
- Do you use any family planning? What kind?
- Do you have any pain or cramping? Where is the pain?
- Any fever, chills, foul smelling discharge?

ALWAYS THINK OF INCOMPLETE ABORTION when any woman of childbearing age has a missed period with vaginal bleeding **OR** lower abdominal pain (cramping) **OR** passed clots or tissue It is also possible the woman does not remember she has missed her period

LOOK and FEEL

When you examine the woman, try to have a quiet and private area where others can not listen or see what you are doing If you have only one room for examinations, ask others to wait outside Use a cloth or sheet to cover the woman during the examination and procedure Explain everything you are going to do, before you do it

Refer to Module 5 **Prevention and Treatment of Hemorrhage,** page 5 5 The main parts of the examination include

- Take the blood pressure, pulse, and temperature
- **LOOK** for signs of shock
- **FEEL** for low abdominal tenderness, rebound tenderness
- **FEEL** the uterus for tenderness, size, position, and shape Compare the actual size of the uterus with the date of the last normal menstrual period
- **LOOK** for vaginal bleeding, clots, or foul smelling discharge
- **LOOK** using a vaginal speculum Remove any products of conception or clots from vaginal canal or cervix
- **LOOK** for lacerations or discharge
- **FEEL** the uterus (bimanual examination) to confirm size and compare to the weeks of gestation information from the history
  - Insert lubricated index and middle fingers into the vagina until you can feel the cervix
  - Put your other hand on the abdomen, find the uterus between your fingers inside the vagina and your hand on the abdomen
  - Gently move the uterus noting tenderness, size, position, and shape

IDENTIFY THE PROBLEM and TAKE APPROPRIATE ACTION

Refer to Module 5 **Prevention and Treatment of Hemorrhage,** page 5 5

FINDINGS	Shock
ACTION	Refer to Module 8 **Hydration and Rehydration**, page 8 5
FINDINGS	Abdominal swelling that is hard and tender, may have signs of shock, think of ectopic pregnancy or injury to internal organs
ACTION	Treat as outlined in Module 5 **Prevention and Treatment of Hemorrhage**, Learning Aid 1 - Bleeding in the Abdomen (Intra-abdominal Bleeding), page 5 62
FINDINGS	Severe abdominal pain *with* tender uterus OR fever OR offensive vaginal discharge think of ectopic pregnancy or septic abortion
ACTION	REFER Treat as outlined in Module 7 **Prevention and Management of Sepsis**, page 7 9 See Module 5 **Prevention and Treatment of Hemorrhage**, pages 5 5 and 5 55
FINDINGS	Vaginal bleeding and no fever *with* clots OR painful contractions OR passed tissue think of incomplete abortion
ACTION	Treat as outlined in Manual Vacuum Aspiration, page 10 48 See Module 5 **Prevention and Treatment of Hemorrhage**, page 5 55
FINDINGS	Vaginal bleeding that has stopped think of threatened abortion
ACTION	Treat with rest in bed for 24 to 48 hours REFER if bleeding recurs OR fever OR offensive discharge OR severe abdominal pain

SKILL Manual Vacuum Aspiration[3]

Incomplete or inevitable abortion is treated by removing the remaining products of conception from the uterus The method used for emptying the uterus depends on the duration of pregnancy, the availability of equipment, supplies, and a skilled midwife and/or doctor You will find the WHO guidelines in Learning Aid 3 - Provision of Postabortion Care, page 10 59

Manual vacuum aspiration (MVA) is an effective method for treatment of incomplete abortion up to 12 weeks' fundal height Manual vacuum aspiration uses suction to remove the contents of the uterus As soon as the remaining products of conception are removed, the uterus will contract and the bleeding will decrease This is life saving for the woman with an incomplete abortion who is bleeding too much

Equipment

MVA instrument kit (See Learning Aid 4 - MVA Equipment and Supplies, page 10 60)

Precautions

As you **ASK and LISTEN**, **LOOK and FEEL**, you may **IDENTIFY** a **PROBLEM** that needs **ACTION** before beginning the MVA, or the need to use a different method to empty the uterus Special care is necessary to make sure that the uterine size by fundal palpation and bimanual examination is not more than 12 weeks, see page 10 46 At 12 weeks' gestation, the uterus can just be palpated at the level of the symphysis pubis *If the size of the uterus is greater than 12 weeks, treat as a second trimester pregnancy and* ***REFER***

Procedure

This procedure describes the MVA instrument If you use other instruments, check to make sure you know how to prepare the vacuum as it may be not the same way as shown in this procedure

Preparation

1 **Reduce chance of infection** to women and health care staff, including cleaners, by giving infection prevention training See Module 7 **Prevention and Management of Sepsis**, page 7 25

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[3] The illustrations shown in Figure 2 through Figure 12 are from IPAS 1993 and are used with permission of the Postabortion Care Consortium

Ways of reducing the chance of infection include

- Wash hands with soap and water **before** and **after** each MVA procedure
- Use **sterile** or **high-level disinfected** instruments and gloves on both hands
- Clean the cervix and vagina **before** inserting any instrument through the cervix and into the uterus
- Use the no-touch technique for the MVA procedure

2 **Have the MVA instruments available and ready**

- Ensure that another MVA syringe is available in case it is needed

- Prepare the MVA syringe to create a vacuum to make sure the syringe holds a vacuum Attach an adaptor if required to the end of the syringe or cannula

- Lock the valve on the MVA syringe in a closed position (See Figure 2)

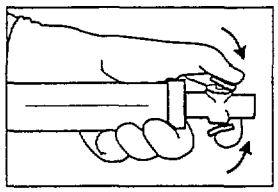


Figure 2 Closing the Pinch Valve

- Pull back on the plunger until the arms of the plunger lock in place with the arms of the plunger seated fully on the wide edges of the barrel (See Figure 3) This position keeps the plunger in place so that it will not slip back into the barrel, see Learning Aid 4 - Equipment, page 10 60

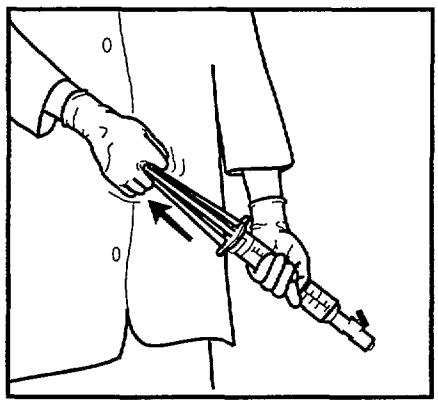


Figure 3 Creating the Vacuum

3 **Management of pain** depends on the emotional state of the woman, the dilatation of the cervix, the time it takes to complete the MVA, and the skill of the midwife and/or doctor

- **Emotional state of the woman** care for the woman's feelings as soon as you see her Losing a pregnancy is something a woman will always remember The woman coming to you for help may be afraid, anxious, depressed, sad and/or sick at this time The woman may be afraid to answer questions Help her understand that you want to help her and that you are ready to listen to her Give her the feeling that you respect her and want to help her with her problem Give her care without expressing judgment Helping the woman stay calm helps her remain more comfortable, it really helps the MVA procedure to be less painful

  Remember that nonverbal actions are sometimes stronger than verbal words Explain to her what you need to do and why you need to do it Make sure she understands that you want to help her so that she will remain healthy

- **Dilatation of the cervix** the cervix is most always open with an incomplete abortion Because it is soft and open, you can insert the cannula without causing the woman pain Selection of the proper size cannula will minimize (lessen) stimulation of the nerves around the cervix, therefore preventing pain Explain each step of the procedure before doing it to help the woman be prepared

- **The MVA procedure** takes only a few minutes when it is done by a skilled, competent, and confident midwife or doctor Handle instruments gently and talk with the woman throughout the procedure After performing each step, such as placing the sponge (ring) forceps or passing the cannula, wait a few seconds for the woman to prepare for the next step Move slowly and use instruments with confidence

- The **skill of the midwife or doctor** can not be emphasized enough It is very important to remember that the woman will have lower abdominal pain with cramping and uterine contractions as the uterus is emptying Even the most skilled midwife and her staff cannot prevent this pain, but they can prepare the woman and encourage her during the experience The midwife must continue to monitor her staff and help them review procedures so that they are ready and capable of assisting her The midwife must continue to update and improve her own skills so that she can competently manage an uncomplicated MVA and identify any complications

- **Gentle, supportive care** of the woman, and the **use of a non-narcotic analgesic** (ibuprofen or acetaminophen) often are enough for the uncomplicated MVA procedure when waiting for the procedure to be performed as well as during and after the procedure

- If additional dilation of the cervix is necessary, use of local anesthesia such as a paracervical block is the best overall option for effective MVA pain management Refer to Learning Aid 6 - How to Administer Paracervical Block, page 10 68 or ask your referral physician to teach you, if this is local practice

4 **Vaginal examination** - it is important that the midwife who performs the MVA procedure be certain about the following

- **Uterine size**, the uterus must **FEEL** no larger than 12 weeks, see page 10 46 If there is any doubt, REFER

- **Position**, the midwife must be very careful to insert the cannula according to the position of the uterus, to prevent perforation This is the same caution as with intrauterine devices (IUD)

- **Condition of the vagina and cervix**, if you find tears (lacerations), perforation, or pus, REFER and give broad spectrum antibiotic, see Module 7 **Prevention and Management of Sepsis**

- **Contents (products of conception) in the vagina**, tissue or clots should be removed from the vagina before starting the MVA

5 **Prepare the woman** Explain once again what you are going to do Ask the woman to empty her bladder Ask your assistant to wash the woman's lower abdomen and genitals with soap and water

- Wash your hands and put high-level disinfected or sterile gloves on both hands

- Ask the woman about allergic reactions, such as to iodine, before selecting an antiseptic

STEPS FOR PERFORMING MANUAL VACUUM ASPIRATION (MVA)

1 **Gently insert speculum** and **LOOK** at the cervix for tears, tissue or clots Remove any tissue, membranes, or clots in the cervix or vagina, using a sponge forceps Also, if IUD strings are visible in the cervix, remove the IUD after cleaning the cervix by clamping on the strings with a forceps Pull slowly and gently until the IUD comes out of the cervix

2 **Clean the cervix, cervical os, and vagina** Use a sponge forceps and gauze or cotton to swab the cervical os, the cervix, and vagina with antiseptic solution Swab the cervical os very well If iodophors are used as antiseptics, allow up to 2 minutes before continuing with the procedure to allow time for the release of free iodine

3 **Grasp the cervix with a ring forceps** See Module 4 **Episiotomies and Repair of Lacerations**, page 4 11, for information on how to do this properly Give analgesic medications and/or paracervical block if needed, see Learning Aid 6 - How to Administer Paracervical Block, page 10 68

4 **Cervical dilation** is usually not necessary with incomplete abortion When necessary, gently dilate the cervix using cannulae of increasing size, taking care not to use any force, as you may tear the cervix or perforate the uterus Cervical dilation must be performed by experienced and skilled staff REFER if necessary Have ready several sizes of cannulae based on the uterine size using these guidelines

Uterine Size 5 to 7 weeks, try 4, 5, 6 millimeter (mm) cannula
Uterine Size 7 to 9 weeks, try 5 ,6, 7 mm cannula
Uterine Size 9 to 12 weeks, try 7 to 12 mm cannula

5 **Hold the cervix** so that it does not move and **gently insert the cannula** through the cervix into the uterine cavity just past the internal os (See Figure 4) You may need to rotate the cannula while gently applying pressure to get the tip of the cannula to pass through the cervical canal

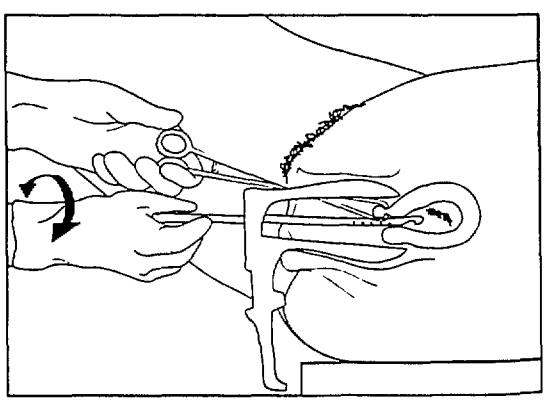


Figure 4 Inserting the Cannula

6 ***Very gently* push the cannula slowly into the uterine cavity** until it touches the fundus (See Figure 5) Remember the uterus is very soft, *use no force* Note the uterine depth by the dots visible on the cannula The dot nearest the tip of the cannula is 6 cm from the tip, and the other dots are at 1 cm intervals After measuring the uterine size, withdraw the cannula slightly

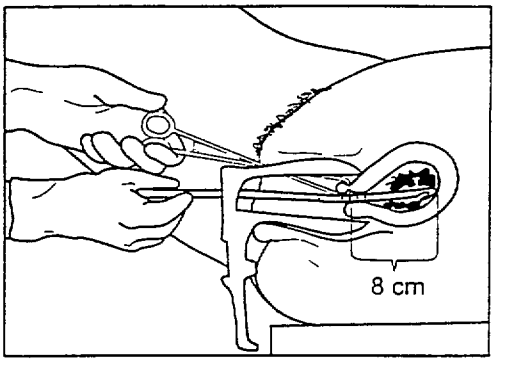


Figure 5 Measuring the Uterine Depth

Note While performing MVA, prevent injury to the woman by only inserting the cannula the measurement identified

7 **Attach the prepared syringe to the cannula** by holding the forceps and the end of the cannula in one hand and the syringe in the other (See Figure 6)

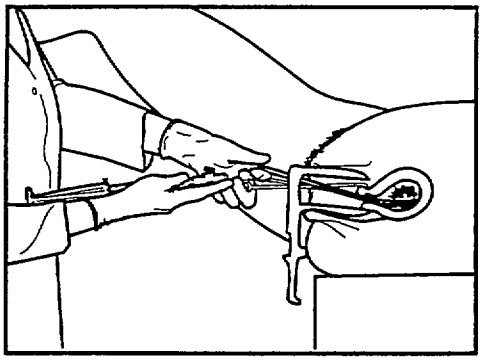


Figure 6 Attaching the Syringe

Note Make sure that the cannula **does not move forward** into the uterus as you attach the syringe by watching the uterine measurement on the cannula

8 **Release the pinch valve** on the syringe (see Figure 7) to transfer the vacuum through the cannula to the uterine cavity Bloody tissue and bubbles should begin to flow through the cannula into the syringe

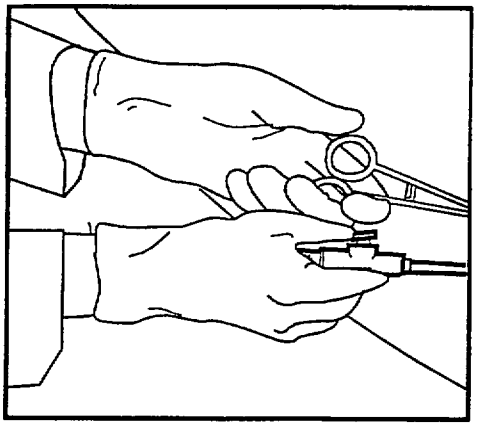


Figure 7 Releasing Pinch Valve

9 **Evacuate any remaining contents** of the uterine cavity by gently rotating the syringe and then moving the cannula gently and slowly back and forth within the uterine cavity (see Figure 8) Do not rotate the cannula more than 180 degrees (one half turn)

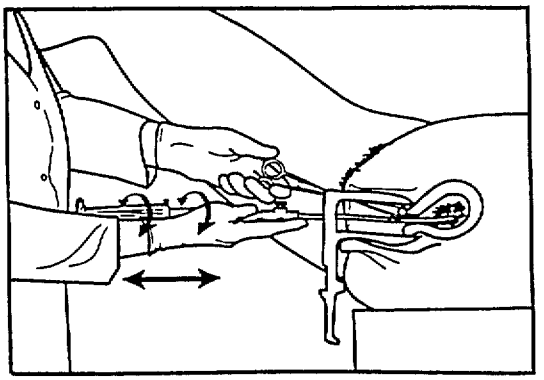


Figure 8 Evacuating Uterine Contents

It is important **not** to withdraw the opening(s) of the cannula outside of the cervical os This will cause the vacuum to be lost If this happens or if the syringe is full, leave the cannula in place in the uterus and re-establish the vacuum If the cannula is withdrawn and touches the vagina or other nonsterile surface, it is contaminated Do not reinsert it Use another sterile or high-level disinfected cannula See Preparation for the Procedure, on page 10 48

Note While the vacuum is established and the cannula is in the uterus, always hold the syringe by the barrel, **never hold the syringe by the plunger arms** Doing this may cause the plunger arms to become unlocked, accidentally allowing the plunger to slip back into the syringe, pushing material back into the uterus

10 **Check for signs of completion** The MVA procedure is finished when

- Red or pink foam and no more tissue is seen in the cannula
- A gritty (rough) sensation is felt as the cannula passes over the surface of the evacuated uterus
- The uterus contracts around (holds) the cannula

11 **Detach the syringe, withdraw the cannula**, and then place the cannula in the decontamination solution (See Figure 9) With valve open, empty the contents of the MVA syringe into a strainer (gauze or cloth spread over a container) by pushing on the plunger

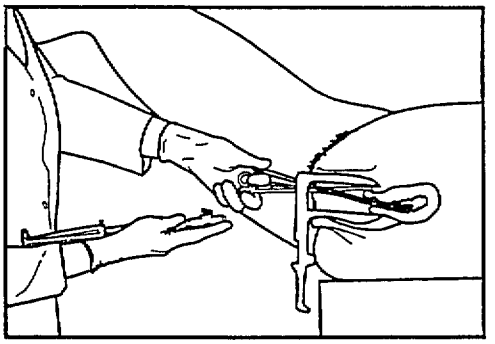


Figure 9 Detaching the Syringe

Note Do **not** put the empty syringe in the decontamination solution until you are certain the procedure is completely finished Keep the syringe on the tray until you have inspected the tissue in case you find that the uterus may not be empty You may need to use the MVA instruments to remove more tissue

12 **Quickly inspect the tissue** (see Figure 10) removed from the uterus
- for quantity and presence of products of conception
- to assure complete evacuation
- to check for a molar pregnancy (not common)

Figure 10 Inspecting Tissue

If necessary, strain and rinse the tissue to remove excess blood clots Tissue which may be seen in treatment of incomplete abortion include villi, fetal membranes, endometrial tissue (decidua) and, after 9 weeks from the last menstrual period, fetal parts Place tissue in container of clean water, saline solution, or weak acetic acid (vinegar) to examine again Tissue specimens may be sent to the laboratory if you suspect a molar pregnancy or other problem

Follow the recommended infection prevention practices for handling specimens, see Module 7 **Prevention and Management of Sepsis**, Infection Prevention Methods, page 7 32

If no products of conception are seen, then

- All of the products of conception may have been passed before the MVA was performed (complete abortion), *no further action is needed*

- The uterine cavity may appear to be empty but may not have been emptied completely due to the inexperience of the midwife, **or** because using a cannula that is too small or stopping the aspiration too soon can result in retained tissue, *if this is the case, repeat the aspiration to remove remaining tissue*

- The vaginal bleeding may have been due to a cause other than incomplete abortion such as *break through bleeding from contraceptives, uterine fibroid or ectopic pregnancy* (a **life-threatening emergency**, REFER) See Module 5 **Prevention and Treatment of Hemorrhage**, page 5 5

- The uterus may be abnormal For example, the cannula may have been in the nonpregnant side of a double uterus, REFER

- With the absence of products of conception in a woman with symptoms of pregnancy, *think of ectopic pregnancy, this is an emergency,* REFER

13 **After being certain the procedure is finished, remove the equipment** Make the woman comfortable and explain your findings to her and her family

14 **Decontaminate all instruments** See Module 7 **Prevention and Management of Sepsis**, Infection Prevention Methods, page 7 25

15 **Dispose of waste** While still wearing gloves, place contaminated gauze, cotton and other waste items in a properly marked, leak-proof container or plastic bag Place sharp instruments like needles and syringes in a puncture proof container or wrap firmly so that no one can get stuck Waste should be disposed of by burning or burying Tissue and clots removed from the uterus may be emptied into the sewage system, if available

16 **Remove gloves and decontaminate** Put both gloved hands in decontamination solution, and rinse off all the blood you can see Remove the gloves by turning them inside out If surgical gloves are to be reused, put them in the solution for 10 minutes If they are disposable gloves, they can be burned or buried after soaking for 10 minutes

17 **Wash hands** thoroughly with soap and water

18 **Record findings** including vital signs, fluids given, appearance of products of conception, estimated blood loss, and time, type, and dose of medications given

19 **Comfort the woman and her family** Talk with the woman and her family, reassure and encourage them

Monitoring The Woman's Recovery

1 Take and record vital signs as soon as the MVA is completed

2 Allow the woman to rest comfortably in a place where her recovery can be observed and monitored

3 Check for anemia and give iron tablets according to findings See Module 2 **Quality Antenatal Care**, page 2 6, for anemia protocols If the woman is Rh negative, give Rh(D) immune globulin before discharge, if available

4 If treatment for complications was started, continue treatment and monitor or REFER as needed

5 **For uncomplicated MVA,** check bleeding at least once before discharge Recheck vital signs Check to see that cramping has decreased Prolonged cramping is not considered normal The woman may go home as soon as she is stable, can walk without assistance, and has received follow up information

6 Follow up information for the woman and her family

Signs of a normal recovery are
- Some uterine cramping over the next few days, which may be relieved by mild analgesics like ibuprofen or Panadol
- Some spotting or bleeding, which should not be more than a normal menstrual period
- A normal menstrual period that should occur within 4 to 8 weeks

Advice about medications, follow up, and fertility The woman should be given advice for taking any medications that may be ordered for her, should be given a date of her follow up visit, and should know that
- She should not have sexual intercourse or put anything into the vagina (no douching, no tampons) until after the bleeding stops in 5 to 7 days, and
- Her fertility can return in less than 2 weeks after the MVA procedure, so she needs to have contraceptive counseling and begin using a family planning method immediately if another pregnancy is **not** wanted

Warning signs and symptoms The woman should know the warning signs and symptoms, what to do, and where to go for emergency care for
- Prolonged cramping, more than a few days
- Prolonged bleeding, more than 2 weeks
- Bleeding more than normal menstrual bleeding
- Severe or increased pain
- Fever, chills, or malaise (tired all the time)
- Fainting or weakness

Postabortion Family Planning

A woman's **fertility returns** almost immediately after an incomplete abortion, as early as **11 days after**, if the pregnancy was less than 12 weeks She must decide whether or not she wants to become pregnant soon In the case of spontaneous abortion, she may wish to become pregnant again quickly, and unless there are any medical problems, there is no reason to discourage her from doing so

For many women, the abortion clearly shows she does not want to be pregnant at this time The woman and her partner (if appropriate) need to receive counseling and information about her return to fertility and available contraceptive methods This may not be the best time for her to make decisions that are permanent or long term Counseling must be appropriate for the woman's emotional and physical condition Full and informed choice is critical in the selection of any method and especially for intrauterine contraceptive devices (IUDs), injectables, implants, and voluntary sterilization

Nearly any contraceptive method may be used and can be started immediately unless there are major postabortion complications Natural family planning is not recommended, however, until a regular menstrual pattern returns For more information, refer to local policies and standards and the *Healthy Mother and Healthy Newborn Care Manual*, family planning choices and counseling section Make sure that every postabortion woman knows

- She can get pregnant again, almost immediately and needs to decide if she wants to become pregnant soon,
- There are safe, modern family planning methods that can help her avoid becoming pregnant, and
- Where and how she can get these methods if the midwife can not help her with the method of choice

Learning Aid 3 - Provision of Postabortion Care by Level of Health Care Facility and Staff

Provision of Postabortion Care by Level of Health Care Facility and Staff			
Level	**Staff May Include**	**Emergency Postabortion Care Provided**	**Postabortion Family Planning**
Community	•Community residents with basic health training •Traditional birth attendants •Traditional healers	Recognition of signs and symptoms of abortion and serious postabortion complications Referral to facilities where treatment is available	Provision of pills condoms diaphragms and spermicides Referral and follow up for these and other methods
Primary (Primary health clinics family planning clinics or polyclinics)	•Midwives •Health workers •Nurses •General practitioners	**All primary care facilities Above activities, plus** Diagnosis based on medical history and physical and pelvic examination Resuscitation/preparation for treatment or transfer Hematocrit/hemoglobin testing Referral if needed **If trained staff and appropriate equipment are available Above activities, plus** Initiation of emergency treatments •antibiotic therapy •intravenous fluid replacement •oxytocic Uterine evacuation during first trimester for uncomplicated cases of incomplete abortion Pain control •simple analgesia and sedation •local anesthesia (paracervical block)	Provision of above methods plus IUDs injectables and Norplant® implants Referral for voluntary sterilization
First Referral Level (District hospital)	•Midwives •Nurses •General practitioners •Ob/Gyn specialists	**Above activities, plus** Emergency uterine evacuation through second trimester Treatment of most postabortion complications Local and general anesthesia Diagnosis and referral for severe complications (septicemia peritonitis renal failure) Laparotomy and indicated surgery (including for ectopic pregnancy) Blood crossmatch and transfusion	Provision of above methods plus voluntary sterilization Follow up including anemia
Secondary and Tertiary Level (Regional or Referral Hospital)	•Midwives •Nurses •General practitioners •Ob/Gyn specialists	**Above activities, plus** Uterine evacuation as indicated for all incomplete abortions Treatment of severe complications (including bowel injury, severe sepsis, renal failure) Treatment of bleeding/clotting disorders	All above activities

Source Adapted from Complications of Abortion WHO 1994

Learning Aid 4 - MVA Equipment, Supplies, and Care of MVA Equipment

Incomplete abortion is treated by removing the remaining products of conception from the uterus In the first trimester, MVA may be used if there is the availability of equipment, supplies, and skilled staff This learning aid describes the basic equipment, supplies and care of the equipment necessary for MVA

1 Equipment and Supplies Needed for MVA

MVA Kit, see below
Vaginal speculum
Uterine tenaculum or
Vulsellum forceps
Sponge holding or
Ring forceps (2)
Clear container
Light source
Swabs/gauze
Antiseptic solution
Gloves
Strainer
Simple magnifying glass
Not required but available
Paracervical block equipment
Local anesthetic
Sharp curette
Tapered dilator

Contents of MVA Kit by IPAS

Basic MVA instrument kit for emergency treatment of incomplete abortion (see Figure 11), contain either a single-valve or double-valve 60 cc sterile syringe with

- A locking valve
- Plunger handle
- Collar stop
- Silicone for lubricating the syringe
- O - ring
- Flexible cannulae with two openings
  - **single-valve syringe,**
  use 4, 5, 6 mm cannulae
  - **double-valve syringe,**
  use 6, 7, 8, 9, 10, 12 mm cannulae

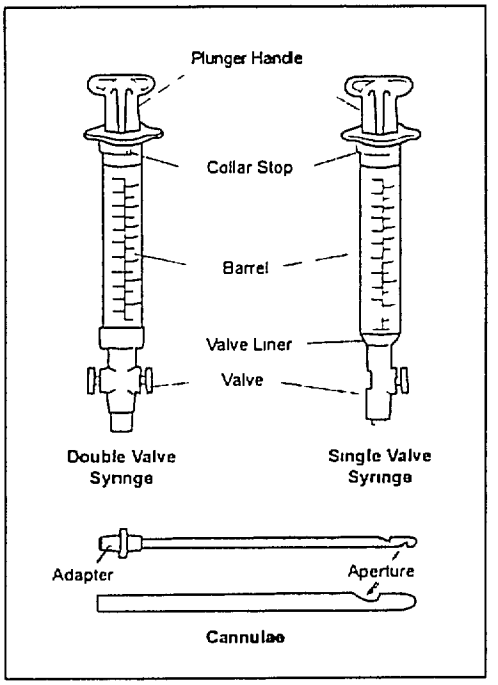


Figure 11 MVA Instruments by IPAS

Furniture for the treatment room

Before beginning the MVA procedure, make sure the following are in the treatment room and in working order

- Examination table with stirrups
- Plastic buckets for decontamination
- Puncture proof container for disposal of needles
- Leak proof container for disposal of waste
- Strong light
- Seat or stool

2 Antiseptics

Antiseptics do not reliably destroy bacteria and viruses They do not destroy bacterial endospores Antiseptics are adequate for cleaning skin before an injection or surgical procedure They are not appropriate for disinfecting surgical instruments and gloves

Antiseptics that should not be used as disinfectants are

- Acridine derivatives (gentian violet or crystal violet)
- Cetrimide (Cetavlon)
- Chlorinated lime and boric acid (Eusol)
- Chlorhexidine gluconate (Hibiscrub, Hibitane)
- Chlorhexidrine gluconate and Cetrimide, various concentrations (Savlon)
- Chloroxylenol (Dettol)
- Hexachlorophene (pHisoHex)
- Mercury compounds (toxic and not recommended as antiseptic or disinfectant)

Low level antiseptics to be used only for environmental surfaces (such as floors, walls, beds) when chlorine solutions are not available

- One to 2 percent phenol (Phenol)
- Five percent carbolic acid (Lysol)
- Benzalkonium chloride
- Quaternary ammonium (Zephiran)

3 Disinfectants

Disinfectants reliably destroy bacteria, viruses, and some endospores <u>if used in the correct dilution and method</u> The following charts describe appropriate disinfectants for high-level disinfection of MVA instruments There are also charts for preparing chlorine solution for decontamination See Module 7 **Prevention and Management of Sepsis**, page 7 25, for additional infection prevention information

High-Level Disinfection of Instruments

Equipment	Disinfecting Agent	Advantages	Disadvantages	Solution Strength	Minimum Time Required for Disinfection	Steps	Precautions
Metal Instruments and Cannulae	Boiling water	Easily available will provide high-level disinfection (HLD) up to 5 500 meters (18 000 feet)		N/A	20 minutes at a rolling boil	Fill large (at least 25 cm/10 in diameter) pot 3/4 full with clean water deposit instruments cover pot; bring to boil again boil for 20 minutes remove items gently with HLD forceps air dry on a HLD tray or in a HLD container	Grasp cannulae gently when removing from water Grasping hot cannulae with forceps may flatten the cannulae Do not leave cannulae in previously boiled water
Instruments Cannulae	Glutaraldehyde (2-4%)	Not easily inactivated by organic materials	Skin eye respiratory irritant	Use full strength--never dilute follow manufacturer's instructions for mixing	20 minutes	Submerge items completely making sure solution fills cannula interior soak, remove with HLD forceps rinse with boiled water air dry on a HLD tray or in a HLD container	Discard solution (7 to 28 days) after mixing or sooner if cloudy (follow manufacturer's instructions)
	Chlorine (0 1%)	Fast acting very effective against HBV and HIV	Corrosive to metal	Dilute to 0 1% for clean equipment using boiled water 0 5% if tap water is used	20 minutes	Submerge items completely in a non-metal container making sure solution fills cannula interior soak remove with HLD forceps rinse with boiled water air dry on a HLD tray or in a HLD container	Change solution daily or sooner if cloudy
	Hydrogen Peroxide (6%)	Not easily inactivated by organic materials	Corrosive to copper aluminum zinc and brass inactivated by prolonged exposure to heat (over 30°C) or light	Mix 1 part 30% hydrogen peroxide with 4 parts boiled water to make 6% solution	30 minutes	Submerge items completely in a non-metal container making sure solution fills cannula interior soak remove with HLD forceps rinse with boiled water air dry on a HLD tray or in a HLD container	Store hydrogen peroxide in opaque container away from light and heat. Change solution daily or sooner if cloudy
	Formaldehyde (8%)	Not easily inactivated by organic materials	Vapors toxic skin eye respiratory irritant	Dilute 1 part commercial formaldehyde (35-40%) with 4 parts boiled water to make 8% solution	20 minutes	Submerge items completely making sure solution fills cannula interior soak remove with HLD forceps rinse with boiled water air dry on a HLD tray or in a HLD container	Use only in well-ventilated area. Do not dilute with chlorinated water--this produces toxic gas Discard solution after 14 days or sooner if cloudy

Source Tietjen et al (1995)

Preparing Dilute Chlorine Solutions from Liquid Bleach (Sodium Hypochlorite) for Decontamination and HLD

Type or Brand of Bleach (Country)	Chlorine % Available	Ratio of Bleach to Water† 0 5%	0 1%††
JIK (Kenya) Robin Bleach (Nepal)	3 5%	1 6	1 34
Household bleach (USA Indonesia) ACE (Turkey) Eau de Javal (France) (15 % chlorum)	5%	1 9	1 49
Blanquedor Cloro (Mexico)	6%	1 11	1 59
Lavandina (Bolivia)	8%	1 15	1 79
Chloros (UK) Lejia (Peru)	10%	1 19	1 99
Chloros (UK) Extrait de Javel (France (48 % chlorum)	15%	1 29	1 149

†For the ratio of bleach to water read as 1 part concentrated bleach to x parts water (e g , JIK–1 part bleach to 6 parts water for a total of 7 parts)

Source Tietjen et al (1995)

††Use boiled water when preparing a 0 1% chlorine solution for HLD because tap water contains microscopic organic matter which inactivates chlorine

Chemicals for Sterilizing MVA Instruments

Sterilizing Agent	Advantages	Disadvantages	Solution	Minimum Time Required for Sterilization	Steps	Precautions
Glutaraldehyde 2 - 4% (Cidex)	Not easily inactivated by organic materials	Sterilization slower below 25°C (77°F) skin, eye respiratory irritant	Full strength-- never dilute, follow manufacturer s instructions for mixing	10 hours	Submerge instruments completely, make sure solution fills cannulae interior, soak remove with sterile forceps rinse with sterile water air dry	Use only in well ventilated areas, discard according to manufacturers instructions or sooner if solution is cloudy
Formaldehyde (8%)	Not easily inactivated by organic materials	Vapors toxic skin eye respiratory irritant	Dilute 1 part commercial formaldehyde (35-40%) with 4 parts bottled water to make 8% solution	24 hours	Submerge instruments completely, make sure solution fills cannulae interior soak, remove with sterile forceps	Use only in well ventilated areas, do not dilute with chlorinated water–this produces toxic gas discard 14 days after mixing or sooner if solution is cloudy

Source Leonard and Yordy (1994)

4 **Care of MVA Equipment** see Module 7 **Prevention and Management of Sepsis** for additional information

Processing of MVA equipment follows the steps of **decontamination, cleaning, sterilization, or high-level disinfection** MVA equipment is reassembled and stored ready for use

- **Decontamination** of all items, including surgical gloves, should be done immediately after use to make them safer for staff to handle and clean Soak all instruments used, including cannulae, the MVA syringe, and cervical dilator in a 0 5% chlorine solution for 10 minutes before cleaning Surfaces such as examination or procedure tables should be decontaminated by wiping with decontamination solution after each client

- **Cleaning** with cold water and soap is the most effective way to reduce the number of germs on soiled instruments Liquid or powdered soap is best, as hand soap leaves a residue (coating) which is sometimes difficult to remove Wear gloves (utility gloves are good), and use a soft brush for the instruments Make sure to take apart all instruments, including MVA and injection syringes After cleaning, rinse inside and outside of syringes, gloves, and instruments with clean water

  MVA syringe serves only as the source of vacuum and container for blood and tissue The syringe does not come in contact with the client's bloodstream so decontamination and cleaning are acceptable care If disinfection or sterilization are required by your protocols, use only chemical agents Heat by boiling, steaming, or autoclave will crack the syringe and it will be useless

- **Sterilization or high-level disinfection of instruments** - Sterilization is the safest and most effective method for processing instruments (such as ring forceps, speculum, dilator, **note that cannulae can not be sterilized**) that come in contact with the blood, tissue under the skin, or tissues which normally are sterile When sterilization is not available, high-level disinfection is the only acceptable method Refer to the tables on high-level disinfection, page 10 62 and to Module 7 **Prevention and Management of Sepsis**, page 7 25, for information

Storage and Reassembly - Sterile packs or containers should be labeled with an expiration date and used within one week If they are not used within one week, they must be resterilized Store packs or containers in covered areas off the floor to protect from dust If the packs or containers become wet, the items are not sterile and must be reprocessed

Store instruments that have been high-level disinfected in dry, covered, high-level disinfected or sterile containers with tight fitting lids Do **not** store the cannulae or instruments in chemical solutions because they can become contaminated Remove instruments from containers with sterile or high-level disinfected forceps by holding the end of the cannula that connects to the syringe It is best to store a few cannulae in each container

Reassembling the MVA syringes Replace the o-ring on the plunger Lubricate the o-ring by placing one drop of silicone or liquid soap on the o-ring, then spread the silicone or liquid soap around the ring with a gloved fingertip

Reassemble the syringe by holding the plunger arms together and inserting the plunger into the barrel Reattach the collar stop Push the plunger in and out several times to distribute the lubricant in the barrel

Check the syringe for vacuum This should be done after cleaning and again immediately before use Do this by closing the pinch valve and pulling out the plunger until the locking arms catch Leave the syringe in this position for 2 to 3 minutes, and then release the pinch valve You should hear a rush of air into the syringe, which means that the syringe maintains a vacuum

If you do not hear a rush of air, remove the plunger Check the o-ring for cracks If the syringe parts appear undamaged, reassemble the syringe Repeat the test If the syringe still loses vacuum, replace the o-ring and repeat the test If the syringe still loses vacuum, it should discarded

Storing the MVA syringes Store the syringes in covered containers or plastic bags that will protect them from dust If they not used within one week, reprocess by cleaning and drying

Learning Aid 5 - Management of MVA Problems and Complications

There are some problems that can happen during and after completing an MVA procedure Most are not serious and if recognized immediately and corrected, the client's recovery will not be affected

Technical Problems - In most MVA procedures, the syringe vacuum remains constant until the syringe is about 90% full However, a decrease in vacuum may happen before the procedure is complete if the cannula is blocked or withdrawn too early (prematurely)

- **Syringe Full** - If the syringe is full

  1 Close the pinch valve of the syringe

  2 Disconnect the syringe from the cannula, leaving the tip of the cannula in place inside the uterus **Do not push the plunger when disconnecting the syringe**

  3 Empty the syringe into a container for inspection by opening the pinch valve and pushing the plunger into the barrel Be careful not to splash the contents of the syringe into your eyes

  4 Re-establish a vacuum in the syringe, reconnect it to the cannula and continue the aspiration You can keep a second prepared syringe in case one syringe gets full

- **Cannula Withdrawn Prematurely into Vaginal Canal** - To correct this

  1 Remove the syringe and cannula, taking care not to contaminate the cannula

  2 Close the pinch valve of the syringe

  3 Detach the syringe from the cannula, open the valve, and empty the syringe, re-establish the vacuum

  4 Reinsert the cannula if it has **not** been contaminated Use another if this one is contaminated Do not reinsert if the cannula has been contaminated

  5 Reconnect the syringe, release the valve, and continue aspiration

- **Cannula Clogged** - If no tissue or bubbles are flowing into the syringe, the cannula may be clogged

  1 Close the pinch valve of the syringe

  2 Remove the syringe and cannula, taking care not to contaminate the cannula

  3 Remove the material from the opening in the cannula, using a sterile or high-level disinfected forceps or sponge **Note** Never try to unclog the cannula by pushing the plunger back into the barrel while the cannula tip is still in the uterus

  4 Re-insert the cannula, attach a prepared syringe, and release the pinch valve

- **Syringe Does Not Hold Vacuum**

  If the syringe does not seem to hold a vacuum, try lubricating the plunger and barrel with a drop of silicone If this does not work, replace the o-ring If this does not work, discard it and use another syringe See page 10 65 for additional information

Learning Aid 6 - How to Administer Paracervical Block

Local anesthesia, most commonly provided by a *paracervical block* with lidocaine without epinephrine, is used to ease cervical pain *if additional cervical dilation* is necessary It reduces cervical pain from stretching, dilatation, or movement of the cannula in the cervix It will **not** reach the nerves of the uterus

In order to use local anesthesia, emergency drugs and equipment for suction and resuscitation should be available In most cases 10 ml of one percent lidocaine without epinephrine is adequate In no case should the total dose exceed 20 ml Remember to prevent injecting directly into a vein, *aspirate* (pull back on the plunger of the syringe) before injecting the medication

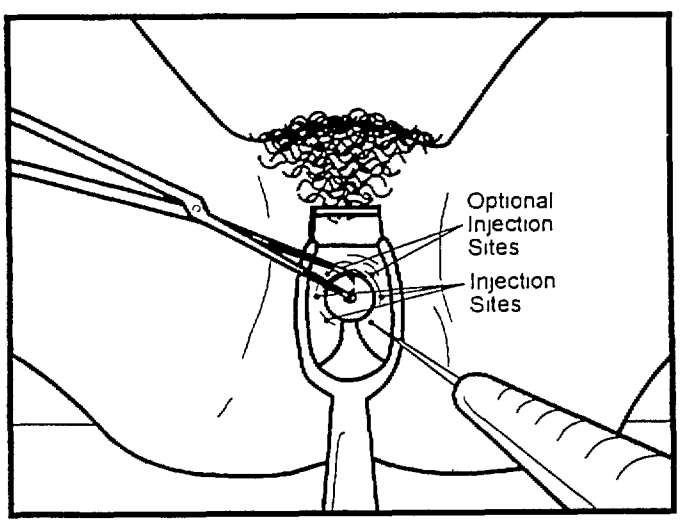
Procedure

At each injection site, insert the needle, then *aspirate* to make certain the needle is not in a blood vessel If any blood is visible in the syringe, do **not** inject Pull the needle out and insert it in a different injection site

1 After finding an absence of known allergies to anesthetics, fill a 10 to 20 ml syringe with 1% lidocaine without epinephrine

2 Use a 3 5 cm (1½ inch), 22 or 25 gauge needle to inject the local anesthetic If a sponge or ring forceps is to be used to grasp the cervix, first inject 1 ml of local anesthetic into the anterior or posterior lip of the cervix which has been exposed by the speculum Refer to Module 4 **Episiotomies and Repair of Lacerations**, pages 4 11 - 4 12, for seeing and holding the cervix

3 With the forceps on the cervix, use slight traction and movement to help identify the area between the smooth cervix and the vaginal tissue This is the site for insertion of the needle around the cervix (See Figure 12)



Source Margolis et al 1993

Figure 12 Paracervical Block Injection Sites

4 Insert the needle just under the cervix and aspirate slightly to make certain the needle is not in a blood vessel

5 Inject about 2 ml of the local anesthetic just under the cervix, not deeper than 2 to 3 millimeters (mm) at 3, 5, 7, and 9 o'clock, see Figure 12 When the anesthetic is correctly placed, a swelling and blanching of the tissue can be seen

6 When you have finished the injections, wait at least to 2 to 4 minutes for the anesthetic to take effect

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages shown in parentheses ( )

1 Losing a pregnancy is something a woman will always remember Describe what you will ask (**ASK and LISTEN**) a woman who comes to you because she is bleeding Her last menstrual period was 8 weeks ago (page 10 45)

2 A woman comes to you with vaginal bleeding She has 2 pads and some clots/tissue wrapped in a cloth Her last menstrual period was 10 weeks ago She is having painful contractions What will you **LOOK** at and **FEEL**? (page 10 46)

3 You have just identified that a woman has a threatened abortion What will you do? (page 10 47)

4 Why is manual vacuum aspiration done? (page 10 48)

5 In order to perform a manual vacuum aspiration, there are 5 preparation steps List the steps and describe why each one is necessary (pages 10 48 - 10 51)

6 Why is the size of the uterus measured before performing a manual vacuum aspiration? (page 10 47)

7 After a manual vacuum aspiration is finished, the contents removed from the uterus must be inspected Why must this be done? (page 10 55)

8 List and explain the infection prevention steps (pages 10 60 and 7 25)

9 Why is infection prevention important for the woman who needs a manual vacuum aspiration? (page 7 25)

		Date	Date	Date	Date
•	REFER if lacerations, trauma, pus discharge, or uterine size more than 12 weeks				
8	Prepare the woman, explain what you are doing				
•	Ask her to empty her bladder				
•	Wash lower abdomen and genitals with soap and water				
Manual Vacuum Aspiration Steps					
•	Explain what you are going to do				
•	Use infection prevention hand washing, gloves				
1	Gently insert speculum				
2	Use infection prevention swab cervical os with antiseptic solution				
3	Grasp cervix with ring forceps Administer paracervical block and/or other medications if needed Allow time to take effect				
4	Inspect cannula and syringe again to make sure they are in good condition and correct choices according to uterine size and cervical dilatation				
5	Hold the cervix so it does not move and gently insert the cannula Rotate with gentle pressure if necessary				
6	Push the cannula slowly into the uterine cavity Measure the uterine depth by the dots visible on the cannula				
7	Attach the prepared syringe to the cannula without contamination Make sure the cannula does not move forward in the uterus while you attach the syringe				
8	Release the pinch valve to transfer the vacuum through the cannula to the uterine cavity				
9	Move cannula effectively to empty the uterus				
10	Check for signs of completion • Red or pink foam, no more tissue seen in cannula • Rough sensation is felt as cannula passes over the surface of the uterus				

	Date	Date	Date	Date
• Uterus contracts around the cannula				
11 Withdraw cannula, detach syringe, place cannula in decontamination solution With valve open, empty contents of MVA syringe into strainer by pushing on the plunger ***Do not put the empty syringe in decontamination solution*** until you are certain the procedure is completely finished				
12 Inspect the tissue removed You may need to strain and rinse the tissue so that you can see better • For quantity and presence of products of conception • To assure complete evacuation • To check for molar pregnancy (not common)				
Solve problem if no products of conception are seen according to findings • No further action needed • Repeat aspiration • Decide cause for vaginal bleeding and take action				
13 After being certain the procedure is finished, remove equipment Make the woman comfortable and explain your findings to her and her family				
14 Decontaminate all instruments after procedure				
15 Dispose of wastes				
16 Remove gloves and decontaminate				
17 Wash hands with soap and water				
18 Record findings including vital signs, fluids given, appearance and amount of products of conception, estimated blood loss, medications (given, time, dose)				
19 Comfort the woman and her family				
Monitor the Woman's Recovery				
1 Take and record vital signs				
2 Observe and monitor bleeding and condition while the woman rests				

10 Why is infection prevention important for the midwife when performing a manual vacuum aspiration? (page 7 25)

11 During the recovery period from the manual vacuum aspiration procedure, what warning signs and symptoms must the woman and her family know about? (page 10 57)

12 A woman's fertility returns almost immediately after an incomplete abortion She must decide whether or not she wants to become pregnant soon What family planning information will you give her? (page 10 58)

Skills Checklist - Manual Vacuum Aspiration

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments in the comments section below

	Date	Date	Date	Date
When performing **manual vacuum aspiration** procedure				
1 Establish rapport, get to know the woman, make her feel comfortable				
2 Explain the procedure and be supportive to the woman and her family				
3 Prepare room, equipment, and medications				
4 Have the MVA instruments ready including • Have two MVA HLD/sterile kits, ring forceps, speculum • Prepare MVA syringe use adaptor if needed, lock valve, create vacuum				
5 Manage pain				
• Care for the emotional state of the woman, explain what you are doing and why at each step of the procedure				
• Assess dilatation of cervix and give analgesic according to findings See Learning Aid 6 - Paracervical Block, if needed				
• Perform MVA with competence and confidence				
6 **ASK and LISTEN** medical history, cramping, pain, bleeding, LNMP, emotional state				
7 **LOOK and FEEL** Assess for shock, anemia, infection, condition of cervix and uterine position, and that ***uterine size is no larger than 12 weeks***				
• Abdominal examination - uterus not higher than the level of the symphysis pubis				
• Vaginal examination - ***bimanual palpation confirmed uterus not larger than 12 weeks size***				
• Manage shock, anemia, infection				

	Date	Date	Date	Date
3 Check for anemia and give iron tablets according to findings If the woman is Rh negative, give Rh(D) immune globulin before discharge, if available				
4 If there is treatment for complications, continue treatment and monitor or REFER as needed				
5 For uncomplicated MVA, check bleeding at least once before discharge Recheck vital signs, cramping, and general well being				
Explain to the woman she may expect • Some uterine cramping over next few days, may take analgesic • Some spotting or bleeding, not more than normal menstrual period • That normal menstrual period should occur within 4 to 8 weeks				
Tell the woman the date for follow up visit, and • That she should have no sexual intercourse or anything in the vagina until 5 to 7 days after bleeding has stopped • That her **fertility can return in less than 2 *weeks*** after the MVA procedure She needs to choose family planning method immediately if another pregnancy is not wanted				
Explain these WARNING SIGNS AND SYMPTOMS The woman should report back to you if she has • Cramping more than 5 days • Bleeding more than 2 weeks • Bleeding more than normal menstrual bleeding • Severe or increased pain • Fever, chills, or malaise (tired all of the time) • Fainting or weakness				
Explain to the woman about postabortion family planning • She can get pregnant as soon as 11 days after MVA procedure • There are safe, modern family planning methods that can help her avoid becoming pregnant • Where and how she can get these methods if you can not help her with the method of choice				

Comments

SYMPHYSIOTOMY

Goal

The midwife will learn the indications and contraindications of a symphysiotomy She will learn the life-saving skill of dividing (separating) the symphysis pubis to make the pelvic opening larger

Objectives

The midwife caring for a mother during delivery will be able to

1 list and recognize the indications for doing a symphysiotomy
2 demonstrate how to position the mother for a symphysiotomy
3 explain to the mother and others the need for symphysiotomy
4 list the contraindications of a symphysiotomy
5 explain the dangers for the mother when doing a symphysiotomy
6 describe the procedure for symphysiotomy
7 do a symphysiotomy to help a mother deliver her baby
8 give postpartum care to a woman after symphysiotomy

Note Review Module 3 **Monitoring Labor Progress** before you study this module

Introduction

The symphysiotomy operation is important in midwifery and obstetric practice where cephalopelvic disproportion (CPD) is common and *cesarean section is not available*

If a symphysiotomy is done on the wrong patient at the wrong time or with poor technique, the results can seriously damage the mother and baby **A symphysiotomy should be done only when the midwife or doctor knows the indications and contraindications and is skilled in the operation** Side effects and complications are seen in proportion to the lack of skills and inexperience of the midwife or doctor doing the operation (R H Philpott)

The midwife will usually identify possible problems with size of the pelvis at the antenatal clinic and help the woman see a doctor Sometimes the midwife identifies problems when a woman is in labor and helps her get to the doctor **It is important that the midwife identifies problems early and gets help from the doctor with cesarean section facilities as soon as possible** This can not be stressed enough It is when we delay in identifying or referring a problem that the outcome is a damaged baby, damaged mother, or even the death of mother and/or baby

There will be times when a woman in labor with CPD comes to the midwife The baby and mother may both be distressed, and the midwife may need to do a symphysiotomy to save the life of the mother or baby These neglected or mismanaged cases of women in labor at home may cause damage to the mother or baby **The midwife must try to avoid this difficult situation by getting all women to come to the antenatal clinic** The midwife must teach the importance of coming to the maternity when having trouble during pregnancy, labor, and delivery

A Midwife's Experience.

A 19 year old woman was carried to my clinic The woman looked tired, worried and was still trying to push She had been pushing since the sun went down (about 3 hours) The fetal heart rate was 100 but strong The baby "felt" about 3 kg, the head was only 2/5 above the pelvic brim, the contractions were strong (lasting more than 40 seconds) and 4 in 10 minutes The baby's head was visible at the vulva and the caput of about 4 cm was covered with blood and dung On VE (vaginal examination) the vulva was a little swollen, the vagina was hot and dry The cervix could not be felt and molding was ++ (overlapped sutures that can be separated) I asked the woman to push with a contraction but the head did not move

I asked the family to quickly find the lorry driver I started an intravenous infusion, gave an antibiotic, and cleaned the woman I knew that it would take over 1 hour by lorry to get to the maternity center with a doctor on site The family could not agree The family did not want to go any place The family asked that I help **now** The mother was in much pain and I feared for both her life (ruptured uterus) and that of her baby I explained all to the mother and her family

I performed a symphysiotomy with the grandmother and auntie holding the woman's legs The woman was so strong She was able to deliver her baby boy successfully The family was so excited

LSS Co-author

Common Medical Terms

Abduction - moving an arm or leg away from the body

Adduction - moving an arm or leg toward the body

Cephalopelvic Disproportion (CPD) - the baby's head is too large or the birth canal (pelvic opening) is too small to let the baby deliver Compare this definition to normal cephalopelvic proportion

Diagonal Conjugate - the internal (inside) measurement of the pelvis from the lower border (edge) of the symphysis to the promontory of the sacrum The normal measurement is 12 to 13 cm (4 3/4 - 5 inches) Refer to Module 3 **Monitoring Labor Progress**, for Learning Aid 3 - Measuring the Pelvic Size, page 3 69 See Figure 13

Figure 13 Side Views for Measurement of the Diagonal Conjugate

Normal Cephalopelvic Proportion - the baby's head goes through the birth canal (pelvic opening) and the baby delivers without problem Compare this definition to cephalopelvic disproportion See Figure 14

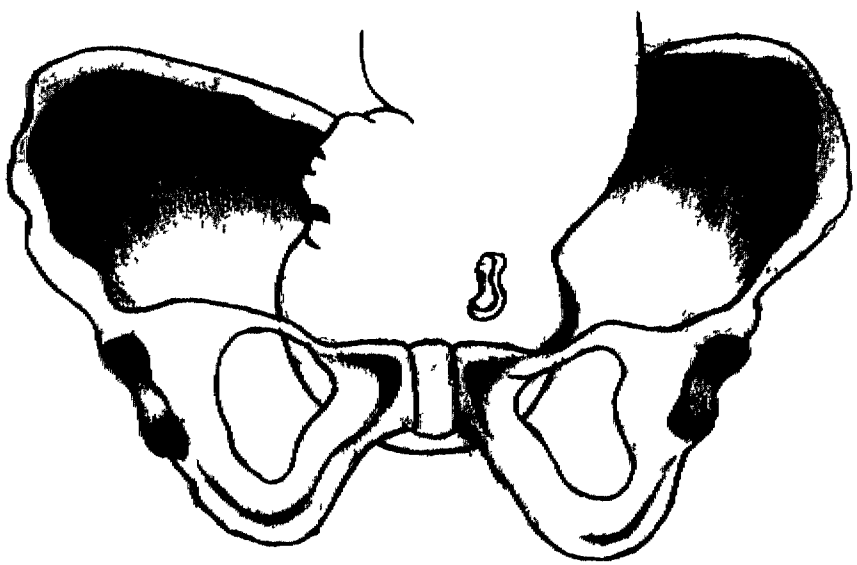


Figure 14 Normal Cephalopelvic Proportion

Normal Female Pelvis - the side and front of the pelvis are formed by the two hip bones (innominate bones), and the back by the sacrum and the coccyx (tail bone or bottom of the spine) On vaginal examination the sacrum should feel curved The subpubic arch should admit 2 fingers and the ischial spines can be felt but are not prominent, sharp, or pointed Look at Figure 15 to find the position and different parts of these bones

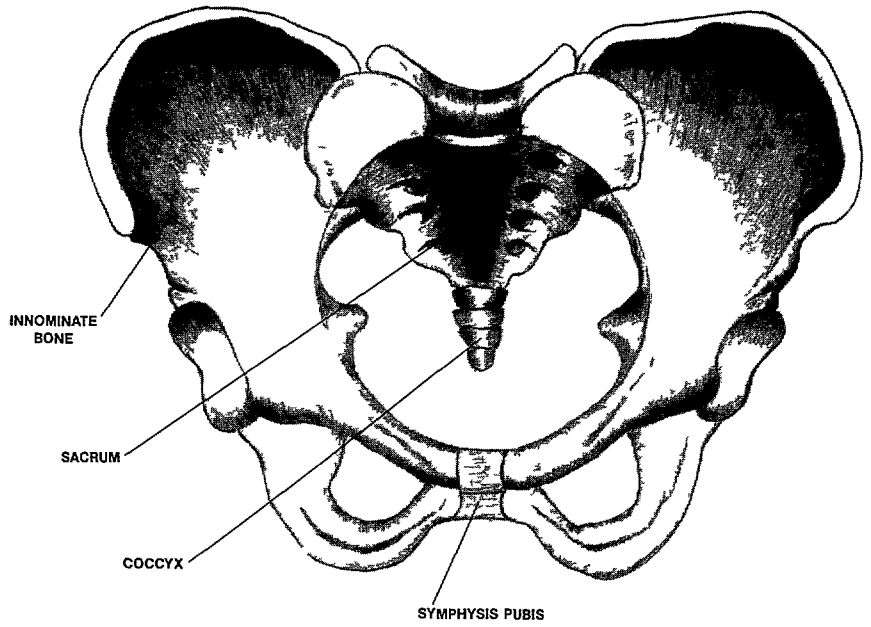


Figure 15 The Bones of the Pelvis and Important Points

Oxytocic - any one of a number of drugs that stimulate the smooth muscle of the uterus to contract

Symphysiotomy - the separation (dividing) of the symphysis pubis pad of cartilage with a scalpel, making the pelvic opening larger

Symphysis Pubis - the slightly movable joint of the pelvis, made up of two pubic bones joined together by a pad of cartilage This joint softens and becomes more mobile during the later months of pregnancy

Early Identification of Cephalopelvic Disproportion

Cephalopelvic disproportion (CPD) is a problem in some women because of contracted pelvis It is important to **screen women before labor** and send those with possible CPD to a doctor *This screening is not 100% reliable, most CPD is identified during labor* (Philpott) A maternity is not a safe place to do a trial labor because surgery may be needed

During antenatal clinic or the first time you see a pregnant woman, **ASK and LISTEN, LOOK and FEEL** for the following If any of these are identified, help her go to the doctor

Primigravida
- Height below normal for her ethnic group
- Diagonal conjugate less that 12 cm (4 ¾ inches)

Multipara
- History of stillbirth or neonatal death
- History of cesarean section, vacuum extraction, symphysiotomy

What Happens When You Do a Symphysiotomy?

When you do a symphysiotomy, the pelvis gets bigger The increase is greatest in the outlet, but the brim and mid-cavity also get larger There is more room for the baby The baby may deliver very quickly after you do the symphysiotomy

There is a permanent enlargement of pelvic size The fibrous (stretchy) tissue heals at the joint This tissue relaxes (softens or stretches) to let the baby deliver in later deliveries The outcome of 229 deliveries in women with previous symphysiotomy 167 (73%) spontaneous vertex delivery, 32 (14%) episiotomy, 25 (11%) cesarean section, 5 (2%) repeat symphysiotomy (Van Roosmalen)

Indications

Symphysiotomy is mainly done to overcome **borderline cephalopelvic disproportion (CPD)** with a primigravid labor, vertex presentation, and live fetus The major problem is to assess (decide) borderline CPD accurately

For labor to progress well, dilatation of the cervix should be accompanied by descent of the head Measuring the descent of the baby's head helps the midwife follow the progress of labor Descent of the head is measured by palpating the head through the abdomen and recording the findings every hour As discussed in **LOOK and FEEL**, descent is measured in "fifths" of head palpable above the pelvic brim See Module 3 **Monitoring Labor Progress**, page 3 13, for Descent of the Fetal Head

Borderline CPD will usually present as delay late in the first stage or during the second stage of labor It is very important for midwives to be skilled in the identification of CPD Referral to a doctor with cesarean section facilities is the preferred management of CPD in all patients, to prevent rupture of the uterus and maternal or fetal death

While monitoring labor progress, the degree of CPD will be seen in the descent (level) of the fetal head and the degree (amount) of molding and cervical dilatation

- **FEEL** how far the baby's skull bones (*not caput*) have progressed into the pelvis Compare this finding to your abdominal palpation of descent of the baby's head **Remember** the baby's head with caput can be at the vulva, while 4/5 of the head is palpable abdominally

- **FEEL** the fontanelles to decide the position of the baby The anterior fontanelle is a diamond shaped joining of four sutures The posterior fontanelle is a triangular joining of three sutures In a well-flexed vertex presentation, only the posterior fontanelle is felt If the head is not well flexed (deflexed), both fontanelles are felt

- **FEEL** for caput and molding Feel the suture lines for separation, severe (+++) overlapping of the bones is a sign that the head will not fit through the pelvis of the woman (cephalopelvic disproportion)

> Remember that **increased molding, a change in fetal heart rate, or the presence of meconium are serious signs of fetal distress** The skilled midwife should realize that a symphysiotomy is not the answer to delay in labor due to inefficient uterine action (contractions) in the absence of CPD, nor can it be used to overcome severe CPD

While you monitor labor progress, the following signs will tell you if there is a CPD problem which **may** be relieved by a symphysiotomy

1 The fetal head is engaged Two-fifths or less of the fetal head can be felt abdominally

2 The degree of overlap (molding) of the fetal head will be mild (+) to moderate (++) **Severe molding (+++) is a sign of serious fetal distress** Refer to the doctor **right away** to prevent rupture of the uterus, and maternal or fetal death

3 The cervix falls loosely over the head (7 cm or more), but the head cannot descend to fully dilate the cervix

4 The uterine contractions must be regular, with the woman in active phase of labor

Symphysiotomy is only done to overcome borderline CPD, when the fetal head is 2/5 or less on abdominal palpation See Module 3 **Monitoring Labor Progress**, page 3 13

	Borderline CPD	CPD
Descent	2/5 or less abdominal 3/5 or more in pelvis	not engaged 4/5 or 5/5 abdominal
Molding	mild (+) to moderate (++)	severe (+++)
Cervical Dilatation	7 cm or more	usually less than 7 cms
Contractions	at least 3 in 10 minutes lasting 20 to 40 seconds or more	variable, could be very irregular or almost constant

Contraindications

Symphysiotomy is not used

1 On obese (heavy) women The weight of the thighs might pull the symphysis pubis too far apart

2 In women who have had a previous cesarean section The release (loosening) of the symphysis pubis might cause too much pressure on the uterine scar

3 To overcome delay in labor due to inefficient uterine contractions as it would not increase uterine contractions and would not solve the problem

4 When the estimated weight of the baby is less than 2 7 kg (6 lb) or more than 3 6 kg (8 lb) The small baby must have some other problem, for it is so small that CPD can not be the problem The large baby may pull the symphysis pubis too far apart, and healing will not take place

5 When the presentation is not vertex or when the baby has died

SKILL· Symphysiotomy

A symphysiotomy is an emergency, surgical, life-saving procedure when done by a skilled and experienced midwife or doctor

A symphysiotomy is always done right before delivery Prepare for a distressed baby A large episiotomy is done to reduce the amount of pressure on the symphysis pubis and to protect the bladder and urethra Refer to Module 4 **Episiotomies and Repair of Lacerations**, page 4 4 A vacuum extraction may be done to help the mother deliver her baby See Module 9 **Vacuum Extraction** Because bleeding and possible hemorrhage may happen, intravenous infusion is necessary Refer to Module 8 **Hydration and Rehydration**

You must have **two assistants** to help you, and also **two additional reliable persons** to support the woman's legs Symphysiotomy is a **sterile procedure** See Module 7 **Prevention and Management of Sepsis**, page 7 25, and Learning Aid 4 - Sterile Technique and Sterile Supplies, page 7 42

Equipment

Sterile scalpel solid blade scalpel or handle and Number 20 blade
Sterile catheter firm Jacques No 6 if available, or any catheter
Sterile gloves
Sterile episiotomy equipment
Sterile local anesthesia equipment
Sterile delivery and vacuum extraction equipment
Resuscitation equipment
Good light source
Soap and water

Procedure

1 Collect all of your equipment and explain to your assistants what you expect them to do One assistant should watch the intravenous drip and monitor the woman and baby The second assistant should be gloved to assist in the symphysiotomy The two reliable persons should be assigned the very important responsibility of holding the woman's legs See Learning Aid 7, page 10 88, for symphysiotomy positioning

2 Explain to the mother and family what you are going to do Make sure the woman understands the importance of her cooperation Any uncontrolled movement during or after the incision will cause too much separation in the symphysis pubis This can cause severe pain and a long recovery

3 Ask the assistant to wash the lower abdomen and genital area with soap and water Start the intravenous drip if it is not already running

4 Ask two reliable persons to help the woman lie on her back

5 Scrub your hands Put on sterile gloves

6 **FEEL** the middle (fibrocartilage) of the symphysis pubis See Figure 16

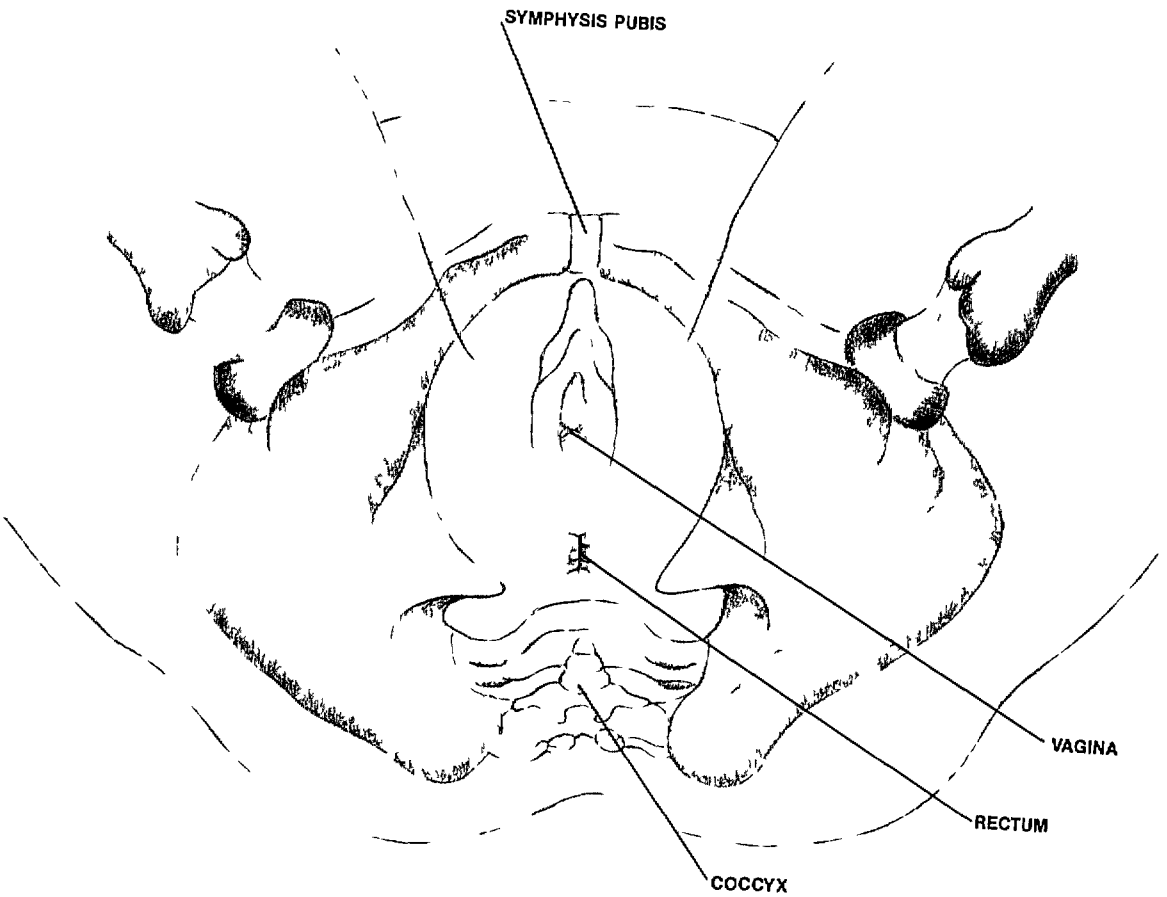


Figure 16 Symphysis Pubis and Related Anatomy

7 Infiltrate 10 ml of 1 0% lidocaine hydrochloride over and around the symphysis pubis area using the same technique as for infiltrating the perineum Refer to Module 4 **Episiotomies and Repair of Lacerations**, page 4 5

8 Infiltrate the perineum with 10 ml of 1 0% lidocaine hydrochloride

9 Pass a catheter into the urethra and bladder Tape the catheter to the woman's leg to keep it from coming out

10 Ask the two reliable persons to support the legs against their chests so that the legs are abducted (spread apart) to not more than 80 to 90 degrees See the illustration, Figure 18, on page 10 88

11 Check to make sure the anesthesia is working Touch the area with a sharp needle The woman should feel a dull (not painful) touch

12 Insert two fingers in the vagina Find the catheter and push it to one side with your vaginal fingers Use these fingers to make sure you do not cut the urethra or the uterus **Always feel for the knife blade with your vaginal fingers**

13 Find the symphysis pubis with the vaginal fingers

14 With your other hand, feel for the symphysis pubis cartilage just under the mons (fatty pad) Insert (push) the scalpel in the mons over the symphysis pubis Make a 2 cm (3/4 inch) incision

15 Keep the catheter pushed to one side with one of the vaginal fingers Place the other finger below the symphysis pubis joint to feel for the knife as you cut Make sure the knife does not come through to your finger

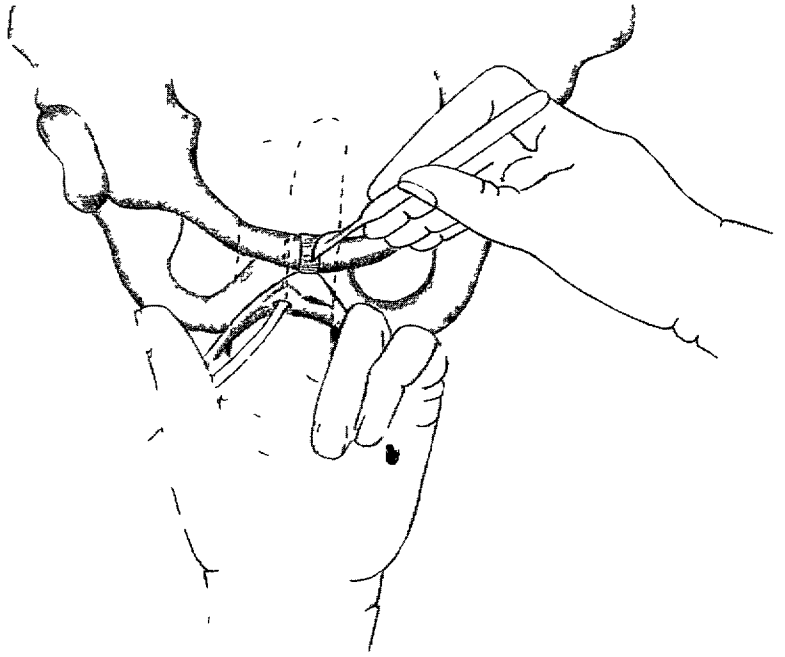


Figure 17 Insert Scalpel in the Mons

16 Hold the scalpel at right angles to the skin and the symphysis pubis with the cutting edge pointing towards you Push the knife firmly and smoothly See Figure 17 The fibrocartilage is cut completely, from the top to the bottom You will feel the knife more easily with the vaginal fingers as the cartilage is cut Pay close attention to what you are feeling with your vaginal fingers You should always feel tissue between your vaginal fingers and the knife

17 Your vaginal fingers will be able to feel when separation has taken place in the joint The separation of the pubic bones will be about 2 5 cm (the width of a thumb)

18 If there is bleeding, stop it by pressing down on the cut

19 The fetal head will decide the amount of separation of the symphysis Once the incision is made, the reliable persons should bring the woman's legs **together** (adduction) at the same time Ask one of the reliable persons to watch for bleeding and press on the cut

20 Sometimes contractions slow during this part of the procedure and sometimes the baby comes out quickly Prepare for the delivery Do a generous (large) episiotomy so that the head can be delivered with as little pressure as possible on the bladder and urethra

21 Once the symphysis is cut, effective uterine contractions are necessary to push the baby out Help the mother to bear down and push This is the least traumatic way for the delivery Use the vacuum extractor to help the baby deliver if necessary See Module 9 **Vacuum Extraction**

22 If there are no or inefficient uterine contractions, an intravenous drip with oxytocin should be set up and run to get efficient contractions Refer to Learning Aid 2 - Oxytocic Infusion with Doctor Supervision, page 10 21 **Remember inefficient uterine contractions are a contraindication for a symphysiotomy**

23 Give oxytocin after the delivery using active management of third stage If an intravenous drip with oxytocin was started, run it at a fast rate until it is finished

24 Inspect the vagina and cervix for trauma Refer to Module 4 **Episiotomies and Repair of Lacerations**, page 4 10

25 Repair the episiotomy Keep the legs as close together as possible

26 Put one stitch in the skin over the symphysis

27 Change the catheter to a Foley, if available

28 Bathe the woman as needed, and make her comfortable

29 Help the reliable persons place a soft cloth between the woman's legs, remembering always to keep them together (adduct) Wrap the knees loosely together using a wide roller bandage or cloth

30 Explain to the woman and her family what you did and that the legs must be wrapped together so that the cut will heal Ask the family to prepare the woman's favorite food and drink Explain to them that she has worked hard and needs to eat and drink to get her energy and strength back

31 Help the woman to lie on her side and arrange for transport to a doctor

Care of the Woman after Symphysiotomy

The woman will need care in hospital for 10 to 15 days depending on her condition and recovery Her knees must remain wrapped together for two days She will need perineal care, frequent turning, and positioning on her side The catheter should drain continuously for 5 days Give her a broad spectrum antibiotic such as ampicillin for 10 to 14 days She will need good food and fluids to heal her body and to establish a milk supply for her baby

She will need assistance with walking on the third to the fifth day She may need to use crutches, canes, or sticks for support when beginning to walk By the tenth day, she will usually be able to walk without assistance

Complications

Complications are usually minimal on well managed cases with experienced and skilled staff Bleeding is controlled by pressure

Pain after the symphysiotomy can be managed with analgesics Difficulty walking and pain usually disappear by the time of discharge There may be some pain over the incision and backache These will lessen as the woman continues to recover from the operation There may be recurring pain with another pregnancy at the time when the symphysis and sacro-iliac joints relax

Urinary tract infection and stress incontinence are usually prevented by an adequate (large) episiotomy to keep the head from pressing on the anterior vaginal wall Infection needs to be treated with antibiotics

Keep up Postpartum Examinations

Try to see the woman every 2 weeks for 2 months to encourage her and make sure she is free of problems and complications Counsel on the next pregnancy and place of delivery She should know what happened so that she can tell the midwife next time

Learning Aid 7 - Position for Symphysiotomy

The position and cooperation of the woman are important to the success of the symphysiotomy Ask 2 reliable persons to support the legs They each should hold one of the woman's legs They should use both hands One hand should hold the ankle

They should stand close to the woman's legs They should hold the legs against their own bodies This will help them not move the legs They should hold the legs firmly Each leg should not be abducted (pulled away from the body) more than 80 to 90 degrees from the center of the woman's body (See Figure 18)

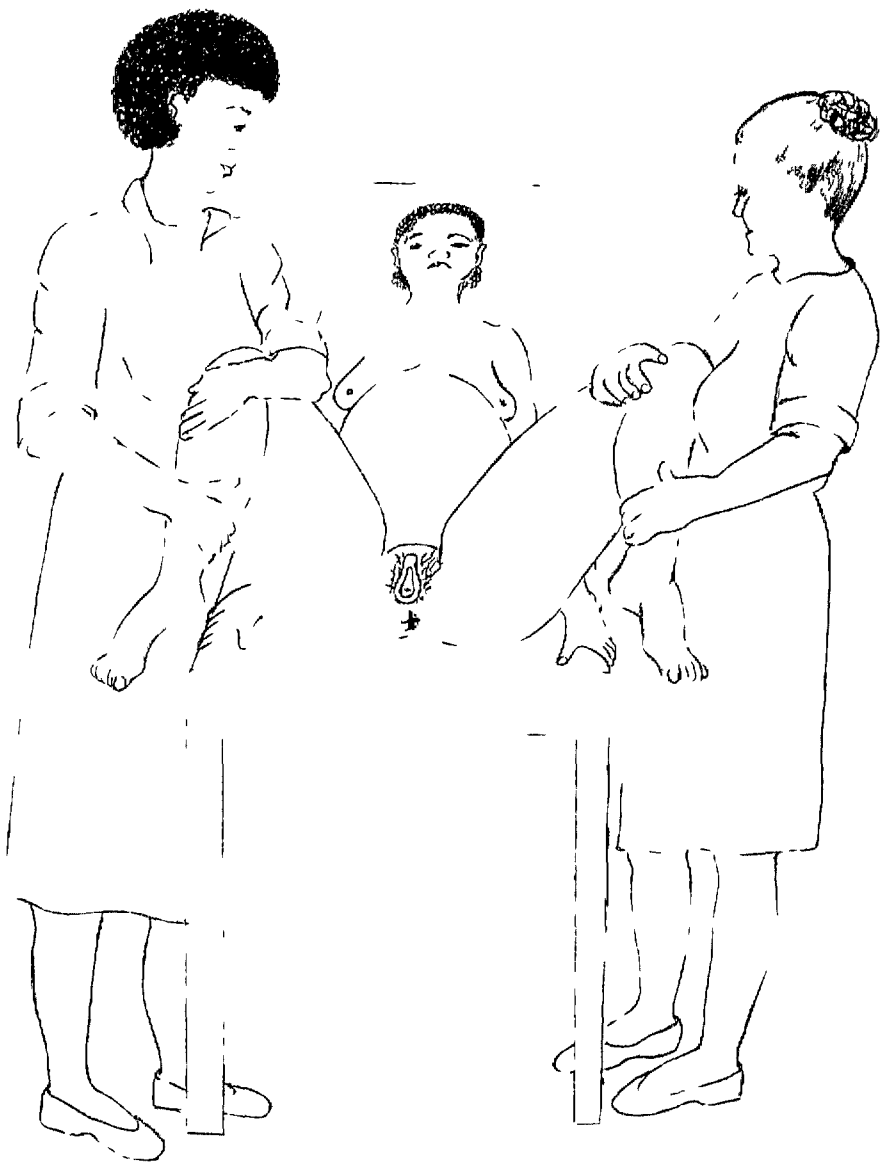


Figure 18 Position the Woman for Symphysiotomy

Review Questions

What Did I Learn? Find out what you know and understand of this section of the module by answering the following questions When you are finished, look for the answers in the module on the pages shown in parentheses ( )

1 Describe the indications of cephalopelvic disproportion and explain how a midwife decides that she must do a symphysiotomy (page 10 81-82)

2 Describe and demonstrate how to position a mother for a symphysiotomy (page 10 88)

3 Describe the dangers (complications) of a symphysiotomy for a mother How can you prevent these dangers? (page 10 82)

4 Describe postpartum care for a woman after symphysiotomy (page 10 87)

5 List the steps of a symphysiotomy (pages 10 83-87)

You may need to review the skills checklist and add to or delete from your list a few times It is very important to learn these steps and to help a doctor do a symphysiotomy so that you can get the confidence you need to safely do the procedure in an emergency

Skills Checklist - Symphysiotomy

This checklist has two purposes

1 The midwife uses it as a guide for checking her own skills
2 The supervisor uses it when evaluating how well the midwife performs

After observing/performing, write a rating ✓ = satisfactory **OR** ✗ = needs improvement
Add any comments in the comments section below

	Date	Date	Date	Date
When you do a symphysiotomy				
1 **LOOK and FEEL** for signs of CPD				
• Decent of fetal head - Engaged - 2/5 or less felt abdominally - Molding + or ++				
• Dilation of cervix 7 cm or more				
2 Collect all of your equipment				
3 Explain and show your assistants what to do				
• The first assistant watches IV, monitors mother and baby				
• The second assistant is gloved to assist				
• Two reliable persons hold the woman's legs				
4 Explain to mother and family what you are doing				
5 Ask first assistant to wash the lower abdomen and genital area with soap and water				
6 Start an IV infusion, if it is not already running				
7 Ask 2 reliable persons to help the woman lie on her back				
8 Scrub and glove				
9 Infiltrate 10 ml 1 0% lidocaine hydrochloride into the skin over and around symphysis pubis				
10 Infiltrate perineum with 10 ml of 1 0 % lidocaine hydrochloride				
11 Pass a catheter				

	Date	Date	Date	Date
12 Ask the 2 reliable persons to support the legs against their chests so that the legs are abducted (pulled apart) to not more than 80 to 90 degrees				
13 Check to make sure the anesthesia is working by touching a sharp needle to the area				
14 Get ready to make the incision				
• Insert two fingers into the vagina				
• Find the catheter/urethra with vaginal fingers				
• Push the catheter to one side				
• Find the symphysis pubis with the vaginal fingers				
15 Start the incision				
• Feel for symphysis pubis fibrocartilage				
• Insert scalpel in the mons over symphysis pubis				
• Make ¼ inch (½ cm) incision				
• Keep catheter pushed to one side with vaginal finger to protect the urethra				
• Place the other vaginal finger at the back of the symphysis pubis joint to feel for knife blade				
16 Finish the incision				
• Hold the scalpel at a right angle to the skin and symphysis pubis				
• Keep the cutting edge pointing towards you				
• Push knife firmly and smoothly through the fibrocartilage				
• You will feel the blade more easily with vaginal fingers a cartilage is cut				
• You should always feel tissue between vaginal fingers and knife blade				

	Date	Date	Date	Date
• Your vaginal fingers will feel about a 2 5 cm (width of thumb) separation of the pubic bones				
17 If there is bleeding, stop it with direct pressure				
18 Let the fetal head decide the amount of separation of the symphysis pubis				
• Ask reliable persons to adduct (put together) woman's legs after incision				
• Ask reliable persons to watch for bleeding and tell you right away				
19 Prepare for delivery				
• Make a generous episiotomy				
• Use vacuum extractor if woman can not push baby				
20 Deliver the baby				
• Be prepared for a depressed baby				
21 Give oxytocic and do active management of third stage				
22 Inspect vagina and cervix for trauma				
23 Repair episiotomy and symphysis cut				
• Keep the legs as close together as possible				
24 Change catheter to a Foley, if available				
25 Bathe the woman, wrap her legs together, make her comfortable				
• Place soft cloth between her knees				
• Wrap legs loosely together so that she does not forget to keep them together				
• Do routine after delivery care				
• Check the catheter				
26 Arrange for transport to hospital				
• Go with the woman and her family				

Comments

OTHER LEARNING AIDS

Learning Aid 8 - Assist at Emergency Blood Transfusion

Blood transfusions may be life saving in cases of extreme blood loss "The decision to transfuse blood or blood products must be based on a careful assessment which indicates that they are necessary for saving life or for preventing major morbidity Blood which has not been obtained from appropriately selected donors and/or which has not been appropriately screened for infectious agents should not be transfused, other than in the most exceptional life-threatening situations "[4]

An Obstetrician's Experience

> I have used this technique (replacement transfusion) in women with freshly ruptured ectopic pregnancy for many years with great success I emphasize **freshly** ruptured - within 6 to 12 hours I do not use anticoagulant as the blood does not clot in ruptured ectopic If it does clot, then it must come from another source (pelvic vessel or uterus)
>
> Obstetrician, Southern Africa

NOTE Replacement transfusion or recycle of own blood as described here is only suggested for the extreme situation where there is *abdominal surgery and no other choice*

Why?

To replace blood to keep the woman alive The woman has lost so much blood that she does not have enough blood cells remaining to transport oxygen around her body Volume can be replaced by intravenous fluids, only blood can replace oxygen carrying blood cells Remember that any amount of blood loss may be significant to an individual woman Keep in mind that if a woman has a Hemoglobin of 5 gm and loses 500 cc of blood, the blood loss is more significant for her than for a woman with a Hemoglobin of 12 gm with the same 500 cc blood loss Blood transfusion is necessary when the loss *is significant for the woman*

NOTE Everything possible must be done to prevent or stop blood loss Refer to Module 5 **Prevention and Treatment of Hemorrhage**

When?

During abdominal surgery, like cesarean section or rupture uterus, the blood loss is so much and the condition so serious that the woman will die without help immediately

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[4] WHO (1989) Global Blood Safety Initiative Guidelines for the Appropriate Use of Blood

Where to Collect Blood?

Blood can be collected from the peritoneal cavity of the abdomen during surgery for a **freshly** (within the last 6 to 12 hours) ruptured ectopic or ruptured uterus One person should manage the collection using all sterile techniques available, but remember that this is a LIFE-SAVING procedure The contamination and any resulting infection can be managed once the woman is continuing to live If the blood just runs on the floor or is soaked up by cloths and gauze, the woman will not have a chance to use her own blood to be able to live

How?

1 Collect the fresh blood from the woman in a sterile container, or a container that is as clean as possible *Great care must be taken in the handling of this blood*, for if the blood cells are broken, they cannot carry oxygen, and oxygen is the most important need at this point

2 Gently pour and filter the blood through a funnel containing some sterile gauze or abdominal pack to strain out any clots NOTE Do not traumatize or break the blood cells, for the blood cells are necessary to transport oxygen

3 Pour the filtered blood into an intravenous infusion bottle or a blood collecting bottle or bag containing anticoagulant if available

4 Attach an intravenous giving set Use a blood transfusion set if available, because the filter will stop very small clots from entering the circulation

Intravenous infusion fluids can replace volume of liquid lost during a severe hemorrhage, but intravenous fluids can not carry oxygen When the loss of blood is severe, the woman must receive blood cells in order to distribute oxygen throughout her body.

5 Attach the blood transfusion tubing to a large IV needle already attached to an infusion

6 Run the blood in fairly fast Observe the woman's blood pressure and pulse rate NOTE There is no need for cross match

7 All persons helping with this procedure must be protected against exposure to blood borne diseases by wearing protective clothing including apron and gloves

A Midwife's Experience..

In the operating room, I have used a sterile stainless steel pitcher to dip (remove) blood out of the peritoneal cavity, gently returned it to a transfusion bottle, and reinfused it to the woman She did live and did not have an infection

LSS Co-author

Learning Aid 9 - First Assist at Cesarean Section

Introduction

Cesarean section is an operation in which the baby, placenta, and membranes are delivered from the woman's uterus when a vaginal delivery is not possible Incisions are made in the abdominal and uterine walls The incision is made through the lower uterine segment

Reasons for Cesarean Section

- Contracted pelvis
- Cephalopelvic disproportion
- Placenta previa
- Diabetes mellitus
- Failed induction
- Maternal distress
- Dysfunctional uterine action
- Severe preeclampsia
- Abruptio placenta
- Prolapse cord
- Fetal distress
- Ruptured uterus

Preparation

1 Explain to mother and family the problem and what to expect No food or drink to be taken for 6 hours before operation Get the woman's consent for the operation Arrange for blood donors if needed Be sure jewelry and/or false teeth are removed before the operation

2 If time and facilities are available, check the hemoglobin and cross match blood, in case there is a need for transfusion

3 If an IV infusion is not already running, start it now See Module 8 **Hydration and Rehydration**, page 8 7

4 Do a surgical shave and cleansing of the abdomen

5 Insert a catheter in the bladder and tape the catheter to the mother's thigh A Foley catheter is best, if available

6 Atropine 0 6 mg intramuscularly may be ordered to be given Sometimes an antacid is ordered within 30 minutes of general anesthesia A narcotic is not usually given because it will affect the baby Epidural anesthesia may be used

Preparation of Equipment in Operating Room (Theater) [5]

1 Check suction and oxygen

2 Check availability of drugs and supplies that may be needed, including oxytocic, digoxin, nikethamide, hydrocortisone, intravenous solutions, tubing, needles, and syringes Scrub/surgical clothing, including footwear and goggles, should be available

3 Check resuscitation equipment for mother and baby See Module 6 **Resuscitation**, page 6 7

4 Prepare the instrument table A sample of instruments is

Sponge holding forceps (4)
Scalpel with blades No 4, No 23
Mayo curved scissors (1)
Sponge holding forceps (6)
Small artery forceps (2)
Abdominal retractor (1)
Suction nozzle and tubing (1)
Toothed dissecting forceps (1)
Mayo needle holders (2)
Surgical needle, see Figure 19

Towel clips (4)
Mayo straight scissors (1)
Artery forceps (12)
Allis tissue forceps (4)
Kocher forceps (1)
Obstetric forceps (1)
Packing forceps (1)
Plain dissecting forceps (1)
Clip inserting forceps (1)
Suture, see Figure 19

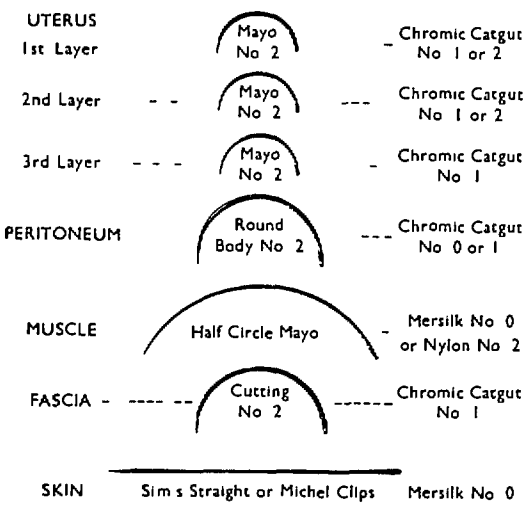

Figure 19 Sample of Needles and Sutures for Cesarean Section

[5] This section including Figure 19 is adapted primarily from *Textbook for Midwives* 8th edition (1975) by Margaret Myles pages 575-580

5 A sample of sterile packs used

Linen and dressing pack one laparotomy sheet, 2 draping sheets, 2 dressing towels, 5 packs of 5 abdominal swabs (surgical sponges or mops with a tape or/and metal identifier) each, one perineal pad, 2 small basins for antiseptic solution, one kidney basin for soiled scalpel, one tray for sutures, one folded towel for sutures, waste container

Baby pack 2 baby blankets, one towel, 5 gauze squares (swabs), bulb syringe, DeLee mucus extractor, cord ties, one artery forceps, one 10 ml syringe, and nasogastric tube size 14 (very small)

Gown pack 4 sets of surgical gowns (**OR** aprons), caps, masks, hand towels

Bowl packs 2 large basins and one basin for antiseptic solution

Extra packs Syringes, needles, catheters, gloves

Procedure - Assist at Cesarean Section

The midwife who "scrubs" is responsible for counting abdominal swabs with an assistant who does not scrub for the operation The "scrubbed" midwife prepares all of the equipment in order of use and within easy reach Used instruments are set aside in a basin and additional instruments are added to the instrument table anticipating each step of the operation The "scrubbed" midwife must know the cesarean section procedure step by step in order to be prepared

The assistant helps to welcome the woman for cesarean section, listens to the fetal heart, makes the woman comfortable, checks the catheter, and explains to the woman what is happening The woman may be placed a little on her left side, using a pillow, to prevent her lying flat on her back

The "scrubbed" midwife

1 Hands the doctor a sponge holding forceps with a swab (sponge) soaked in antiseptic

2 Places a surgical sheet over the woman's thighs, hands 4 towel clips and drapes to place around incision area, helps put the laparotomy sheet in place

3 For the **skin incision** places on the instrument table in order of need scalpel, abdominal swabs, kidney basin, dissecting forceps, scissors, artery forceps, and towel with short lengths of catgut 2/0, places instrument table over thighs, hands scalpel and abdominal swab, has kidney basin ready for scalpel, hands catgut to tie vessels if diathermy is not being used

4 For the **peritoneal incision** hands artery forceps, tissue forceps, clean scalpel and scissors as needed, hands dry abdominal swabs (sometimes used to hold back intestines), hands abdominal retractor

5 For the **uterine incision** places clean scalpel, dissecting forceps, and curved scissors on table, mops wound with dry abdominal swab, has obstetric forceps ready, holds suction nozzle as membranes of the fetal sac are being punctured

6 For **delivery of the baby** clears all instruments from the area where the baby will be laid Holds the baby with the head a little lower than the body, wipes the mouth and nose, dries, covers, and clamps the cord with Mayo forceps and cuts the cord, hands the baby to the assistant See Module 6 **Resuscitation**, pages 6 3 and 6 6 for information on immediate care of baby and resuscitation

The anesthetist or assistant gives ergometrine intravenously as the baby's body is being removed If the woman is pre-eclamptic, Syntocinon is given intramuscularly (IM) Time of birth is noted

7 Hands basin for placenta and Mayo forceps to remove (detach) membranes Hands six forceps to pick up edges of wound

8 Suturing of the cesarean section wound depends on each doctor's special technique The following information is given to help the midwife understand the complicated and necessary repair Ask your doctor to outline for you the suture and needles preferred Refer to Figure 19 for suggested needles and sutures

For the **suture of the uterus** places clean towel on instrument table with needle holders and dissecting (tissue) forceps, hands suture and needle on needle holder, hands abdominal swab to dry uterine wound, counts and checks abdominal swabs (surgical sponges) with the "non-scrubbed" midwife The count must be correct before the uterine wound is closed

For the **suture of the peritoneum** hands 4 Allis forceps, suture and needle on needle holder, again wipes the wound dry

For the **suture of the fascia** hands suture and needle on needle holder

For the **suture of fat** (subcutaneous tissue) hands suture and needle on needle holder

For **closure of the skin** hands 4 Allis forceps, and clips, holder and inserter OR suture and needle on needle holder, according to preference of the doctor, wipes the wound dry after closure, puts on abdominal dressing, removes drapes

9 Expresses clots from the uterus, makes sure the uterus is contracting, removes catheter, washes the genital area, and puts on a pad

10 Positions the woman on her side, with a pillow behind her until she is fully awake

11 Continues postsurgical postpartum observation every 15 minutes for 3 hours, watching for signs of abdominal wound or vaginal bleeding, pulse, blood pressure

12 Cares for instruments, linen, and equipment according to the Infection Prevention routine of decontamination, cleaning, and sterilizing See Module 7 **Prevention and Treatment of Sepsis**, page 7 25, for details

Postoperative Care on the Postpartum Unit

1 Take the temperature, pulse, and blood pressure every 2 hours for 2 times Check for bleeding of the abdominal wound or vaginal bleeding If all signs are within normal limits, then take every 4 hours for 24 hours

If the woman is receiving blood transfusion or has signs of shock or other findings are not normal, take vital signs every 30 minutes until she is improved and then continue as above

2 Six to 8 hours after vital signs are within normal limits, give the woman a wash (sponge bath) in bed Do genital cleansing and change the pad every 2 hours for the first 24 hours Give light food and drinks once the woman is awake Offer the woman a chance to urinate If she is not able to pass urine by 24 hours after surgery, a catheter needs to be passed Pain medication is important so that she can rest comfortably Encourage and help the mother to turn at least every 2 hours

3 The baby should be offered the warmth and comfort of being with mother as soon as the mother is willing Encourage the baby to nurse Help the mother to find a comfortable position

4 The first day after surgery, the mother is allowed out of bed as soon as she is able She will need assistance with bathing, voiding, genital cleansing and probably with walking Pain medicine is usually given every 6 hours Take vital signs every 6 hours Encourage breast feeding and help the mother

5 The second day after surgery, give the mother assistance as she needs it A shower may be allowed Pain medication is not needed as often, the baby is more interested in nursing A laxative may be necessary if her bowels do not move Take vital signs twice a day and monitor the uterus for hardness The dressing may be changed by the midwife or the doctor, depending on the routine

6 Skin clips or sutures are removed on the sixth and eighth days, again this may vary The woman may go home when she feels like it, depending on where she lives and her home situation Follow up according to the woman's condition, but usually follows the schedule of a normal delivery

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LSS FORMULARY

This is a reference for the medications suggested in the Life-Saving Skills Manual for Midwives Use it as your reference and adapt to what is allowed, available and appropriate in your circumstances If you have a different name for any medicine, write it next to the name(s) in parentheses ()

Dispensing medicines is an important part of your work as a midwife You use medicines to prevent or treat disease The Formulary contains the information you will need to use and dispense medicines safely and effectively

Also included in this Formulary is a brief discussion of anaphylactic shock, allergic reaction and penicillin skin testing The medicines are listed according to categories of use, for example, oxytocic or vaccines Each medicine entry includes a description in the following order

Uses	A statement about the problems for which the medicine is used in this manual Dosages are discussed in the module that considers each specific problem
Dose	**Adult** dose given, unless otherwise noted
Side Effects	Information about the most common side effects of the medicine
Warning	Information to alert the midwife to precautions that she should take when using and dispensing the medicine
Client Instructions	Suggestions about what information to tell the woman or family about the medicine

Formulary List

The *formulary list* of medicines below, uses generic (scientific) names You can look up the name of a medicine you want to use to find the page number in the formulary where you can learn more about it

ANTI ALLERGY MEDICINES

Diphenhydramine hydrochloride (Benadryl)

Use	Effective in controlling allergic reactions and itchy skin lesions
Dose	Give 25 to 50 mg IM May repeat dose in 2 to 4 hours or give 25 to 50 mg capsule by mouth
Side Effect	May cause drowsiness, dry mouth and blurred vision
Warning	Do not operate machinery or drive motor vehicles during treatment
Client Instructions	This medicine will help stop the symptoms of allergy and itchy skin Keep the medicine out of the reach of children

Promethazine hydrochloride (Phenergan)

Use	Prevention and control of nausea and vomiting, sedation during labor controlling allergic reactions Use for pregnant women during labor or in emergency situation for vomiting or allergic reaction
Dose	Give 25 to 50 mg IM
Side Effect	May cause drowsiness
Warning	Do not operate machinery or drive motor vehicles during treatment
Client Instructions	This medicine will help you to rest relax, or stop the feelings of nausea or vomiting Keep the medicine out of the reach of children

ANTI INFECTIVE MEDICINES

Ampicillin (Amoxil)

Use	Effective against a broad range of bacteria including infections of the reproductive system, throat, chest, skin and genitourinary system
Dose	Give IM or by mouth 1 gm (1000 mg) first dose, then 500 mg every 6 hours for 7 to 10 days
Side Effect	The most frequent reaction is a generalized skin rash that itches Stop the medicine if allergic reaction appears
Warning	Do not give ampicillin to clients who have a history of allergic reaction to either penicillin or ampicillin
Client instructions	It you see any rash or get itching of the skin, stop taking the medicine and tell the midwife right away Keep the medicine out of reach of children

Ceftriaxone (Roceptin)

Use	Effective against a broad range of bacteria including gonococcal infections Safe for pregnant and breast feeding women
Dose	Adult Give 250 mg IM one time only Newborn *for ophthalmia neonatorum due to gonorrhea* Give 125 mg IM one time only
Side Effect	Expensive
Warning	None
Client instructions	None

Chloroquine (Aralen)

Use	Effective in treatment and suppression of nonchloroquine resistant malaria
Dose	Give by mouth 1 gr first dose, 500 mg in 6 hours, and 500 mg daily for the next 2 days
Side Effect	Visual disturbances and skin irritations
Warning	Overdosage or intravenous injection may cause headache drowsiness, decreased respiratory and heart rates, shock followed by death
Client Instructions	Chloroquine tastes bitter it is dangerous if a large amount is taken at one time and it can cause visual disturbances and skin itching, but the medicine should be continued Keep it out of reach of children

Co-trimoxazole (Septrin, Bactrim, Septra)

Use	Effective against a broad range of bacteria including infections of the reproductive system, throat, chest, skin and genitourinary tract
Dose	Oral tablets of 400 mg sulfamethoxazole with 80 mg trimethoprim give 2 tablets 2 times a day for 7 days THIS MEDICINE COMES IN SMALLER AND LARGER STRENGTHS read the label and give the correct dose
Side Effect	Nausea, abdominal discomfort and skin itching
Warning	Contains sulpha medication, should not be given during last days of pregnancy to nursing mothers, or infants younger than 6 weeks
Client instructions	Take this medicine twice in a day until it is all finished even if you feel better before the medicine is finished This medicine leaves your body in urine It can block up the kidneys unless you drink an extra amount of water every day Each day while you are taking the medicine, drink at least 6 more glasses of water than you usually drink

Eye ointment, antibiotic (erythromycin, penicillin G, tetracycline)

Use	Local treatment of conjunctivitis in the newborn
Dose	Use every 2 hours until the conjuctivitis has cleared *Newborn within 4 hours of birth*, put a small amount in the inner corner of each eye, do not wipe or rinse out
Side Effect	None
Warning	The ointment may be mistaken for discharge
Client instructions	After cleaning the eyes, put ointment in both eyes, every 2 hours until cleared

Eye solution, silver nitrate

Use	Effective in newborns to prevent gonococcal conjunctivitis
Dose	Put one drop of 1 percent silver nitrate in each eye
Side Effect	Redness and irritation of the eyes, will clear up within 2 to 3 days
Warning	None
Client instructions	This medicine will prevent eye infection that sometimes happens at birth, the medicine can cause some redness of the eyes which will clear up in one or two days

Erythromycin

Use	For clients allergic to penicillin, effective in infections of the skin, ear, throat, soft tissues, lungs and when broad spectrum antibiotics are not available Safe for pregnant and breast feeding women
Dose	Adult Give 500 mg by mouth 4 times a day for 7 to 10 days *Newborn* Give by mouth 50 mg/kg/day in 4 divided doses for 14 days
Side Effect	Sometimes nausea, vomiting and diarrhea but can continue taking the medicine
Warning	None
Client instructions	Take this medicine before you eat, when your stomach is empty, with a glass of water Take all of the medicine, even after you begin to feel better Keep the drug out of the reach of children

Gentamicin (Garamycin)

Use	Effective in treating serious infections such as septicemia in the newborn particularly when used with penicillin or ampicillin
Dose	Adult Give IM 80 mg 2 times a day for 7 to 10 days *Newborn for septicemia* Give IM 5 mg/kg/day in 2 divided doses (for example for a 3 kg baby, give 5 mg per kg which equals 15 mg, divide by 2 to give 7 5 mg IM 2 times a day)
Side Effect	May cause hearing loss or kidney damage
Warning	Do not give to pregnant women, this medicine may harm the growing baby
Client instructions	This medicine will help to make you feel better very soon

Mefloquine (Lariam, Mephaquin)

Use Prevention of P falciparum and P vivax malaria infections Insufficient clinical data to document effect in P ovale or P malariae

Dose Give by mouth one 250 mg tablet every week

Side Effect Dizziness, nausea are common If anxiety depression or restlessness occur stop the medicine

Warning Use with caution in pregnant and breast feeding women Administration of mefloquine and quinine or chloroquine may increase the risk of convulsions

Client Instructions This medicine may cause dizziness or nausea but continue taking it If you feel anxious depressed, or restless stop the medicine and tell your midwife

Metronidazole (Flagyl)

Use Effective in treating anaerobic infections amebiasis giardiasis and trichomonal vaginitis

Dose Give by mouth 500 mg 2 times in a day, for postpartum or postabortion infection combine with broad spectrum antibiotics and give 1 gram 2 times a day for 10 days

Side Effect Sometimes causes nausea vomiting abdominal pain unpleasant taste in the mouth, headache and skin rashes

Warning Do not give to pregnant women during the first 3 months of pregnancy

Client Instructions Take all of the medicine Do not drink alcohol while your are using this medicine You may get an unpleasant taste Keep the drug away from children

Penicillin, (benzylpenicillin or crystalline or aqueous)

Use Effective against many bacteria in newborn infections and when broad spectrum antibiotics are indicated but not available An intramuscular injection provides high blood levels rapidly (See skin test at the end of this formulary)

Dose Adult Give IM 2 million every 4 to 6 hours
Newborn Give 50 000 IU per kg every 12 hours for 7 days

Side Effect Allergic reactions are most common side effect Mild reactions include generalized skin rash with severe itching fever, joint pains and swelling of face Serious hypersensitivity reactions (anaphylactic shock) should be treated immediately Intramuscular route is very painful

Warning Do not give any penicillin to a person who has a history of allergy to penicillin Mild reactions can be treated with an antiallergy medicine

Client Instructions This medicine may cause an itchy skin rash fever swelling and pain in the joints This is a painful injection

Phenoxymethylpenicillin (Penicillin V)

Use Effective in certain infections of the ears, sinuses, throat chest, and soft tissues Is quickly absorbed through the intestines Sometimes is used to continue treatment after injections

Dose Give by mouth 1 gm (1000 mg) 4 times a day for 10 days

Side Effect Allergic reactions are very rare May develop skin rash fever joint pains and generalized swelling

Warning Do not give to clients with a history of penicillin allergy

Client Instructions Take at least 30 minutes before mealtime or 2 hours after eating Return to the midwife if any reaction of skin rash and fever Keep the drug out of reach of children

Penicillin, procaine

Use	Effective for serious infections of the skin, ear, throat and lungs Use when the client is not likely to take penicillin regularly by mouth This type of penicillin maintains blood levels for up to 24 hours
Dose	Give IM 800,000 - 1,200,000 IU 2 times a day for 5 to 10 days
Side Effect	Can cause the same types of allergic reactions as other penicillins, including skin rash, fever, joint pain and generalized swelling
Warning	Do not use in newborns or when client has history of allergy to penicillin Never give intravenously
Client instructions	This medicine sometimes causes severe reactions You may develop an itchy skin rash, general swelling of your body, pain in your joints and fever If this happens, tell the midwife as soon as possible The medicine will help to stop the infection in your body However, you will need to take all of the injections in order for the medicine to make you well

Probenecid (Benemid)

Use	Effective in the treatment of gonorrhea, pelvic inflammatory disease, and other infections, by slowing down the elimination of penicillin through the kidneys In this way, it helps to increase the level of penicillin in the blood after an oral or intramuscular dose of penicillin
Dose	Give by mouth 1 gm
Side Effect	None
Warning	None
Client instructions	This medicine will help to make the penicillin injection more effective than it would be otherwise

Streptomycin

Use	Effective in the treatment of septic abortion, infections in the abdomen, and tuberculosis when used with one or 2 additional antibiotics
Dose	Give IM ½ to 1 gm every 24 hours for as long as antibiotics are given
Side Effect	Pain and irritation at the site of the injection are common Rotate the site of injection for each shot
Warning	Do not give to pregnant women, streptomycin will cause permanent damage to the ears of the fetus resulting in deafness in the newborn Ringing in the ears and difficulty in maintaining body balance are symptoms of irritation of the nerves of the ear Stop giving the medicine immediately if these symptoms occur
Client instructions	This injection may cause pain where it is injected The injection is given in a different muscle each time to prevent some of the pain The medicine can cause ringing in your ears or make it difficult for you to keep your balance If you notice these feelings, tell the midwife right away

Sulfadoxine-pyrimethamine (Fansidar)

Use	Effective in prophylaxis where chloroquine resistant P falciparum malaria is endemic However, strains of P falciparum may have developed resistance to the medicine
Dose	One tablet contains 500 mg sulfadoxine and 25 mg pyrimethamine Give one tablet by mouth every week
Side Effect	Sometimes skin rash (stop immediately), pharyngitis, itching, diarrhea or nausea may be problems
Warning	Do not give if allergic to sulpha medications Do use for pregnant or breast feeding women
Client instructions	Take only the amount which has been ordered Keep the drug out of reach of children If skin rash is seen, stop taking the drug and immediately see your midwife or doctor

Tetracycline

Use Effective in certain types of infections for which penicillin is not effective These include urinary tract infections, chronic bronchitis typhus, bacterial gastroenteritis and trachoma

Dose Give by mouth 500 mg 4 times a day for 10 to 14 days

Side Effect May cause vomiting nausea, and diarrhea May also develop thrush Other toxic side effects are rare

Warning Tetracycline is quickly absorbed into growing teeth and will damage the teeth and cause permanent discoloration Do not give to children under 8 years of age Do not give to pregnant or nursing women, unless you are treating a life-threatening illness and this is the only antibiotic available

Client Instructions Drink a full glass (cup) of water with each dose to prevent an upset stomach Take the medicine at least one hour before meals, because food will interfere with the absorption Milk and milk products also interfere with the absorption Do not take iron pills, laxatives, antacids or sodium bicarbonate while you are taking tetracycline Continue to take the medicine even if you have some nausea, vomiting or diarrhea Keep the drug out of reach of children and protect it from the light

OXYTOCIC

Ergonovine maleate (Ergometrine Maleate)

Use Effective in controlling bleeding after delivery by causing the uterus to contract Intravenous acts in 45 seconds intramuscular acts in 7 minutes and gives sustained contractions of the uterus

Dose Give IV or IM 0 2 to 0 25 mg Intramuscular dose may be repeated, if necessary, up to 5 times over a 24 hour period

Side Effect Nausea and vomiting occasionally

Warning DO NOT GIVE IF BLOOD PRESSURE IS HIGH Do not use for augmentation (induction) of labor

Client Instructions This medicine is very helpful in controlling bleeding It causes the uterus to clamp down and prevent more blood loss

Methylergonovine maleate (Methergine)

Use Effective in controlling bleeding after delivery by causing the uterus to contract It acts in 20 minutes intramuscular or oral intravenous response in 5 minutes, all ways of giving the medication have a sustained action

Dose Give IV or IM 0 2 mg Available in tablets 0 2 mg

Side Effect Nausea, headache

Warning DO NOT GIVE IF BLOOD PRESSURE HIGH do not use for induction of labor

Client Instructions This medicine helps control bleeding by causing the uterus to clamp down and prevent blood loss

Oxytocin synthetic (Oxytocin, Pitocin, Syntocinon)

Use Effective in controlling bleeding *after delivery and during postabortion* by causing the uterus to contract Use instead of ergometrine in management of third stage of labor where ergometrine is contraindicated or unavailable Intramuscular acts in 3 to 7 minutes, intravenous infusion acts within 1 minute

Dose Give IM 10 to 20 IU after delivery and during spontaneous or incomplete abortion

Side Effect Low blood pressure and fast heartbeat occur occasionally

Warning None reported for controlling bleeding

Client Instructions This medicine helps control bleeding It causes the womb to clamp down and prevent further blood loss

Syntometrine (combination of synthetic oxytocin 5 IU and ergometrine maleate 0 5 mg)

Use	Effective in active management of third stage, prevention and treatment of postpartum hemorrhage It has rapid and sustained action
Dose	Same as for oxytocin and ergometrine
Side Effect	Same as for oxytocin and ergometrine
Warning	Same as for oxytocin and ergometrine
Client Instructions	This medicine helps control bleeding It causes the uterus to clamp down and prevent further blood loss

VACCINES

Tetanus Toxoid (Absorbed Tetanus Vaccine, Absorbed Tetanus Toxoid)

Use	Provides active immunization against tetanus
Dose	Give IM 0 5 ml at first contact or as early as possible in pregnancy, give the second injection at least 4 weeks later, give the third injection 6 months later or during the next pregnancy, give the fourth injection one year later or during the next pregnancy, and give the fifth injection at least one year following the fourth injection or during another pregnancy This provides protection from tetanus throughout the childbearing years (See Module 7 **Prevention and Management of Sepsis**, for World Health Organization recommendations on immunization)
Side Effect	Local redness and swelling occur occasionally at the injection site
Warning	None
Client Instructions	This medicine will help to protect you and your baby from becoming ill with tetanus Be sure that you receive all of the recommended injections You may have some pain and swelling at the place where you are injected If the pain and swelling last longer than 2 days, return to the midwife

VITAMINS and HEMATINICS

Ferrous Sulfate (iron)

Use	Prevention and treatment of anemia
Dose	Give by mouth 320 mg 2 times a day
Side Effect	May cause discomfort in the abdomen nausea, constipation or diarrhea, and black stools
Warning	Keep out of reach of children Ferrous sulfate is poisonous if taken in overdosage
Client Instructions	This medicine contains iron, which your body needs in order to make blood properly Many foods contain iron You must try to eat foods that contain iron so that your body will get the natural iron that it needs The medicine will give your body an extra amount of iron and will help you the most if you can take it when your stomach is empty If the medicine causes you to feel sick to your stomach, take the medicine right after eating Do not take antacids for they will prevent the body from using the iron Keep it out of the reach of children

Folic Acid (Vitamin B 9)

Use	Effective for the treatment and prevention of anemia
Dose	Give by mouth 500 mcg to 1 mg daily
Side Effect	None
Warning	None
Client Instructions	Take medicine every day to help prevent anemia Keep this medicine out of reach of children

Ascorbic Acid (Vitamin C)

Use	Effective for the treatment and prevention of scurvy and anemia Vitamin C increases the absorption of iron
Dose	Give by mouth 500 mg daily
Side Effect	None
Warning	None
Client Instructions	Take this medicine every day so that your body can absorb and use iron Many foods contain Vitamin C You must eat foods that contain Vitamin C so that your body will better use iron

ANALGESICS

Acetaminophen (Tylenol)

Use	Effective in reducing fever and relieving pain
Dose	Give by mouth 1000 mg 4 times a day for pain or fever
Side Effect	Occasional rash or itching
Warning	Large doses can cause liver damage
Client Instructions	Keep medicine out of the reach of children It is poisonous in large doses

Acetylsalicylic Acid (aspirin)

Use	Effective in reducing fever, pain and inflammation in arthritis
Dose	Give by mouth 600 mg (10 grain) every 3 to 4 hours as needed for pain or fever
Side Effect	Can cause stomach irritation and bleeding, nausea and vomiting Ringing in the ears dizziness, sweating, and confusion are signs of overdosage
Warning	Bleeding time is increased Do not use in those who have ulcers Do not use in children less than 2 years of age
Client Instructions	Take every 4 hours for pain discomfort and fever Take aspirin with food or milk to reduce irritation of the stomach Keep aspirin out of reach of children It is poisonous in large doses

Paracetamol (Panadol)

Use	Effective in reducing fever and the discomfort associated with many common illnesses
Dose	Give by mouth 1000 mg 4 times a day for fever or pain
Side Effect	None
Warning	Do not use with liver or kidney disease
Client Instructions	Take every 3 to 4 hours for discomfort or fever Keep out of reach of children

ANESTHETICS

Lidocaine hydrochloride *without epinephrine* (Xylocaine, Lignocaine)

Use	Effective to prevent pain when performing and repairing an episiotomy, and/or during repair of perineal laceration
Dose	Give subcutaneous around the episiotomy or laceration 5 to 20 ml of 0 5% to 2% solution *without epinephrine*
Side Effect	Drowsiness (sleep) can occur with usual dose Overdose of more than 30 ml may cause convulsions, low blood pressure, and respiratory arrest
Warning	Do not use if patient has a history of convulsions or liver disease Before injecting, always make certain that the needle is **not** in a blood vessel Injection into a blood vessel will cause an overdose
Client Instructions	This medicine will cause numbness (no feeling) at the place it is injected This numbness will reduce pain and discomfort though you will feel pressure and movement

Ethyl Chloride spray

Use	Effective to prevent pain for the procedure of incision and drainage of a breast abscess (See Module 7, **Prevention and Management of Sepsis**)
Dose	For local anesthesia, hold container about 12 inches (30 cm) from area to produce a fine spray Spray for 1 to 3 minutes
Side Effect	Overdose may increase sensitization, and pain
Warning	Do not spray on broken skin or mucous membranes
Client Instructions	This medicine will cause numbness at the place it is sprayed This numbness will reduce pain and discomfort and will last just long enough for the procedure

NARCOTICS

Morphine Sulfate

Use	Relieve severe pain in any emergency such as ruptured uterus
Dose	Give IM 10 mg (1/6 grain) every 3 to 4 hours for severe pain
Side Effect	Nausea, loss of appetite constipation, confusion, and sweating
Warning	Depression of respiration and blood pressure may occur
Client Instructions	This medicine is a strong pain-killer It will help you to feel better

Pethidine or Pethilorfan (Demerol)

Use	Short acting effective pain relief The pain relieving effect lasts for 2 to 4 hours after intramuscular injection
Dose	Give IM 25 to 100 mg every 2 to 4 hours
Side Effect	Dizziness, nausea, vomiting, sweating, headache, weakness and dry mouth occasionally occur
Warning	May cause depression of respiratory center in baby Try not to give to mother within 2 hours of anticipated delivery
Client Instructions	This medicine will reduce the pain and help you relax. It will help you to feel better

Pentazocine Hydrochloride (Talwin, Fortral)

Use	Relief of moderate to severe pain, relief is variable
Dose	Give IM 50 mg every 3 to 4 hours
Side Effect	Sedation, visual disturbances, nausea, respiratory depression occur
Warning	None
Client Instructions	This medicine will reduce the pain and help you to sleep It will help you to feel better

SEDATIVES/ANTICONVULSIVE

Amobarbital Sodium (Sodium amytal)

Use	Control of seizures (convulsions) related to epilepsy, rabies, and tetanus
Dose	Give IM 250 mg
Side Effect	Overdosage leads to depressed respirations, low blood pressure, shock, coma, and death
Warning	None
Client Instructions	This medicine will help to prevent you from having more convulsions

Diazepam (Valium)

Use	Effective in the control of repeated seizures (convulsions) associated with epilepsy, eclampsia during pregnancy, and eclampsia during labor It is also effective in causing muscle relaxation in cases of tetanus
Dose	***Adult convulsion*** Give IV 10 mg, repeat in 30 minutes if continued convulsion Give IM if unable to infuse ***Severe pre-eclampsia*** Give IM 20 mg, may repeat after 30 minutes if needed ***Newborn tetanus*** Give IM every 4 hours 0 5 mg per kg body weight
Side Effect	Large dosages of diazepam cause drowsiness dizziness and inability to walk or stand
Warning	Overdosage may lead to depressed respirations low blood pressure and coma
Client Instructions	This medicine will help to stop your convulsions It will cause your muscles to relax. This medicine can cause drowsiness

Magnesium Sulfate

Use	Effective in controlling convulsions and lowering blood pressure in women suffering from eclampsia
Dose	A 10 gm ampule contains 20 ml of a 50 % solution Give IM 10 ml in each hip for a total of 20 ml or 10 gm **Note** ampules also come in 10% to 25% solutions, make sure you give the correct dose
Side Effect	Toxic effect including flushing of the face thirst severe lowering of the blood pressure, and respiratory depression may occur *Overdose may be treated with calcium gluconate*
Warning	Do not give if the woman is not passing urine or if she is suffering from respiratory depression (breathing less than 16 times in a minute) or in a deep coma
Client Instructions	When your blood pressure is very high this medicine helps to lower it The medicine may cause you to breathe more slowly but you need to have this injection to stop your convulsions It will also make you feel hot

Phenobarbitone (Phenobarbital)

Use	Effective in the control of epilepsy, may be used to stop premature labor, may be used in tetanus convulsions
Dose	Adults Give IM or by mouth 30 to 120 mg Give one time only *Newborn with tetanus convulsion* Give IM 2 5 mg per kg
Side Effect	Rare Overdosage and poisoning lead to decreased respirations
Warning	None
Client Instructions	This medicine may help prevent or reduce convulsions due to tetanus and epilepsy Too much of this medicine can cause difficulty breathing

ANAPHYLACTIC SHOCK OR ALLERGIC REACTION

Epinephrine (Adrenalin) 1 1000

Dose Give injection of 1 1000 solution subcutaneous as follows

Adults and children over 40 kg	give 0 5 cc
Children 20 to 40 kg	give 0 3 cc
Children 10 to 20 kg	give 0 2 cc
Children under 10 kg	give 0 1 cc

Management

1. Place person on his or her back, feet elevated (shock position), make certain airway is open and clear
2. Give injection according to dose appropriate for weight
3. Take and record pulse, respirations and blood pressure every 5 minutes until normal
4. If signs of shock or reaction continue for 10 minutes, repeat injection using appropriate dose
5. If signs of shock continue for 30 minutes, **REFER** as quickly as possible Go with person to hospital so you can continue to help person and family

PENICILLIN SKIN TEST

Use To rule out allergy to procaine penicillin for suspected penicillin allergy

Dose Make a solution of 0 1 ml procaine penicillin and 0 9 ml distilled (injection) water

Management

1. Inject 0 1 ml subcutaneous on the inner aspect of the arm, midway between the elbow and the wrist forming a small wheel (blister)
2. If no redness or other allergic signs in 10 minutes, continue to give the dose of procaine penicillin
3. If there is redness or other allergic signs, advise the person not to take procaine penicillin Use another antibiotic

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