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A partograph is a composite graphical record of key data (maternal and fetal) during labor entered against time on a single sheet of paper. Relevant measurements might include statistics such as cervical dilation, fetal heart rate, duration of labor and vital signs. It is intended to provide an accurate record of the progress of labor, so that any delay or deviation from normal may be detected quickly and treated accordingly. Partography is a method of graphical recording the progress of labor.

The use of partograph starts during the first stage of labor when the woman is having regular, painful contractions and her cervix is 4cm dilated this is known as the active phase of labor and ends at the full dilatation of the cervix i.e 10cm. first stage of labor occurs 12hrs in a primid and 6hrs in a multid.

 **MANAGEMENT OF FIRST LABOUR USING A PARTOGRAPH**

**ADMISSION:**

* Admission of the mother to the ward
* Take consent
* Provide nursing support
* Patients identification: full name, gravida, parity, hospital number, date and time of admission etc are written at the top of the partograph.
* Time: time is recorded using the time of admission as zero-time. The actual time of the day is recorded below the hour line.



**ASSESSING PROGRESS:**

The midwives uses a range of skills, including visualization of the purple line, appearing from the woman’s anal margin gradually extending to the nape of the buttocks, and observing the Rhombus of Michaelis, a kite-shaped area between the sacrum and ilea which becomes increasing visible as the fetal head descends in the pelvis. In addition, the midwife should be vigilant in observing changes in the woman’s breathing, behavior, noises, movements and posture alongside changes in the nature of contractions.

**ABDOMINAL EXAMINATION:**

An abdominal examination should be repeated by the midwife at intervals throughout labour in order to assess the length, strength and frequency of contractions and the descent of the presenting part. Palpation is of benefit prior to undertaking a vaginal examination, as the findings will assist the midwife to be accurate when defining the position and station of the head/breech. It is also useful to record the position of the fetus contemporaneously during the labour, as this assist with the analysis of events should a shoulder dystocia occur.

**UTERINE CONTRACTIONS:**

The frequency, length and strength of the contraction should be noted and recorded on the partograph, usually at 30minutes intervals. The uterus should always feel softer between contractions and failure to relax is evidence of hypertonicity. Hypertonicity is usually defined as a contraction lasting more than 2 minutes. The contraction rate is usually assessed by counting the number of contractions in 10 minutes, over a 20 minute period and recordings their durations in seconds which includes:

<20 seconds – use dots … to indicate on the partograph

20-40 seconds- use datches /// to indicate on the partograph

>40 seconds- use black titled boxes to indicate on the partograph

 Evidence of five contractions or more in 10 minutes is evidence of tachysystole in spontaneous labour, or hyper stimulation in induced labour. An excessive number of contractions or hypertonicity can result in fetal compromise as a result of prolonged cord compression or reduction in placental perfusion with consequent reduction in blood supply to the fetus.

**VAGINAL EXAMINATION:**

Vaginal examination are undertaken using aseptic principles and should be used judiciously when more information is required if this cannot be gleaned from external observations of women in labour. Vaginal examination of the mother is done every 4hrs and the justification for each vaginal examination should always be recorded.

Indications for vaginal examination includes:

* Make a positive identification of the presentation
* Determine whether the head is engaged in case of doubt
* Ascertain whether the forewaters have ruptured, or to rupture them artificially
* Exclude cord prolapse after rupture of the forewaters , especially if there is an ill-fitting presenting part or there are fetal heart rate changes
* Assess progress of slow labour
* Confirm full dilatation of the cervix
* Confirm the axis of the fetus and presentation of the second twin in a multiple pregnancy in order to rupture the second amniotic sac, if necessary.

During vaginal examination, the woman’s bladder should be empty, privacy should be obtained, tap water should be used to cleanse the vagina for the procedure. Under no circumstance should a midwife make a vaginal examination if there is any frank bleeding unless the placenta is positively known to be in the upper uterine segment.

**State of membranes and colour of Liquor:**

Below the fetal heart rate, there are two rows close to each other on the partograph. The first of these is labelled Liquor which is the medical term for the amniotic fluid; if the fetal membranes have ruptured, the colour of the fluid is initially recorded for every 4 hours. The colour of the fluid is recorded on the partograph using the following keys:

I-Membranes are intact or A-Liquor is absent

R-Membranes ruptured

C-Membranes ruptured; clear fluid/liquor

M-Mecronium – stained fluid/liquor

B-Blood stained/liquor

The second row below Liquor is labelled moulding.

**Degree of moulding of the head:**

 Moulding occurs first at the junction of the occipito-parietal bones and then between the parietal bones. It is crucial to check moulding. Moulding is the extend to which the bones of the fetus skull are overlapping. It indicates the degree of compression that the head is being subjected to during the passage through the birth canal. Increasing moulding is a sign of this repulsion that suggest the possibility of obstructed labour. When documenting the degree of moulding on a partograph use the following keys:

1. Means no moulding

+- Means The bones are touching each other

++- Means The bones are overlapping but can be separated easily by pressure on your finger

+++- Means The bones are overlapping but cannot be separated easily by pressure of your finger

**Cervical dilatation and Descent of the fetus head:**

Below ‘Moulding’ there is an area of the partograph labelled Cervix (cm) (Plot X) for recording cervical dilatation i.e the mother’s cervix in centimetres. This area of the partograph is also where the record of Descent of the fetus head (Plot O), which refers to how much of the head divided into 5 parts is palpable in the abdomen above the symphysis pubis.

0/5th indicates that the fetus head has fully descended into the pelvis and its fully engaged.

5/5th indicates that the fetus head is not engaged and its completely above the pelvis.

**ASSESSING THE WELLBEING OF THE WOMAN**

* **Pulse rate:** pulse is recorded every 30mins and marked with a (.) in the partograph. If the rate increases to move more than 100 beats/mins it may be indicative of infection, ketosis or haemorrhage. Or it may be a sign a rupture membrane.
* **Temperature:** Temperature is recorded every 2 hourly. If the hyperpyrexia is there it is the indication of infection or ketosis.
* **Blood pressure:** Hypotension may be caused by the woman being in the supine position, by shock or as a result of vasodilation associated with epidural anaesthesia. Hypertension is an indication of pre-eclampsia and in cases where a woman has pre-eclampsia or essential hypertension during pregnancy, labour may further elevate the blood pressure. Blood pressure is measured every 4 hourly and marked with an arrow (↕).
* **Urinalysis:** All urine passed during labour must be tested for glucose, ketones and proteins. Ketones may occur as a result of starvation or maternal distress. A trace of protein may be present following rupture of the membranes or a sign of a urinary tract infection, but more significant proteinuria may indicate worsening pre-eclampsia.
* **Fluid balance:** A record should be kept of all urine passed to ensure that the bladder is being emptied. Observe the tongue periodically for hydration.
* **The fetal heart rate**: This should be counted over a minute in order to allow for variation. The rate should be between 120-160 beats/mins.
* **Drugs and rehydration**: they are recorded in the space provided if these are given e.g metronidazole e.t.c.
* **Oxytocin**: this is recorded in a separate column above for fluids and drugs.

**MANAGEMENT OF SECOND STAGE OF LABOUR**

This is the stage in labour where the contribution of a qualified and skilled attendant with midwifery skills is the most critical in ensuring a safe outcome. Second stage of labor starts when the cervix is fully dilated till the time the baby comes out, It lasts for 30 minutes. These aspects of care in the second stage includes:

* Initiation of active pushing
* Duration of active pushing in the second stage
* Maternal and fetal monitoring during second stage
* Position of the woman during the second stage of labour
* Use of oxytocin during the second stage of labour
* Instrumental vaginal delivery
* Pain relief during the second stage of labor
* Water birth

**Initiation of active pushing:**

The woman should be encouraged to push when full cervical dilatation, the fetal condition, and engagement of the presenting part have been confirmed, and the woman feels an urge to bear down. Even when the woman feels the urge, pushing should only be encouraged during a contraction. In the absence of the urge to push and in the presence of a normal fetal heart rate, care providers should wait before encouraging active pushing in primiparous women and when women who have had an epidural for up to but not longer than 4 hours, and in multiparous women for up to but not longer than 1 hour. The basis of this recommendation is that under normal circumstances the end of first stage of labour, uteroplacental perfusion and fetal oxygenation only start to deteriorate once active pushing commences.

**Duration of active pushing in the second stage of labour:**

Primiparous women should not actively push for more than 2 hours and multiparous women for more than 1 hour, owing to an increased risk of birth asphyxia and maternal infection. Lack of descent of the presenting part may also indicate obstructed labor. Intervention should be considered promptly and options evaluated and acted upon before these indicative time periods if the maternal and fetal condition deviates from normal; for example, in the presence of fetal bradycardia or severe maternal hypertension.

**Maternal and Fetal monitoring during the second stage**

Maternal parameters should be monitored when the second stage of labor is confirmed and thereafter, and for specific indications such as a historyof hgigh blood pressure, prolonged labor, and previously identified abnormal fetal heart rate. Equipment in good working order and devices that simplify detection of the fetal heart should be available at the recommended frequency. The frequency of fetal heart auscultation should be every 5-10mins or more often when bradycardia is suspected. One can get best information about the condition of the fetus and it is easier to hear, by auscultating immediately after a contraction. The care provider should be able to interpret the fetal heart rate and take appropriate actions when needed. The use of a fetoscope can be used in a ver quiet labor room.

**Position of the woman during the second stage of labor;**

The delivery facility should have adequate space, equipment, and skilled care provider for the woman to deliver in a position of her choice, including upright positions. Unfortunately, inappropriate medical and midwifery teaching and habit have meant that many women are made to deliver lying flat on their backs and with their feet in stirrups. This position reduces uteroplacental blood flow, can contribute to fetal distress, and provides no mechanical advantage to enhance descent.

**Use of oxytocin during the second stage of labor:**

Intramuscular oxytocin administration before delivery is contraindicated. Intravenous oxytocin should be administered only according to a health facility protocol(describing indications, dose, and intravenous route) by a trained care provider. A typical intravenous oxytocin infusion regime for labor augmentation is described by the World Health Organization. It should be noted that infusions based on counting drops in the intravenous giving set can result in highly inaccurate oxytocin dosing, and where an infusion pump is not available the resulting contraction frequency and strength should be observed especially carefully to avoid hyperstimulation. Where the contractions are poor and fetal presentation, position, and heart rate have been confirmed as normal, the use of oxytocin infusion may reduce the need for instrumental vaginal delivery.

**Instrumental vaginal delivery:**

In the case of prolonged second stage of labor and fetal bradycardia, use of instrumental delivery (vacuum extractor (ventouse) or forceps) may help to shorten the second stage of labor and reduce the need for cesarean delivery. Instrumental delivery should be attempted by care providers who are trained and qualified to recognize the indications, and are skilled and equipped to perform the procedure safely for mother and baby.

**Pain relief delivery during the second stage of labor:**

Pain relief options must be discussed with the woman prior to the onset of labor and offered according to her wishes and using health facility protocols and norms. The need of pain relief is highly variable between individuals and should be individually assessed. While psychosocial interventions such as having a birth companion and provision of supportive care may reduce the need for analgesia, there is an excellent evidence from the pain literature that while pain behavior is culturally determined, for example whether crying out in pain is acceptable or not, experience of pain intensity and associated suffering are not culturally determined. Thus, care providers should not base assumptions of “coping” on visible pain behavior. Usually the second stage is relatively short and self-limiting. Local anesthesia should be used for perineal infiltration prior to cutting an episiotomy, and the practice of cutting an incision without anesthesia is to be deprecated. For instrumental delivery, a pudendal block may be indicated, especially for forceps delivery.

**Episiotomy:**

An episiotomy is an incision made into the perineum for the purpose of enlarging the soft tissue outlet for a macrosomic or breech infant or to decrease the length of the second stage if the baby is in distress. There are 3 main types of episiotomy- mediolateral, median and J-shaped episiotomy, episiotomy should be performed under anesthesia, whether anesthesia is already in place for labor, such as epidural, or by administering a local infilteration. Episiotomy and laceration repair should always be performed under adequate perineal anesthesia.

**Water birth:**

When the woman options for a water birth, the care provider should respect her wishes as much as possible without compromising safety. In facilities that offer water births, adequate equipment should be provided for the protection and safety of the care provider, the woman, the baby (i.e effective infection prevention).

 **MANAGEMENT OF THIRD STAGE OF LABOR**

The third stage of labor is defined as the time between birth of the baby and the delivery of the placenta and membranes. It is the third stage that is the most perilous for the woman because of the risk of postpartum hemorrhage. The stage of labor typically lasts between 10 and 30 minutes, if the placenta fails to separate within 30 minutes after childbirth, the third stage is considered to be prolonged. If the third stage of labor lasts longer than 18 minutes , it is associated with significant risk of post partum hemorrhage (PPH); and there is a six-fold increase in PPH when the third stage of labor lasts longer than 30 minutes.

**The management of third stage of labor includes:**

The third stage of labor may be managed expectantly or actively. In expectant (physiological) management, uterotonic drugs are not given prophylactically, the cord may or may not be clamped early, and the placenta is delivered by maternal effort. In active management, uterotonic drugs are given before birth of the placenta, the cord is usually cut 2-3 minutes after birth, and the placenta is delivered by controlled cord traction (CCT).

**STEPS IN ACTIVE MANAGEMENT OF THE THIRD STAGE OF LABOR**

The three main components or steps of active management of the third stage of labor includes- administering a uterotonic drug, controlled cord traction (CCT) and massaging the uterus-should be implemented along the provision of immediate newborn care.

1. Thoroughly dry the baby, assess its breathing and perform resuscitation if needed, and then place the baby in skin-to-skin contact with the mother:
2. After birth of the baby, immediately dry the infant and assess its breathing. If the baby requires resuscitation, you may need to cut the cord immediately to care for the baby.
3. Then place the reactive infant, prone, in skin-to-skin contact, on the mother. If the umbilical cord is short, place the mother’s abdomen until after cutting the cord. Be careful to leave some slack on the umbilical cord and do not unduly stretch the cord.
4. Remove the cloth used to dry the baby.
5. Cover both the mother and infant with a dry, warm cloth or towel to prevent heat loss.
6. Cover the baby’s head with a cap or cloth.

**Note:** if the baby has poor color or needs resuscitation, the cord may be cut immediately so that adequate resuscitation can be performed immediately.

1. Administer a uterotonic drug within 1 minute of the baby’s birth:
2. Before performing active management of the third stage of labor, gently palpate the woman’s abdomen to rule out the presence of another baby. At this point, do not massage the uterus.
3. If another baby is not present, begin the procedure by giving the woman 10 IU of oxytocin by IM injection on the upper thigh. This should be done within 1 minute of childbirth. If available, a qualified assistant should give the injection.
4. In patient with intravenous access in place, 10-20 IU may be placed in 500-1000ml of crystalloid and run quickly or 5IU may be administered as an intravenous bolus, followed by a similar infusion.

**Note**: Ergometrine should not be used in the absence of CCT because of the risk of retained placenta associated with tonic-clonic contractions induced by ergometrine.

1. Clamp and cut the umbilical cord:
2. Place one clamp 4cm from the baby’s abdomen after cord pulsation have ceased or approximately 2-3 minutes after birth of the baby, whichever comes first.

**Note:** if national guidelines for newborn interventions to prevent/reduce the risk of maternal-to-child transmission of HIV/AIDS include early clamping of the cord, then the protocol for active management of third stage labor may have to be revised.

1. Gently milk the cord towards the woman’s perineum and place a second clamp on the cord approximately 2cm from the first clamp.
2. Cut the cord using sterile scissors under cover of a gauze swab to prevent blood spatter. After mother and baby are safely cared for, tie the cord.
3. Place the baby on the woman’s chest, in skin-to-skin contact. And encourage breastfeeding.

iv. Perform controlled cord traction:

1. Place the clamp near the woman’s perineum to make Controlled cord traction (CCT) easier
2. Hold the cord close to the perineum using a clamp.
3. Place the palm of the other hand on the lower abdomen pubic bone. Just above the woman’s pubic bone to assess the uterine contractions. If a clamp is not available, CCT can be applied by the cord around the hand.
4. Wait for uterine contractions, only perform CCT when there is a contraction.
5. When there is a contraction, apply external pressure on the uterus in an upward direction (towards the woman’s head) with the hand just above the pubic bone.
6. At the same time with your other hand, pull with firm, steady tension on the cord in a downward direction. Avoid jerky or forceful pulling.
7. Gently hold and wait if the uterus is fully contracted again. If necessary use a sponge forceps to clamp the cord closer to the perineum as it lengthens.
8. With the next contraction, repeat CCT with counter traction.
9. Do not release support on the uterus until the placenta is visible at the vulva.
10. As the placenta is delivered, hold and gently turn it with both hands until the membranes are twisted.
11. Slowly pull to complete the delivery. Gently move membranes up and down until delivered.

**NOTE**: If the membrane tear, gently examine the upper vagina and cervix wearing high-level disinfected or sterile gloves and use a sponge forceps to remove any pieces of remaining membranes.

v. Massage the uterus:

1. Massage the uterus immediately after delivery of the placenta and membranes until it is firm.
2. After stopping massage, it is important that the uterus does not relax again.
3. Palpate for a contracted uterus every 15 minutes and repeat uterine massage as needed during at least the first 2 hours after child birth.
4. Instruct the woman how to massage her own uterus, and ask her to call if her uterus becomes soft.

vi. Examine the placenta and membranes for completeness

vii Examine the genitalia and repair lacerations/episiotomy if necessary

viii Evaluate blood loss

ix Explain all examination findings to the woman and, if she desires, her family.