
MotherCare™

Management of Life Threatening Obstetrical Emergencies

*Protocols & Flow Diagrams
For Use By Registered/Licensed
Nurse-Midwives or Midwives
in Health Centers and Private or
Government Services*

Prepared by:
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Colleen Conroy, BSN, MPH

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Introduction

Purpose and Use

This manual of protocols for the management of obstetrical emergencies was developed by MotherCare for use by registered/licensed nurse-midwives who are working in health centers, health posts and maternity centers and for community nurse-midwives who are working in private or government services. The protocols were designed to enable midwives to give prompt, emergency treatment for life threatening conditions in order to reduce maternal and perinatal mortality. The protocols also enable health and maternity centers to establish standards of practice for the management of eight potentially life-threatening obstetrical conditions:

-  ***Anemia***
-  ***Antepartum Hemorrhage***
-  ***Eclampsia***
-  ***Management of Prolonged First Stage of Labor***
-  ***Postpartum Hemorrhage***
-  ***Pre-eclampsia***
-  ***Premature Rupture of the Membranes***
-  ***Puerperal Sepsis***

These protocols and flow charts can be used in pre- and in-service training for midwives and for use in the clinical situation to guide the practice of clinical midwives, as well as orient new staff.

A selection of these protocols has been used by MotherCare field staff in long-term country projects in Nigeria and Uganda as part of a training course to upgrade nurse-midwives' skills to address obstetrical

emergencies. Other protocols have been designed based on the recommendations of WHO and according to midwifery and obstetrical texts (refer to References in the Appendix).

Format

This manual includes three sections:

Protocols for the management of eight obstetrical emergencies or complications. Each protocol includes a definition of the complication; guidelines for prevention, treatment, referral, follow-up; and suggested counseling points. The counseling points are not all inclusive; rather, they offer suggestions for the midwife to establish a supportive environment for the woman and her family through interaction skills which require asking, listening and responding. Midwife-client consultations, which can, and should, occur throughout the management of the complication, allow the woman to realize and understand the problem she is experiencing, what is being done to resolve the problem, and what she and her family might expect. These consultations also give her the opportunity to ask questions and express her feelings and apprehensions.

Flow Charts provide the same information as the protocols but are presented as algorithms and are useful for quick reference and as useful tools for pre- and in-service training. Four of the complications, antepartum hemorrhage, postpartum hemorrhage, premature rupture of the membranes and puerperal sepsis, are presented in this format.

Support Systems include a list of essential drugs and equipment which must be available in order to effectively manage these complications. The drugs are listed according to their classification.

Modifications and Additions to the Protocols and Flow Charts

Whereas these protocols are designed for use by registered/licensed nurse-midwives to guide their management of obstetrical emergencies/complications, they are only useful and legitimate for use if the midwives have been trained to carry out these procedures. On the other hand, they are useful tools to train midwives who will later be authorized to carry out these practices.

These protocols have been developed as generic tools and do not take into consideration the level of training of midwives, country policies regarding midwifery practice, the policies regarding drug use and the availability of drugs and equipment. Therefore, for appropriate use in-country, they may require modifications, deletions or additions.

Anemia

Definition

Anemia is a hemoglobin less than 11 g percent. Mild to moderate anemia is 7.0 g – 11.0 g percent. Severe anemia is 4.0 g – 6.9 g percent.

Action

1. Prevention of Anemia (no pallor; no risk factors)

- Give standard dose of iron preparation:
 - ✓ combination tablet (60 mg iron plus 250µg folic acid) twice daily.

OR

- ✓ ferrous sulfate tablet (200 mg) twice daily + folic acid tablet (0.5 mg) daily.
- Give antimalarials—malaria chemoprophylaxis according to local situation.
- Treat hookworm and other parasites as indicated.
- Check for other signs of infections/diseases (e.g. urinary tract, pulmonary tuberculosis).
- Give dietary advice for malaria and hookworm.

2. Treatment of Mild to Moderate Anemia During Pregnancy

- Give higher dose of iron preparation:
 - ✓ combination tablet (60 mg iron plus 250µg folic acid) three times daily.

OR

- ✓ ferrous sulfate tablet (200 mg) three times

daily + folic acid tablet (0.5 mg) daily.

- Recheck hemoglobin after one month:
 - ✓ **If** hemoglobin has increased by 2 g percent or reached a level ≥ 11 g, continue treatment.
 - ✓ **If** hemoglobin has increased less than 2 g percent, **REFER**.

Refer regardless of gestation for severe anemia.

If signs of heart failure are present, **REFER** to hospital immediately.

3. Management of Labor

Mild to moderate anemia:

- ✓ strict asepsis and antisepsis
- ✓ antibiotics if membranes are ruptured more than 12 hours
 - prevent prolonged labor;
 - watch for signs of cardiac failure;
 - assist second stage if possible or necessary;
 - **give oxytocin** 10 units IM after delivery of baby;
 - prevent postpartum hemorrhage;
 - examine placenta for completeness;
 - avoid IV fluids during first 48 hours after delivery.
- Women with severe anemia in labor should be managed in the hospital.

4. Follow-up

- Check hemoglobin 48 hours after delivery;
- Continue iron therapy according to degree of anemia;
- Encourage postpartum check-up.

Counseling Points

1. Advice and explanations appropriate to the particular woman should be given so that she can understand the causes and treatment of anemia. This may include dietary advice with information on food sources of iron and the necessity of taking iron supplementation regularly throughout her pregnancy.
2. Women should also be advised as to the side-effects of iron—black stools, epigastric discomfort, constipation—and advised not to take iron on an empty stomach (take immediately after meals) and advised how to deal with constipation.
3. Counsel on family planning to ensure full recovery of the woman and adequate birth spacing.

Figure 1

Conversion Tables for Hemoglobin Estimation

<i>Per Cent Saturation</i>	<i>Equivalent Hemoglobin in Grams</i>
100%	14.6 Grams
95	14.1
90	13.3
85	12.6
80	11.8
75	11.1
70	10.4
65	9.6
60	8.9
55	8.1
50	7.5
45	6.7
40	5.9
35	5.2
30	4.4
25	3.7
20	3.0
15	2.2
10	1.5

Source: Marshall and Buffington, *Life Savings Skills Manual for Midwives*.
The American College of Nurse-Midwives, 1991.

Antepartum Hemorrhage

Definition

Antepartum hemorrhage (APH) is bleeding from the genital tract in pregnancy (20 weeks – USA, 28 weeks – UK) and before the birth of the baby.

Establishing the cause of antepartum hemorrhage is often difficult. The midwife needs to act on a provisional diagnosis, which may be obstetric: placenta previa, abruptio placenta, ruptured uterus, very “heavy show”; or gynecological: cervical erosion or carcinoma, vaginal warts or varicose veins.

It is an emergency if:

- the woman is bleeding heavily per vagina or internally.
- the woman is in labor.

Action

1. Check for:

- presentation of fetus
- signs of labor
- tenderness (palpate)
- signs of shock and anemia
- acute kidney failure
- whether blood is clotting (blood may not be clotting in abruptio placenta)
- amount of external bleeding

2. Never perform a vaginal examination when bleeding until placenta previa is ruled out.

3. Refer to a doctor or hospital.

4. Management while waiting for referral:

- take blood for grouping, cross-matching, hemoglobin (if possible);
- organize donors for blood supply;
- check vital signs;
- set up intravenous infusion (sodium chloride/plasma expander);
- observe signs of second stage in case of "heavy show".

A. Abruptio Placenta

Definition

Abruptio placenta is bleeding from partial separation of a normally situated placenta. It may be revealed or concealed or a combination of both.

Action

1. Start IV infusion (after taking blood for grouping, cross-matching and hemoglobin, if possible).
2. Palpate abdomen for presentation of fetus.
3. Feel for uterine tenderness.
4. Observe contractions.
5. If pain is severe, administer analgesic and/or sedatives: pethidine 25 mg IV.
6. **Refer** to a hospital immediately with relative or friend to donate blood as the woman may need a cesarean section.
7. **Follow-up** after delivery: Check for signs of anemia (See Protocol for Anemia, page 1).

★ CAUTION: This condition is often associated with severe pre-eclampsia and eclampsia. Include these signs and symptoms in diagnosis and management.

B. Placenta Previa

Definition

Placenta previa is when the placenta is abnormally embedded in the lower uterine segment. It may lie partly or completely over the cervix.

Action

1. **Never do an internal examination.**
2. Start IV infusion, if possible.
3. Check presentation of fetus by palpating the abdomen.
4. **Refer** for confirmation of diagnosis even if bleeding has stopped.
5. If discharged home after diagnosis, counsel the woman to return immediately if she starts to bleed.
6. **Follow-up** after delivery: Check for signs of anemia (See Protocol for Anemia, page 1).

Counseling Points

1. The woman, her partner and her family should be kept fully informed of what is happening at all times, with adequate explanations if the woman requires emergency surgery.
2. Every woman should know at the end of the birth/hospitalization exactly what happened to her and what was done for her so that she can give a good history with subsequent pregnancies.
3. Counsel on family planning to ensure full recovery of the woman and counsel on adequate birth spacing.

Eclampsia

Definition

Eclampsia is one or more convulsions in a pregnant woman with raised blood pressure which is not caused by epilepsy, cerebral hemorrhage, cerebral malaria, or meningitis.

Action

1. Perform FIRST AID

■ During the fit:

- ✓ prevent the patient from injuring herself by removing all sharp or dangerous objects near her;
- ✓ do not restrain her by force;
- ✓ keep an airway open by gently placing a padded tongue spatula (never use force);
- ✓ give oxygen, if available.

■ After the fit:

- ✓ Clear the airway
 - clean the mouth and throat;
 - suck away any secretions with aspirator, if available;
 - insert an airway tube or padded tongue spatula (if not able to insert during fit);
 - keep the patient quiet on side and give oxygen, if available.

2. Give anticonvulsant drug

- Stop the convulsions (depending on training and country regulations)
- ✓ inject slowly, (5 - 10 minutes) intravenously "lytic cocktail": pethidine 50 mg +

chlorpromazine (largactil) 25 mg +
diazepam (valium) 10 mg.

OR

- ✓ inject slowly magnesium sulfate 4 g (20 mls of 20% solution) intravenously + 10 g (20 mls of a 50 % solution) intramuscularly.

★ **CAUTION—SIGNS OF MAGNESIUM SULFATE OVERDOSE:** *Magnesium sulfate depresses the central nervous system, which is how it controls convulsions. If too much is given, however, it can also depress respirations. Therefore, it is important to check the woman's respirations, urinary output, and knee reflexes to be sure that she is not getting too much magnesium sulfate. In the absence of knee reflexes, if the urinary output falls below 35 mls per hour, or if her respirations fall below 12 breaths per minute, discontinue the magnesium sulfate. Giving calcium gluconate 1 g IV and withholding the magnesium sulfate will reverse respiratory depression.*

3. Give antihypertensive drug

- ☞ apresoline (hydralazine hydrochloride) 20 mg by slow IV push, followed by apresoline 20-40 mg IV infusion to control the diastolic pressure at 90 mg Hg.

4. Look carefully for other possible causes of fits. Misdiagnosing cerebral malaria or meningitis can be fatal! Investigate and treat for cerebral malaria and/or meningitis according to country policy and guidelines.

- 5. Refer** to hospital as soon as possible with referral note describing condition and treatment given, including hour and dosage of drugs. Explain to the woman that she will need to deliver her baby as soon as possible in hospital.

6. **Management while waiting for referral:**

- interview family, e.g., number and duration of fits, fever, history of epilepsy.
- monitor the woman's vital signs—pulse, blood pressure, temperature, breathing;
- keep the airway clear;
- insert foley catheter and measure urinary output;
- look for signs of labor;
- examine for stiffness of the neck;
- check the knee reflexes;
- observe for cyanosis;
- assess cervical dilation when fits are controlled.

7. **If delivery is imminent in the health center:**

- do assisted delivery (vacuum or forceps), if possible. Avoid prolonged pushing;
- **give oxytocin 10 units IM immediately after the baby is born to prevent postpartum hemorrhage (do not give ergometrine);**
- After delivery, refer the woman to hospital.

★ CAUTION: Patients with eclampsia must be delivered as soon as possible once the fits are controlled, even if the baby is still (very) premature.

8. **Follow-up—If referral is refused after delivery:**

- If the woman has delivered in the health center and the fits are controlled:
- keep the woman under sedation (**Valium 10 mg IM twice to three times a day for 48 hours**);

- observe fluid balance—maintain intake and output records;
- record blood pressure every half hour for 4 hours, then hourly until stable (i.e., returning to baseline BP levels);
- if stable, remove the foley catheter after 48 hours;
- if the woman shows signs of renal failure (i.e., <35 mls of urine per hour), and/or the blood pressure cannot be controlled, the woman **must be REFERRED** immediately.

Counseling Points

1. When time allows and it is appropriate, the midwife should make every effort to inform the attending family of the reasons for the pregnant woman's condition and what needs to be done. The midwife should inform the family of what is happening. The midwife should be supportive to the family and tell them that they acted properly in bringing the woman to the health facility.
2. The woman and family should be advised if cesarean section is necessary. The midwife should be aware of the woman's need to understand what her condition is, what she is experiencing and what has to be done. The midwife should take every appropriate opportunity prior to, during and following any management procedure, to explain what is happening to the client.
3. Every woman should know at the end of the birth/hospitalization exactly what happened to her and what was done for her, so that she can give a good history with subsequent pregnancies.
4. The benefit of pregnancy spacing both to herself and her child (if born alive) should be discussed with the woman and her family.

Management of Prolonged First Stage of Labor

Observations to assess maternal and fetal condition and progress in labor are usually recorded on a partograph (WHO, 1988—Figure 2).

Definition of Prolonged First Stage of Labor

The first stage is prolonged when it exceeds 12 hours. When cervical dilation progresses less than 1 centimeter (cm) per hour in the active phase of the first stage of labor (3-10 cms), the midwife will know that labor is progressing at less than the normal rate (WHO, 1988).

Prolonged Active Phase

1. Between alert and action line (dilation is less than 1 cm/hour—Figure 3)

- If cervical dilation is less than 7 cms, **REFER** to hospital.
- If cervical dilation is 7 cms or more:
 - ✓ **If membranes are intact** - and the presentation is normal and there are no other abnormalities, do Artificial Rupture of Membranes (ARM). After ARM, the woman should deliver within X number of hours according to her dilation (i.e., at 7 cms, after 3 hours or faster, or at 8 cms, after 2 hours or faster).
 - ✓ **If membranes are already ruptured** - and the head is not engaged or the presentation is abnormal, **REFER** to hospital.

2. *At or immediately beyond action line* (Figure 4)

- This woman is now a doctor's case.
 - ✓ If she is still in health center, **REFER** (unless the cervix is nearly fully dilated more than 8 cms and contractions become expulsive).
 - ✓ **Before referral, rehydrate, if possible, with 500 mls or 1000 mls intravenous infusion of Norma¹ Saline or Ringers Lactate or Hartmann's Solution.**
 - ✓ Encourage the woman to pass urine.
 - ✓ **Administer antibiotics—ampicillin 500 mg IM stat, if membranes are ruptured for 12 hours or more, then follow with ampicillin 500 mg by mouth every 6 hours.**
 - ✓ **Administer analgesia pethidine 100 mg IM if available (no valium).**

Prolonged Latent Phase (Figure 5)

If a woman is admitted in labor in the latent phase (less than 3 cm dilated and the frequency of contractions is 2 in 10 minutes or more and the duration is 20 seconds or more) and remains in the latent phase for the next 8 hours, progress is abnormal. **REFER** to a hospital.

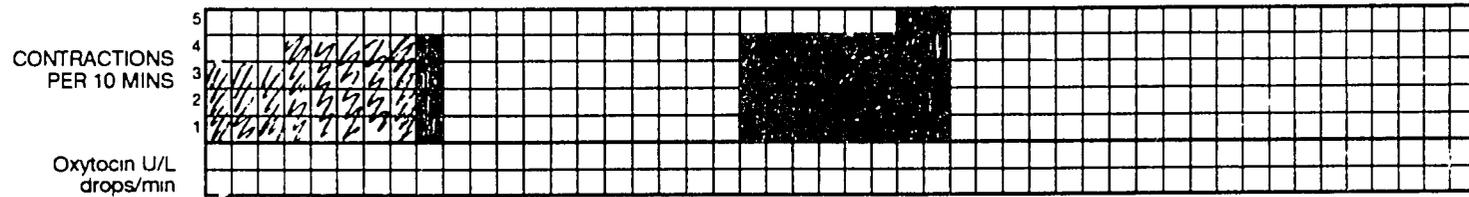
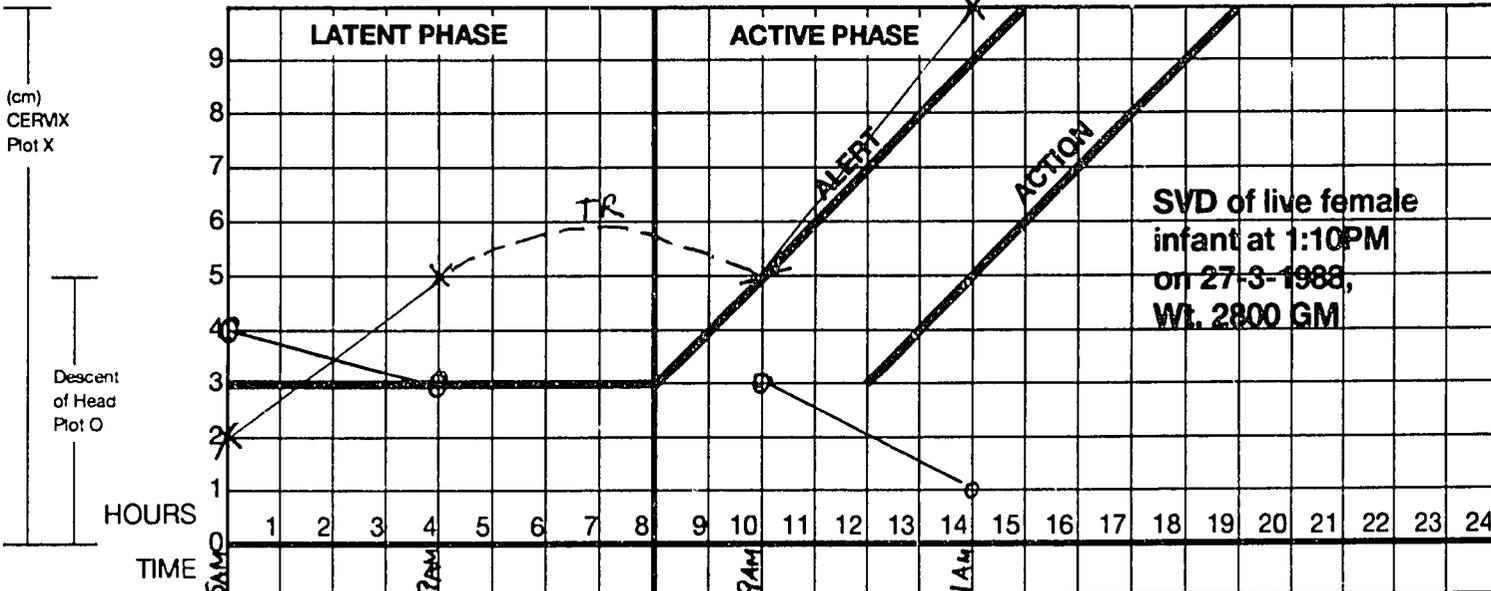
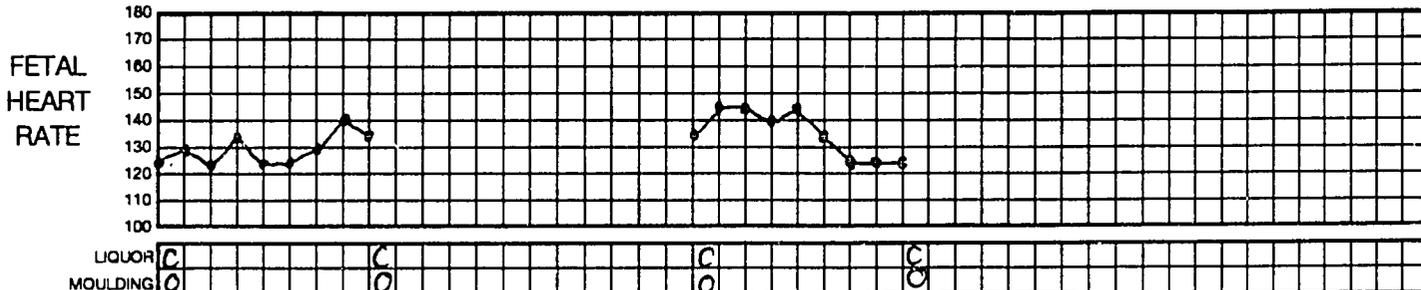
★ **CAUTION: Even if there is a physician in the health center, there is no place for oxytocin augmentation in a health center without facilities for cesarian section.**

Counseling Points

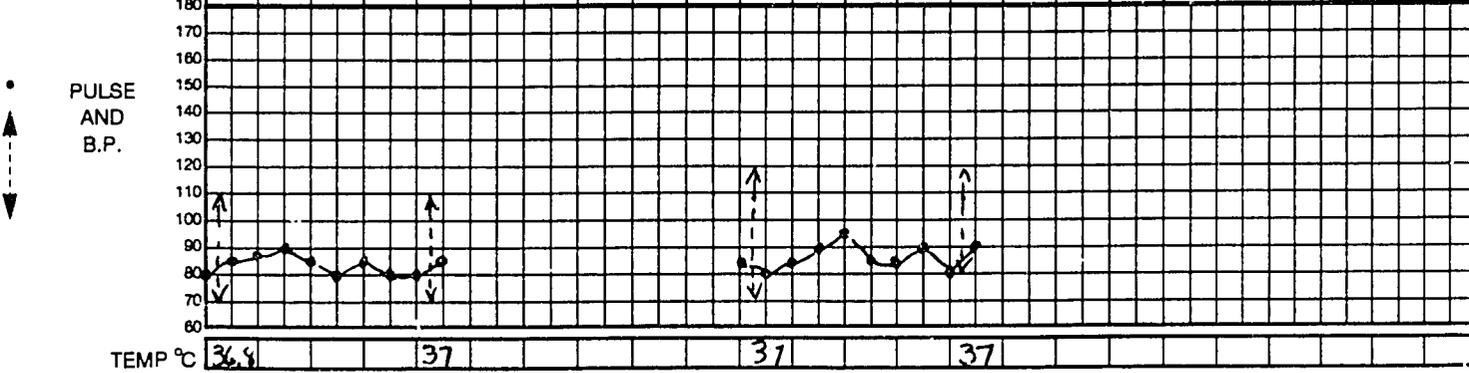
1. Inform the woman of actions and observations.
2. In addition to talking to the woman, invite her questions and comments.
3. If she is literate, have her see the partograph and her own progress. Tell the woman in labor that the point of the partograph and attendance of the midwife is to ensure that the mother and the baby are well and that labor is going as expected. By use of the observations to complete the partograph, the midwife will know if there is any difficulty with the mother, the baby or the labor, so she can start the right treatment or refer the mother to another level of care.

PARTOGRAPH—Figure 2

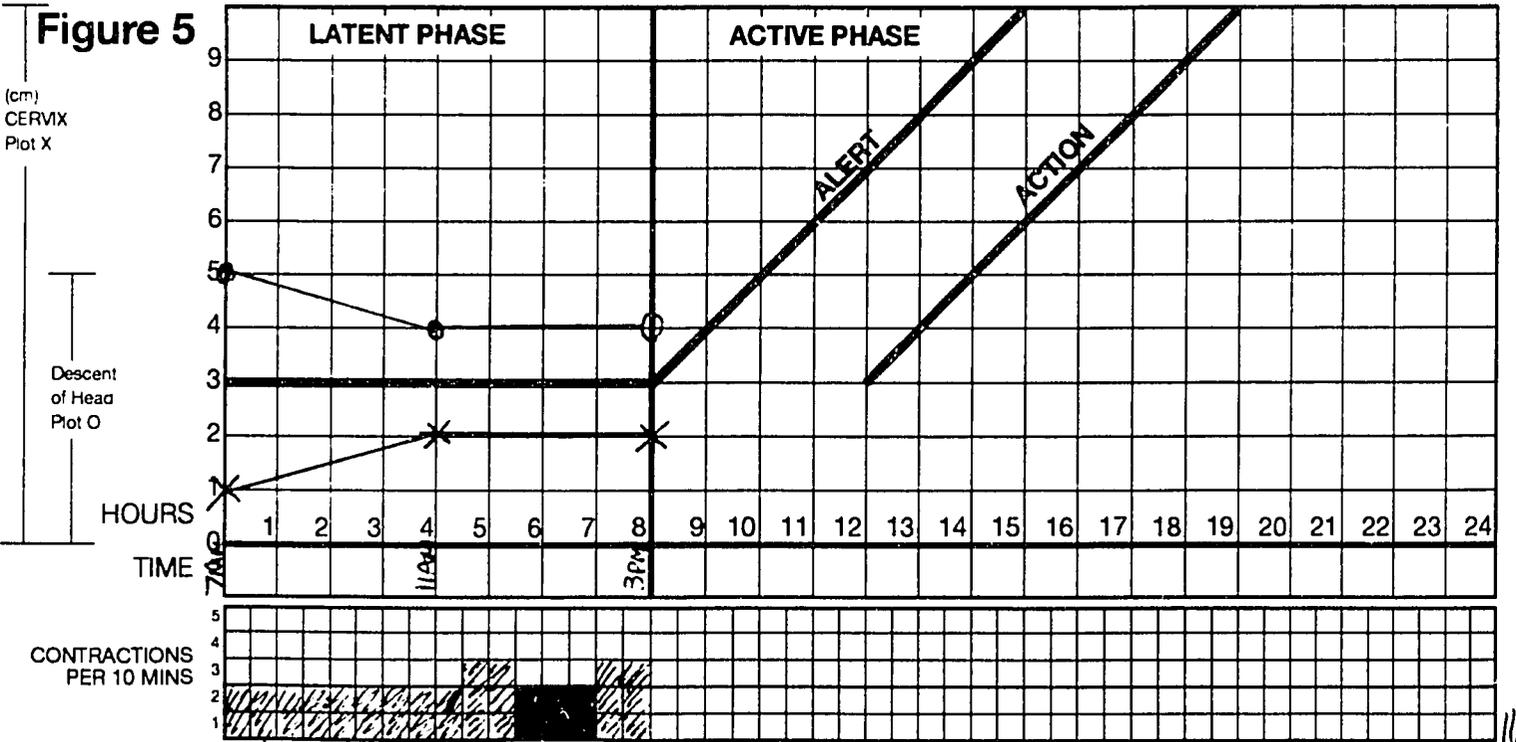
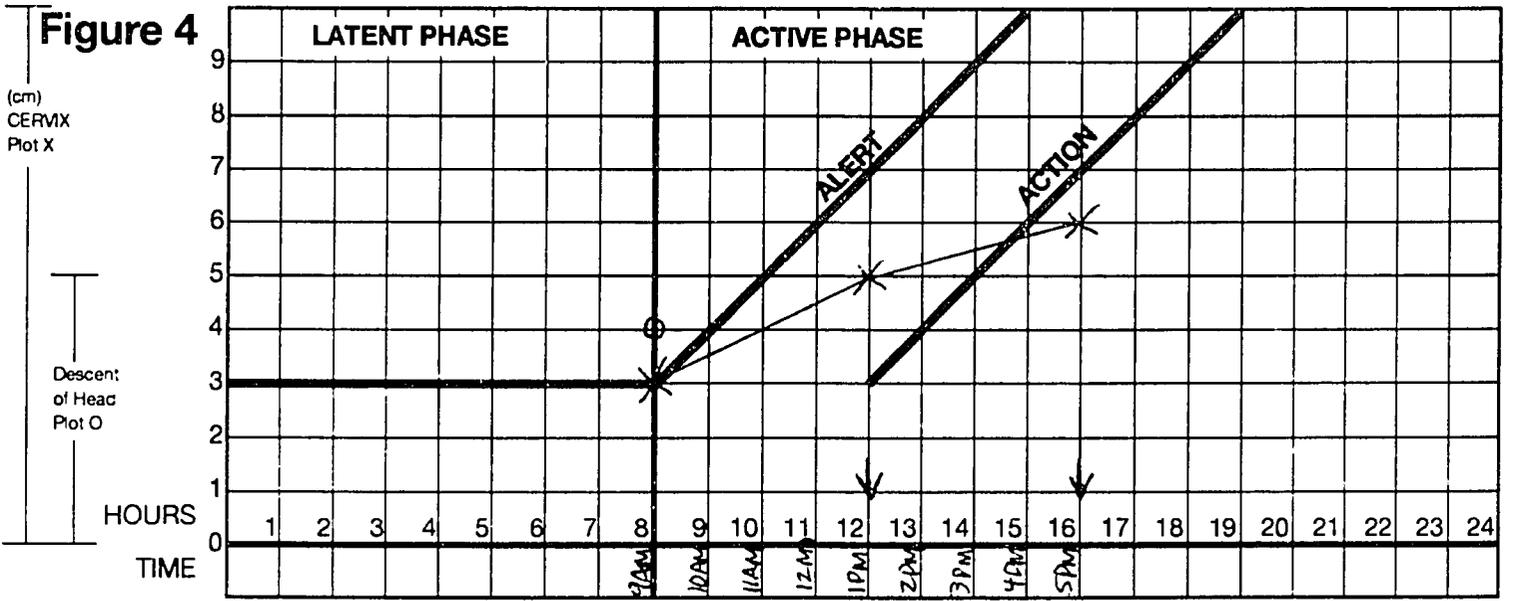
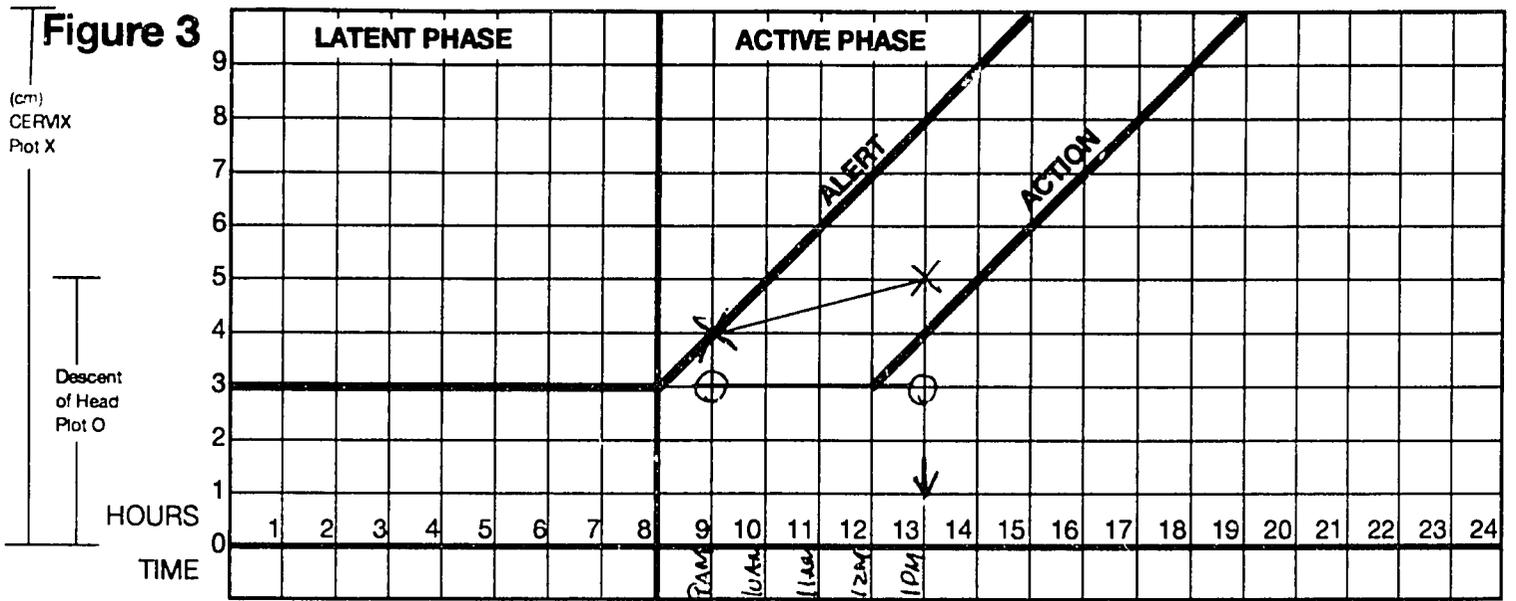
Name Mrs. B. Gravida 1 Para 0 Hospital No. 1059
 Date of admission 27-3-1988 Time of admission 5AM Ruptured membranes 2 hrs.



DRUGS GIVEN AND I.V. FLUIDS



URINE	PROT	-	-	-	-	-	-
	ACET	-	-	-	-	-	-
	VOL	200	100	100	60		



1101

Postpartum Hemorrhage

Definition

Postpartum Hemorrhage (PPH) is defined as the loss of ≥ 500 mls of blood from the genital tract after delivery of the baby (WHO, 1990).

Action

Regardless of cause, *three basic principles apply:*

- call for help;
 - stop bleeding;
 - resuscitate the woman.
1. Massage fundus to contract uterus.
 2. Call for help—**Never leave the patient alone.**
 3. **Give 0.25 or 0.5 mg ergometrine IM or IV.**
 4. Empty bladder (catheterize if unable to pass urine).
 5. Examine for lacerations of perineum, vagina and cervix.
 6. If placenta delivered, examine placenta for completeness.
 7. Start IV fluids if possible and/or necessary (i.e., signs of shock present).
 8. Take blood for grouping and cross-matching, if possible, before transfer to hospital.

★ CAUTION: Always consider possible rupture of the uterus.

A. Uterine Atony

Placenta Undelivered—

Action

Try to remove placenta by one of the following:

1. Controlled cord traction.
2. Do internal examination and feel if placenta is in vagina or cervix. If it is, gently pull it out using controlled cord traction.

★ CAUTION: Refer immediately to hospital if above fails and the cervix is tightly closed.

3. If trained to do manual removal of the placenta, attempt the procedure as follows:
 - Use aseptic technique;
 - **Give 20-40 units or more (up to 100 units) of oxytocin in 1 liter Normal Saline IV or 10-20 units (up to 50 units) in 500 mls Normal Saline at 30 - 40 drops per minute;**
 - Steady uterine fundus with hand on the abdomen;
 - Gently put the whole of your other hand into the vagina and follow the cord up through the cervix into the uterus;
 - Keeping the fingers of your hand together, move them to the edge of the placenta and gently separate the placenta from the wall of the uterus and remove it;
 - Examine placenta and membranes for completeness;
 - **Give ergometrine 0.25 mg - 0.5 mg IM,**

HOWEVER, if blood pressure is \geq 150/100, give oxytocin 10 units IM.

- Observe the patient's condition and look for signs of shock;
 - **Give ampicillin 500 mg IM or IV push. Then follow with antibiotic therapy for 5 - 7 days (example, ampicillin 500 mg four times daily by mouth).**
4. Follow-up for treatment of anemia. (See Protocol for Anemia, page 1.)

Placenta Delivered— Hemorrhage Continues

Action

1. Continue to massage fundus to stimulate uterine contraction.
2. Start IV fluids if not yet done.
3. **Give oxytocin 20 - 40 units (up to 100 units) in 1 liter Normal Saline IV or 10 - 20 units (up to 50 units) in 500 mls Normal Saline at 30 - 40 drops per minute.**
4. Do nipple stimulation or put the baby to the breast.
5. If the bleeding has not stopped, do internal or external bimanual compression.
6. If bleeding cannot be controlled, **REFER** immediately to a hospital with the attendant continuing the procedure.
7. If bleeding is controlled, continue to observe the patient's condition.
8. If internal bimanual compression has been done: **Give ampicillin 500 mg IM or IV push. Then follow with antibiotic therapy: ampicillin 500 mg by mouth four times a day for 5 days.**
9. Follow-up for treatment of anemia. (See Protocol for Anemia, page 1.)

B. Lacerations

Vaginal and Perineal Laceration

Action

1. Suture using local anesthetic.
2. If not trained to suture, **REFER**. If bleeding points are visible and blood spurting, clamp bleeding points with sponge forceps and transfer with clamp in place. If sponge forceps to clamp bleeding point is not available, consider packing of vagina (for procedure, see point 2. below).
3. Give IV Normal Saline.

Cervical Laceration

Action

1. Clamp with sponge forceps and suture cervical tear, if trained to do so.
2. If not trained to suture cervical tear, but patient is bleeding severely, there are two options:
 - continue to clamp with sponge forceps

OR

- do internal bimanual compression. This is achieved by placing a rolled-up sterile sanitary pad inside the vagina, followed by a gloved fist. The other hand is then used to apply pressure to the fundus of the uterus, thereby compressing the uterus between the hands. This method should effectively control hemorrhage from cervical and high vaginal tears and uterine rupture, as well as from an atonic uterus. Then **REFER**.

3. If during referral, internal bimanual compression cannot be maintained and patient continues to bleed, apply external bimanual compression.
4. Give IV Normal Saline.
5. Identify relatives to accompany patient for blood donation.

★ CAUTION: Always be aware that uncontrolled bleeding can be a result of rupture of the uterus.

Counseling Points

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1. Severe postpartum hemorrhage is a terrifying experience.
2. Whatever the cause of the postpartum hemorrhage, provide emotional and psychological support to the woman until she feels confident. The woman's partner may also need reassurance. In the case of severe postpartum hemorrhage or postpartum hemorrhage compounded with severe anemia or infection, the woman should be counseled that lactation may be slow *temporarily* but that she should be encouraged to continue with breastfeeding.
3. Following delivery or treatment of a postpartum condition, the midwife should ensure that the woman is aware of being in a higher category of risk for carrying future pregnancies. Family planning counseling should be initiated to allow the woman to recover and to help her have some control over when and if she gets pregnant again. This will involve counseling of the partner and her family.
4. Counsel the woman and family, explaining that the woman will need rest and a good diet to *regain* strength.

Pre-Eclampsia

Definition

The development of gestational hypertension and significant proteinuria after 20 weeks of pregnancy, during labor, and/or within 48 hours of delivery. A diagnosis of hypertension in a pregnant woman is made when the blood pressure is 140/90 or greater, or when there has been an increase of 30 mm Hg systolic or a 15 mm Hg diastolic rise over baseline values.

Severe Pre-Eclampsia

- The blood pressure reaches 160/110 mm Hg or more.
- Heavy proteinuria (+ +) develops.
- There is progressive hyper-reflexia.
- Other symptoms are present, like:
 - ✓ severe headache
 - ✓ visual disturbance
 - ✓ epigastric pain
- An eclamptic fit can occur at any moment.

Action

The essential elements for management of severe pre-eclampsia and eclampsia:

- Antihypertensive drugs IV.
- Anticonvulsant drugs IV.
- Extremely careful fluid balance with urinary catheterization.
- Delivery.
- Generally, no diuretics.

1. **Give antihypertensive drug**

- **apresoline (hydralazine hydrochloride) 5 mg as a loading dose by slow intravenous injection over 5 minutes. (Apresoline should not be used intramuscularly.)**

OR

2. **Give anticonvulsant drug (depending on training and country regulations)**

- **diazepam (valium) 10 mg - 20 mg IM or IV stat, followed by 10 mg - 20 mg every six hours IM or IV.**

OR

- **Inject "Lytic cocktail"**

- ✓ **inject slowly (5 - 10 minutes) intravenously pethidine 50 mg + chlorpromazine (largactil) 25 mg + diazepam (valium) 10 mg.**

OR

- ✓ **inject slowly magnesium sulfate 4 g (20 mls of 20% solution) intravenously + 10 g (20 mls of a 50 % solution) intramuscularly.**

OR

- **paraldehyde 8 - 10 mls every 6 hours IM.**

3. **Refer** to hospital with referral note. The woman should be accompanied by an attendant who has been trained to care for a patient who may develop convulsions. (**REFER to ECLAMPSIA**, page 9) Delivery will usually be managed either by induction of labor or cesarean section.

4. **Management while waiting for referral:**

- **check woman's vital signs - pulse, blood pressure, temperature, breathing;**
- **test urine for protein;**

- ☒ measure urinary output;
- ☒ check for worsening signs of pre-eclampsia;
- ☒ check knee reflexes;
- ☒ examine for signs of labor: contractions, cervical dilation.

Counseling Points

1. The woman and family may be very anxious about the progress of the current pregnancy. The midwife should take every appropriate opportunity prior to, during and following management procedures to explain what is happening to the woman and her family. The necessity for referral needs careful explanation and encouragement as this may involve unforeseen costs and burdens to the family.
2. The midwife should be sensitive to the needs of the family when the woman is admitted to the hospital. The midwife should be supportive and encouraging to the family, telling the family that they acted properly in bringing the woman to the health facility.
3. At the end of the birth/hospitalization, every woman should know exactly what happened to her and what was done for her so that she can give a good history with subsequent pregnancies.
4. The benefit of pregnancy spacing to both herself and her child (if born alive) should be discussed with the woman and her family.

Premature Rupture of the Membranes (PROM)

Definition

Rupture of membranes is said to be premature if it occurs before the onset of labor (regular painful contractions with cervical dilation).

Action—After 37 Weeks

1. Make sure the diagnosis is correct by taking a history and inspecting the vulva and perineum for fluid. Exclude fluid due to urine or heavy vaginal discharge.
2. Check for signs of infection:
 - temperature > 37.5°C
 - purulent or offensive amniotic fluid
 - fetal tachycardia (> 160 beats per minute)
3. Do one sterile vaginal examination to assess cervical dilation and exclude cord prolapse.
4. Check temperature and pulse every four hours.
5. Observe progress of labor.
6. If not in established labor within 8 - 12 hours or if there are signs of infection at any time:
 - **Start antibiotic therapy:**
 - ✓ ampicillin 500 mg IM or IV every 6 hours (until referred).

OR

- ✓ If unavailable, give procaine penicillin, 1.2 million (mega) units IM stat.
- **REFER** to the hospital for induction.

Action—Before 37 Weeks

1. Make sure the diagnosis is correct by taking a history and inspecting the vulva and perineum for fluid. Exclude fluid due to urine or heavy vaginal discharge.
2. Check for signs of infection:
 - temperature > 37.5°C
 - purulent or offensive amniotic fluid
 - fetal tachycardia (> 160 beats per minute)
3. **DO NOT DO A VAGINAL EXAMINATION.**
4. **Refer** to the hospital.
5. **Management while waiting for referral:**
 - If signs of infection, or membranes are ruptured 12 hours or longer:
Start antibiotic therapy (see point 6. page 27).

★ CAUTION: Untreated prolonged rupture of membranes (> 12 hours) is one of the main causes of puerperal sepsis and maternal and perinatal mortality and morbidity.

Counseling Points

Woman and family need to be informed about the necessity for referral regarding the baby's chances of survival if born premature.

Puerperal Sepsis

Definition

Genital tract infections, occurring from the onset of rupture of membranes or labor, during labor, or before the 42nd day postpartum in which two (2) or more of the following are present (WHO 1992):

1. Pelvic pain.
2. Fever perceived, or a raised temperature of $\geq 38.5^{\circ}\text{C}$ on one occasion within 24 hours.
3. Abnormal vaginal discharge, e.g., presence of pus.
4. Abnormal smell/foul odor of discharge.
5. Delay in the rate of reduction of the size of the uterus. (<2 cm/day in first 8 days from 20 cm to 2 cm above the symphysis pubis.)

Action

If the abdomen is tender:

- **REFER** to a physician.
- **Give stat ampicillin 1 g IM before referral.**
- Put up IV fluids (Normal Saline).

If abdomen is not tender:

- **Administer antibiotics**
 - ✓ **Ampicillin 500 mg by mouth four times daily for 5 - 7 days.**
 - ✓ **Metronidazole 200 mg by mouth four times daily for 5 - 7 days.**
- **For pain relief, administer simple analgesic**
 - ✓ **Panadol or buffered aspirin - 1 tab twice to three times daily, if necessary.**

☒ **Administer oxytocic**

✓ **Ergometrine 0.125 mg (1) tablet four times daily for 3 - 5 days (for subinvolution).**

☒ Keep the woman well hydrated.

☒ Consider prophylactic treatment of malaria in endemic areas.

☒ **Follow up**

✓ Monitor the woman daily to exclude worsening signs of infection.

✓ If no improvement in condition after 48 hours, **REFER**.

✓ **Give ferrous sulfate tablets 200 mg two times daily plus folic acid tablets 0.5 mg daily.**

★ **CAUTION:**

A. Look for worsening signs:

1. septicemia

2. pelvic abscess

If present, REFER urgently.

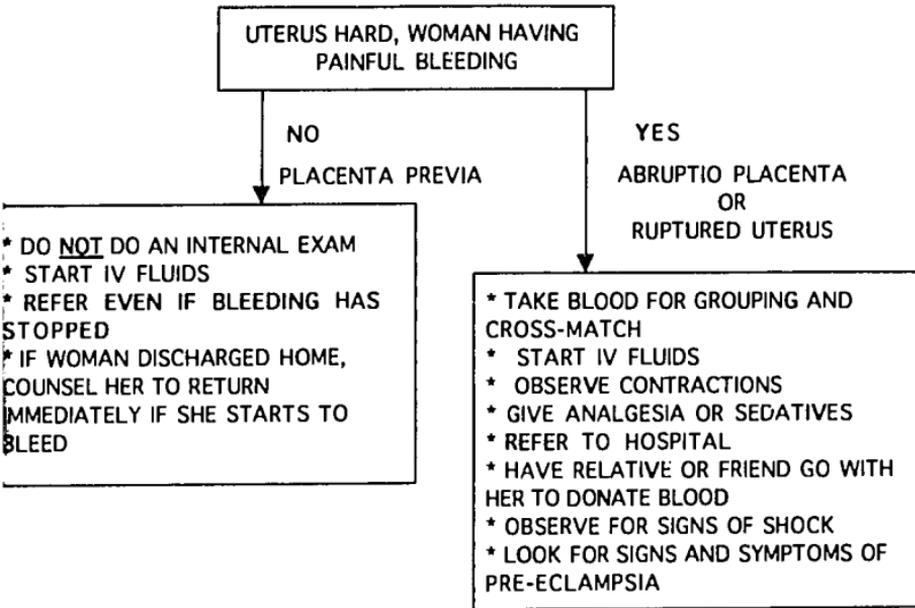
B. A woman with puerperal sepsis may develop a secondary postpartum hemorrhage.

C. If puerperal sepsis is the result of an abortion, the woman should be referred to hospital because evacuation of the uterus may be indicated in addition to antibiotic treatment.

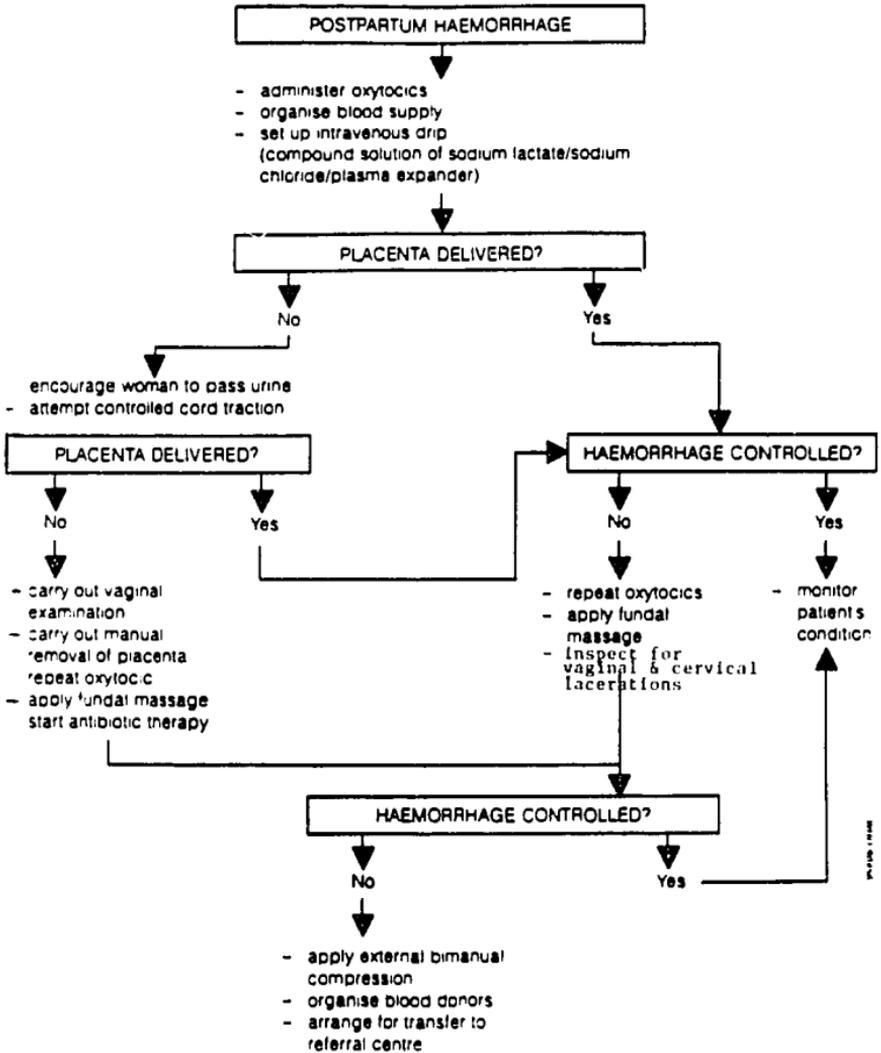
Counseling Points

1. At discharge, counsel the woman to return for a postnatal check-up at 2 weeks or earlier if problems develop (i.e., recurrent fever, vaginal bleeding).
2. The midwife should ensure that the woman understands her condition and the course of treatment. The midwife should take every opportunity before, during and following any management procedure to explain what is happening to the woman.
3. Counsel the woman and family, explaining that the woman will need rest and a good diet to regain strength and advise about the need for family planning.

ANTEPARTUM HEMORRHAGE

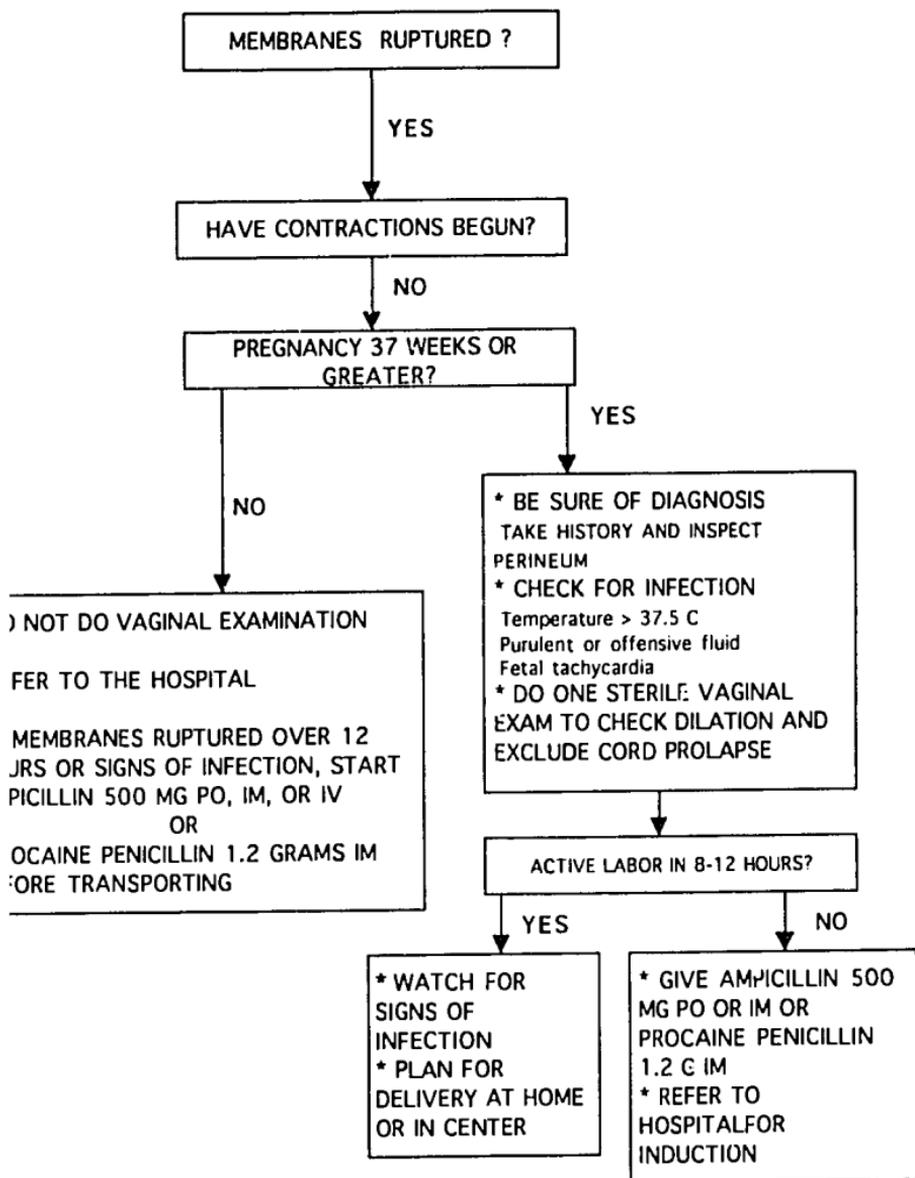


**Health centre
(nurse/midwife: limited operative facilities)**

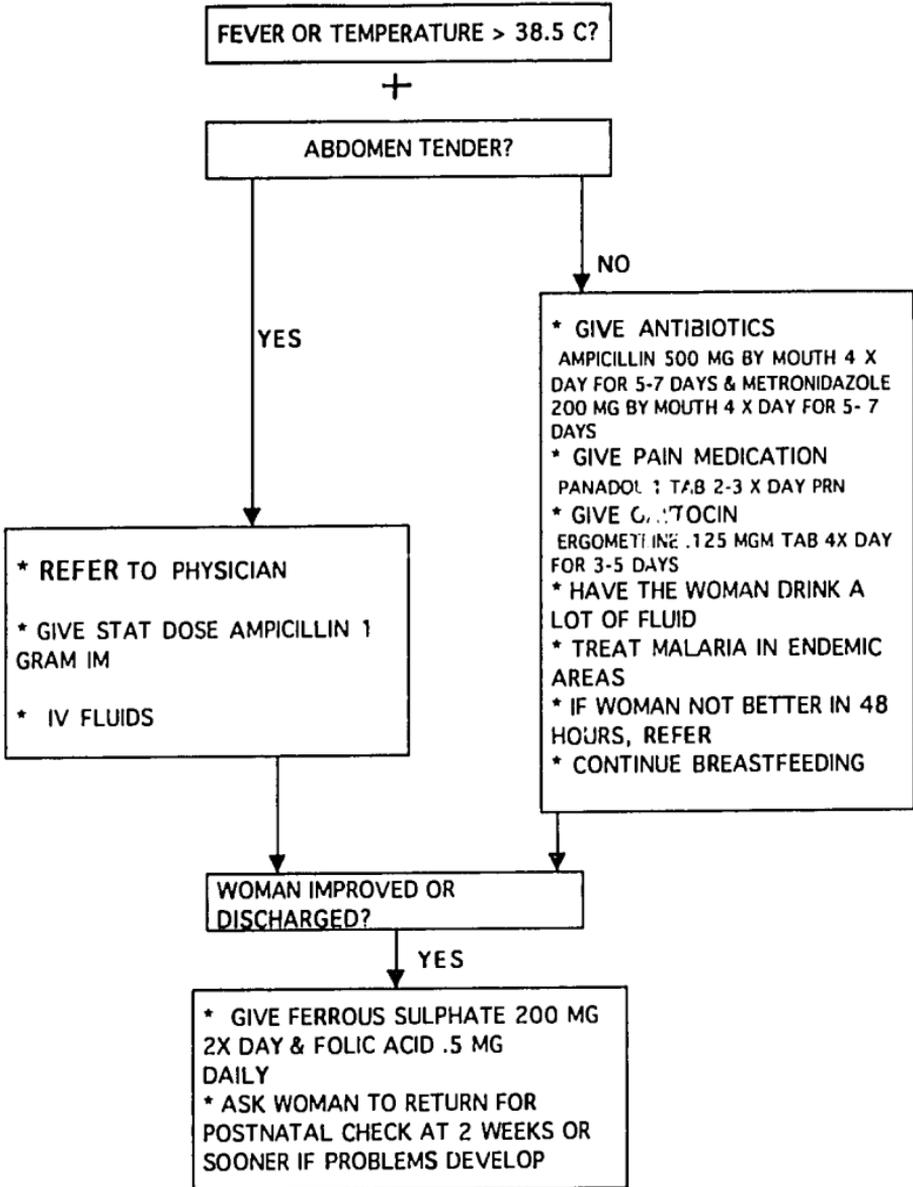


SOURCE: World Health Organization. The Prevention of Postpartum Hemorrhage. WHO/MCH/90.7. Geneva: WHO

PREMATURE RUPTURE OF THE MEMBRANES (PROM)



PUERPERAL SEPSIS



Essential Equipment for Midwives in Health Centers

1. SYPHGMOMANOMETER
2. BULB SYRINGE FOR SUCKING INFANT
3. STETHOSCOPE
4. ALBUMIN STICKS FOR TESTING FOR PROTEINURIA
5. IV FLUID SETS
6. IV CATHETER SETS
7. TOURNIQUETS
8. GLOVES—STERILE AND UNSTERILE
9. STRAIGHT CATHETER
10. FOLEY CATHETER AND URINE COLLECTION BAGS
11. SPONGE FORCEPS
12. VAGINAL SPECULUM
13. STERILE NEEDLES AND SYRINGES FOR IM AND IV INJECTIONS
14. THERMOMETER
15. PADDED TONGUE BLADE OR SPATULA
16. OXYGEN TANK, TUBING, AND FACE MASK OR NASAL CANULA
17. ACCESS TO LABORATORY OR CENTRIFUGE FOR HEMATOCRITS OR HEMOGLOBINOMETER FOR HEMOGLOBIN CHECKS
18. ABSORBABLE SUTURE ON CURVED NEEDLE — FOR EXAMPLE, CHROMIC 00 & 0000
19. STERILE PACKING MATERIAL OR STERILE SANITARY PADS
20. STERILE 4 X 4 GAUZE PADS
21. NITRAZINE PAPER FOR CHECKING RUPTURED MEMBRANES
22. DEVICE FOR AMNIOTOMY — SUCH AS AMNITONE, AMNIHOOK, OR STERILE ALLIS CLAMP
23. SUTURE SET — NEEDLE HOLDER, SCISSORS, NON-TOOTHED DISSECTING FORCEPS
24. DELIVERY SET — CORD SCISSORS, CORD CLAMP, 2 MAYO CLAMPS
25. PROTECTIVE APRON
26. STERILIZER
27. CONTAINERS WITH LIDS TO STORE BOILED INSTRUMENTS, GLOVES, ETC.

Essential Drugs for Midwives in Health Centers

ANTIHYPERTENSIVE DRUGS:

HYDRALAZINE HYDROCHLORIDE (APRESOLINE)
METHYLDOPA (ALDOMET)

ANTICONVULSANT DRUGS:

DIAZEPAM (VALIUM, DIAZEMULS)
CHLORMETHIAZOLE (HEMINEVRIN)
MAGNESIUM SULPHATE
CHLORPROMAZINE (LARGACTIL, THORAZINE)
PETHIDINE (DEMEROL)
PARALDEHYDE

ANTIHEMORRHAGIC DRUGS:

ERGOMETRINE (ERGONOVINE, ERGOTRATE)
OXYTOCIN (PITOCIN, SYNTOCINON)
METHERGIN
SYNTOMETRINE

HEMATINICS:

FERROUS SULPHATE (FERSOLATE)
FERROUS GLUCONATE
FERROUS FUMARATE
FOLIC ACID

ANTI-PYRETICS:

PANADOL (BUFFERED ASPIRIN)
PARACETAMOL
ACETAMINOPHEN (TYLENOL)

ANTIBIOTICS:

AMPICILLIN
METRONIDAZOLE (FLAGYL)
PROCAINE PENICILLIN
ERYTHROMYCIN (FOR THOSE ALLERGIC TO
PENICILLIN)

IV FLUIDS

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