Clinical Practice Guidelines

for the management of

Labour and Delivery

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INTRODUCTION

Patients admitted to the Central Delivery Suite in the Maltese setting often do so by self-referral believing themselves to have gone into labour. Other alternative modes of admissions include emergency admissions for complications of pregnancy or elective admissions for Caesarean sections or induction of labour.

The patient in the Central Delivery Suite is managed by a team of on-duty midwives and the on-duty medical obstetric team. The midwife by virtue of her professional status can assume on her own responsibility the management of women with uneventful pregnancies during labour and delivery. However, she also has the responsibility to *timely* detect complications in the mother and child that may arise at any time during labour and delivery; and to *timely* refer the case for appropriate assistance.

In order that complications are identified in a timely fashion, the available management tools must be utilized effectively and in a manner that conforms to specific criteria. These management tools are all based on regular clinical assessment of the parturient woman supplemented by evidence-based norms of expected progress of labour.

The process of labour and delivery has been divided into various stages and phases:

1. First stage of labour
    a. Latent phase of labour
    b. Active phase of labour
2. Second stage of labour
3. Third stage of labour

Each stage carries particular risks to the mother and child if delay is not timely identified, and therefore it is essential that management protocols are followed closely.

MANAGEMENT TOOLS

The management tools available to the midwife or obstetric doctor are based primarily on clinical assessment of the parturient woman. These clinical findings are transcribed on a time-related graphic representation that should also include projected evidence-based norms of the progress of labour [PARTOGRAM]. It is essential that all practitioners become familiar with the clinical criteria used to facilitate communication.

The criteria used to assess progress of labour include a clinical assessment of the cervix of the parturient woman, the descent of the head within the pelvis and the degree of foetal skull moulding, the strength and frequency of contractions, and the state of the membranes and liqour colour [reflects foetal wellbeing.

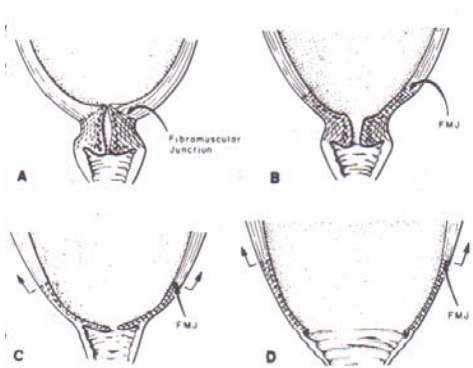
Clinical assessment of the cervix

The cervix of the parturient woman requires a significant degree of preparation before the woman is able to deliver the child. The cervical preparation starts during the latter weeks of pregnancy, but culminates during the Latent Phase of labour. These changes include a change in the consistency and length of the cervix [effacement], and an initiation in cervical dilatation. The foetal presenting part also descends within the maternal pelvis at this stage changing the relationship of the foetal presenting to the cervix measured by the relative position of the cervix and the relationship of the foetal part to the ischial spine. All these parameters are included in Bishop Score to give an overall numerical score of the state of the cervix.

Score	**0**	**1**	**2**	**3**
Dilatation	0	1-2	3-4	>5
Effacement	<40%	40-60%	60-80%	>80%
Consistency	Firm	Moderate	Soft	
Position	Posterior	Middle	Anterior	
Station	-3	-3	-1,0	+1,+2

Bishop Score Criteria

Cervical effacement

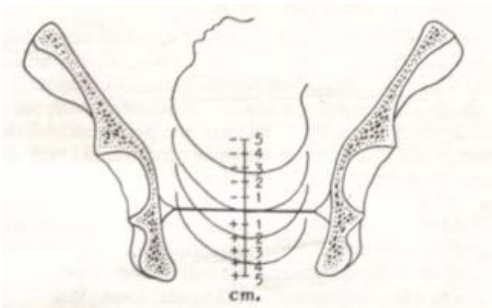


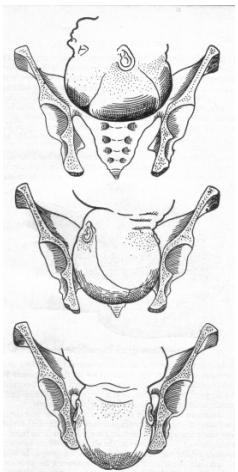
Effacement is progressive shortening of the cervix with fibromuscular junction being pulled up with formation of the lower segment.

Generally progressive with dilatation.

Complete effacement is generally found at 5-6 cm dilatation, but may be attained before there is significant dilatation [*vide C*].

Station of the presenting part





- **Station of the head in relation to ischial spines**
  - **Not useful to define engagement since position of spines dependant on type of pelvis.**
  - **Can be useful to assess progress in same patient.**
  - **Actually relates to relationship to cervix.**

Descent of the foetal head within the pelvis

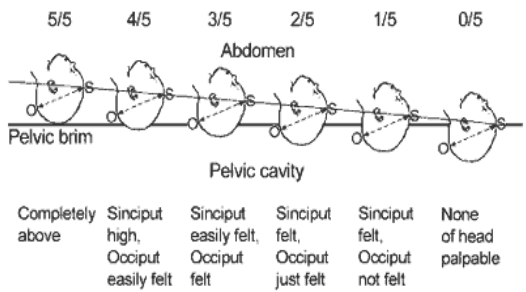
Since the type of pelvis may vary from one woman to another [*sive* gynaecoid, android, anthropoid and platylipoid types of pelvises], the only effective measure of foetal head descent that reflects engagement is the suprapubic assessment of how much of the foetal skull remains palpable. The foetal head is said to be engaged when two-fifths or less of the head are palpable suprapubically.

Partogram - descent of the fetal head

- **It should be assessed by abdominal examination immediately before doing a vaginal examination, using the rule of fifth to assess engagement**
- **The rule of fifth means the palpable fifth of the fetal head are felt by abdominal examination to be above the level of symphysis pubis**
- **When 2/5 or less of fetal head is felt above the level of symphysis pubis, this means that the head is engaged**
  - **by vaginal examination, the lowest part of vertex should have passed or is at the level of ischial spines**

Vaginal assessment of descent is not equivalent to suprapubic descent

Vaginal examination dependant on type of pelvis

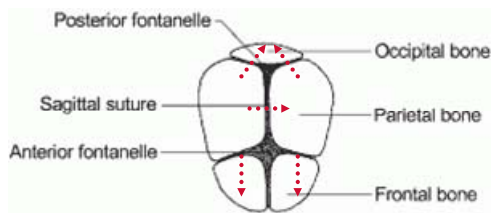


Another clinical assessment that relates to engagement is the degree of foetal skull moulding. A high degree of moulding with the head high in the pelvis is a significant indication of cephalopelvic disproportion.

Partogram - Moulding the foetal skull bones

- **Moulding is an important indication of how adequately the pelvis can accommodate the fetal head**
- **increasing moulding with the head high in the pelvis is an ominous sign of cephalopelvic disproportion**
- **separated bones - sutures felt easily ……O**
- **bones just touching each other ……+**
- **overlapping bones (reducible) ……++**
- **severely overlapping bones (non-reducible) ……+++**

- **Presence of caput**



- **Parietal bones override occiptial and frontal**
- **Anterior parietal bone overrides its posterior fellow**
- **Moulding can decrease biparietal diameter by ~1cm**

Uterine contraction strength

The progress of labour is dependant on the frequency and strength of the uterine contractions. Too much reliance is today made of electronic monitoring of uterine contractions. However these are often unreliable since the patient's movements will alter the position of the tocometer giving variable readings. The clinical assessment whereby the contractions are palpated as to frequency and duration is still considered the most accurate measure. These findings should be depicted in a standard fashion to facilitate communication between the various attendants. Note should be also made on the Partogram of the dosage of syntocinon being administer.

Partogram - Uterine contractions

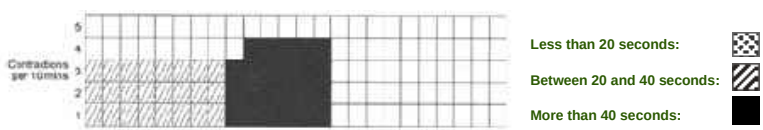
- **Observations of the contractions are made every hour in the latent phase and every half-hour in the active phase**
- **Assess the number of contractions in a 10-minute period**
- **Assess the duration of the contractions by palpation**
  - **measured in seconds from the time the contraction is first felt abdominally to the time the contraction phases off**
- **Each square represents one contraction**

REMEMBER

•Epidural effect on assessment

- **•Epidural started only in Active phase**
- **•Patients should have an ARM ± syntocinon**

•Poor reliability of monitors



Other parameters

Other parameters that need to be carefully noted include those clinical observations that relate to foetal and maternal well-being. These include:

A. Foetal wellbeing
    a. Liqour colour [I = intact membranes; C = clear liquor; M = meconium-stained liquor; B = blood-stained liquor; A = absent liquor]
    b. Foetal heart rate – best assessed electronically at all times [the attending midwife is responsible to ensure that the graphic record of the foetal heart rate is securely filed in the birth record]

B. Maternal well-being
    a. Drugs given, intravenous fluids, syntocinon dose
    b. Pulse, blood pressure, temperature
    c. Urine volume passed, presence of proteinuria and acetonuria.

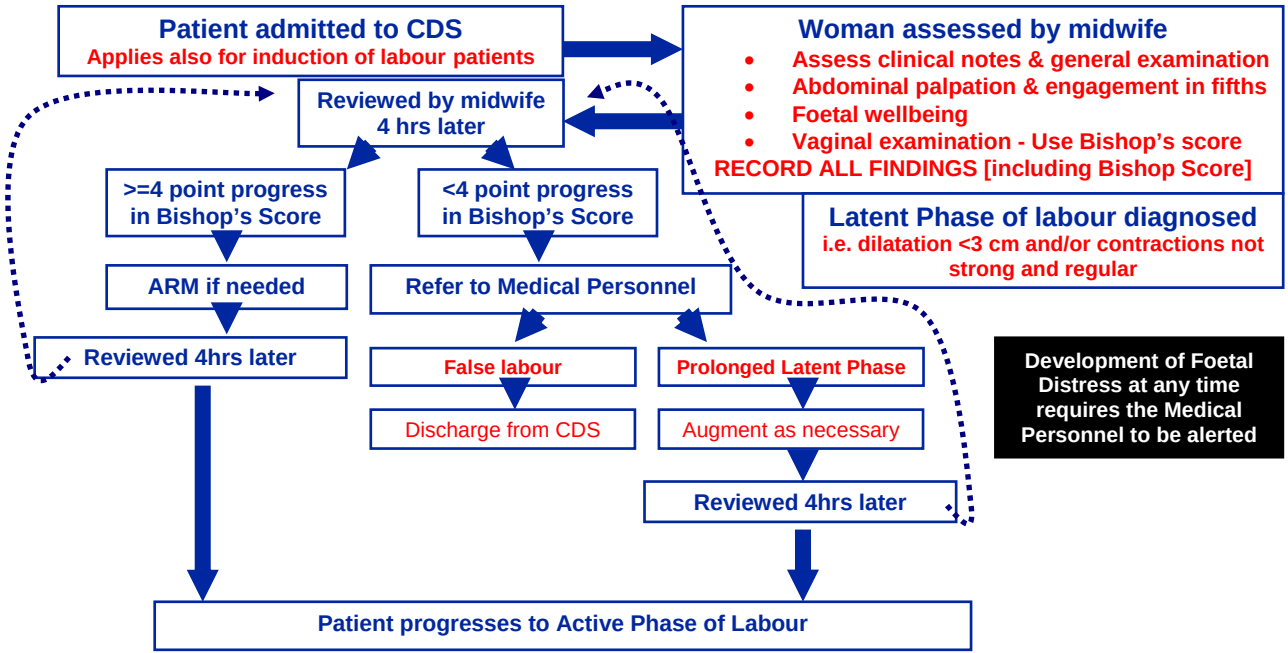
LATENT PHASE OF LABOUR

The Latent Phase of labour is the period where the cervix undergoes significant changes in its structure to help it to eventually undergo a process of cervical dilatation and enable delivery. The best measure of assessing this process is through using a composite score of relevant clinical parameters as described in Bishop Score. This should be charted onto the Partogram for the Latent Phase and a diagonal line should be drawn at a slope of one point per hour. The progress of the Latent Phase varies considerably from one patient to another depending in part on the parity of the patient and the gestational age. It is expected however that a patient who has truly entered the Latent Phase of labour should progress at a rate of one score point per hour.

When a patient is admitted to the Central Delivery Suite, she should be assessed by the attending midwife who will assess for Bishop score including cervical dilatation, and the strength and frequency of the uterine contractions. If the patient is found to be in the Latent Phase of labour [cervical dilatation <3 cm; contractions lasting <40 seconds], then a foetal heart rate monitor is set up to assess for foetal well-being, while other parameters for maternal wellbeing are recorded. The mother should be encouraged to empty her bladder and bowels if necessary. Analgesia at this stage, if requested, should be limited to Nitrous oxide/oxygen mixture.

Assuming all well-being parameters are normal, the patient should be reviewed after four hours [unless otherwise indicated by the clinical state of the patient]. During this period there should have been at least a four-point progress in Bishop Score or the patient would have progressed into the Active Phase of labour. Progress at a rate of less that a four-point score must be considered as a delay in the progress of labour and the obstetric doctor should be summoned. A decision on subsequent management should then be made depending on whether this was a “false labour”, and on the state of the membranes and uterine contraction strength and frequency.

MANAGEMENT FLOW-CHART
Latent Phase of labour



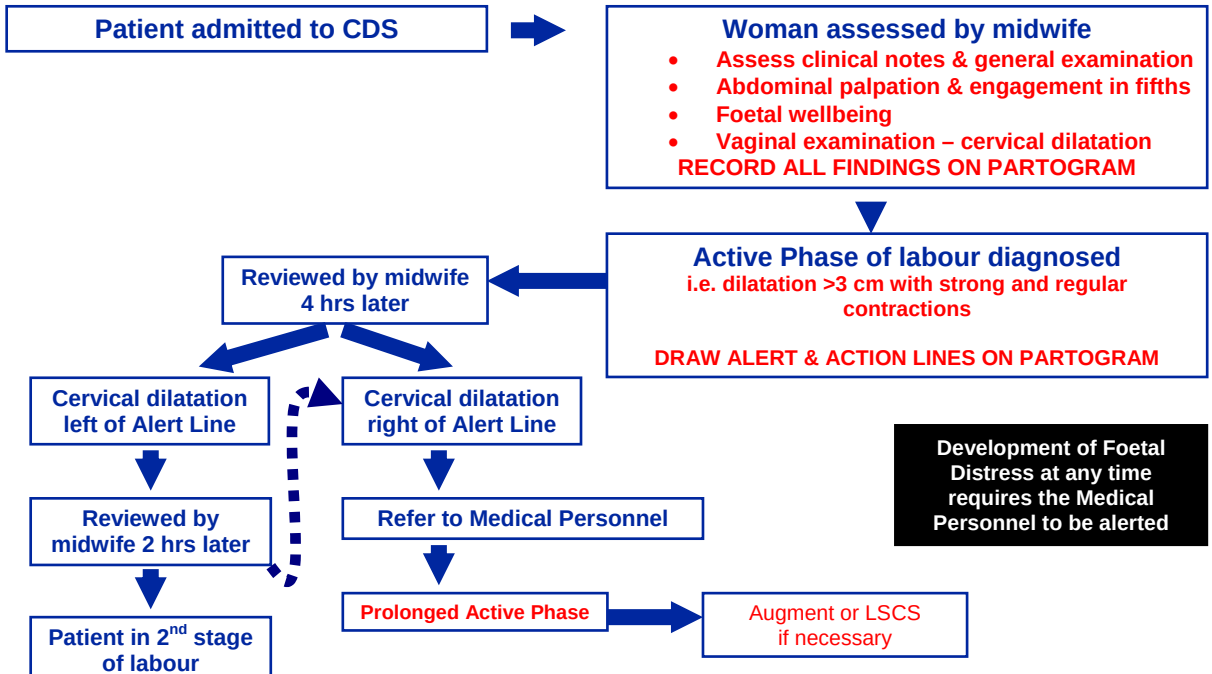
ACTIVE PHASE OF LABOUR

The Active Phase of labour is the phase of maximal cervical dilatation. The Active phase of labour is considered to have initiated when the patient has reached a cervical dilatation of 3 cm and is getting strong [>40 seconds duration] and regular contractions [at least one every 10 minutes]. The minimum rate of cervical dilatation has been identified to be 1 cm per hour. The use of the PARTOGRAM is essential for the accurate and safe management of the Active Phase. This requires the drawing up of the ALERT & ACTION LINES. The Altert Line is a diagonal line drawn at a slope of 1 cm/hr starting from the point where the patient is considered to have entered the Active Phase; the Action Line is an arbitrary parallel line drawn four hours later. Normal progress of labour is considered to be occurring whenever progress proceeds to the left of the Alert Line; any progress to the right of the line is considered as abnormal.

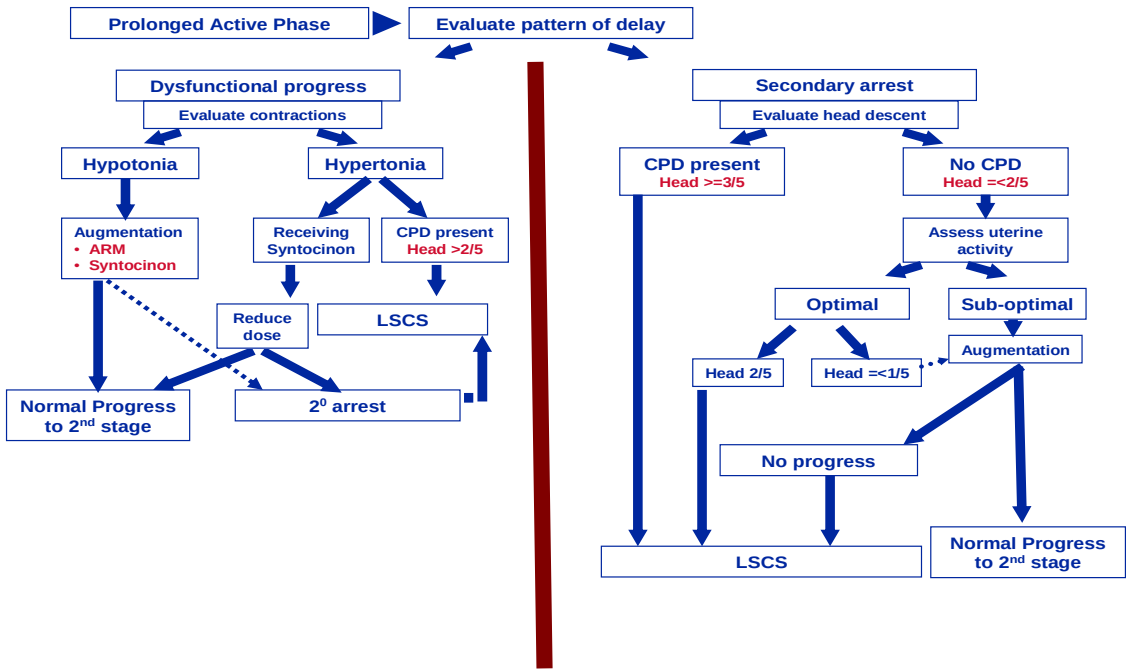
Assuming all well-being parameters are normal, the patient in the Active Phase of labour should be reviewed vaginally after four hours [unless otherwise indicated by the clinical state of the patient]. During this period, there should have been at least a four-centimetre dilatation progress. A slower rate of progress requires the obstetric doctor to be summoned. A decision on subsequent management should then be made depending on whether this was a dysfunctional progress or a secondary arrest taking into consideration the strength of the contractions and descent of the foetal head.

During the Active Phase of labour, the patient must be made as comfortable as possible. Food however should be completely restricted since gastric emptying is delayed increasing the risks of vomiting during labour or induction of anaesthesia id this becomes necessary. Movements should not be restricted unless medically indicated. Foetal heart rate monitoring should be continuous; while the mother's parameters should be monitored every two hours. The amniotic cavity membranes should definitely be ruptured during the Active phase of labour since this augments the progress and gives a "window" to assess for meconium staining of liquor. Pain relief should be offered – Nitrous oxide/oxygen mixture, pethidine, or epidural are suitable options. The patient should be encouraged to empty her bladder whenever the need arises, especially if an intravenous infusion is in place.

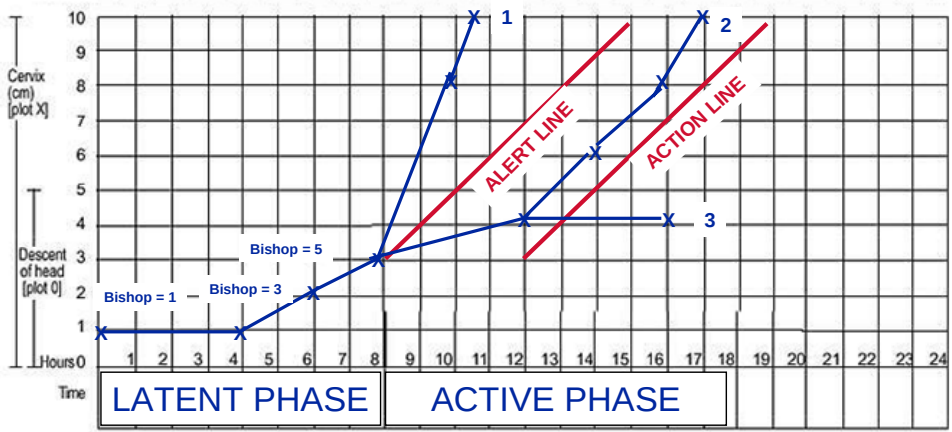
MANAGEMENT FLOWCHART
Active Phase of labour



MANAGEMENT FLOWCHART
Prolonged Active Phase of labour



PARTOGRAM – FIRST STAGE OF LABOUR



- **1. Normal progress of labour**
- **2. Dysfunctional labour**
- **3. Secondary arrest**

SECOND STAGE OF LABOUR

The Second Stage of labour is the period from full dilatation to delivery of the infant. Once the initiation of this stage is identified, then an epidural infusion being used should be completely stopped. This will allow for the patient to start feeling sensations to bear down within about 15 minutes. Ensure that the bladder is empty, especially in patients using epidural analgesia – otherwise consider catheterization. The patient's position during the second stage of labour is determined by the attendant's and patient's preference except in certain circumstances. In patients with spinal problems, e.g. a pasr disc prolapse, then delivery is ideally conducted in the left lateral position; while in patients in whom shoulder dystocia is suspected, then delivery should take place in the formal lithotomy position.

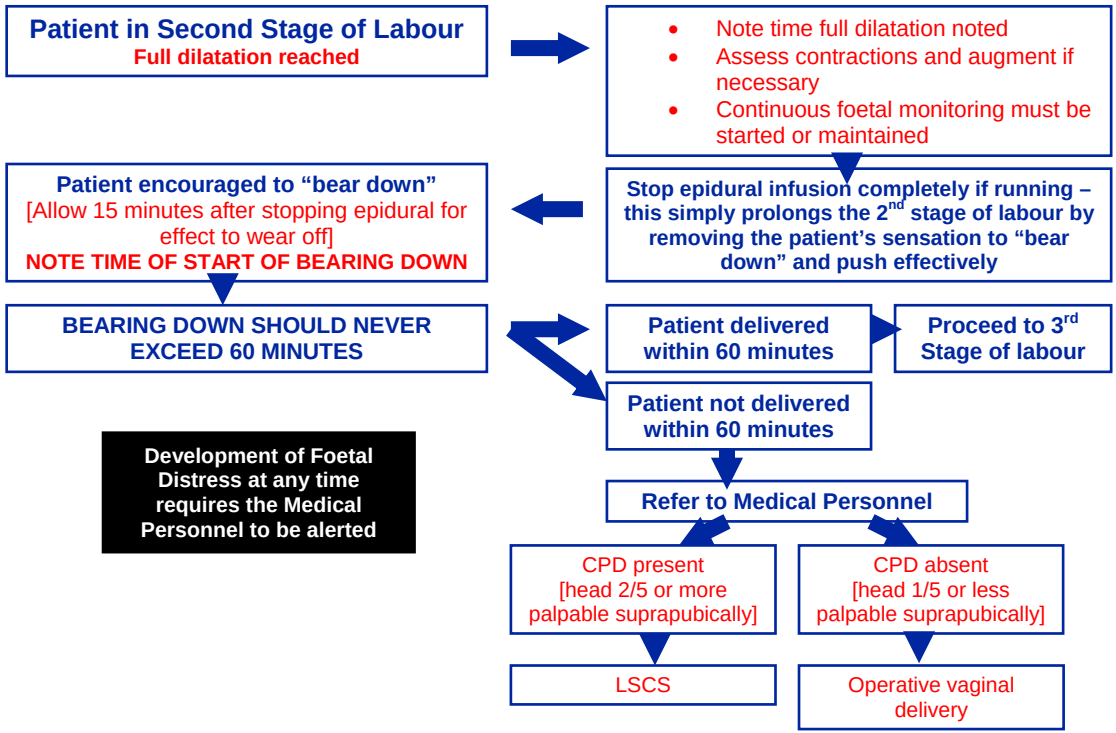
The strength of the contractions must be assessed clinically, and if considered to last less than 40 seconds, a syntocinon infusion should be started or the rate increased. Once sensations to bear down are felt by the patient, then she should be encouraged to bear down effectively and achieve delivery. Progress of the second stage is assessed by following the descent of the head internally relating the presenting part to the ischial spines, or by the presence of external signs that include perineal bulging and gaping. During delivery of the head, the perineum must be protected against uncontrolled tears, and if a tear appears to be imminent, then an episiotomy should be considered.

Bearing down efforts should not last longer than 60 minutes. Any delay further than one hour of effective bearing down suggests arrest of the second stage, and the obstetric doctor must be informed. Any further delay poses particular risks of anoxia to child and possible postpartum haemorrhage in the mother.

The foetal heart rate should be continuously monitored throughout the second stage of labour [preferably by scalp electrode in particular obese patients]. Any signs of foetal bradycardia or decelerations require the immediate referral to the obstetric doctor.

After delivery of the child's head, one should check for the possible presence of the umbilical cord around the child's neck. If present, this is either slipped over the head or clamped and cut. Allow spontaneous restitution of the child head, and then proceed with the delivery of the shoulders and rest of the body using lateral flexion of the head towards the maternal anus to deliver the anterior shoulder. The trunk is then flexed upwards to deliver the posterior shoulder.

MANAGEMENT FLOWCHART
Second stage of labour



THIRD STAGE OF LABOUR

The Third Stage of labour refers to the period between the delivery of the infant and the delivery of the placenta. It should ideally be managed actively with the administration of syntometrin with the birth of the anterior shoulder. This may not be possible unless the midwife has help at that particular moment, in which case syntometrin [unless contraindicated] should be given after the birth of the child when the midwife can give her full attention to the delivery of the placenta. Syntometrin is contraindicated when a sudden rise in venous pressure is contraindicated [e.g. cardiac disease, p/h of cerebral haemorrhage or retinal haemorrhage/detachment]. A safer alternative in these circumstances is syntocinon. The third stage of labour should not last more than 20 minutes, after which medical assistance should be sought.

MANAGEMENT FLOWCHART
Third stage of labour