MODULE III:

TECHNICAL INFORMATION FOR TRAINERS OF TRADITIONAL BIRTH ATTENDANTS

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INTRODUCTION

The purpose of this module is to strengthen and complement the technical knowledge of the educators of traditional birth attendants in the management of the most important obstetric and neonatal emergencies. The information provided here is more technical and detailed than that provided for the traditional birth attendants. This will help the educators to discuss these topics and be better prepared to correctly answer the questions that the traditional birth attendants may pose.

For most topics, the information is structured as follows:

- ✓ Definition
- ✓ Risks
- ✓ Causes
- ✓ Management
- ✓ Prevention

COMPLICATIONS DURING PREGNANCY

1. HEMORRHAGE IN PREGNANCY

DEFINITION

During a normal pregnancy, the placenta is firmly attached to the uterine wall. There should not be any vaginal bleeding. Any amount of vaginal bleeding is a sign that something is wrong and indicates serious danger for the mother and/or the baby.

RISKS

Hemorrhage in pregnancy occurs when, for some reason, the placenta does not stay firmly attached to the wall of the uterus. The mother can lose a lot of blood and risks bleeding to death. When the placenta loosens, the bond between the mother and the fetus breaks, and the baby's life is also in danger. Antepartum hemorrhage is thus a condition that threatens the life of the mother as much as the life of the fetus. The woman must be referred to the hospital immediately, where steps can be taken to stop the hemorrhage.

CAUSES

During the first trimester of pregnancy, hemorrhage can be due to an abortion, either spontaneous or induced, or to an ectopic pregnancy. A spontaneous abortion may occur when the fetus has a congenital malformation incompatible with life. Thirty percent of pregnancies end in spontaneous abortion, the majority in the first weeks of pregnancy. All of the products of conception must be expelled for the uterus to be able to contract. If parts of the fetus or placenta remain inside the uterus, it cannot contract, and the site where the placenta was attached will bleed. The uterus will continue to bleed until it is cleaned out, either by a curettage or spontaneously.

In the case of an induced abortion, the risks increase because infection can develop in addition to the bleeding.

An ectopic pregnancy occurs when the fetus is located outside the uterus (i.e., in the fallopian tube or in the abdominal cavity). These organs are not elastic like the uterine muscle, so that when the pregnancy grows, the organ tears or ruptures. The fetus dies and bleeding can occur which threatens the life of the woman. When

bleeding occurs in the first trimester of pregnancy for whatever reason, the woman must be referred to the hospital.

During the latter part of pregnancy, vaginal hemorrhage can come from the placental site. The placenta is normally attached to the upper part of the uterus. In the case of placenta previa, it is attached to the lower part of the uterus. In the later stages of pregnancy, the growth of the uterus stretches and thins this lower part, which can cause the detachment of the placenta and hemorrhage.

The amount of bleeding depends on the degree of detachment of the placenta. This, in turn, depends on the site of attachment and the amount of stretching that occurs when the baby grows. If there is a major detachment, the baby will die.

Vaginal hemorrhage caused by placenta previa usually does not cause pain. There may be a lot of bleeding. It can stop on its own, only to become heavy again in later stages of pregnancy or during labor. Depending on its location, the placenta can also prevent fetal descent or block the cervix completely at the time of birth. Placenta previa is a condition that can be fatal. Because of this, women with hemorrhage - although the bleeding may have apparently stopped - must always be referred to the hospital to have the baby.

Detachment of the placenta (abruptio placenta) refers to a placenta that is attached in the right place but separates from the uterine wall before delivery. The cause of this separation is usually unknown, although it is frequently associated with hypertension. Sometimes the bleeding remains trapped inside the uterus, behind the placenta, and the blood either does not come out or comes out only a little. In this case, the uterus swells, hurts a lot, and feels hard when touched. If the hemorrhage comes out, it is possible that the uterus will feel soft and not hurt when touched. If the placenta is completely detached, the baby dies. If the detachment is partial, the baby may survive. Whether the blood stays hidden or comes out of the vagina, the mother's life is in danger.

MANAGEMENT

If there is hemorrhage in pregnancy, immediate action is necessary to prevent death. A woman with bleeding during pregnancy should be transferred to the hospital immediately. She should remain lying down with her feet elevated as much as possible during transit, and she should drink plenty of fluids. If a woman with bleeding refuses to go to the hospital, she must stay in bed with her head lower than her feet and drink plenty of fluids. The TBA must insist that she have her baby in the hospital. Pregnant women must be taught to report any bleeding immediately.

PREVENTION

Antepartum hemorrhage in pregnancy is difficult to prevent. However, conditions which contribute to more serious consequences of antepartum hemorrhage, e.g. anemia, can be prevented.

Anemic women can tolerate very little blood loss. This is one of the many reasons to prevent anemia during pregnancy. Since iron deficiency is the most common cause of anemia during pregnancy, the TBA must teach her patients good nutritional habits. If possible, she should have her patients take iron supplements.

2. PRE-ECLAMPSIA/ECLAMPSIA

DEFINITION

Pre-eclampsia/eclampsia is a hypertensive disease provoked by pregnancy.

Pre-eclampsia occurs in the second half of the pregnancy, usually in the third trimester. Although swelling of the feet is normal and 80% of pregnant women experience it, swelling of the hands and face is a different matter and should alert the TBAs to the possibility of pre-eclampsia. Other symptoms include bad headaches, epigastric pain, palpitations and visual problems, rapid increase in weight, high blood pressure (greater than 140/90), and proteinuria.

Without treatment, pre-eclampsia can become eclampsia. This is characterized by convulsions, coma, injury or death of the fetus, and possible cerebral damage or death in the mother.

RISKS

Eclampsia can cause brain damage in the mother or in the baby. In addition, it is a principal cause of maternal and fetal mortality. Obviously, convulsions or coma are emergencies that require immediate transfer to the hospital. Early treatment can prevent death. TBAs must be aware that eclampsia with convulsions can occur up to 48 hours after delivery. Beyond that period, the woman is usually out of danger.

CAUSES

Although it is not known why some women develop this condition, death due to pre-eclampsia/eclampsia can be prevented with early detection and transfer to the hospital for treatment. Pre-eclampsia/eclampsia is more common in primigravidas, women under 20 years of age, women with multiple fetuses, older women, multiparous women with more than five pregnancies, and in pregnancies that produce excessive quantities of amniotic fluid (polyhydramnios).

MANAGEMENT

Although the TBA cannot detect high blood pressure, proteinuria or a rapid increase in weight, she must be alert to abnormal swelling, headaches, palpitations, and/or visual problems. If any of these signs or symptoms occur, she must rapidly refer the woman to the health center or post for evaluation. They will give her treatment (bedrest, hydration, anti-hypertensives, and/or anticonvulsants) and possibly refer her to the hospital. The objective is to keep this condition from progressing to eclampsia.

PREVENTION

Ideally, eclampsia should be prevented by early detection and referral of women with pre-eclampsia. The blood pressure of all pregnant women should be taken in a health center or post at least once during the third trimester. Any woman with symptoms of moderate or severe pre-eclampsia must give birth in the hospital. Usually, pre-eclampsia worsens as the pregnancy advances. Without treatment, it can provoke a crisis at the moment of delivery.

3. PREMATURE RUPTURE OF MEMBRANES

DEFINITION

Premature rupture of membranes occurs when the bag of waters breaks more than 24 hours before the birth of the baby.

When the bag of waters is intact, it constitutes the most important protection against infection in the mother as well as in the baby. This protection must remain intact until the mother begins active labor, ideally until she is pushing to deliver the baby. Nevertheless, sometimes the waters break before the beginning of labor.

RISKS

If the bag of waters breaks before labor begins, the woman and the baby are usually all right if the delivery occurs within 24 hours. If this does not happen, however, the risk of sepsis rises dramatically for the mother and the baby. In the baby's case, the infection carries the danger of fetal or neonatal death. The mother risks the possibility of death or future infertility. For these reasons, labor must begin within 12 hours after the membranes have ruptured. Another risk is that of prolapse of the umbilical cord or body extremities, which occurs more often if the presentation is mobile or non-cephalic.

CAUSES

Generally unknown.

DETECTION

The TBA must teach women to report the rupture of membranes immediately. A woman may experience this as a gush of warm water from the vagina, or as a small, continuous drip with larger quantities when she coughs or sneezes. Amniotic fluid continues to be produced, and so the dripping also continues.

Sometimes it is hard to know what kind of fluid is dripping from the vagina. Remember that it can be blood, amniotic fluid, a profuse discharge caused by a vaginal infection, or urinary incontinence caused by pressure. Of these possibilities, only incontinence is not harmful. If there is any doubt, it is better to refer the woman to the hospital.

MANAGEMENT

To prevent sepsis in the mother and the baby, the TBA must refer all women to the hospital who have ruptured membranes and have not begun labor within 12 hours. There, the woman will receive antibiotics and her labor may be induced. The TBA must also refer all women with ruptured membranes who have a fever, or if the liquid dripping from the vagina has a foul odor. After the premature rupture of membranes, neither the TBA nor the health center/post personnel should do vaginal examinations because they only multiply the risk of infection. The woman should not bathe either. Antibiotic therapy should be started in the health center or post before transferring the patient to the hospital. If the cord has prolapsed, two CLEAN fingers should be inserted into the vagina and the fetal part presenting should be elevated to avoid compression of the cord. The woman should be transported this way, with her hips elevated.

PREVENTION

Although we do not know how to prevent premature rupture of membranes, we can prevent maternal and fetal sepsis by way of detection, referral, and early treatment.

4. PRENATAL CARE

DEFINITION

Pregnant women come to a health center/post or are visited by their TBA to receive prenatal care. The purpose of these prenatal visits is the detection of the principal problems that can occur during pregnancy and the appropriate referral of women with these problems. Health education is part of this process, and the TBA can teach women to report certain danger signs: any bleeding, swelling of the hands and/or face, premature labor, or premature rupture of the membranes. The objective is that all women be examined at least once by a TBA and once in a health center or post during their third trimester (or at least in the ninth month).

The ideal: monthly prenatal visits during the entire pregnancy. These visits will be most valuable if used to evaluate the condition of the woman and her fetus, detect complications, and to begin appropriate treatment early.

CARE THAT THE TBA MUST GIVE

During prenatal visits, the TBA must examine the woman and talk with her to detect any high-risk signs or symptoms requiring transfer to a health center/post for treatment, and to determine if the woman needs to be referred to a hospital to give birth. These symptoms include:

- previous cesarian section (historical and abdominal examination)
- twins (abdominal examination)
- malpresentation (transverse or breech position-abdominal examination)
- abnormal swelling (inspection and questions)
- hemorrhage (clinical history)
- premature rupture of membranes (question the woman)
- premature labor (calculate and compare the estimated delivery date with the current date and the size of the uterus).

If the TBA discovers any of these signs, she must refer the woman, explaining the risks involved so that she agrees to the referral. The TBA must also teach women to report all danger signs immediately and to call quickly when labor begins.

CARE GIVEN IN THE HEALTH CENTER OR POST

In the third trimester of pregnancy, the TBA should refer all women to the health center or post for a prenatal visit. The primary objectives of this visit are to:

- take the blood pressure and examine the urine to detect pre-eclampsia
- give iron and folic acid supplements (if possible)
- give new tetanus vaccinations
- determine if there is a twin pregnancy or malpresentation

Signs of pre-eclampsia only occur at the end of pregnancy (in the seventh, eighth, and ninth months). The woman must also be evaluated in the ninth month to confirm the fetal presentation. The closer to the delivery date, the greater the chances that the fetus has arrived at its final position. Spontaneous changes in position can occur up until a few weeks before delivery. To be as sure as possible of the fetal position, the woman should be examined at the end of the ninth month.

If all of the cases of fetal malpresentation and pre-eclampsia were detected and referred appropriately, a large percentage of the maternal and fetal mortality could be avoided.

High-risk conditions are discussed in more detail in other sections. The purpose of this section is to highlight the signs of risk which should be detected in prenatal care.

5. LABOR

DEFINITION

Labor is the process which gradually shortens and dilates the cervix and finally expels the products of conception: fetus, placenta and membranes. Labor consists of periods of rhythmic uterine contractions between periods of relaxation and rest.

DESCRIPTION

During the progress of normal labor, the contractions increase in frequency, duration and intensity. They come more often, last longer, and are stronger. In the beginning of the first stage of labor (latent phase), the mother can still walk, talk or laugh when she has contractions. These contractions prepare the uterine cervix for dilation during the active phase that follows.

When labor becomes well established (active phase), the intensity of the contractions makes the cervix dilate more rapidly. The behavior of the mother changes. She starts to moan, sweat or feel cold, and soon she becomes absorbed with every contraction. She probably cannot walk or talk until the contraction finishes and may even vomit. Between each contraction, the uterus must relax completely, during which time the woman can then rest and will sometimes even become sleepy. This relaxation of the uterus allows the fetus to recover from the exhaustion provoked by each contraction and also prevents asphyxia. Normal labor lasts about 12 hours. Recent studies conducted by the World Health Organization show that maternal and peri-neonatal morbidity and the need for operative delivery increase after 12 hours of labor.

When the cervix is completely dilated (10 cm), the second stage of labor (expulsive phase) begins. At this time, the mother's efforts can help the baby descend to be born. The woman pushes during each expulsive contraction, and the baby advances down the vagina until it comes out. Normally, when the cervix is completely dilated, the mother will involuntarily feel the urge to push. The expulsive phase normally lasts from a few minutes (for multiparas) to up to one hour (for primiparas). It should not last for more than one hour.

The third stage of labor is the period between the birth of the baby and the delivery of the placenta, and this stage should not last more than one-half hour. Delivery of the placenta is discussed in more detail in the module "Postpartum Hemorrhage."

MANAGEMENT AND DANGERS

Labor is a natural process that proceeds best without intervention. When a woman is in an environment where she receives emotional and family support it will be easier for her to relax, and labor will proceed with fewer complications.

The TBA and the family must work together in the home to give support to the woman in labor. The TBA performs an additional role, which is to monitor the health of the mother and the baby. She does this by detecting and referring those cases where the mother or the baby may be in danger.

The TBA must examine the woman, determine when active labor begins and keep track of how much time passes because prolonged labor is very dangerous for the mother and the baby. She can help the mother relax, allowing her to eat if she wants to, giving her lots of sweetened drinks to prevent dehydration and exhaustion, and encouraging her to urinate frequently. The mother needs support during this very painful period of labor. The mother should be allowed to walk and to be in whatever position she feels most comfortable.

The abdominal examination must be done at the beginning of labor to determine if the baby is coming in the cephalic presentation and if there are one or more fetuses. A baby in the transverse position can never be born vaginally; a Cesarian section is necessary. If a baby in the transverse position is not extracted through this operation, labor will finally cause the uterus to rupture, which will kill the mother and the baby. For this reason, the mother must be sent to the hospital immediately. A baby in the podalic position (breech) also carries a high risk of fetal death or asphyxia as well as danger for the mother, so the mother should be referred to the hospital. The same is true of a multiple pregnancy. The most important thing is to locate the baby's head. If you cannot feel the head in the pelvis, refer the mother to the hospital.

The abdominal examination also allows the TBA to estimate the size of the baby. If it seems from the size of the uterus that the baby is not full-term, the baby will be premature or low birthweight. Because of this, the mother must be referred to the hospital for delivery, where there is special care available for newborns. The abdominal examination also reveals the scar of a previous Cesarian section, another indication that the mother should be referred to the hospital. Vaginal birth after Cesarian section is occasionally possible although there is an increased risk of uterine rupture at the site of the previous operation.

The TBA must determine if the membranes have ruptured and if so, how long ago. In addition, she must determine whether the woman has a fever. If the membranes have been ruptured for more than 12 hours and the baby has not been born or if the woman has a fever or foul-smelling vaginal discharge, she must also be referred to the hospital.

PROCEDURES NOT TO BE DONE BY THE TBA

- TBAs should NOT administer oxytocin to a woman in labor. This increases the frequency, intensity and length of the contraction and can cause severe damage or asphyxia to the baby or cause the mother's uterus to rupture.

- A woman should NOT be told to push until the baby's head is in the birth canal and she feels the irresistible urge to do so.

- TBAs should NOT do vaginal examinations.

- TBAs should NOT give alcohol to the mother during labor, as this can diminish the contractions and depress the baby's respiration at birth.

PROLONGED LABOR

It is important to differentiate between prolonged labor and normal labor. The TBA must stay with the woman to be able to see when labor becomes active (increase in the frequency, intensity and duration of the contractions, and changes in the mother's behavior). After this, she must keep track of the time in order to be able to recognize prolonged labor, which is more than 12 hours of active labor. The baby should be born within 12 hours. If the time when active labor began cannot be determined, the TBA should refer the woman 12 hours after the husband came to get the TBA. If labor is prolonged, it is usually because something is going wrong. There is usually a reason why the baby has not descended and been delivered. Prolonged labor is very exhausting for the mother as well as for the baby. It is associated with high rates of fetal trauma, asphyxia and death of the baby and with exhaustion, infection, uterine rupture, postpartum hemorrhage and death of the mother. This is an emergency. Such women must be referred to the hospital immediately.

When the cervix has dilated and the woman is pushing, the baby should be born within one hour. If the baby has not delivered after one hour of pushing, something is wrong and the mother must be referred to the hospital immediately.

TRUE OR FALSE LABOR

Sometimes a woman has strong, painful contractions that are not really labor. How can you distinguish between true and false labor? The only sure way is do a series of vaginal examinations over a period of hours to detect progressive thinning and dilation of the cervix. Because TBAs must not do vaginal examinations, they have to trust their own evaluation of the woman's contractions.

True labor pains come regularly and rhythmically and increase gradually in frequency, intensity and duration. They become stronger, last longer and are more often. They are felt in the back and in the abdomen and get stronger while walking.

Once true labor pains have begun, they do not stop on their own.

False labor does not dilate the cervix. Pains come at irregular intervals and their frequency, intensity and duration do not increase. They are felt principally in the lower abdomen and do not intensify when walking.

False labor pains can be very worrisome and unpleasant. Rest, back massages and warm baths can help the woman relax and make the pains go away.

6. MALPRESENTATION

DEFINITION

Presentation refers to that part of the baby which lies in the lower part of the uterus during pregnancy and labor. In the normal presentation, called cephalic presentation, the fetal head is in the pelvis and is the first part to come out of the mother. Any other presentation (feet, knee, buttocks, arm, shoulder or back first) is called a malpresentation because it is associated with high risk to the life of the mother and the baby during labor.

In a breech birth, the feet, buttocks or knee of the baby come through the cervix first, instead of the head. In a transverse lie or shoulder presentation, the back, an arm or a shoulder lies over the cervix, with the head to one side and the legs to the other side of the woman's abdomen.

RISKS

A baby in the transverse lie cannot be born through the vagina under any circumstances. If a Cesarian section is not done in time, the woman's uterus ruptures and both the mother and the baby may die.

In the breech position, the parts of the baby that come first are not round and hard like the head and thus do not stimulate dilation. In addition, the legs and buttocks of the fetus have a smaller diameter than the head and can slip through the cervix and permit descent of the baby before dilation is complete. This is a delicate situation because it is likely that the widest part of the body (the head), which comes last, will not fit through the partially dilated cervix and will become trapped inside. When this happens, the umbilical cord is frequently compressed between the baby's head and the mother's pelvic bones, cutting off the baby's blood supply and causing its death. The only solution is a Cesarian section, which is why the hospital is the best place for the delivery of a malpresentation.

MANAGEMENT

The TBA needs to understand the dangers associated with malpresentation. An abdominal examination must be done during the ninth month to detect any malpresentation. This should be repeated when labor begins. The TBA will thus be able to detect a malpresentation and convince any woman with a malpresentation to give birth in the hospital. If a breech presentation is detected before labor begins, the situation and the dangers that go along with it must be clearly explained to the woman and her family. They can thus be prepared to give birth in the hospital.

MANAGEMENT: ATTENDING A BREECH BIRTH

These instructions are only for health care personnel, NOT for TBAs. If you find yourself with a fetus about to be born and without time to go to the hospital, you must know what to do. Do not touch the baby, as such stimulation may cause the baby to extend its arms and head and become trapped inside the uterus.
REMEMBER, DO NOT TOUCH THE BABY!

When the baby's body has spontaneously delivered to the umbilicus, have the woman squat or stand and tell her to push with each contraction. Gravity helps the baby deliver. Normally, the baby is delivered in 3 to 4 contractions. You must wait without touching the baby. If the baby's arms and shoulders have not spontaneously delivered after 3 to 4 contractions, the nurse must introduce two fingers into the vagina, find an arm and gently pull it across the front of the baby's chest. Do the same thing with the other arm and then deliver the shoulders one by one. Rotate the body gently so that the back faces up (towards the mother's symphysis pubis) and the face is looking down towards the mother's sacrum. In the majority of cases, this rotation will occur spontaneously with the efforts of the mother only. Be patient, but do not allow the head to turn upwards towards the pubis. If the baby faces in the direction of the pubis, it will be very difficult to deliver.

If the head does not deliver spontaneously, you must rely on an assistant to help you by providing suprapubic pressure with the palm of the hand to keep the baby's head flexed. At the same time, introduce two fingers into the vagina and find the baby's mouth. Place the two fingers in the baby's mouth and apply gentle traction to guide the head down through the birth canal.

You must be prepared to execute these maneuvers rapidly and to resuscitate the baby afterwards, as it is very probable that it will have been asphyxiated during the delivery.

Do not teach the TBA the maneuvers to deliver a breech baby, as this may create the tendency to interfere too much with the delivery. The majority of breech births can deliver alone. The important point for the TBA is **DO NOT TOUCH THE BABY** until it is born.

7. POSTPARTUM HEMORRHAGE

DEFINITION

The loss of 500 ml or more of blood after delivery of the baby is called postpartum hemorrhage. It is very common in the first minutes and hours after birth, but it can occur up to 40 days after delivery. Between 50 and 250 ml of blood loss is normal.

RISKS

The TBA must be aware that the loss of 500 ml of blood is dangerous. It does not take much time for a woman who has just given birth to lose this amount of blood. If one does not act rapidly, the woman can die.

Postpartum hemorrhage is the most common cause of maternal mortality. It can be due to uterine atony, retained placenta or fragments of placenta, or lacerations sustained during delivery. The seriousness of this situation increases if the woman is anemic and if treatment to stop the hemorrhage is not immediate. It is most important to detect the hemorrhage quickly. For this to be possible, the woman must be uncovered and her vagina inspected to see if she is bleeding. If she is bleeding, send for transportation before you do anything else so that you will be able to transfer the woman to the hospital quickly. Remember that she can die in one or two hours.

PREVENTION

Although it is not possible to prevent all cases of postpartum hemorrhage, the TBA can prevent uterine atony caused by exhaustion due to prolonged labor. She must detect and refer all cases of malpresentation early and avoid prolonged labor. She must not use oxytocin injections during labor as these can cause uterine exhaustion. In addition, she can prevent anemia if she counsels women to take iron during pregnancy and to eat well.

During labor, the TBA can prevent many cases of hemorrhage if she insists that the woman urinates frequently, at least every two hours, to empty her bladder. She must also urinate after the delivery, as a full bladder can hinder the contraction of the uterus. Finally, the correct management of the delivery of the placenta will avoid much unnecessary blood loss.

CORRECT MANAGEMENT OF THE DELIVERY OF THE PLACENTA

The placenta usually detaches and is expelled within a few minutes after the delivery. A sudden but small gush of blood from the vagina and a slight lengthening of the cord indicate that the placenta has separated from the uterine wall and has descended into the birth canal. At this point, the woman can push, and the TBA can gently pull on the cord to guide the placenta out.

If the placenta takes more than 15 minutes to detach and deliver or if the woman is bleeding before the placenta delivers, the TBA must intervene in the following ways:

- Massage the uterus vigorously to make it contract and have the woman urinate. Put the baby to the breast to feed and thereby stimulate uterine contractions.

- Have the woman squat and push. If the placenta does not come out this way, make the woman lie down and do controlled cord traction ONLY WHEN THE UTERUS HAS CONTRACTED AND AS AN EMERGENCY MEASURE:

    1. Push the uterus upwards with the left hand placed on the lower abdomen to prevent it from being drawn down with the placenta.
    2. Put gentle and sustained traction on the cord with the right hand, first backwards (in the direction of the woman's buttocks) and then forwards (in the direction of the symphysis pubis) in order to guide the placenta out.
    3. After the placenta is delivered, continue massaging the uterus to make it contract firmly.

If the placenta is not delivered by controlled cord traction and the woman is bleeding profusely, continue the massage to make the uterus contract. What may happen is that the uterus may contract and trap the placenta inside so that it can not be extracted. The important point, however, is that the bleeding must be stopped in order to save the woman's life. Transfer the woman urgently for manual removal of the placenta in the hospital.

If the placenta is delivered, the TBA must massage the uterus to expel any blood clots that have remained inside and to make the uterus contract firmly. She must examine the placenta and membranes for completeness. She must also look to see if there are any lacerations of the perineum. If there are bleeding lacerations, constant pressure should be applied for a few minutes until the bleeding stops. This should be done before transferring the woman to the hospital.

If referral for suturing of laceations is not required, the TBA should stay with the mother for 2 or 3 hours after the delivery, palpating the uterus every 5 or 10 minutes to make sure that it stays contracted and massaging it if necessary. The woman must

not be left alone until the hemorrhage has completely stopped. The woman must be uncovered periodically to observe the vagina and see if blood is still coming out. In homes, the bedclothes are usually dark-colored, which means that a hemorrhage could go unnoticed. Follow-up for treatment of anemia is important for all women who have had a hemorrhage.

MANAGEMENT: PLACENTA RETAINED FOR MORE THAN 30 MINUTES

When the placenta has not delivered within 30 minutes after the birth of the baby, this constitutes a serious emergency that requires immediate transfer of the woman to the hospital. If the placenta or the membranes are retained, they may provoke a hemorrhage that will not stop until they have been removed. Refer the woman to the hospital for removal of the placenta and further treatment.

MANAGEMENT: PLACENTA AND MEMBRANES INCOMPLETE

The placenta and membranes must always be examined to see if they are complete. If the placenta and/or membranes are not complete, the woman must be referred to the hospital immediately for removal of retained products.

MANAGEMENT: HEMORRHAGE AFTER THE DELIVERY OF THE PLACENTA

If the placenta has delivered but the woman still has a hemorrhage, be it profuse or a steady drip, massage the uterus to express any clots or blood that have collected inside the uterus. The massage will also serve to make the uterus contract firmly. The uterus must be palpated every 5 minutes to make sure it is firm and to massage it when it feels soft. Have the woman urinate and put the baby to the breast to suck. If the hemorrhage continues despite these interventions, transfer the woman to the hospital as rapidly as possible while giving her plenty of liquids to drink. If it feels like the uterus becomes soft when the massaging stops, a weight can be placed on the abdomen (for example, a five pound bag of sand) to maintain pressure on the uterus during the trip to the hospital.

LATE POSTPARTUM HEMORRHAGE

Late postpartum hemorrhage (after the first 24 hours) occurs more frequently in women who do not rest enough after delivery and in those who develop postpartum sepsis. First-time mothers must be advised to rest and avoid heavy work for 6 weeks after childbirth. The TBA must visit them daily for a few days to make sure that everything is going well. During these visits, she must examine the color, quantity and quality of the lochia. She must also determine whether the woman has a fever and must also palpate the uterus. If there is a large quantity of red blood, foul smelling blood, abdominal pain or fever, the woman must be referred to the health center or health post for treatment.

8. POSTPARTUM SEPSIS

DEFINITION

Postpartum sepsis is an infection of the reproductive organs acquired during labor, delivery or in the postpartum period. Because these organs vascularize during the last stage of pregnancy, an infection introduced at this point spreads very rapidly and can easily become massive sepsis. Postpartum sepsis usually occurs on the third day postpartum.

RISKS

Postpartum sepsis is an extremely serious systemic infection that causes death if left untreated. If the treatment is not given quickly enough, the infection can cause infertility.

MANAGEMENT

Signs of postpartum sepsis include lower abdominal pain, especially when the uterus is palpated. The uterus feels big and soft. Signs also include purulent or foul-smelling vaginal discharge, late postpartum hemorrhage, fever for more than one day, headache, muscle pain, dizziness and mental confusion. If the woman shows any signs of postpartum sepsis, she must be taken immediately to the hospital to receive antibiotic therapy. If she is receiving enough liquids, she should continue breastfeeding, as postpartum sepsis is not transmitted to the baby through the mother's breast milk.

An experienced TBA will know that the majority of women who have just given birth complain of many of these signs. It is, therefore, necessary to be able to distinguish puerperal sepsis from normal puerperal discomforts. Many women, especially multiparas, suffer from afterbirth pains: painful, rhythmic uterine contractions that are particularly noticeable when the baby is breastfeeding. In contrast, abdominal pain is almost constant when there is a uterine infection.

Probably all TBAs are familiar with "milk fever." On the second or third day after delivery, when the breasts fill with milk, a woman may have a fever and swollen, sensitive breasts. While her body is experiencing a massive hormonal change, she may have headaches or dizziness, and she may become dehydrated. This syndrome is called "milk fever." Its symptoms are transitory and disappear in one or two days once the natural adjustment to the production of milk occurs. "Milk fever" is not associated with pain in the uterus or with foul-smelling vaginal discharge.

The TBA must be able to recognize these normal discomforts and at the same time be alert to signs of puerperal sepsis, for which it is very important to make prompt referrals for treatment. The TBA must, therefore, visit the new mother daily for a number of days after delivery to palpate the uterus and examine the woman for fever and foul-smelling vaginal discharge. If there are perineal lacerations (sutured or not), the TBA must examine them to make sure that they have not become infected.

MASTITIS

Mastitis is another possible cause of fever in lactating women. The TBA must examine the breasts and ask if there is any pain aside from the normal discomfort. If the nipples are cracked and injured, the mother should be shown alternative positions for breastfeeding in order to avoid pressure on the affected area of the nipple. Positions for breastfeeding include the football hold and lying on one side, in addition to the traditional form of holding the baby in the arms. Alternative positions, along with frequent breastfeeding will help keep the breasts empty and are often enough to prevent cracks in the nipple from becoming mastitis. Treatment for mastitis must include antibiotics and frequent emptying of the breasts. Breastfeeding should continue.

COMPLICATIONS IN THE NEWBORN

9. ASPHYXIATED BABY

DEFINITION

An asphyxiated baby is a newborn who delays or does not start to breathe by itself because it did not receive enough oxygen during labor. Without intervention, respiratory depression results in death or brain damage. With rapid resuscitation, however, the baby can recuperate completely.

CAUSES

Inside the mother's uterus, the baby receives food and oxygen from the placenta through the umbilical cord. But during labor, this support system can be endangered. The umbilical cord can be compressed, due to prolapse, loops around the neck or difficulties in the delivery of the head in a breech baby. The placenta can begin to detach (placenta previa or ABRUPTIO PLACENTA) or the contractions can last too long and be so intense that they interfere with placental circulation (due to bad use of oxytocic during labor). It is likely that a baby who has experienced a long or difficult labor or who has taken a lot of time to be born will have respiratory depression at birth.

RISKS

If the fetus is deprived of its normal supply of oxygen for more than one or two minutes, it starts to show signs of fetal distress, i.e., changes in the heart rate. If the oxygen deprivation lasts longer, the distress becomes more severe, and brain damage or death are possible if the situation is not corrected.

Almost immediately after the birth of a baby, the placenta starts to separate and the baby must begin to breathe in order to survive. A normal baby must begin to breathe and give its first cry during or immediately after birth. If it has suffered from oxygen deprivation during labor, however, it may be born depressed and without the natural reflex to begin breathing. If the baby is not immediately resuscitated, it will not be able to breathe and will die. On the other hand, if the baby is immediately given help in starting to breathe, it is possible that it will recover rapidly, begin to breathe by itself and suffer little if any negative after-effects.

IDENTIFICATION

The TBA must be able to recognize an oxygen depressed baby so that she can take rapid action. It is essential that she examine the baby as soon as possible so that she can evaluate its condition. A normal baby is pink, immediately begins to breathe and cry, and actively moves its arms and legs. In contrast, a depressed baby looks pale or blue, does not cry, and its arms and legs are limp and it does not move them or moves them very little.

MANAGEMENT

A baby born asphyxiated must be given immediate attention. The delivery of the placenta and attention to the mother can wait as long as the mother is not hemorrhaging. It is not necessary to cut the umbilical cord. In fact, it is better to leave it intact if it is long enough to allow the TBA to attend to the baby.

What must the TBA do when she attends the birth of an oxygen depressed baby?

- First, clean the mouth and nose of the baby to remove the mucus and blood.

- Next, dry the baby quickly with a clean towel or cloth, and rub his or her head and body gently to stimulate the baby. Sometimes just the stimulus of drying the body and cleaning the nose and mouth is enough to make the baby cry and start to breathe.

- If the baby is still not active and not breathing well, immediately give mouth-to-mouth resuscitation in the following manner: place the baby on a flat surface and put your mouth firmly over the baby's mouth and nose, steadying the baby's head with one hand, and gently breathe air into the baby's lungs (30 times) and see if the baby responds.

- Repeat artificial respiration two more times (a total of 3 x 30 times) or until the baby is active and begins to breathe better; if a response is not obtained, the baby is declared dead.

- Do not blow too much air into the baby's lungs as they can burst. The amount of air in the mouth is sufficient.

10. NEONATAL SEPSIS

DEFINITION

Any type of infection is very dangerous for newborns. Because they are so small and their immune systems are still immature, localized infections can spread rapidly and overwhelm their systems. This is called neonatal sepsis.

RISKS

Babies most likely to develop neonatal sepsis include those who are premature or low birthweight and those babies with signs of asphyxia who were resuscitated. Those who experienced a long and difficult labor or have inhaled meconium-stained fluid, and those born after prolonged premature rupture of the membranes are also at greater risk.

All newborns have an open wound: the umbilical cord, which is a possible site of entry for a bacterial contamination.

Newborns are also very susceptible to respiratory infections, especially when they have had difficulties starting to breathe spontaneously. Premature babies' lungs have not matured and are thus prone to infections. Bottle-fed babies are also very susceptible to intestinal infections, especially if they have not received any colostrum.

Regardless of the cause, if immediate treatment with antibiotics is not given to a newborn with sepsis, it will very likely die. Death can occur in one or two days.

MANAGEMENT

Babies with a high risk of sepsis should be visited daily by the TBA in order to detect any signs rapidly and, if necessary, refer the baby for treatment.

Signs of neonatal sepsis may include:

- little or no sucking or breastfeeding
- excessive or very little crying
- inconsolable crying
- lethargy
- very little activity
- a "sad" appearance
- fever or hypothermia
- respiratory difficulty or agitated breathing

A hypothermic baby may look pale, or its feet may feel much colder than the rest of its body. All of these signs tell us that an immediate referral to the hospital must be made to administer antibiotic therapy. During transfer, the baby must be kept well-covered and must be breast fed as often as possible to benefit from its mother's antibodies. Septic newborns need to be treated intravenously with a combination of antibiotics. They are extremely delicate and thus need to be cared for in the hospital.

PREVENTION

The baby receives essential antibodies through the mother's colostrum and milk. Exclusive breastfeeding gives the newborn the best defense against infections.

Aseptic techniques for cutting the cord and caring for the umbilicus can keep this area from becoming a site for the entry of infections. The traditional practice of cauterizing the cord with a red-hot coal or a red-hot knife is a good one because it sterilizes and seals the cord, preventing the entry of bacteria.

Newborns, especially premature or low birthweight babies, must be protected from contact with people sick with the flu, diarrhea etc. When the TBA visits a newborn, she must wash her hands before touching the baby.

11. PREMATURE AND LOW BIRTHWEIGHT NEWBORNS

DEFINITION

A premature baby is one who is born at 37 weeks of gestation or less. A low birthweight baby is one who weighs less than 2500 grams (5½ pounds). A low birthweight baby may be premature or full term, but because of its small size it is very susceptible to many of the same problems that premature babies face. As we do not expect the TBA to be able to differentiate between the two cases, this manual will treat them as one problem; the TBA should do the same.

RISKS

Premature and "small" babies may suffer from many complications. Due to their immaturity, they are much more susceptible to injury during labor and delivery and to the effects of asphyxia during birth. They can die much more easily during delivery. After birth, they are very susceptible to infections that can rapidly become sepsis and cause death. Because they have very little or no fatty tissue, they have difficulty maintaining body temperature and can die from hypothermia. Their stomachs are tiny, so they can eat only a little at a time. It is necessary to feed them very frequently to meet their nutritional needs. As they are very small and weak, they may not have the energy to breast feed adequately and thus may not grow as much as they need to. Their lungs are immature and they frequently have difficulty breathing, so are very susceptible to respiratory infections.

MANAGEMENT

When a woman in labor knows the exact date of her last menstrual period, a diagnosis of premature labor can be made. If labor is not well-established or advanced, transportation must be found immediately to take the woman to the hospital. The hope is that the pregnancy can be prolonged until the baby is more mature or that special care appropriate for a premature baby can be given.

If the woman refuses to go to the hospital, she should remain in bed, because bedrest may stop contractions. If labor is well underway and it looks as if, from the uterine size, a premature or very small baby will be born, the woman should also be referred to the hospital to give birth.

HOME CARE OF A PREMATURE BABY

It is also likely that the TBA will attend premature births in the home, particularly if the woman refuses to be referred to the hospital, labor begins very rapidly, or it is not impossible to predict the size of the baby, as sometimes happens with twins. If a premature birth is attended in the home, the TBA should suggest that the mother take her baby to the hospital to receive special care while he or she grows.

If the mother cannot get the baby to a hospital, the TBA must take special measures to help this baby survive.

HOME CARE: WARMTH

The baby must be dried quickly and gently and must be kept well-wrapped and warm by skin-to-skin contact with the mother or by another heat source. Ideally, the baby should be in constant skin-to-skin contact with the mother. If this is not possible, hot water bottles and up to four layers of clothing should be used. **(MAKE SURE THAT THE HOT WATER BOTTLES ARE WRAPPED IN TOWELS AND ARE NOT IN DIRECT CONTACT WITH THE BABY, AND THAT THE TOP OF THE BOTTLE IS AWAY FROM THE BABY TOWARDS THE FOOT END OF THE COT. BEWARE OF LEAKING BOTTLES!)** The air between the layers of clothing will keep the baby warmer. The baby should have a cap, socks and gloves. The baby doesn't need to be bathed; in fact, bathing should be delayed for fear of chilling the baby.

HOME CARE: FEEDING

The baby should be put to the breast as soon as possible and should be breast fed frequently, at least every two hours. Do not give any food or liquid besides breast milk. Premature babies should not be exposed to infections: avoid contact with people sick with colds, diarrhea or other infections. The TBA should visit the baby daily to evaluate its condition.

HOME CARE: DANGER SIGNS

If any symptoms of sepsis or respiratory problems develop, the family must take the baby to the hospital immediately. Once again the signs to look for are:

- poor sucking or lack of sucking,
- weak or excessive cry,
- fever or hypothermia,
- respiratory difficulty.

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