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MATRIC NO: 15/MHS02/050

A **partogram** or **partograph** is a composite graphical record of key data (maternal and fetal) during [labour](/wiki/Childbirth" \o "Childbirth) entered against time on a single sheet of paper. Relevant measurements might include statistics such as [cervical dilation](/wiki/Cervical_dilation), [fetal heart rate](/wiki/Fetal_heart_rate), duration of labour and [vital signs](/wiki/Vital_signs).

It is intended to provide an accurate record of the progress in labour, so that any delay or deviation from normal may be detected quickly and treated accordingly. However, a [Cochrane review](/wiki/Cochrane_review) came to the conclusion that there is insufficient evidence to recommend partographs in standard labour management and care.

**RECORDING AND INTERPRETING THE PROGRESS OF LABOUR**

Another important point is that (unless you detect any maternal or fetal problems), every 30 minutes you will be counting fetal heart beats for one full minute, and uterine contractions for 10 minutes.

Do a digital vaginal examination initially to assess:

* The extent of cervical effacement and cervical dilatation
* The presenting part of the fetus
* The status of the fetal membranes (intact or ruptured) and amniotic fluid
* The relative size of the mother’s pelvis to check if the brim is wide enough for the baby to pass through.

Thereafter, in every 4 hours you should check the change in:

* Cervical dilatation
* Development of cervical oedema (an initially thin cervix may become thicker if the woman starts to push too early, or if the labour is too prolonged with minimal change in cervical dilatation)
* Position (of the fetus, if you are able to identify it)
* Fetal head descent
* Development of moulding and caput (Study Session 2 in this Module)
* Amniotic fluid colour (if the fetal membranes have already ruptured).

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### CERVICAL DILATATION

The **latent phase** at the onset of labour lasts until cervical dilatation is 4 cm and is accompanied by effacement of the cervix. The latent phase may last up to 8 hours, although it is usually completed more quickly than this. Although regular assessments of maternal and fetal wellbeing and a record of all findings should be made, these are *not* plotted on the partograph *until* labour enters the active phase. Vaginal examinations are carried out approximately every 4 hours from this point until the baby is born. The **active phase** of the first stage of labour starts when the cervix is 4 cm dilated and it is completed at full dilatation, i.e. 10 cm. Progress in cervical dilatation during the active phase is at least 1 cm per hour (often quicker in multigravida mothers).

In the cervical dilatation section of the partograph, down the left side, are the numbers 0–10. Each number/square represents 1 cm dilatation. Along the bottom of this section are 24 squares, each representing 1 hour. The dilatation of the cervix is estimated by vaginal examination and recorded on the partograph with an X mark every 4 hours. Cervical dilatation in multipara women may need to be checked more frequently than every 4 hours in advanced labour, because their progress is likely to be faster than that of women who are giving birth for the first time.

If progress of labour is satisfactory, the recording of cervical dilatation will remain on, or to the left, of the alert line. If the membranes have ruptured and the woman has no contractions, do not perform a digital vaginal examination, as it does not help to establish the diagnosis and there is a risk of introducing infection.

**DESCENT OF THE FETAL HEAD**

For labour to progress well, dilatation of the cervix should be accompanied by descent of the fetal head, which is plotted on the same section of the partograph, but using O as the symbol. But before you can do that, you must learn to estimate the progress of fetal descent by measuring the **station** of the fetal head. The station can only be determined by examination of the woman’s vagina with your gloved fingers, and by reference to the position of the presenting part of the fetal skull relative to the ischial spines in the mother’s pelvic brim.If the fetal head is *lower down* the birth canal than the ischial spines, the station is given a *positive*number. At station +1 and even more at station +2, you will be able to see the presenting part of baby’s head bulging forward during labour contractions. At station +3 the baby’s head is **crowning**, i.e. visible at the vaginal opening even between contractions. The cervix should be fully dilated at this point.

Now that you have learned about the different stations of fetal descent, there is a complication about recording these positions on the partograph. In the section of the partograph where cervical dilatation and descent of head are recorded, the scale to the left has the values from 0 to 10. By tradition, the values 0 to 5 are used to record the level of fetal descent.

### ASSESSING MOULDING AND CAPUT FORMATION

Some baby’s skulls have a swelling called a **caput** in the area that was pressed against the cervix during labour and delivery, this is common even in a labour that is progressing normally. Whenever you detect moulding or caput formation in the fetal skull as the baby is moving down the birth canal, you have to be more careful in evaluating the mother for possible disproportion between her pelvic opening and the size of the baby’s head. Make sure that the pelvic opening is large enough for the baby to pass through. A small pelvis is common in women who were malnourished as children, and is a frequent cause of prolonged and obstructed labour.

#### RECORDING MOULDING ON THE PARTOGRAPH

To identify moulding, first palpate the suture lines on the fetal head and appreciate whether the following conditions apply. The skull bones that are most likely to overlap are the parietal bones, which are joined by the sagittal suture, and have the anterior and posterior fontanels to the front and back.

**Sutures apposed:**This is when adjacent skull bones are touching each other, but are not overlapping. This is called degree 1 moulding (+1).

**Sutures overlapped but reducible:** This is when you feel that one skull bone is overlapping another, but when you gently push the overlapped bone it goes back easily. This is called degree 2 moulding (+2).

**Sutures overlapped and not reducible**: This is when you feel that one skull bone is overlapping another, but when you try to push the overlapped bone, it does not go back. This is called degree 3 moulding (+3). If you find +3 moulding with poor progress of labour, this may indicate that the labour is at increased risk of becoming obstructed.

When you document the degree of moulding on the partograph, use a scale from 0 (no moulding) to +3, and write them in the row of boxes provided:

0  Bones are separated and the sutures can be felt easily.

+1  Bones are just touching each other.

+2  Bones are overlapping but can be separated easily with pressure by your finger.

+3  Bones are overlapping but cannot be separated easily with pressure by your finger.

In the partograph, there is no specific space to document caput formation. However, caput detection should be part of your assessment during each vaginal examination. Like moulding, you grade the degree of caput as 0, +1, +2 or +3. Because of its subjective nature, grading the caput as +1 or +3 simply indicates a ‘small’ and a ‘large’ caput respectively. You can document the degree of caput either on the back of the partograph, or on the mother’s health record (if you have it).

### UTERINE CONTRACTIONS

Normally, contractions become more frequent and last longer as labour progresses. Contractions are recorded every 30 minutes on the partograph in their own section, which is below the hour/time rows. At the left hand side is written ‘Contractions per 10 mins’ and the scale is numbered from 1–5. Each square represents one contraction, so that if two contractions are felt in 10 minutes, you should shade two squares.

### ASSESSMENT AND RECORDING OF FETAL WELLBEING

How do you know that the fetus is in good health during labour and delivery? The methods open to you are limited, but you can assess fetal condition:

* By counting the fetal heart beat every 30 minutes;
* If the fetal membranes have ruptured, by checking the colour of the amniotic fluid.

#### FETAL HEART RATE AS AN INDICATOR OF FETAL DISTRESS

The normal fetal heart rate at term (37 weeks and more) is in the range of 120–160 beats/minute. If the fetal heart rate counted at any time in labour is either *below*120 beats/minute or *above* 160 beats/minute, it is a warning for you to count it more frequently until it has stabilized within the normal range. It is common for the fetal heart rate to be a bit out of the normal range for a short while and then return to normal.

#### RECORDING FETAL HEART RATE ON THE PARTOGRAPH

The fetal heart rate is recorded at the top of the partograph every half hour in the first stage of labour (if every count is within the normal range), and every 5 minutes in the second stage. Count the fetal heart rate:

* As frequently as possible for about 10 minutes and decide what to do thereafter.
* Count every five minutes if the amniotic fluid (called *liquor* on the partograph) contains thick green or black meconium.
* Whenever the fetal membranes rupture, because occasionally there may be cord prolapse and compression, or placental abruption as the amniotic fluid gushes out.

Each square for the fetal heart on the partograph represents 30 minutes. When the fetal heart rate is in the normal range and the amniotic fluid is clear or only lightly blood-stained, you can record the results on the partograph, as in the example in Figure 4.8. When you count the fetal heart rate at less than 30 minute intervals, use the back of the partograph to record each measurement. Prepare a column for the time and fetal heart rate.

### ASSESSMENT OF MATERNAL WELLBEING

During labour and delivery, after your thorough initial evaluation, maternal wellbeing is followed by measuring the mother’s vital signs: blood pressure, pulse, temperature, and urine output. *Blood pressure* is measured every four hours. *Pulse* is recorded every 30 minutes. *Temperature* is recorded every 2 hours. *Urine output* is recorded every time urine is passed. If you identify persistent deviations from the normal range of any of these measurements, refer the mother to a higher health facility

## MANAGEMENT OF SECOND STAGE OF LABOUR

This is the stage in labor where the contribution of a qualified and skilled attendant with midwifery skills is the most critical in ensuring a safe outcome.

While attending a delivery, the timing and process of active pushing should be guided so that this is encouraged only when the cervix is fully dilated and when the presenting part has engaged in the pelvis and the woman feels the urge to push. The skilled attendant also has the role of encouraging the mother to adopt positions for active pushing that are culturally appropriate, comfortable, and mechanically beneficial; for example, squatting or sitting up as opposed to lying flat on a bed.

**Initiation of active pushing**

A 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 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 for this recommendation is that under normal circumstances at the end of the first stage of labor, uteroplacental perfusion and fetal oxygenation only start to deteriorate once active pushing commences.

**Duration of active pushing in the second stage of labor**

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/or 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 history of high 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 5–10 minutes or more often when bradycardia is suspected. One can get the best information about the condition of the fetus, and it is easiest to hear, by auscultating immediately after a contraction. The care provider should have the skills to interpret the fetal heart rate and take appropriate action when needed. While the traditional Pinard stethoscope (fetoscope) may be adequate in very quiet labor rooms, it is often difficult to use reliably owing to surrounding noise or maternal obesity, and especially in the second stage because of the woman's naturally vigorous movements.

**POSITION OF THE WOMAN DURING THE SECOND STAGE OF LABOR**

The delivery facility should have adequate space, equipment, and skilled care providers 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 with their feet in stirrups. This position reduces uteroplacental blood flow, can contribute to fetal distress, and provides no mechanical advantage to enhance descent.

**MANAGEMENT OF THE THIRD STAGE OF LABOR**

AMTSL was defined by the Bristol and Hinchingbrooke trials as:

(1) Uterotonic drug was administered with the birth of the anterior shoulder;

(2) Immediate cord clamping;

(3) CCT with the first contraction.

More recently, the steps of AMTSL have been integrated into routine care for the woman AND her newborn and have been refined to include the following:

(1) Administration of a uterotonic drug within 1 minute after the baby’s birth and after ruling out the presence of another baby;

(2) Clamping and cutting the cord after cord pulsations have ceased or approximately 2–3 minutes after birth of the baby, whichever comes first;

(3) CCT during a contraction with counter traction to support the uterus, including gently turning the placenta as it is delivered to prevent tearing of the membranes;

(3) Massaging the uterus immediately after delivery of the placenta.

Clinical guidelines for management of the third stage of labor will generally also include careful inspection of the placenta and genitalia to rule out retained placenta/placental fragments and genital lacerations, and careful monitoring of the woman and her newborn for at least the first 6 hours postpartum.