Chapter

1

Normal and Abnormal Labour

QUESTION 1

1.1 List 10 parameters which are monitored and recorded in the partogram during labour.

1.2 List the information which is recorded in the uppermost section of the partogram.

1.3 What are the parameters which indicate the progress of labour?

Answer 1.1

- Fetal heart rate.
- The duration of contractions and the interval between contractions
- Cervical dilatation
- Moulding of the skull bones and caput formation
- Abdominal and vaginal descent of the head
- Position of the fetal head
- Colour of the liquor
- Maternal pulse
- Temperature
- Blood pressure
- CTG findings
- Oxytocin drip rate

Answer 1.2

- Name
- Age
- BHT number
- Parity and gravidity
- Period of amenorrhoea
- Blood group
- Date and time of admission to the labour ward
- Special problems
- Special instructions

Answer 1.3

- Cervical dilatation
- Descent of the head.

QUESTION 2

2.1 What are the parameters of fetal well-being which are monitored in the partogram?
2.2 Describe the method of monitoring the above parameters.
2.3 List 3 indications for continuous fetal heart rate monitoring.
2.4 What are the parameters of maternal well-being which are recorded in the partogram?
2.5 Describe the method of monitoring the above parameters.

Answer 2.1

- Fetal heart rate
- CTG findings
- The colour of the liquor

Answer 2.2

The fetal heart rate: The fetal heart rate is auscultated using a hand held Doppler machine for 1 minute. This is done soon after a contraction to detect type 2 decelerations. It is difficult to auscultate accurately during contractions and also the type 1 decelerations which occur during contractions are not regarded as pathological. The fetal heart rate is recorded graphically in the partogram.

The frequency of auscultation is:

- From onset of labour to cervical dilation of 4 cm (during the latent phase)—every 30 minutes
- From cervical dilation of 4 to 10 cm—every 15 minutes
- From cervical dilation of 10 cm to onset of pushing (during the passive phase of the second stage)—every 10 minutes
- From onset of pushing to delivery of the baby (active phase of the second stage)—every 5 minutes.

CTG Recording

A CTG is usually performed if an abnormality is detected during intermittent auscultation. Continuous CTG monitoring is done in high risk patients.

The Colour of the Liquor

Perineal pads are inspected for the colour of the liquor half hourly after the membranes are ruptured and is recorded as clear (C) meconium (M) stained or blood stained. It is advisable to rupture the membranes early (at cervical dilatation of 4–5 cm) to allow observation of liquor and to augment labour.

Answer 2.3

- The presence of significant meconium.
- Fresh vaginal bleeding that develops in labour.

- Confirmed delay in the first or second stage of labour.
- Oxytocin use (*refer* Chapter 15, question 7 for all the indications for continuous fetal heart rate monitoring)

Answer 2.4

Maternal pulse, blood pressure and temperature are recorded.

Answer 2.5

Maternal pulse is recorded hourly, but may be recorded simultaneously with the fetal heart rate to differentiate between the two.

- The temperature is recorded once in 4 hours.
- The blood pressure is recorded 4 hourly. It is recorded half hourly in patients with PIH.

QUESTION 3

3.1 What are the parameters of progress of labour which are recorded in the partogram?

3.2 Describe how these are monitored and recorded in the partogram.

3.3 Describe how the frequency and duration of contractions are monitored and recorded in the partogram.

Answer 3.1

- Cervical dilatation
- Descent of the head.

Answer 3.2

The cervical dilatation is assessed by performing a vaginal examination 4 hourly and is graphically recorded.

Descent of the head

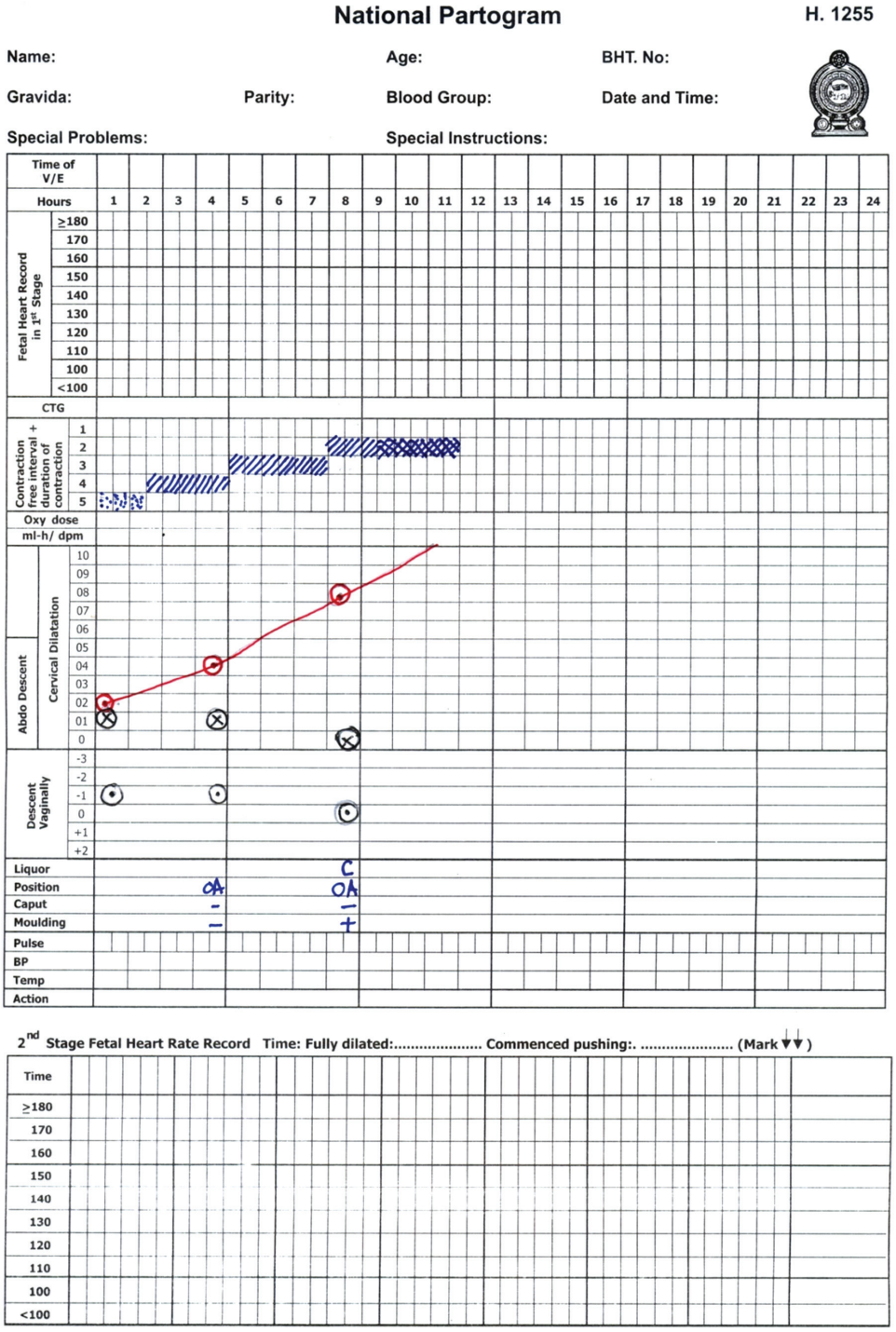
- Abdominal descent of the head is assessed by performing an abdominal examination once in 4 hours.
- It is assessed according to the number of fifths palpable per abdomen. The appropriate number of squares is marked in the partogram.
- The vaginal descent of the head is assessed by performing a vaginal examination once in 4 hours, simultaneous with the abdominal examination. It is assessed by the distance of the head to the ischial spines as –3, –2, –1, 0, +1 and +2. The appropriate number of squares is marked in the partogram.

Answer 3.3

- The duration of contractions and the contraction free interval is recorded and documented according to the key given in the second page of the partogram.
- The interval from the beginning of one contraction to the beginning of the next contraction is calculated and the number of contractions per 10 minutes can be calculated.

QUESTION 4

Is the progress of labour normal or abnormal in this partograph recording of a primiparous woman? Give reasons for your answer.



Answer 4

The progress of labour is normal because:

- The latent phase has taken 4 hours from 2 cm.
- The cervix has dilated at the rate of 1 cm/hour in the active phase.
- The head has descended normally and it is fully engaged at the beginning of the second stage.
- There is no caput.
- Moulding is normal and is grade 1.
- The position of the head is occipito anterior.
- The frequency of contractions is adequate and the frequency has gradually increased up to 4–5 contractions/10 minutes at the end of the first stage.

QUESTION 5

5.1 List 5 parameters which are recorded in a partograph which indicate the possibility of obstructed labour.

5.2 How will you treat obstructed labour in the first stage?

5.3 How will you treat obstructed labour in the second stage in a woman with a cephalic presentation?

5.4 How will you treat obstructed labour in a woman with an occipito-posterior position in the second stage?

Answer 5.1

- Failure of cervical dilatation to progress in the presence of strong uterine contractions.
- Presence of a large caput (++).
- Severe moulding with overlapping of skull bones (+++).
- Failure of the head to descend during the first stage and presence of more than one fifth of the head palpable per abdomen at the beginning of the second stage.
- Failure of the head to descend during the second stage.

Answer 5.2

Perform a caesarean section.

Answer 5.3

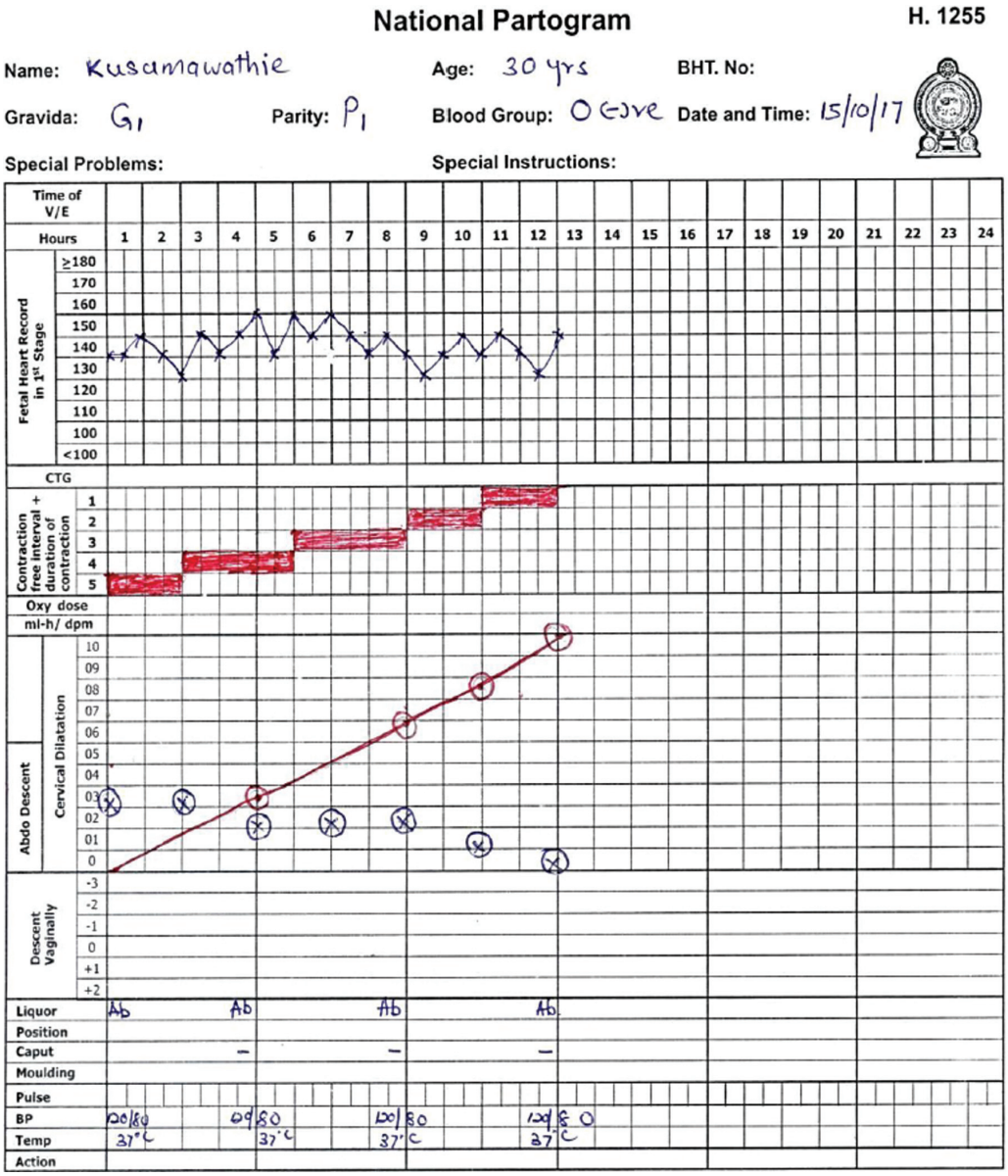
The safest option is to perform a caesarean section because it is dangerous to apply instruments in the presence of obstructed labour, as there could be an undiagnosed brow presentation, mento-posterior face presentation, occipito-posterior position or cephalo-pelvic disproportion. The case should be assessed by a consultant. Instrumental delivery can be considered, if the above complications are carefully excluded and all the criteria for safe application of instruments are satisfied. However, the procedure should be carried out in the operating theatre with all preparations kept ready for caesarean section (trial of instrumental delivery).

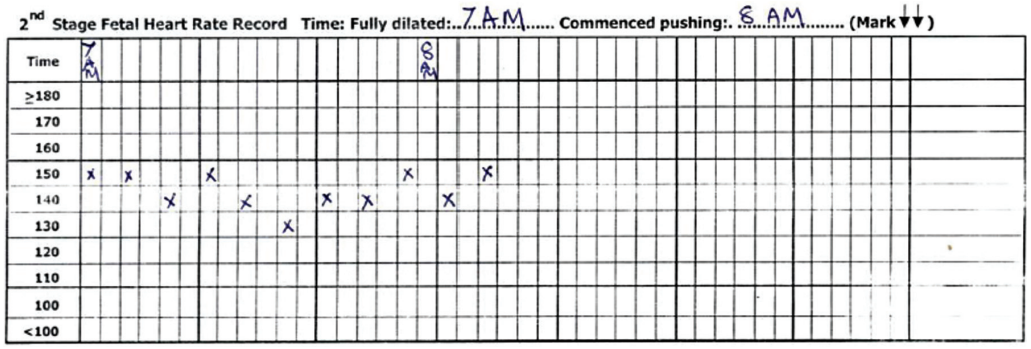
Answer 5.4

If the pelvis is adequate and no part of the head is palpable per abdomen the obstruction could be relieved by rotation of the head to the occipito-anterior position. Therefore, Kielland's forceps delivery or vacuum delivery can be tried. However, the procedure should be carried out in the operating theatre with all preparations kept ready for caesarean section.

QUESTION 6

List the mistakes which have been made while maintaining the partogram and mention your corrections.



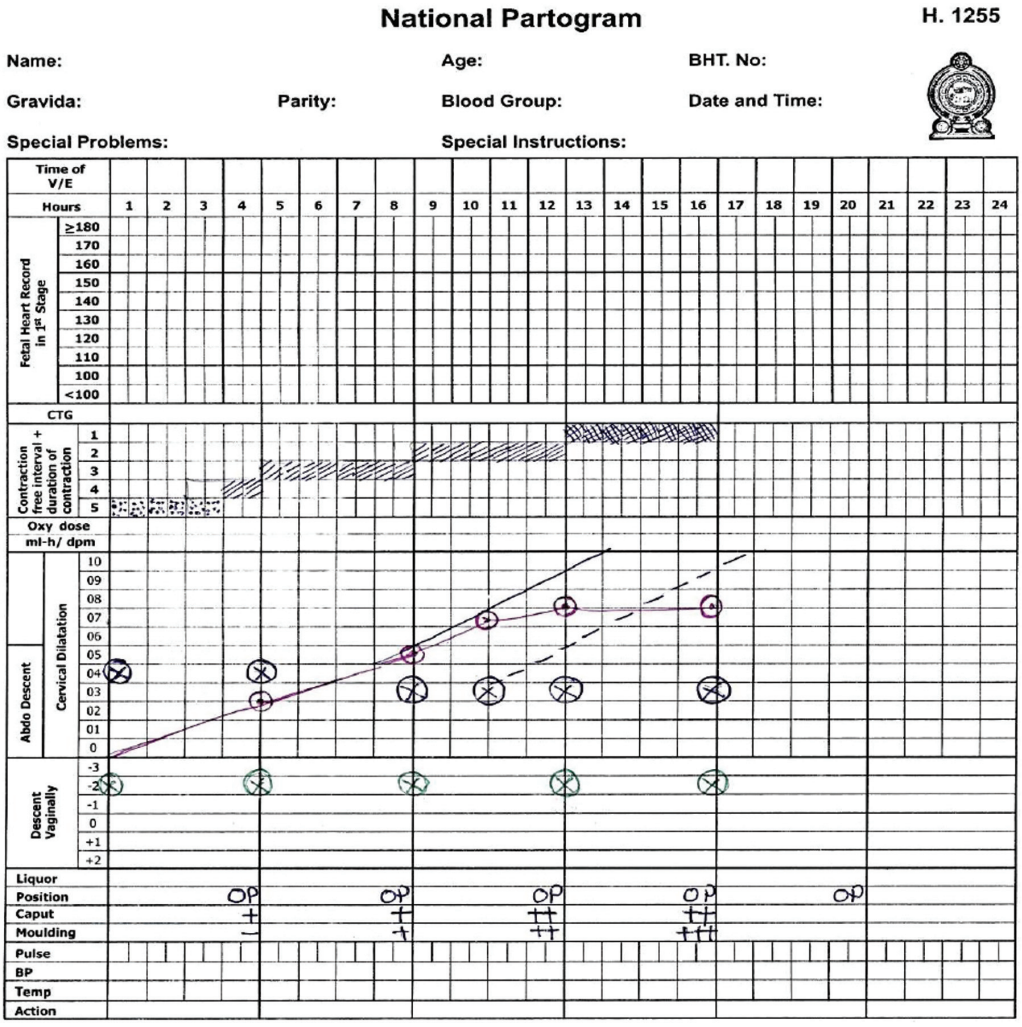


Answer

- The name has been written without initials or a surname. It is important to write the full name to identify the patient as there may be two patients with similar names.
- The BHT number is not mentioned. The BHT number is important to identify the patient and to trace her ticket at a later date.
- The time of admission is not mentioned. The time is important to assess the duration of labour and to determine whether labour is becoming prolonged.
- The patient is Rhesus negative, but this has not been highlighted in the special problems.
- The need to take cord blood has not been mentioned in the special instructions.
- The fetal heart rate has been recorded half hourly during the active phase of the first stage, whereas it should be recorded every 15 minutes.
- The duration of contractions have not been marked. It should be marked according to the code mentioned in the partogram. Even though uterine hyperstimulation has occurred after cervical dilatation of 8 cm no intervention has been carried out.
- Vaginal examination has been performed once in 2 hours from 6–10 cm dilatation. Vaginal examination should be performed once in 4 hours during the first stage.
- Abdominal descent of the head has been recorded 2 hourly. It should be recorded once in 4 hours.
- Vaginal descent of the head has not been recorded at the time of the vaginal examination. It should be recorded 4 hourly during the first stage and hourly during the second stage.
- Amniotomy has not been performed. Amniotomy should be performed at a cervical dilatation of 5–6 cm.
- The position of the fetal head and moulding has not been recorded. These parameters should be recorded once in 4 hours during the vaginal examination.
- The fetal heart rate has been recorded once in 10 minutes after the woman commenced pushing. It should be recorded once in 5 minutes during this stage.
- The partogram has been maintained in a haphazard manner. Documentation should be done neatly and methodically in the standard manner.

QUESTION 7

The image given below is the partograph recording of a secondpara.



7.1 Describe 4 important observations which have been recorded.

7.2 Name the abnormality of cervical dilatation.

7.3 What could be the cause of the abnormality in this patient?

7.4 List two other conditions which could cause this abnormality.

7.5 Mention how you could prevent this complication.

7.6 How will you treat this woman?

7.7 What are the maternal and fetal risks?

Answer 7.1

- The fetal position is occipito-posterior
- The frequency of contractions has followed the normal pattern with gradual increase in the frequency up to cervical dilatation of 8 cm. She is getting 4–5

contractions per 10 minutes which is regarded as adequate in the latter part of the active phase of the first stage. However, the frequency of contractions has increased after this point indicating uterine hyperstimulation.

- The cervical dilatation has progressed normally at first but dilatation has begun to arrest at 7 cm, in spite of strong uterine contractions lasting for 40–60 seconds, with a frequency of 4–5 per 10 minutes. It has deviated to the right from the alert line between 6 and 7 cm and has crossed the action line at 8 cm.
- The head has failed to descend with three fifths of the head still palpable above the pelvic brim. Vaginal descent of the head is static at station-2.

Answer 7.2

Secondary arrest.

Answer 7.3

Occipito-posterior position. The pelvis could be narrow and android in type.

Answer 7.4

- Brow presentation
- Mento-posterior face presentation

Answer 7.5

- The pelvis should be assessed before the onset of labour by the following methods.
  - Inquire regarding a history of prolonged labour or difficult instrumental deliveries in the first pregnancy and the birth weight of the previous baby.
  - Carry out clinical and ultrasonic evaluation of the fetal weight.
  - Measure the height of the woman
  - Clinical pelvic assessment should be performed before onset of labour, if cephalo-pelvic disproportion is suspected.
- Perform a careful vaginal examination early in labour (at 3–4 cm cervical dilatation) to exclude mento-posterior face and brow presentation and occipito-posterior position. If a mento-posterior face presentation or a brow presentation is found a caesarean section should be performed before obstruction occurs.
- If an occipito-posterior position is found, the pelvis should be assessed carefully to exclude an android pelvis and if the pelvis is adequate good contractions should be provided with timely use of an oxytocin infusion.

Answer 7.6

Perform a caesarean section immediately.

Answer 7.7

- Fetal hypoxia, fetal distress and fetal death.
- Obstructed labour
- Uterine rupture
- Sepsis

QUESTION 8

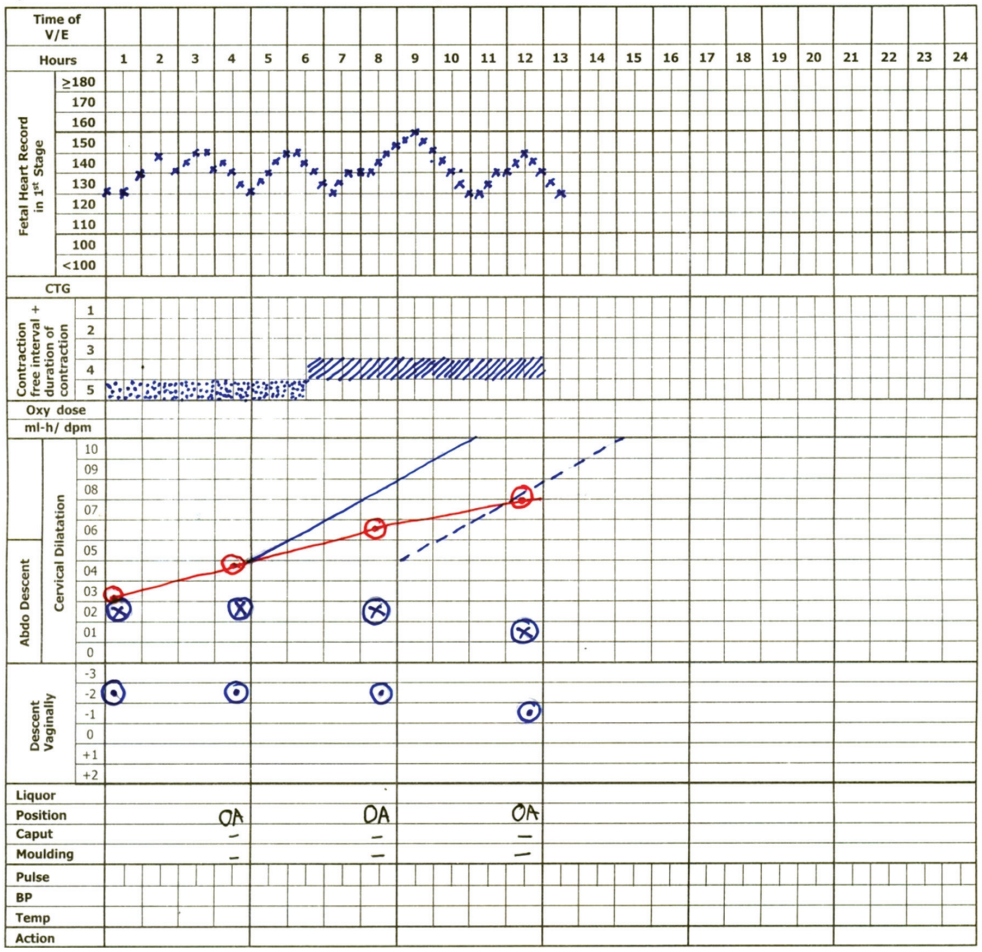
National Partogram

H. 1255

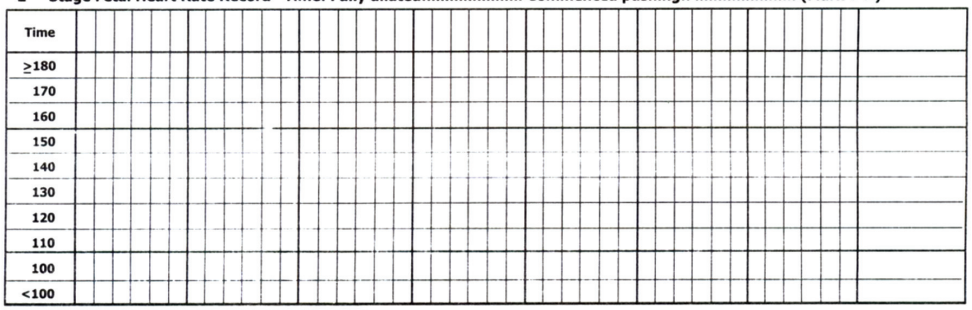
Name: Age: BHT. No:

Gravida: Parity: Blood Group: Date and Time:

Special Problems: Special Instructions:



2nd Stage Fetal Heart Rate Record Time: Fully dilated:..... Commenced pushing:. ..... (Mark ↓↓)



The image given on previous page is the partograph recording of a secondpara.

8.1 Describe 4 important observations which have been recorded.

8.2 Name the abnormality of cervical dilatation.

8.3 What is the main reason for this abnormality?

8.4 State 4 other conditions which could cause this abnormality.

8.5 What is the best treatment option for this woman? Give your reasons.

8.6 What are the indications for performing a caesarean section for this condition?

8.7 What precautions should be taken to prevent the occurrence of this complication?

8.8 What is your management if the reason for the delay is an occipito-posterior position?

Answer 8.1

- The fetal heart rate is within the normal range with good beat to beat variation and accelerations.
- The frequency of contractions is inadequate and static with two-three contractions per 10 minutes. For labour to progress normally there should be 4 contractions per 10 minutes in the latter part of the first stage.
- Labour has been slow from the beginning. The rate of cervical dilatation is about 2 cm in 4 hours during the active phase. The cervical dilatation has deviated to the right from the alert line at 5 cm and has crossed the action line at 7 cm.
- The head has descended and is engaged.

Answer 8.2

Primary dysfunctional labour.

Answer 8.3

Inadequate uterine contractions.

Answer 8.4

- Occipito-posterior position
- Mento-anterior face presentation
- Uterine over distension due to twin pregnancy
- Uterine over-distension due to polyhydramnios

Answer 8.5

The only abnormality seen in this partograph is the slow rate of cervical dilatation. The fetal heart rate is within the normal range. The descent of the head is satisfactory. However, a careful vaginal examination should be performed to exclude brow and mento-posterior face presentation, occipito-posterior position and cephalo-pelvic disproportion.

The woman should be reassured and explained regarding the available management options. An amniotomy should be performed and an oxytocin infusion should be commenced. The patient should be well hydrated. Adequate pain relief should be provided preferably with epidural analgesia. Continuous fetal heart rate monitoring should be commenced and the progress should be assessed by performing a vaginal examination in 2 hours.

Answer 8.6

- Fetal distress.
- Failure to progress 2 hours after augmentation.
- Presence of a previous caesarean section or a myomectomy scar.
- Cephalo-pelvic disproportion.
- Breech presentation.
- Occurrence of a malpresentation such as brow or mento-posterior face presentation.

Answer 8.7

- The frequency of contractions should be assessed half hourly.
- The progress of labour should be carefully assessed with 4 hourly abdominal and vaginal examinations.
- An early amniotomy should be performed at a cervical dilatation of 4–5 cm and an oxytocin infusion should be commenced after 2 hours if the progress is not satisfactory, in the absence of a scarred uterus, malpresentation, cephalo-pelvic disproportion or fetal distress.

Answer 8.8

Labour can be augmented as above with amniotomy and an oxytocin infusion in the absence of cephalo-pelvic disproportion.

QUESTION 9

9.1 What is the accepted increase in the frequency of contractions throughout labour?

9.2 What are the parameters of progress of labour during the first stage?

9.3 What are the parameters of progress of labour during the second stage?

Answer 9.1

- In the latent phase of the first stage, the frequency of contractions should be 1–2 per 10 minutes.
- In the early part of the active phase of the first stage frequency of contractions should be 2–3 per 10 minutes, while in the latter part it should be 4–5 per 10 minutes, with each contraction lasting from 45 seconds –1 minute.
- In the second stage, the frequency of contractions should be 5 per 10 minutes, with each contraction lasting for nearly 1 minute.

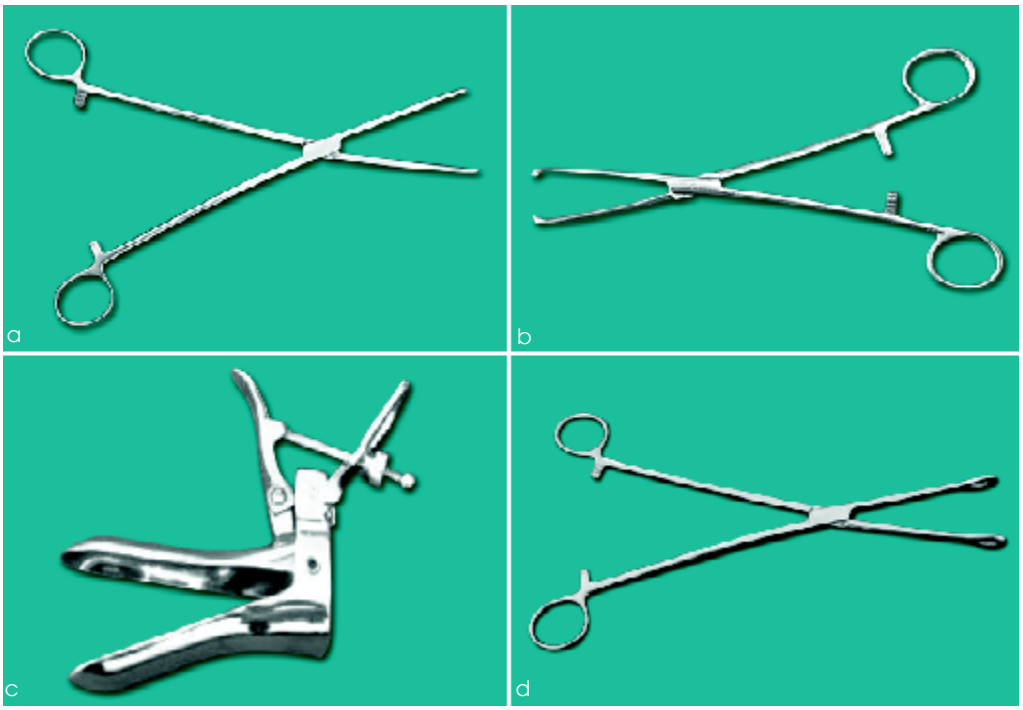
Answer 9.2

The parameters of progress during the first stage are dilatation of the cervix and abdominal and vaginal descent of the head, recorded by abdominal and vaginal examinations performed 4 hourly.

Answer 9.3

The parameter of progress during the second stage is the vaginal descent of the head, recorded by vaginal examination performed hourly.

QUESTION 10



10.1 Pick and name the instrument/s needed to perform an amniotomy.
10.2 Describe in detail the method of performing an amniotomy.
10.3 How can you confirm amniotomy if liquor is not visualized.

Answer 10.1

a. Long artery forceps

Answer 10.2

- Amniotomy is performed in the labour ward under strict aseptic precautions.
- Place the patient in the dorsal position.
- Scrub and wear sterile gloves.
- Clean the vulva with an antiseptic solution.
- Insert 2 fingers of the right hand into the vagina and reach the cervical os.
- Assess the cervical dilatation, the presenting part and the level of the presenting part.
- Exclude cord presentation. Sweep the fingers around the head to exclude the presence of the cord in the vicinity.
- Amniotomy is performed at a cervical dilatation of 5 cm, if the presentation is vertex and the head is well applied to the presenting part. Amniotomy is delayed in breech presentation and in the presence of a high head, because of the risk of cord prolapse.
- Hold a blunt long artery forceps in the left hand and guide it along the right hand into the cervical os.

- Grab the membranes with the forceps and pull to break the membranes.
- Keep the fingers in the os and release the liquor slowly.
- Remove the fingers when the liquor is drained and the head has descended.
- Do not remove an excessive amount of liquor.
- Exclude cord prolapse.
- Auscultate the fetal heart sounds.

Answer 10.3

If amniotomy has occurred there will be hair in the artery forceps.

QUESTION 11

11.1 Mention 2 advantages of amniotomy.

11.2 List 4 risks of amniotomy.

11.3 What precautions will you take to prevent the complications you have mentioned?

Answer 11.1

It augments labour and reduces the risk of amniotic fluid embolism. Oxytocin should not be commenced without performing an amniotomy because of the risk of amniotic fluid embolism. Colour of the liquor can be seen. Meconium and blood staining can be excluded.

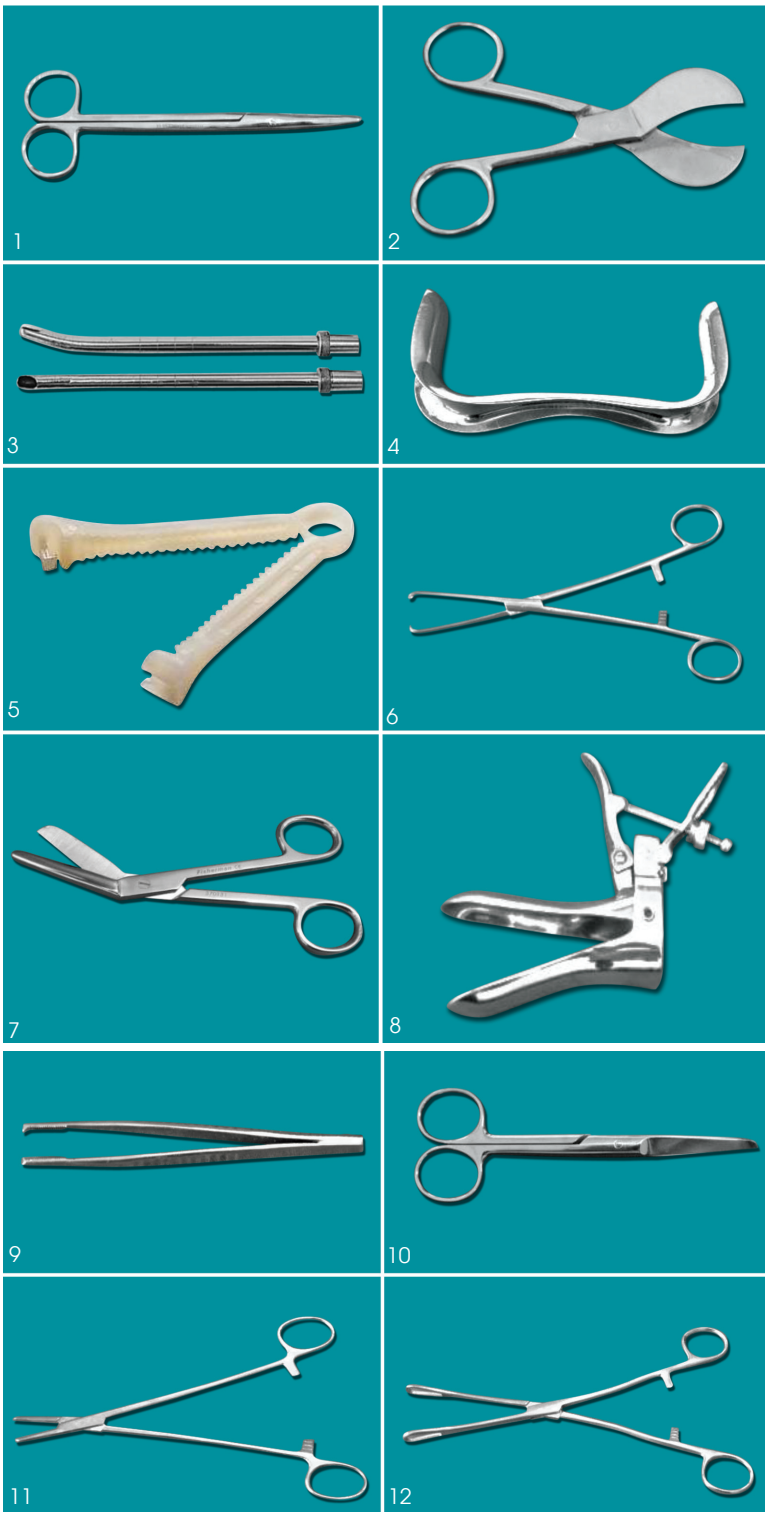
Answer 11.2

- Cord prolapse
- Sepsis
- Tissue trauma
- Placental abruption, if a large volume of liquor is released suddenly.

Answer 11.3

- Cord prolapse is prevented by:
  - Performing a vaginal examination to exclude cord presentation.
  - Sweeping around the presenting part to exclude the presence of the cord in the vicinity.
  - Releasing the liquor gradually by keeping the fingers in the os till the head descends
  - Delaying amniotomy till the presenting part is well descended and well applied to the cervix
- Sepsis is prevented by:
  - Performing the procedure in the labour room under strict aseptic precautions.
  - Minimizing the amniotomy delivery interval by commencing an oxytocin infusion, if the contractions are not adequate.
- Tissue trauma is prevented by using a blunt artery forceps for the procedure.
- Placental abruption is prevented by releasing the liquor in the bag of forewaters gradually. Release of an excessive amount of liquor should be avoided.

QUESTION 12



12.1 Select and name the instruments which are required to conduct a normal vaginal delivery.

12.2 Mention the use of each instrument you have selected.

12.3 List the other equipment/material required to conduct a normal vaginal delivery.

Answers 12.1 and 12.2

2. Cord scissor is used to cut the baby's cord
5. Cord clamp is used to clamp the baby's cord.
7. Episiotomy scissor is used to perform an episiotomy.
9. Catch forceps is used to hold the tissues while suturing the episiotomy.
10. Dressing scissor is used to cut thread.
11. Needle holder is used to hold the needle while suturing the episiotomy.
12. Sponge holding forceps is used to hold gauze swabs to clean the blood while suturing the episiotomy.

Answer 12.3

- Four sterile cloth towels
- One 2 cc syringe to give oxytocin
- One 10 cc syringe to infiltrate lignocaine to the perineum to perform and suture the episiotomy.
- Gauze swabs and gauze towels
- Perineal pads
- Oxytocin 5 units
- 10cc of 1% lignocaine
- A large tray to place the placenta
- Infant resuscitaire cum warmer
- A supply of oxygen
- A good light

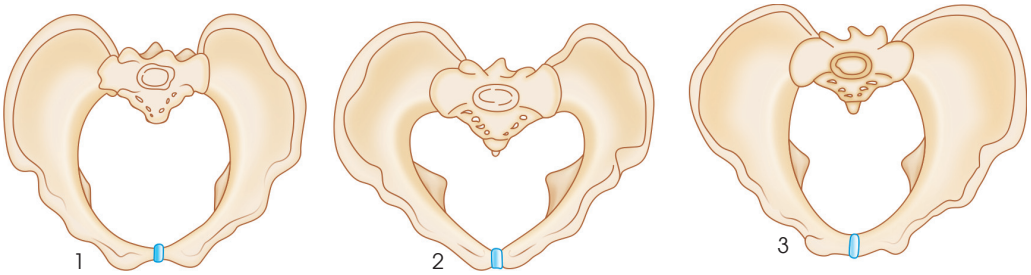
QUESTION 13

13.1 List 4 indications for performing a clinical pelvic assessment before the onset of labour.

13.2 List the steps you would follow when performing a clinical pelvic assessment.

13.3 What is the POA at which you would perform a clinical pelvic assessment?

13.4 Which of the following pelvic types is most suitable for normal labour?



Answer 13.1

Routine clinical pelvic assessment is done before deciding to allow a vaginal delivery in a woman with:

- Breech presentation.
- Previous caesarean section.
- Occipito-posterior position.
- A non-engaged head at term in the first pregnancy.

Answer 13.2

- This is performed in the clinic or in the ward.
- A vaginal examination is performed after placing the patient in the dorsal position.
- The pelvis is assessed at the inlet, mid-cavity and the outlet.
- The inlet is adequate if the sacral promontory is not felt. If the promontary is felt the diagonal conjugate should be measured (refer paper 15 question 1).
- Next the fingers are passed along the sacrum. In an adequate gynaecoid pelvis the sacrum is concave. If the sacrum is flat the space in the mid-cavity may be inadequate.
- Next the ischial spines and the sacrospinous ligaments are felt. The mid-cavity is adequate if the ischial spines are not prominent and the sacrospinous ligaments accommodate three fingers.
- The sub-pubic angle and the inter-tuberous diameter are measured to assess the outlet. If the outlet is adequate the sub-pubic angle should admit 3 fingers and the inter-tuberous diameter should accommodate 4 knuckles. However, the outlet can be enlarged by performing an episiotomy as the posterior boundary is not bony.

Answer 13.3

It is performed after 38 weeks by which time the fetal growth is complete.

Answer 13.4

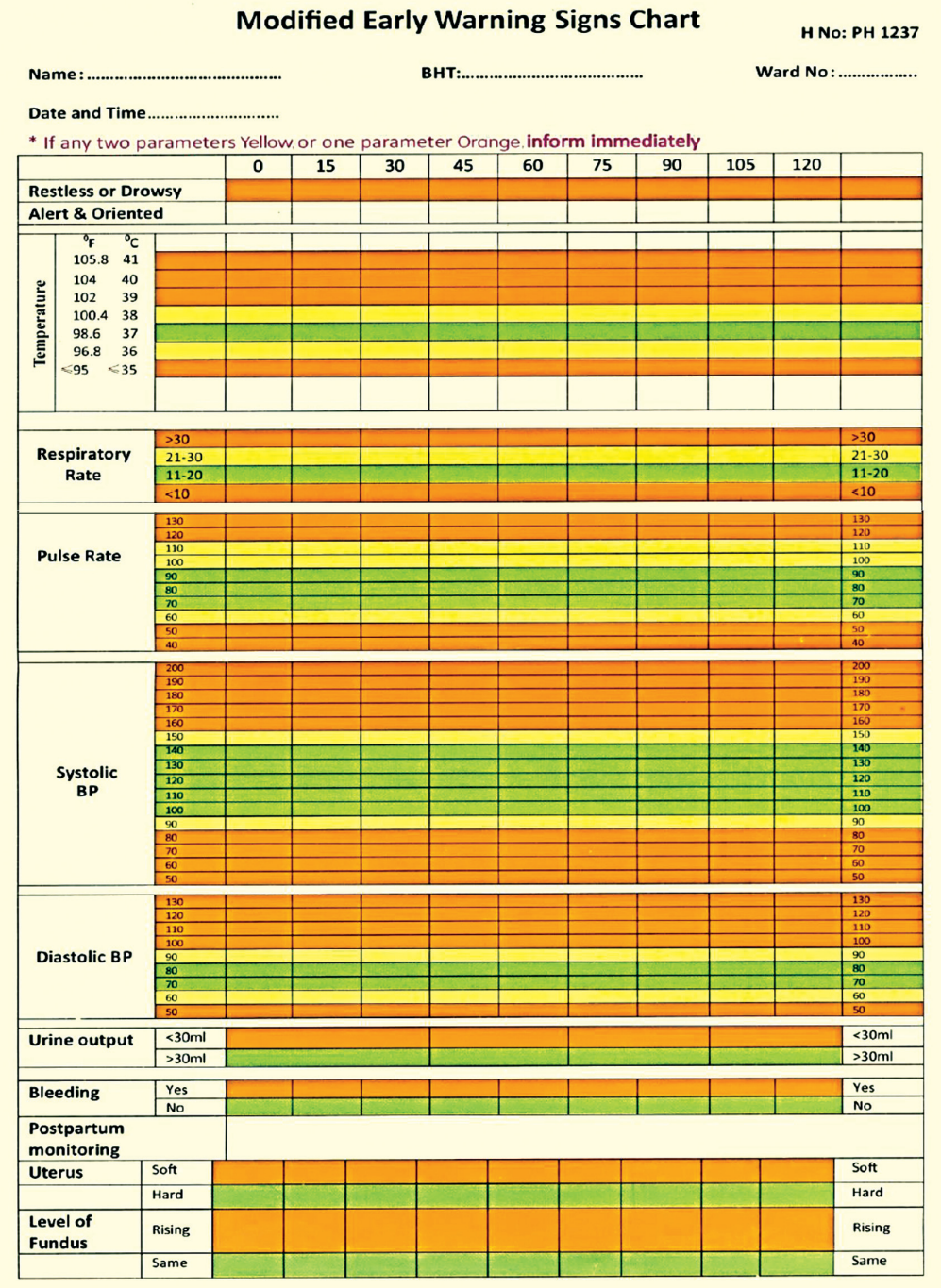
Number 1-Gynaecoid pelvis.

QUESTION 14

14.1 List 2 clinical situations in which this chart should be used for monitoring purposes.

14.2 List 5 ways in which the above chart has reduced the clinical risk in obstetric patients.

14.3 Name 2 categories of officers other than doctors who could maintain the above chart.



Modified Early Warning Signs Chart

H No: PH 1237

Name: ..... BHT: ..... Ward No: .....

Date and Time .....

* If any two parameters Yellow or one parameter Orange, **inform immediately**

		0	15	30	45	60	75	90	105	120	
Restless or Drowsy											
Alert & Oriented											
Temperature	°F 105.8 / °C 41										
	104 / 40										
	102 / 39										
	100.4 / 38										
	98.6 / 37										
	96.8 / 36										
	≤95 / ≤35										
Respiratory Rate	>30										>30
	21-30										21-30
	11-20										11-20
	<10										<10
Pulse Rate	130										130
	120										120
	110										110
	100										100
	90										90
	80										80
	70										70
	60										60
	50										50
	40										40
Systolic BP	200										200
	190										190
	180										180
	170										170
	160										160
	150										150
	140										140
	130										130
	120										120
	110										110
	100										100
	90										90
	80										80
	70										70
	60										60
	50										50
Diastolic BP	130										130
	120										120
	110										110
	100										100
	90										90
	80										80
	70										70
	60										60
	50										50
Urine output	<30ml										<30ml
	>30ml										>30ml
Bleeding	Yes										Yes
	No										No
Postpartum monitoring											
Uterus	Soft										Soft
	Hard										Hard
Level of Fundus	Rising										Rising
	Same										Same

Answer 14.1

It should be used to monitor women after:

- Caesarean section
- Normal delivery
- Instrumental delivery

Answer 14.2

- This chart should be attached to the BHT of all postpartum patients.
- It is a standard, universal method of observation and has replaced the haphazardly maintained observation charts.
- It is mandatory to monitor all the parameters at given frequent intervals.
- The level of risk is clearly visible as it is indicated in different colours. Deterioration can be identified early.
- Situations which need medical attention are clearly indicated by different colours.
- It can be maintained even in a primary care unit and the patient can be transferred early as the clinical risk is clearly indicated.

Answer 14.3

It can be maintained by nurses and midwives.

QUESTION 15

15.1 What are the parameters which are monitored in the modified early warning chart in a woman during the first 2 hours after partus and what is the frequency of monitoring?

15.2 How do you assess the level of the risk?

15.3 When should a medical officer be informed?

Answer 15.1

Parameters which are monitored at 15 minute intervals include:

- Maternal pulse rate.
- Systolic and diastolic blood pressure
- Respiratory rate.
- Tone of the uterus and the level of the fundus
- Visual estimation of the blood loss.
- The level of alertness

The urine output is charted every 30 minutes.

The temperature should be checked before the patient leaves the labour ward.

It is mandatory to monitor the above parameters during the first 2 hours, while the patient is in the labour ward.

Further monitoring may be needed in high risk patients.

Answer 15.2

- The chart contains green, yellow and orange areas.
- If the observed value is recorded in a green area it is within the normal range.
- If it is recorded in a yellow area the risk is moderate.
- If it is recorded in an orange area the risk is high.

Answer 15.3

- A medical officer should be informed if any parameter is recorded in an orange area or if 2 parameters are recorded in a yellow area.
- If the observations are recorded only in green areas usual frequency of observation could be continued.