UNIT 3  INTRANATAL CARE

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3.0 INTRODUCTION

In Unit 2, you have learnt about antenatal care. Pregnancy is a unique, exciting and often joyous time in a women’s life. It has been a long wait for nine months when an expecting mother wants to see little bundle of joy by giving birth to a child. The fear and anxiety about child birth often prevents most women from enjoying the experience. However, an adequate knowledge about signs of labour and delivery in general can create feeling of confidence and a sense of well-being which is very crucial in ensuring a successful labour and child birth. In this unit you will learn about normal vaginal delivery, normal labour, stages of
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labour, mechanism and management of first, second, third and fourth stages of normal labour.

3.1 OBJECTIVES

After completing this unit, you should be able to:

• explain normal and assisted vaginal delivery;
• define and explain indications and contraindication of vaginal delivery;
• define and explain normal labour and process of labour;
• explain causes and stages of normal labour;
• describe signs of labour and factors influencing labour;
• explain physiological changes in first, second, third and fourth stages of normal labour;
• demonstrate mechanism of normal labour;
• describe management of first, second, third and fourth stages of labour; and
• explain immediate care of newborn at birth.

3.2 NORMAL LABOUR

Labour is the process by which the foetus, placenta and membranes are expelled through the birth canal.

Normal Labour: Labour is said to be normal when:-

• It occurs at term (between 37 and 42 completed weeks of gestation).
• Onset is spontaneous.
• Foetus presents by vertex.
• Completed without undue prolongation (within 18 hours).
• No complications to mother or baby.

Process of Labour: Process of labour involves four components commonly called 4p’s. These are:

• Power (or the force) – the involuntary uterine contractions to push the fetus out.
• Passenger (or the foetus) – must be of a size and shape to negotiate through the varying dimensions of the birth canal e.g. size, position and presentation of fetus.
• Passage (or the birth canal, or maternal pelvis) – must be of an adequate size, shape to allow descent, rotation and expulsion of the foetus.
• Psyche (or maternal Psychological response) – psychology of birth can adversely affect maternal fear intention.

3.2.1 Causes of Onset of Labour

Labour is a coordinated sequence of involuntary intermittent uterine contractions.
Labour occurs due to:

- **Uterine stretch theory** – The uterus which is a hollow muscular organ becomes stretched due to growing foetal structures. In return the pressure increases causing psychological changes (uterine contraction) that initiates labour.

- **Oxytocin theory** – Pressure on cervix stimulates to release oxytocin from maternal posterior pituitary gland. As pregnancy advances, the uterus becomes more sensitive to oxytocin. Presence of this hormone causes initiation of the labour.

- **Progesterone Deprivation theory** – A decrease in progesterone production may stimulate prostaglandins synthesis and hence the effect of estrogen which has a stimulating effect on uterine muscle. In later pregnancy rising foetal cortisol levels inhibits progesterone production from placenta reduces progesterone formation which initiates labour.

- **Prostaglandin theory** – In late pregnancy, foetal membranes and uterine decidua increase prostaglandin levels. A decrease in progestin level also elevates the prostaglandins which causes uterine contraction and labour is initiated.

- **Theory of Ageing Placenta** - Advance placental age decrease blood supply to the uterus which triggers uterine contractions and starts labour.

### 3.2.2 Stages of Labour

There are four stages of labour as given below:

**First Stage:** It is the stage of dilatation. It starts from the onset of true labour pains and ends with fully dilatation of cervix (10 cm). This is usually the longest stage. It consists of three phases. Early, Active and Transitional phase.

**Early Phase:** The cervix starts to open and widen. It will go from being close to being about 3 cm. Contractions are mild and short, lasting 20 to 40 seconds.

**Active Phase:** Contractions are longer and more frequent. The cervix opens from 4 cm to 7 cm. Contractions are more powerful, usually starts, gradually build up to a peak intensity. Lasting 40 to 60 seconds and occurs every 3 to 5 mts. Show and rupture of membranes may occur.

**Transitional Phase:** Contractions reach peak in intensity, occur every 2 to 3 mts with a duration of 60 to 90 seconds and causing maximum dilatation of 8 to 10 cm and there is an urge to push.

**Second Stage:** Stage of expulsion of fetus. It starts from full dilatation of cervix to expulsion of foetus from birth canal. Contractions push the foetus down the birth canal and mother feels intense pressure, Similar to an urge to have a bowel moment.

It has two phases. Propulsive phase and Expulsive Phase

**Propulsive phase:** It starts from full dilatation of cervix upto the descent of the presenting part to pelvic floor.

**Expulsive Phase:** It starts by maternal bearing down efforts and ends with delivery of the baby.
**Third Stage:** It is the stage of Separation and expulsion of placenta and membranes. It starts with birth of the baby and ends with complete expulsion of placenta and membranes (after birth). The uterus continues to contract to push out the placenta and membranes.

**Fourth Stage:** It is the stage of recovery. It is the stage of observation for at least one hour. After the expulsion of after birth. During this period the general condition of women and behavior of uterus are to be carefully watched.

The stages of labour are summarised in following Table 3.1.

<table>
<thead>
<tr>
<th>Table 3.1: Stages of labour</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First stage</strong></td>
</tr>
<tr>
<td>Latent stage (not in active labour):</td>
</tr>
<tr>
<td>Cervix is dilated &lt;4 cm</td>
</tr>
<tr>
<td>Contractions weak (less than 2 contractions in 10 minutes)</td>
</tr>
<tr>
<td>Active stage: Cervix is dilated &gt;4 cm</td>
</tr>
<tr>
<td><strong>Second stage</strong></td>
</tr>
<tr>
<td><strong>Third stage</strong></td>
</tr>
<tr>
<td><strong>Fourth stage</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average duration of stages of labour</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First stage</strong></td>
</tr>
<tr>
<td>Primi</td>
</tr>
<tr>
<td>Multi</td>
</tr>
</tbody>
</table>

**3.2.3 Premonitory Signs of Labour**

A short time previous to the commencement of labour where certain symptoms manifest themselves which are looked upon as indications of the approaching event is termed as premonitory stage of labour.

Premonitory stage begins 2 or 3 weeks before the onset of true labour and consists the following.

- **Lightening (Dropping, sinking of the uterus):** Few weeks prior to the labour in primigravida the presenting part is settling into the pelvis. It is due to active pulling up of the lower pole of uterus around the presenting part which
Intranatal Care

... diminishes the fundal height and minimizes the pressure from the diaphragm. The mother experiences the sense of relief from the cardio respiratory embarrassment.

- **Frequency of micturition:** Due to pressure of gravid uterus on the bladder, the mother feels urge in passing urine.

- **Low back ache:** As baby gets heavier and drops lower resulting some aches and pains in the lower back and pelvis as uterine and pelvis ligaments are stretched.

- **Cervical Ripening (Softening, effacing, thinning out and dilating):** A ripe cervix is soft less than 1.7 cm in length, admits a finger easily and is dilatable.

- **Increase vaginal secretion:** An increase beyond the increase that occurred throughout the pregnancy. The mucous is more slippery and viscous.

- **Mucous plug expelled:** With the softening and effacement of the cervix, the cervical mucous plug (operculum) is expelled resulting in a small amount of blood loss from exposed cervical capillaries known as show.

- **Braxton Hicks Contraction:** Irregular contraction that usually cause discomfort in lower abdomen occur throughout pregnancy now become more powerful intermittent and are associated with pain in back.

- **Nesting Syndrome:** 1 to 2 weeks before child birth, the women begins to create most comfortable atmosphere for her future baby, cleans the house, keeps newborn clothes ready, rearranges house hold things, prepares herself for admission to hospital.

- **Weight Loss:** During last weeks of pregnancy the weight falls one to two kg’s because swelling decreases or sometimes related to loose stools.

3.2.4 **Difference between True and False Labour**

Now you need to know the signs and symptoms of true and false labour.

True labour pain versus false labour pain: True labour pain has the following features and can be clearly differentiated from false labour pain: Table 3.2

<table>
<thead>
<tr>
<th><strong>True Labour Pain</strong></th>
<th><strong>False Labour Pain</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Begins irregularly but becomes regular and predictable</td>
<td>Begins irregularly and remains irregular</td>
</tr>
<tr>
<td>Felt first in the lower back and sweeps around to the abdomen in a wave pattern</td>
<td>Felt first abdominally and remains confined to the abdomen and groin</td>
</tr>
<tr>
<td>Continues no matter what the woman’s level of activity</td>
<td>Often disappears with ambulation or sleep</td>
</tr>
<tr>
<td>Increases in duration, frequency and intensity with the passage of time</td>
<td>Does not increase in duration, frequency or intensity with the passage of time</td>
</tr>
<tr>
<td>Accompanied by ‘show’ (blood-stained mucus discharge)</td>
<td>Show absent</td>
</tr>
<tr>
<td>Achieves cervical effacement and cervical dilatation</td>
<td>Does not achieve cervical effacement and cervical dilatation</td>
</tr>
</tbody>
</table>
3.2.5 Essential Factors Influencing Labour

Essential Factors influencing Labour are given below: These are 3Ps

- **The Passenger:**
  - Foetal head
  - Shoulder and Pelvic girdle
  - Foetal Lie
  - Presentation
  - Attitude
  - Position

- **The Passage Way:**
  - Pelvis
  - Soft Tissues
  - Cervix
  - Vagina

- **The Power:**
  - Uterine contraction
  - Voluntary bearing down efforts
  - Implication of nursing care

- **The Psyche:**
  - Mother’s confidence in her ability
  - Support from care givers
  - Labour environment
  - Psychological stress of labour pains

3.2.6 Normal Vaginal Delivery

You have already learn about pregnancy and its management. Pregnancy ends in to a process of delivery. You will now learn about delivery. We shall begin with Normal vaginal delivery.

Before discussing about vaginal delivery, you need to know about the labour room requirement where delivery is to be conducted. The details of Labour Room are given in Practical course BNSL-043, Block 4, Unit 2.

Definition and types

**Definition**

Normal vaginal delivery is the birth of offspring through vagina. It is a natural method of birth.

**Spontaneous Vaginal Delivery (SVD):** It is the one when a pregnant female goes into labour without use of drugs or technique to induce labour and deliver her baby in a normal manner, without forceps, vacuum extraction or a cesarean section.
**Assisted Vaginal Delivery (AVD):**

It is the one when a pregnant female goes into labour (with or without a use of drugs or techniques to induce the labour) and requires the use of special instruments such as forceps or vacuum extractor to deliver her baby vaginally.

**Instrumental Vaginal Delivery (IVD):**

Is another term for assisted vaginal delivery in which the instruments are used to deliver her baby.

**Indications and Contradictions**

**Indications**

- Spontaneous Labour mediated by pituitary and placental hormones
- Rupture of amniotic and chorionic membranes
- Induction of labour
- Ripening of cervix

**Contradictions**

These are the risk factors where normal vaginal delivery is contradicted.

- Cord prolapse
- Brow presentation
- Face presentation
- Breech presentation
- Malposition
- Twin pregnancy
- Higher order birth
- Multiple prior caesarian deliveries more than two
- Non reassuring foetal heart rate pattern
- Macrosomia

**Check Your Progress 1**

i) Define Normal vaginal delivery?

ii) Explain normal labour?

iii) List Premonitory signs of labour?

iv) Describe the role of oxytocin in the onset of labour?
3.3 FIRST STAGE OF LABOUR

You have already learnt in Section 2.3.6 that first stage of labour is from the onset of two labour pains to fully dilatation of cervix. You will now learn the physiological changes that take place in the first stage of labour.

3.3.1 Physiological Changes

It is important to make observations while caring a women in labour. This knowledge about physiological changes will help for the effective management. The following are the physiological changes.

Fundal Dominance: Uterine contraction starts from the fundus of uterus and moves downwards. Contractions of the funds are strong, intense and lasts for a longer time. This pattern permits the cervix to dilate and fundus to expel the foetus.

Polarity: It is the neuro muscular harmony between upper and lower uterine segment. Contractions of the uterus takes place at the upper pole and there is slight contractions and dilatation of the cervix taking place at the lower pole.

Contraction and retraction of uterine muscles: (Fig 3.1)

- **Uterine Contraction:** It is the temporary shortening of the uterine muscles. During labour the uterine muscles becomes short and the space in uterus becomes less so pressure is increased in the uterine cavity. This pressure push down the fetus in the lower portion of the uterus and force the foetus to deliver.

- **Uterine Retraction:** Retraction is the phenomenon of the uterus in labour in which the muscle fibres are not permanently shortened or relaxed but retain some of the contraction, resulting in shortening and thickening of the upper uterine segment which helps in the progressive expulsion of the foetus.

![Fig. 3.1 : Contraction and retraction of uterine muscle](image)

Characteristics of Uterine contraction: These include following Fig 3.2

- **Intensity** (Degree of peak, tightness or hardness): It describes degree of uterine systole, intensity changes as labour progresses in the beginning it can be like mild cramp.

- **Frequency:** It is measured from beginning of one contraction to the beginning of very next contraction. This not only includes the duration of one contraction but also the rest period between the two, Examples: if contraction starts at 8 PM and then another contraction is at 8:15 PM so contraction has a frequency of 15 min.
• **Duration**: It is the time from the beginning of one contraction to the end of that same contraction. During labour duration of contraction will start out short (25 to 35 seconds long) and ultimately gets to 70 to 90 seconds.

• **Increment**: means when uterine muscles contract and force increase in strength.

• **Acme**: It is the peak of intensity.

• **Decrement**: Gradual decrease in strength until the muscles are relaxed.

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*Fig. 3.2 : Characteristics of Uterine Contraction*

- **Formation of upper and lower uterine segment**: The uterus forms a thick upper segment and thin lower muscular layer. The upper longitudinal muscles pull on the lower circular muscles situated in the lower uterine segment which will aid in the descent of the presenting part.

- **Retraction Ring**: This is a ridge formed between the upper and lower uterine segment. It is normal if it is not visible over the symphysis pubis. If it is visible as a depressed ridge running transversely or slightly oblique across the abdomen above the symphysis pubis it is called bundles Ring.

- **Cervical Effacement**: Effacement is a process by which the muscular fibres of cervix are pulled upwards and merge with fibres of lower uterine segment. It is a thinning out of the cervix. It is expressed in terms of percentage. 100% effacement means that the cervix is fully effaced. In primi effacement precedes the dilatation of cervix. In multigravida both occurs simultaneously.

- **Cervical dilatation**: It is the process of enlargement of the external os which is tightly closed aperture to an opening large enough to permit the passage of foetal head. This is expressed in centimeters and ranges from 0 to 10 centimeter.

- **Presence of show**: As the cervix dilates, the operculum is discharged out with light blood stains called show. This is due to rupture capillaries of the decidua, where the chorion detaches due to dilatation of the cervix.

- **Formation of bag of membranes**: As the chorion detaches, a loosen sack of amniotic fluid buldges downwards into the dilating internal os. In case of complete flexion where the presenting part gets completely fixed, fluid cuts into two compartments, one compartment with foetus and some fluid called hind water and another compartment with fluid in front of the presenting part called fore waters.

- **Rupture of membranes**: It occurs at the end of first stage of labour when cervix is fully dilated and no longer supports the bag of fore waters. It may occur at any time during labour or even before labour starts.

- **Fetal axis pressure**: At each uterine contraction, the uterus rears forwards (become upright) and the force of fundal contraction is transmitted to upper
pole of the uterus down the long axis of the fetus and is applied by the presenting part of the cervix.

3.3.2 Monitoring and Management of First Stage of Labour

Principles of Management:

- To have safe vaginal delivery.
- To carefully monitor vital signs for early detection of any deviation from the normal.

The Monitoring and Management of first stage of labour is summarised in Table 3.3 below.

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**Oxytocin drugs for inducing/accelerating labour should not be administered before delivery as their use is associated with a high incidence of rupture of the uterus.**

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### Table 3.3: Monitoring and management of first stages of labour

<table>
<thead>
<tr>
<th>Monitoring</th>
<th>Action/Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Latent stage, i.e. not in active labour</strong></td>
<td>• Record time of rupture of membranes and colour of amniotic fluid.</td>
</tr>
<tr>
<td>Monitor the following every one hour:</td>
<td>• Never leave the woman alone.</td>
</tr>
<tr>
<td>• Contraction:</td>
<td>• Allow her to remain mobile.</td>
</tr>
<tr>
<td>• Frequency—how many contractions in 10 minutes</td>
<td>• Let her choose the position in which she is comfortable.</td>
</tr>
<tr>
<td>• Duration—how many seconds each contraction lasts</td>
<td>• If after eight hours, the contractions are stronger and more frequent but there is no progress in cervical dilatation, with or without rupture of the membranes, it indicates nonprogress of labour. Refer the woman urgently to an FRU.</td>
</tr>
<tr>
<td>• FHR: Normal FHR is between 120 and 160 beats/minute</td>
<td>• If after eight hours, there is no increase in intensity/frequency duration of contractions, the membranes are not ruptured and there is no progress in cervical dilatation, ask the woman to relax. Advise her to come/send for you again when the pain/discomfort increases, and/or there is vaginal bleeding, and/or the membranes rupture.</td>
</tr>
<tr>
<td>• Presence of any sign of an emergency (difficulty in breathing, shock, vaginal bleeding, convulsions or unconsciousness)</td>
<td></td>
</tr>
<tr>
<td>• Monitor the following every four hours:</td>
<td></td>
</tr>
<tr>
<td>• Cervical dilatation (in cm)</td>
<td>• Never leave the woman alone.</td>
</tr>
<tr>
<td>• Temperature</td>
<td>• Start maintaining a partograph when the woman reaches active labour.</td>
</tr>
<tr>
<td>• Pulse</td>
<td></td>
</tr>
<tr>
<td>• Blood pressure</td>
<td></td>
</tr>
<tr>
<td><strong>Active stage</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Monitor the following every 30 minutes:</strong></td>
<td></td>
</tr>
<tr>
<td>• Maternal pulse</td>
<td></td>
</tr>
<tr>
<td>• Contraction—frequency and duration</td>
<td></td>
</tr>
</tbody>
</table>
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**Monitoring**

- FHR
- Presence of signs such as meconium blood-stained amniotic fluid, prolapsed cord.

**Monitor the following every four hours:**

- Cervical dilatation (in cm) by P/V
- Temperature
- Blood pressure

**Action/Management**

- Re-assess the woman and consider criteria for referral.
- Call a senior person, if available. Alert emergency transport services.
- Encourage the woman to empty her bladder.
- Ensure adequate hydration but omit solid foods.
- Encourage her to maintain an upright position and walk, if she wishes.
- Monitor intensively, using the partograph. Refer immediately if there is no progress.

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**Promotion of physical well-being:** The woman is allowed to ambulate if not contraindicated as in case of bleeding, rupture of membranes, pregnancy induced hypertension, cardiac disease or any medical problem. Ambulation may decrease the need for analgesics, shortens labour and decreases incidence of foetal heart rate abnormalities.

- Allow the mother to assume any comfortable position except dorsal decumbent which may result in supine hypotensive syndrome, leading to foetal distress.
- Encourage deep breathing during contraction.
- Massage back if she complains of backache.
- Be with the women, reassure her and encourage her to express her discomfort, fear and anxiety.
- Change the pad in excessive vaginal discharge.

**Nutrition and Hydration**

- The women’s need for energy is met through nourishing, give oral fluids at frequent intervals.
- Solid foods are usually avoided since gastric emptying is prolonged during labour and also in anticipation of anaesthesia.
- Sometimes I/V fluids may be given to provide energy and prevent dehydration.
- If the mouth is dry, provide mouth wash and sips of water.
- Maintain intake and output chart.

**Bladder: Care** To maintain empty bladder. The women should be encouraged to pass urine every two to three hours during labour. The urine should be tested for presence of glucose, ketones and proteins. A full bladder is associated with poor uterine contraction. It prevents decent of foetal head and can also cause injuries to bladder. Retention of urine frequently occurs in labour and catheterization may be required.
3.3.3 Partograph

The partograph is a graphic recording of the progress of labour and the condition of the mother and foetus. It is a tool which helps assess the need for action and recognises the need for referral at the appropriate time. This facilitates timely referral to save the life of the mother and foetus. The progress of labour is recorded as a simple graph with time on horizontal axis and important features on vertical axis. Sample partograph is given in Fig. 3.3.

**Importance:**
- Provides continuity of care.
- Provides basis for decision making.
- Facilitates research.
- Allows audit and review.
- Defends one's action

Make following observations and follow the instructions given below carefully while filling the partograph:

**Identification data**

Note down the woman’s name and age, parity, date and time of admission, registration number and time of rupture of the membranes.

**Foetal condition**

- Count the FHR every half an hour.
  - Count the FHR for one full minute.
  - The rate should be preferably counted immediately after a uterine contraction.
  - If the FHR is below 120 beats per minute or above 160 beats per minute, it indicates foetal distress. In such cases referral is indicated.
- Remember that each of the small boxes in the vertical column of the partograph represents a half-hour interval.
- Note the condition of the membranes and observe the colour of the amniotic fluid as visible at the vulva every half an hour.
  - Record in the partograph as follows:
    - Membranes intact (mark ‘I’)
    - Membranes ruptured: - (mark ‘R’)
    - Clear liquor (mark ‘C’)
    - Meconium-stained liquor (mark ‘M’)

**Progress of Labour**

- Begin plotting on the partograph only when active labour starts. Active labour starts when the cervical dilatation is 4 cm or more and the woman is having at least two good contractions every 10 minutes.
- Record the cervical dilatation in centimeters every four hours. Sample partograph in labour is given in Fig. 3.4
- In this phase, cervical dilatation progresses by approximately 1 cm per hour and is often quicker in multigravidae.
• Plot the first recording of cervical dilatation on the **Alert line**. Write the time accordingly in the corresponding row for time. After four hours, conduct a vaginal examination and plot the cervical dilatation in centimeters on the graph.

• If the Alert line is crossed (the plotting moves to the right of the Alert line), it indicates prolonged/obstructed labour and you should be alert that something is abnormal with the labour.

• Note the time when the Alert line is crossed. The woman needs to be referred urgently to the FRU. Please remember to send the partograph along.

• Crossing of the Action line (the plotting moves to the right of the Action line) indicates the need for intervention. There is a difference of four hours between the Alert line and the Action line. By the time the Action line is crossed, the woman should ideally have reached the FRU for the appropriate intervention. Refer as soon as Alert line is crossed and do not wait for referral till the Action line is crossed.

• Chart the contractions every half an hour; count the number of contractions over 10 minutes and note their duration in seconds. Record the number of good uterine contractions (lasting more than 20 seconds) in 10 minutes every half an hour and accordingly, blacken the boxes on the partograph.

**Maternal condition**

• Record the maternal pulse on the graph every half an hour and mark with a dot (.).

• Record the woman’s blood pressure on the graph every four hours, using a vertical arrow (\(^\uparrow\)) with the upper end of the arrow signifying the systolic blood pressure and the lower end indicating the diastolic blood pressure.

• Record the temperature every four hours and note it on the temperature graph.

**Interventions**

• Mention any drug that has been administered during labour, including the dosage, route and time of administration. Also include the food items and liquids consumed by the woman during labour.

**Indications for referral to the FRU on the basis of the partograph**

• If the FHR is 160 beats/minute or less than 120 beats per minute

• If there is meconium- and/or blood-stained amniotic fluid

• When the cervical dilatation plotting crosses the Alert line (moves towards the right side of the Alert line)

• If the contractions do not increase in duration, intensity and frequency.

• If the maternal vital signs, i.e. the pulse (more than 100/min), BP (>140/90 mmHg) and temperature (>38ºC), cross the normal limits.

**Steps of plotting Partograph**

Let us summarise the steps of plotting the Partograph as given below.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Record identification data</td>
</tr>
<tr>
<td>2)</td>
<td>Record Fetal heart rate, condition of amniotic fluid and membranes, cervical dilatation position of presenting part and frequency and duration of uterine contractions. Maternal parameters shall be properly recorded with respect to time</td>
</tr>
</tbody>
</table>
3) Plot cervical dilatation when it is 4 cm and above on the alert line along with the time Note: The first plotting on the Partograph is always on the alert line. A Partograph is started once labour has commenced.

4) Plot the following every half hour: frequency and duration of uterine contractions, foetal heart rate, condition of the membranes, colour of amniotic fluid and maternal pulse.

5) Plot the following every four hours: cervical dilatation, descent of head or presenting part, maternal temperature blood pressure and urinalysis (should be performed every time the woman passes urine).

6) Record any medications or interventions carried out on the Partograph in the relevant sections with time noted.

7) Interpret the findings and make a decision on necessary action. If referral is required, refer the client further with a duly completed referral slip and copy of the Partograph.

8) Record the date, time of birth, condition at birth, sex and weight of the baby and type of delivery on the Partograph.

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Fig. 3.3 (a) : Sample Partograph
Interpretation of Partograph

Let us discuss how partograph is plotted and interpreted as given below. A sample partograph in labour is given in Fig. 3.3 (b).

Look at the Partograph given in Fig. 3.3 (b) you will find graphic representation in various parts.

- In the beginning, partograph represents patient particulars.
  - It includes patient particulars Date of Admission (DOA) & time of admission to ward as well as to Labour room (to know the exact time of onset of labour),
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Period of Gestation (POG), blood group, membrane ruptured or not & time of rupture.

- The next graphical representation is the foetal heart rate.

  It’s monitored every half hourly (as you can see that each column correspondence to half an hour interval) it should be in the range of 120–160 in normal cases.

- The next column after foetal heat represents the colour of the amniotic fluid, where I is Intact, C represents Clear & M represents Meconium stained followed by Moulding – which is generally absent, but if there is overriding of bones then it has to be graded as 1, 2 or 3.

- The next graphic presentation represents cervical dilation from 0–10 cm, this is denoted by (x), it is plotted from the active phase i.e. from 4 to 10 cm dilation & head station in descending order.

  This graph is further divided into 3 zone, draw the first line from 4 cm dilation to 10 cm dilation i.e. at a distance of 6 hours (1cm/hr). This line is called as alert line. The area on left of alert line is called as Zone 1

  - Cervical dilation in normal cases when plotted should be either on the alert line or on its left side.

  - Another line is drawn parallel to alert line at a distance of 4 hrs, it is called as Action line.

  - The area between alert line and action line is called as Zone 2.

  - Dilation plotted in this area shows abnormal progress of labour, and the mother and baby has to be critically assessed.

  - When dilation falls towards the right side of action line, it is called Zone 3, here the patient has to be reassessed by a senior expert. Here decisions for LSCS or amniotomy etc are planned and implemented.

  - Head station graph (Descent of head) always progress downwards and is represented by (0).

  Mention the effacement cervix in percentage at the bottom of this graph to correlate the progress of labour.

  *Generally per vaginal examination (PV) is done every 4 hourly but in case of rupture of membrane PV can be done irrespective of the timing of previous PV examination. Once the mother has delivered it is written as Normal Vaginal delivery, live baby, sex, time of birth, weight. It can be written with red pen.

- Next part of Graph represents the contractions. It is monitored every half an hour with the onset of first contraction from 4 cm dilation for plotting, (otherwise before 4 cm we write it in a partogram book).

- The contractions are recorded for 10 minutes. In this we see the total number of contractions, duration of each contractions and its intensity (e.g. 3–4 contractions in every 10 minutes lasting for 35–40 seconds, moderate in intensity)

- The X axis represents the number of contractions and the shaded area shows the corresponding number (generally we give different shades for the boxes as per the intensity and duration). Contraction lasting for less than 20 seconds denotes poor contractions and hence requires intervention like augmentation by oxytoxin; and the contraction lasting more than 55 or 60 seconds denotes hyper stimulation, hence the oxytocin has to be either tapered, or stopped.
Next graph column shows it shows the dose of inj oxytocin if administered followed by column from administration of any drugs like drotin, analgesics and IV for hydration. They can be recorded against the corresponding time.

Following above is the Graph for TPR and BP every half an hour.

Next graph column represents urine analysis (emptying of bladder is done frequently to avoid obstruction of presenting part and also to prevent bladder injury, observe oxytocin toxicity. Dip stick test can also be done to see protein, acetone and glucose.

All these readings plotted in this graph corresponds to the same time as mentioned below the graph showing Cx dilatation etc.

**Case Study 1**

Savita (wife of Omprakash), 28 years of age, third gravida, was admitted at 7:00 am on 21 Jan 2017 with the complaint of labour pains since 1:00 am. Her membranes had ruptured at 5:00 am. She has two children of the ages of 7 and 3 years. On admission, her cervix was 2 cm dilated.

**Plot the following findings on the partograph:**

**At 10:00 am:**
- The cervix is dilated 5 cm.
- She had 3 contractions in 10 minutes, each lasting 20-40 seconds.
- The FHR is 120 beats per minutes
- The membranes have ruptured and the amniotic fluid is clear.
- The BP is 120/70 mmHg
- Her temperature is 36.8°C
- Her pulse is 80 per minute

**10:30 am:** FHR 120, contractions 3/10 each 30 seconds, pulse 80/minute, amniotic fluid clear

**11:00 am:** FHR 136, contractions 3/10 each 35 seconds, pulse 80/minute, amniotic fluid clear

**11:30 am:** FHR 140, contractions 3/10 each 40 seconds, pulse 88/minute, amniotic fluid clear

**12:00 noon:** FHR 130, contractions 3/10 each 40 seconds, pulse 88/minute, amniotic fluid clear

**12:30 pm:** FHR 136, contractions 4/10 each 45 seconds, pulse 84/minute, amniotic fluid clear

**1:00 pm:** FHR 140, contractions 4/10 each 45 seconds, pulse 88/minute, amniotic fluid clear

**1:30 pm:** FHR 130, contractions 4/10 each 50 seconds, pulse 88/minute, amniotic fluid clear

**2:00 pm:** FHR 140, contractions 4/10 each 55 seconds, pulse 90/minute, temperature 37°C BP 100/70 mmHg amniotic fluid clear

- Cervix fully dilated
- Amniotic fluid clear
- BP 100/70 mmHg

**At 2:20 pm:** Spontaneous birth of a live female infant weighing 2.85 kg
3.4 SECOND STAGE OF LABOUR

Second stage of labour begins with fully dilatation of cervix to the expulsion of fetus. At this point let us review mechanism of labour and physiological changes during second stage of labour before discussing about management. We shall begin with principle of management and physiological changes during second stage of labour.

Principles of Management:

- To encourage birth of a healthy baby.
- To prevent damage to perineal tissues.

3.4.1 Physiological Changes

Following physiological changes take place.

Descend:

Descend of foetal presenting part which begins during first stage of labour, reaches
its maximum at the end of first stage of labour and continues through second stage of labour.

Uterine Action:
Contractions become stronger and longer approximately every 2 minutes lasting 60 to 90 seconds but may be less frequent giving mother and foetus a recovery period during resting phase. Nature of contraction changes become more expulsive as pressure is exerted on rectum and pelvic floor. Mother feels urge to push and the women begins to voluntary bear down.

Rupture of membranes:
The membranes often rupture spontaneously at the second stage of labour and there is gush of liquor amni per vagina. With the rupture of membranes the head flexion increases and progress of labour increases.

Dilatation, gaping of anus and perineal Bulging:
Deep engagement of presenting part and maternal pushing produces dilatation, gaping of anus and perineal bulging during late second stage of labour. Perineum possessively bulges during contraction and anus gaps, the vulval opening becomes circular during the expulsive phase. With each contraction the head descends and the perineum distends leading to perineal bulging.

Appearance of presenting part:
With perineal buldging, the scalp hair are visible through vulval opening. There may be desire to pass stool when head comes on the pelvic floor and the crowning of head occurs. Excessive Moulding may result from prolonged labour in the formation of a large caput which may protrude through the cervix prior to full dilatation.

Congestion of the vulva:
There is an intense pressure in the area of perineum and rectum as foetal presenting part descends the pelvic floor which leads to congestion of vulva due to stretching of the vulva. If the second stage lasts longer than two hours in primi Gravida or one hour for multi Gravida is considered abnormal.

3.4.2 Mechanism of Labour
We shall begin with definition and principles and then discuss the steps of mechanism of labour.

Definition: It refers to the sequencing of events related to posturing and positioning that allows the foetus to find the easiest way out. It is also defined as the series of passive moments of the foetus during its passage through maternal pelvis during labour.

Principles:
- Descent takes place throughout labour.
- Whichever part leads and first meets the resistance of the pelvic floor will rotate forward until it comes under the symphysis period.
• Whatever emerges from the pelvis will pivot around the pubic bone.

**Steps of mechanism of labour in.**

At the onset of labour the follow pneumonic LAPPED is followed. These are:

**L – Lie**

Is the relationship of the long axis of fetus to the long axis of uterus (Fig. 3.4 a-d). There are three lies – longitudinal, transverse and oblique. In 99% cases the lie is longitudinal the remainder of oblique and transverse as shown in Fig. 3.4.

**A – Attitude**

Is the relationship of fetal head and limbs to its trunk, the attitude should be complete flexion (Fig. 3.5 a-d)
P – Presentation

It refers to the part of fetus which lie in the lower pole of uterus. There are three presentations vertex (cephalic), breach and shoulder (transverse). In 96.8% cases presentation is vertex (Fig. 3.6 a-f).

![Fig. 3.6: (a-f) Foetal presentation (a) vertex (b) Brow (c) Face (d) Breech (e) Shoulder - dorsoanterior](image)

P – Position

It the relationship between the denominator and 6 points in the pelvicbrim. There are six positions (Fig. 3.7a-f)

![Fig. 3.7: (a-f) Diagrammatic presentation of six positions of the vertex](image)
**E – Engagement**

Engagement means that most of the babies had has descended into the mother’s pelvic cavity and only a small cavity can be felt abdominally.

**D – Denominator**

Is the name of the part of the presentation that is when referring to the foetal position. Each presentation has different denominator.

**Principle Movements: (Fig. 3.8 a-f)**

- **Descend:** It takes place due to forceful uterine contraction and retraction, rupture of membranes, complete cervical dilatation and maternal efforts. As the foetal head engages and descends it assumes an occipito transverse position because that is the widest diameter available for the widest part of the foetal head.

- **Flexion:** Flexion is increased throughout labour. While descending through the pelvis, the foetal head flexes so that foetal chin is touching the foetal chest. The increased flexion will decrease the presenting diameter i.e. occipito frontal (10 cm) to a smaller diameter (sub occipito bregmetic 9.5 cm). The occiput becomes the leading part.

- **Internal Rotation of the head:** The occiput leads and meets the pelvic floor first and rotates anteriorly 1/8 of the circle to come under symphysis pubis. This causes the slight twist in the fetal neck. The anterio posterior diameter of the head now lies in the anterio posterior diameter of the pelvic outlet.

- **Crowning:** The occiput slips beneath the sub pubic arch and crowning occurs when the head no longer recedes back between the contractions and the widest transverse diameter (biparietal) is born.

- **Extension of the head:** Once crowing has occurred, the foetal head extends, pivoting on the sub occipital region around pubic bone. While the sinciput, face and the chin sweeps the perineum and head is born by the moment of extension.

- **Restitution:** The twist in the neck of the foetus that resulted from the internal rotation is now corrected by a slight untwisting moment. The occiput moves 1/8 of the circle towards the side from which it started.

- **Internal rotation of shoulders:** The anterior shoulder reaches the pelvic floor first in the left oblique diameter and rotates forward 1/8 of the circle from right to left and thus the shoulders are now in the anterior posterior of the pelvis.

- **External rotation of head:** It occurs as the shoulders rotate 1/8 internally causing the head to rotate another 1/8 of the circle externally in the same direction as restitution. Example in LOA, the occiput rotates on the left towards left thigh while in ROA it moves in right.

- **Lateral flexion:** The anterior shoulder escapes under the symphysis pubis, the posterior shoulder sweeps the perineum so both shoulders are born simultaneously. The reminder of the body is born by lateral flexion as the spine bends sideways through the birth canal.
Summary of Mechanism of Labour:

- Engagement
  - Flexion
  - Crowning
- Extension of Head
- Restitution
- Internal rotation of shoulders
- External Rotation of head
- Lateral Flexion
3.4.3 Management during Second Stage of Labour

During second stage of labour you have to prepare for safe delivery of the baby and prevent damage to perenial tissue, we shall begin with preparation of delivery.

Preparation for Delivery: Keep all the equipments and instruments ready for safe delivery of the baby.

Pre-delivery preparation

While taking care of the pregnant women in labour you have to keep all equipments ready for the safe delivery. You need to keep following equipments ready as given in Table 3.4. The trays which should be kept ready area given in Table 3.5.

<table>
<thead>
<tr>
<th>Pre-delivery Observation Room Criteria</th>
<th>Equipment and Accessories</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The number of beds for this area will depend upon the delivery load of the facility.</td>
<td>1) Foetoscope/Doppler</td>
</tr>
<tr>
<td></td>
<td>2) BP apparatus with stethoscope</td>
</tr>
<tr>
<td></td>
<td>3) Thermometer</td>
</tr>
<tr>
<td></td>
<td>4) Wall clock</td>
</tr>
<tr>
<td></td>
<td>5) Colour coded bins</td>
</tr>
<tr>
<td></td>
<td>6) Cetrimide swabs</td>
</tr>
<tr>
<td></td>
<td>7) Disposable gloves</td>
</tr>
<tr>
<td></td>
<td>8) Bed head tickets with attached Partograph</td>
</tr>
<tr>
<td></td>
<td>9) Utility gloves</td>
</tr>
<tr>
<td></td>
<td>10) Washbasin</td>
</tr>
<tr>
<td></td>
<td>11) IV stand</td>
</tr>
<tr>
<td></td>
<td>12) Sterilized instruments</td>
</tr>
</tbody>
</table>
Table 3.5: Trays to be kept in labour Room

<table>
<thead>
<tr>
<th>Tray Type</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery Tray</td>
<td>*Gloves *Scissor *Artery forceps *Cord clamp *Sponge holding forceps *Urinary catheter *Bowl for antiseptic lotion *Gauze pieces and cotton swabs *Speculum *Sanitary pads *Kidney tray</td>
</tr>
<tr>
<td>Episiotomy Tray</td>
<td>*Inj. Xylocaine 2% *10 ml disposable syringe with needle *Episiotomy scissors *Kidney tray *Artery forceps *Allis forceps *Sponge holding forceps *Toothed forceps *Needle holder *Needle (round body &amp; cutting) *Chromatic catgut no.0 *Gauze pieces *Cotton swabs *Antiseptic lotion *Thumb forceps *Gloves</td>
</tr>
<tr>
<td>Baby Tray</td>
<td>*Two pre-warmed towels/sheets for wrapping the baby *Cotton swabs *Mucus extractor *Bag and mask *Sterilized thread for cord/cord clamp *Nasogastric tube and gloves *Inj. Vitamin K *Needle and syringe. (Baby should be received in a pre-warmed towel. Do not use metallic tray.)</td>
</tr>
<tr>
<td>Emergency Drug Tray</td>
<td>• Inj. Oxytocin (to be kept in fridge) • Inj. Magsulf 50% • Inj. Calcium gluconate-10% • Inj. Dexamethason • Inj. Ampicillin, Inj.Gentamicin • Inj. Metronidazole • Inj. Lignocaine-2% • Inj. Adrenaline • Inj. Adrenaline • Inj. Hydrocortisone Succinate • Inj. Diazepam • Inj. Pheneramine maleate • Inj. Carbofresh • Inj. Fertin • Inj. Phenergan • Ringer lactate • Normal saline • Betamethason Inj. Hydrazaline • Nefidepin • Methyldopa • IV sets with 16-gauge needle at least two • Controlled suction catheter • Mouth gag • IV Canula • Vials for drug collection Ceftriaxon (3rd generation cephalosporins)- ForL3 facility (**only for L2, L3)</td>
</tr>
</tbody>
</table>

Gloves, Speculum, Anterior vaginal wall retractor, Posterior vaginal wall retractor, Sponge holder forceps, MVA syringe & cannulas, MTP cannulas, Urinary catheter, Small bowl of antiseptic lotion, Sterilized gauze/pads, Cotton swabs, Disposable syringe and needle, Tab. Misoprostals

PPIUD Insertion Forceps, Sym's speculum, Ring forceps or sponge holding forceps, Cu IUCD 380A/ Cu IUCD 375 in a sterile package, Cotton swabs, Betadine solution
Preparation of delivery room:

Instrument and labour table preparation.

- Delivery room should always be ready for conduction of labour.
- Safety of the laboring mother should always be ensured.
- If the women is transferred from one bed to another it should be between contractions, supporting the mother adequately.
- Provide enough privacy.
- Maintain strict asepsis in the conduction of labour.
- Make sure that room is warm enough for the baby.
- Ensure that the resuscitation trolley is ready for use.

You must be aware of all do’s and don’ts in labour room.

Do’s and Don’ts in Labour Room

All essential practices protocols should be displayed in and around the labour room and clearly visible at appropriate places. Essential practices are presented in Table 3.7 and harmful practices in Table 3.6.

Table 3.6: Do’s (Essential Practices for Sub-Centre (SC), Primary Health Centre (PHC), Community Health Centre (CHC) and District Hospital (DH))

<table>
<thead>
<tr>
<th>At the Time of Admission</th>
<th>In Labour Room</th>
<th>After Delivery and Before Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of Maternal and foetal condition by: Measurement of BP and temperature of mother Measurement of Foetal Heart Rate Measurement of Haemoglobin Measurement of urine protein Assessment of gestational age (give ANCS if &lt;34 weeks).</td>
<td>Partograph Active management of third stage of labour Delayed cord clamping Essential newborn care Drying and wrapping of baby Immediate resuscitation, if required. Skin to skin contact of the newborn Immediate initiation of breastfeeding Injection vitamin K</td>
<td>Assessment of maternal bleeding Assessment of newborn condition by measurement of temperature and respiratory rate Assessment of maternal condition by measurement of BP and temperature</td>
</tr>
</tbody>
</table>

Table 3.7: Harmful Practices for Sub-Center (SC), Primary Health Centre (PHC), Community Health Centre (CHC) and District Hospital (DH)

<table>
<thead>
<tr>
<th>Don’ts (Harmful Practices) for Sub-Center (SC), Primary Health Centre (PHC), Community Health Centre (CHC) and District Hospital (DH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. No routine enema</td>
</tr>
<tr>
<td>2. No routine shaving</td>
</tr>
<tr>
<td>3. No routine induction/augmentation of labour</td>
</tr>
<tr>
<td>4. No place for routine suctioning of the baby</td>
</tr>
</tbody>
</table>
5. No pulling of the baby. Allow natural slow delivery (3 minutes – 1 min for head, 1 min for shoulders and 1 min for body). Only assist when required at the time of delivery of body (prevents PPH)

6. No routine episiotomy

7. No fundal pressure

8. No immediate cord cutting

9. No immediate bathing of the newborn

10. No routine resuscitation on warmer (evert baby should not be kept on warmer unless there is an indication)

For management for second stage of labour refer Table 3.8 given below.

**Table 3.8: Steps in management of second stage of labour**

<table>
<thead>
<tr>
<th>Steps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ensure privacy and dignity of the woman. Make her feel comfortable. A male doctor needs a female assistant while performing the examination. Ask if she has understood what is going to be done and ask her permission before undertaking the examination</td>
</tr>
<tr>
<td>2.</td>
<td>Put on personal protective attire (wear goggles, mask, cap, shoe covers, plastic apron). Place the plastic sheet or Kelly’s pad under the woman’s buttocks and two clean towels on mother’s abdomen. Place the perineal sheet/leggings, if available.</td>
</tr>
<tr>
<td>3.</td>
<td>Palpate the supra pubic region to ensure that the woman’s bladder is not full. If it is full, encourage her to empty the bladder or catheterize</td>
</tr>
<tr>
<td>4.</td>
<td>Wash hands and put on sterile gloves</td>
</tr>
<tr>
<td>5.</td>
<td>Clean the woman’s perineum with sterile swabs</td>
</tr>
<tr>
<td>6.</td>
<td>Talk to the woman and encourage her to take breaths through her mouth after every contraction</td>
</tr>
<tr>
<td>7.</td>
<td>When the head is visible, encourage her to bear down during contractions</td>
</tr>
<tr>
<td>8.</td>
<td>Support the perineum with one hand using a clean pad and control the birth of the head with the fingers of the other hand to maintain flexion, allowing natural stretching of the perineal tissue to prevent tears</td>
</tr>
<tr>
<td>9.</td>
<td>Feel around the baby’s neck for the cord and respond appropriately if the cord is present</td>
</tr>
<tr>
<td>10.</td>
<td>Allow the baby’s head to turn spontaneously, then, with the hands on either side of the baby’s head, deliver anterior shoulder by gently moving head a little downward which allows shoulder to drop down the symphysis pubis</td>
</tr>
<tr>
<td>11.</td>
<td>When the axillary crease of anterior shoulder is seen, deliver the posterior shoulder, lifting the baby upwards towards the mother’s abdomen</td>
</tr>
<tr>
<td>12.</td>
<td>Support the rest of the baby’s body with one hand as it slides out and note the time of birth and sex of the baby and show the mother. Place the baby on the mother’s abdomen over a clean, dry, pre-warmed towel in a prone position with the head turned to one side</td>
</tr>
</tbody>
</table>
Intrapartum Care

13. Quickly dry the baby with a pre-warmed towel, discard the wet towel. Wrap the baby loosely in the second prewarmed dry towel. Delay cord clamping for 1-3 mins if the baby is crying or breathing well.

14. Palpate the mother’s abdomen to rule out the presence of an additional baby/babies and proceed with active management of the third stage (AMTS) and ENBC.

15. Look for any vaginal or perineal tears; if present, assess the degree of tear and manage accordingly.

*For third-degree perineal tears, refer the woman immediately for higher specialised care with proper, sterilised perineal dressing.

**Steps of vaginal examination**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Wash hands and wear HLD/sterilised gloves on both hands</td>
</tr>
<tr>
<td>2)</td>
<td>Take an antiseptic solution swab in a sponge holder and clean both labia from above downwards. Repeat the step again using another swab</td>
</tr>
<tr>
<td>3)</td>
<td>Discard the swabs in the yellow bucket</td>
</tr>
<tr>
<td>4)</td>
<td>Separate the labia, clean with a swab from above downwards</td>
</tr>
<tr>
<td>5)</td>
<td>Insert index and middle finger to perform the vaginal examination. Rotate the hand 90 degrees so that palm faces upwards and gently stretch the fingers till the rim of cervix is felt (usually at 3–9 O’clock position)</td>
</tr>
<tr>
<td>6)</td>
<td>Assess cervical dilatation (record in cm) e.g. 7 cm, dilated</td>
</tr>
<tr>
<td>7)</td>
<td>Similarly, feel the rim of the cervix with the index and middle finger, assess the cervical effacement mention in %, or can be reordered as: not effaced, partly effaced, fully effaced</td>
</tr>
<tr>
<td>8)</td>
<td>Membranes – Present/Absent. If absent colour of liquor</td>
</tr>
<tr>
<td>9)</td>
<td>Check/confirm Presentation – Vertex/breech/empty pelvis*</td>
</tr>
<tr>
<td>10)</td>
<td>If Vertex – check- caput (boggy feeling) or moulding*</td>
</tr>
<tr>
<td>11)</td>
<td>Station – at spines/above/below</td>
</tr>
<tr>
<td>12)</td>
<td>Remove the glove inside out for decontamination in 0.5% chlorine solution.</td>
</tr>
</tbody>
</table>

As soon as the baby is born take following action.

1) Check for cry, if present, Clean the nose and mouth and put the baby on mother’s abdomen where a warm towel should be there before delivery.

2) Wipe the baby with the warm towel and discard the wet towel.

3) Wrap the baby in another warm towel and put the baby on mother’s abdomen

4) Make mother and baby comfortable

5) Give pre-loaded Inj. Oxytocin 10 units Intra Muscularly after ruling out twins.

6) Re-check the baby and mother for comfort.

7) Feel the cord pulsation

8) Tie and cut the cord once the pulsation stops within one to three minutes.
9) Check the signs of placental separation
10) Remove placenta by compressed Cord Traction (CCT)
11) If the does not cry tie and cut the cord
12) Put the baby on radiant warmer (New Born Care Corner)
13) Shout for help and do resuscitation.

3.4.4 Episiotomy

**Definition:** It is a planned surgical incision made in the area between the vagina and anus (perineum). It is done during second stage of labour to expand the opening of the vagina to prevent tearing during the delivery of the baby. It is also called as perineotomy.

Routine episiotomy is not recommended.

**Objectives:**
- To enlarge the vaginal interiotus so as to facilitate easy and safe delivery of the foetus.
- To minimise over stretching and rupture of perenial muscles and fascia.
- To reduce the stress and strain of foetal head.

**Indications:**
- **Anticipating perenial tear in:**
  - Primigravida as an elective procedure
  - Face to pubis or face delivery
  - Big baby
  - Narrow pubic arch
  - Old perenial scar
  - Rigid perineum
- **Manipulative Delivery:**
  - To get more space for operative or manipulative delivery like
    - Breach
    - forceps
    - internal version
    - Vacuum extraction

**To cut short second stage in:**
- Heart disease
- Eclampsia
- Post cesarean
- Post maturity
Foetal Conditions:
- Foetal distress.
- Premature baby (to prevent intracranial damage)
- Breech delivery (to minimise compression of after coming head)
- Mental retardation.

Common Conditions:
- Threatened perenial injury in primigravida.
- Rigid perineum.
- Forceps, breech, occipito posterior or face delivery.

Contra Indications:
- Inflammatory bowel diseases.
- Severe perenial malformations.
- Severe perenial scarring.
- Coagulation disorders.

Timings for episiotomy:
- Episiotomy has to be performed timely, when the perenium is buldging and three to four centimeter diameters of the foetal scalp is visible during the contraction.
- If episiotomy is performed early, it will fail to release presenting part and there can be haemorrhage from cut vessels.
- If performed late it will lead to laceration.

Types of Episiotomy: Fig. 3.9
The following are the types of episiotomy:
- **Midiolateral**: The incision is made downwards and outwards from the midpoint of the fourchette either to the right or left. It is directed diagonally in a straight line which runs about 2.5 cm away from the anus. This incision is more difficult to repair and blood loss is more.
- **Median/Midline**: The incision commences from the centre of the fourchette and extends posteriorly along the mid line about 2.5 cm. it is associated with reduced blood loss and is easy to repair leading to less pain and dyspareunia.
- **Lateral**: The incision starts from about 1 cm away from the centre of fourchette and extends laterally. This is not practiced as barotholin ducts gets damaged.
- **J shaped**: The incision, begins in the centre of the fourchette and is directed posteriorly along the mid line for about 1.5 cm and then directed downwards and outwards along 5 or 7 O’clock position to avoid the anal sphincter.
Repair:

- The repair is done soon after the expulsion of placenta and membranes. If repair is done prior, disruption of the wound is inevitable, oozing during this period is controlled by pressure with a sterile gauze swab and bleeding by the artery forceps. Early repair prevents sepsis and eliminates mother’s prolonged apprehension of stitches.

Preconditions for repair:

- Mother is placed in lithotomy position.
- Good light source from behind is needed.
- The perineum including the wounding area is cleansed with aseptic solution.
- Blood clots are removed from vagina and wounded area.
- Mother is draped properly.
- Repair is done under aseptic precautions.
- If there is oozing of blood, a vaginal pack may be inserted and is placed high up and don’t forget to remove pack after repair is complete.

- Repair is done in three layers:
  - Vaginal mucosa and sub mucosal tissue.
  - Perineal muscles.
  - Skin and subcutaneous tissue.

Postoperative care:

- **Dressing:**
  - The wound is to be dressed each time following urination and defecation to keep area clean and dry.
  - The dressing is done by swabbing with disposable medicated gauze.
  - The state of healing is assessed by observing REEDA SCALE (Redness, edema, Ecchymosis, Discharge and Approximation).
• **Comfort:**
  - To relieve pain in the area, application of heat or cold, sits bath may be used.
  - Analgesics given when required.

**Effects of episiotomy:**
- Infection
- Bruising
- Swelling
- Bleeding
- Painful scarring

**Options for pain relief:**
- Cold pack on perineum
- Sitz bath
- Use medication (tucks medicated pads).
- Use of personal lubricants Example KV jelly during sexual intercourse
- After using washroom patting dry.

**How to prevent the need for episiotomy:**
- Good nutrition – helps healthy skin, stretches more easily.
- Kegels exercises – for healthy pelvic floor muscles.
- Controlled pushing in second stage of labour.
- Use of perineum massage techniques.
- Avoid lying on your back while pushing.

<table>
<thead>
<tr>
<th>Check Your Progress 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Describe physiological changes during second stages of labour?</td>
</tr>
<tr>
<td>................................................................................................................</td>
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<tr>
<td>................................................................................................................</td>
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<tr>
<td>ii) Define crowning?</td>
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<tr>
<td>iii) Write down management during second stage of labour?</td>
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<tr>
<td>iv) Define mechanism of labour?</td>
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<td>v) Write down indications for giving episiotomy?</td>
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3.5 THIRD STAGE OF LABOUR

Third stage of labour is that of separation and expulsion of placenta and membranes. You will now learn about physiological changes that take place during third stage of labour and active management of third stage of labour.

Natural Process during third stage

a) Separation of placenta
   - Result of the abrupt decrease in size of the uterine cavity.
   - The retraction process accelerates.
   - Formation of retroplacental clot.

Before separation – Per-abdomen
   - Uterus becomes discoid in shape, firm in feel, and ballottable.
   - Fundal height reaches slightly below the umbilicus.

Before separation – Per-vagina
   - Slight trickling of blood.
   - Length of umbilical cord visible from outside remains static.

After Separation (per-abdomen)
   - Uterus becomes globular, firm and ballottable.
   - Fundal height is slightly raised.
   - Suprapubic buldging.

After Separation (per-vagina)
   - Slight gush of vaginal bleeding.
   - Permanent lengthening of cord.

Causes of separation of placenta (Fig. 3.10)
   - After delivery of foetus, the uterus retracts and placental bed diminished.
   - As the placenta is inelastic and does not diminish in size but it separates.
   - There is reduction in surface area of placental site as the uterus shrinks.
   - There is formation of hematoma due to venous occlusion and vascular rupture in the placental bed caused by uterine contraction.

Fig. 3.10: The mechanism of placental separation (a) Placenta attached to the uterine wall (b) Placenta separated from the uterine wall
b) **Descent of placenta**

- Sudden trickle or gush of blood.
- Lengthening of umbilical cord.
- Change in the shape of the uterus (globular).
- Change in the position of the uterus.
- Uterus rises in abdomen.

c) **Expulsion of placenta by following methods (Fig. 3.11)**

- Mathews Duncan Mechanism
  1) Separation starts at the lower edge of the placenta at lateral border (20%).
  2) Maternal surface appears first at vulva.
  3) Usually accompanied by more bleeding from placental site due to slower separation.
  4) No retroplacental clot is formed.

- The Schultz Mechanism
  1) Placenta separates in the center and folds it on itself as it descends into the lower pole of uterus (80%).
  2) Foetal surface appears at vulva with membranes trailing behind.
  3) Minimum blood loss as retroplacental clot is contained with the membranes (inverted sac).

![Fig. 3.11: Methods of placental expulsion](image)

(a) Schultz method  (b) Mathew’s Duncan method

- Haemostasis - Haemostasis is due to retraction of the oblique uterine muscle fibres and vigorous uterine contractions following placental separation. After separation of placenta, the innumerable torn sinuses which have free circulation of blood from uterine and ovarian vessels have to be obliterated. The occlusion is affected by complete retraction where by arterioles as they pass through interlacing intermediate layer of myometrium are literally clamped which prevents bleeding. (Fig. 3.12)
Hemostasis involves following main points

- Retraction of the oblique uterine muscle fibres.
- Vigorous uterine contraction following placental separation.
- Transitory activation of coagulation.

3.5.1 Active Management of Third Stage of Labour (AMTSL)

It begins with the birth of the baby and ends with delivery of the placenta and membranes.

It a feasible and inexpensive intervention that can help to save thousands of women’s lives. AMTSL includes the use of Uterotonic drug immediately following delivery, controlled cord traction and early cord clamping and cutting.

Approximately 60% cases of PPH can be prevented if AMTSL is done in all cases after delivery.

It helps in expulsion of placenta and reduction in blood loss to mother.

The three critical steps of AMTSL are: (Fig. 3.13) given below

- Administration of uterotonic drug (Ing Oxytocin of 10 IU, IM/Tab Misoprostol- 600 mcg, oral)
- Controlled cord traction
- Uterine massage
Technique for applying controlled cord traction (Fig. 3.14)

- Clamp the umbilical cord close to the perinium and hold cord in one hand.
- Place the other hand just above the women’s symphysis pubis and stabilise the uterus by applying counter pressure over the abdomen.
- Wait for strong contraction (usually every 2 to 3 mts).
- With strong contraction encourage the mother to push and very gently pull downwards on the cord to deliver the placenta by continuous applying counter pressure to the uterus.
- With the next contraction repeat CCT till placenta delivers.
- When placenta is delivered catch in both hands in vulva to prevent membranes tearing and gently turn until the membranes are twisted.
- Slowly pull till placenta with membranes is born.

Fig. 3.14 : Controlled cord traction (Brandt-Andrew’s method)

Massage the uterus

Right after placenta is delivered rubbing the uterus is a good way to contract it and stop bleeding.

Examination of placenta and membranes: (Fig. 3.15)

Hold the placenta in the palm of your hands, with the maternal side facing upwards.
- Check all the lobules or present one fit together.
- Hold the cord with one hand, allow the placenta and membranes to hang down.
- Place the other hand inside the membranes, spreading the fingers out, to make sure membranes are complete.
- Ensure position of cord attachment to placenta is normal.
- Safely dispose placenta either burying or incineration.
Fig. 3.15 : Examination/Inspection of Placenta and Membranes

To summarise the steps of active management of third stage of labour is given below.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Palpate the mother’s abdomen to rule out the presence of an additional baby</td>
</tr>
<tr>
<td>2.</td>
<td>Administer inj. oxytocin, 10 IU, IM* OR tab. misoprostol 600 micrograms orally</td>
</tr>
<tr>
<td>3.</td>
<td>Clamp the cord with artery clamps at 2 places when cord pulsation stops. Put one clamp on the cord atleast 3 cm away from the baby’s umbilicus and the other clamp 5 cm from the baby’s umbilicus</td>
</tr>
<tr>
<td>4.</td>
<td>Cut the cord between the artery clamps with sterile scissors by placing a sterile gauze over the cord and scissors to prevent splashing of blood</td>
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<tr>
<td>5.</td>
<td>Apply the disposable sterile plastic cord clamp tightly to the cord 2 cm away from the umbilicus just before the artery clamp (instrument) and remove the artery clamp</td>
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<tr>
<td>6.</td>
<td>Place the baby between the mother’s breasts for warmth and skin-to-skin care</td>
</tr>
<tr>
<td>7.</td>
<td>Perform routine steps of ENBC</td>
</tr>
<tr>
<td>8.</td>
<td>Re-clamp the cord close to the perineum. Perform controlled cord traction during a contraction by placing one hand on the lower abdomen to support the uterus and gently pulling the clamped cord with the other hand close to the perineum until the placenta and membranes have been delivered appropriately</td>
</tr>
<tr>
<td>9.</td>
<td>Perform uterine massage with a cupped palm until uterus is contracted</td>
</tr>
<tr>
<td>11.</td>
<td>Examine vagina, labia and perineum for tears. If found, refer the woman for appropriate care</td>
</tr>
<tr>
<td>12.</td>
<td>Discard the placenta in the yellow bin for contaminated waste and place instruments in 0.5% chlorine solution for 10 mins for decontamination</td>
</tr>
<tr>
<td>13.</td>
<td>Dispose of the syringe, needle and oxytocin ampoule in a puncture-proof container. The needle should be cut by a hub cutter before disposal</td>
</tr>
</tbody>
</table>
14. Immerse both gloved hands in 0.5% chlorine solution and remove the gloves inside out, leave them for decontamination for 10 mins

15. Wash both hands thoroughly with soap and water and dry them with a clean, dry cloth or air-dry them

16. Perform post procedural task as follows: Advise mother on immediate postpartum care for her and baby. Record delivery notes in case file

Key points to remember:
- Check for uterine contraction and vaginal bleeding every 15 mins for 2 hours after delivery
- Never apply CCT without contraction and without applying counter traction (push) above the symphysis pubis with the other hand

3.5.2 Immediate Care of Newborn Baby

The first hour after birth has a major influence on the survival, future health and well-being of a new born infant. The health workers have an important role at this time. The care they give during this period is critical in helping to prevent complications and ensure intact survival. The birth of baby is one of the life’s most wondrous movements. New born babies have amazing abilities yet depended on mother for nutrition, safety and warmth. Newborn assessment which includes observation, inspection, evaluation for which the you must have a thorough knowledge as lot of changes occur at birth. In this unit you will learn about immediate care of a newborn baby.

Basic needs at birth: There are four basic needs at birth. These are:
- Warmth
- Normal breathing
- Mothers milk
- Protection from infection

Care of a newborn baby at birth

<table>
<thead>
<tr>
<th>Steps</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Call out the time of birth and sex of the baby and show the baby to the mother, ensure that details are recorded</td>
</tr>
<tr>
<td>2.</td>
<td>Deliver the baby on the mother’s abdomen in a prone position with face to one side</td>
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<tr>
<td>3.</td>
<td>If the baby is not crying or not breathing, resuscitate as per GoI guidelines</td>
</tr>
<tr>
<td>4.</td>
<td>If the baby is crying, delay cord clamping 1–3 mins before cutting</td>
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<tr>
<td>5.</td>
<td>Dry baby with a pre-warmed towel while over mother’s breast</td>
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<tr>
<td>6.</td>
<td>Encourage breastfeeding</td>
</tr>
<tr>
<td>7.</td>
<td>Check cord for any oozing of blood</td>
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<tr>
<td>8.</td>
<td>Place an identity wristband on the baby</td>
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<tr>
<td>9.</td>
<td>Cover the baby’s head with a cap and cover the mother and baby with a warm cloth/sheet</td>
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<tr>
<td>10.</td>
<td>Give the baby an injection of vitamin K</td>
</tr>
<tr>
<td>11.</td>
<td>Weigh the baby and record the weight</td>
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<tr>
<td>12.</td>
<td>Check for any congenital malformations</td>
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</table>
Key points to remember:
- The Labour Room must be warm (maintain room temperature in the range 26–28°C) to avoid hypothermia
- Assess the baby’s breathing; if the baby is not breathing or has difficulty in breathing, initiate resuscitation
- Dose of vitamin K in neonates with birth weight < 1000 g – 0.5 mg IM
- Dose of vitamin K in neonates with birth weight > 1000 g – 1.0 mg IM

3.5.3 Care of the Mother
- Examine the perenium, lower vagina and vulva for tears.
- If present manage as per management of vaginal and perenial care.
- Clean the women and the area beneath her.
- Put a sanitary pad under the buttocks.
- Pads can be counted to estimate blood loss.

Summary of steps of Active Management of Third Stage of Labour (AMTL) is given in BNSL-043, Block 4, Unit 4.

3.6 FOURTH STAGE OF LABOUR

Fourth stage is defined as first one hour after delivery of placenta and membranes.

The aim is to make observation, provide care to mother and newborn and don’t separate mother and baby unless essential.

The delivered mother should remain in the delivery room for atleast one hour following delivery. Most of this time will be spent in clearing up in completing records but careful observation of the mother and baby is very important.

3.6.1 Care of Women during Fourth Stage of Labour (In Labour Room)

Assess the following parameters.

1) Maternal vital signs. The vital signs checked and recorded every fifteen minutes.

2) Uterine contractility. The fundus should be checked on several occasions to ensure that it remains well contracted and prevent bleeding.

3) Lochia. Lochia should be observed for flow, colour and consistency.

4) Bladder status. Bladder is kept empty because it will prevent the uterus for contracting properly. A full bladder causes uterine atony and several postpartum bleeding. Mother is encouraged to pass urine.

5) Perineal conditions. Perineum is inspected for edema and hematoma formation.

Personal Hygiene:

Most mothers appreciate a wash and change of clothes after delivery. Attention should be paid to perenial toilet and a clean pad applied.
Nutrition:
A drink is usually appreciated, if the mother is hungry she should be given a light snack.

Breast Feeding:
Encourage mother for breast feeding. The baby is observed for cord clamp, skin color, respiration and temperature.

Records:
Records for mother and baby should be completed during this time.

Observe/Call for Help (If any of the following signs appear):
- Bleeding increases.
- Women feels dizzy.
- Severe head ache.
- Visual disturbance.
- Epigastric.
- Distress.
- Complaints of breathlessness.
- Increased abdominal or perenial pain.

Transfer:
Before the mother is transferred to the postnatal ward, the fundus and lochia must be checked.

Note: Don’t discharge the women before 48 hours after delivery. This is a crucial period for the occurrence and management of PPM (postpartum Haemorrhage) so the women is kept under observation for 48 hours.

3.6.2 Care of Women after Delivery (Postnatal Ward)

Admission:
Welcome the mother to postnatal ward, observe her general condition, palpate uterus and observe lochia, check for emptying of bladder.

Rest and Sleep:
Mother should have sufficient rest and sleep. Inability to sleep other than due to feeding the baby may be an early sign of puerperal neurosis.

Ambulation:
The mother should be encouraged to mobilise from about six hours after delivery. This helps to reduce thromboembolic disorders.

Nutrition:
Attention and education must be paid to the kind of food that she eats, so that she maintains her own health and lactates adequately. She should have a well-balanced diet with adequate protein and fluid intake.
Hygiene:
Her first shower after delivery should be supervised in case she feels dizzy or unwell. She should be instructed for use of the bidet and encourage to use it as often as possible. When attending to her personal hygiene perenial pads should be changed frequently and the perenium kept clean and dry to promote healing.

Micturition:
There will be a marked diuresis for two to three days following delivery. The bladder should be emptied as soon as possible after delivery. Numbness due to injury or pressure during delivery makes the women unaware of a full bladder.

Bowels:
The bowel probably was emptied during labour so there may be no bowel action for a couple of days. Painful perenium or haemorrhoids may restrict bowel action.

Breastfeeding:
The first feed should be given as soon as possible after birth, as the baby is alert and sucks well at birth. The baby should be fed on demand and there should be no limit to the length of time that a baby sucks. Breastfeeding should be happy and satisfying experience of the mother and her baby.

Postnatal Exercises:
Postnatal exercises help to give the mother sense of well-being, encourage good circulation and restore the muscle tone of the abdominal wall and pelvic floor. Emphasise the need for regular exercise.

Haemogoblin:
This is checked on the second day after delivery and mother is treated accordingly.

Discharge:
Before leaving the hospital the mother and baby are examined properly. The mother may be given iron tablets to take and the reason and importance for taking them should be carefully explained to her.

Abnormal Signs to be Reported Like:
1) Heavy vaginal bleeding
2) Fever
3) Foul smelling vaginal discharge
4) Swollen, tender, red warm area on breast
5) Burning micturition
6) Persistent pelvic pain
Check Your Progress 4

i) List the signs of separation of placenta?
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ii) What are the components of active management of third stage of labour?
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........................................................................................................................................
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iii) Write down important observations you will make after delivery of the baby?
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3.7 MAINTAINING RECORDS AND REPORTS

Records and reports are maintained throughout labour which include following.

1st stage of Labour:
• Women’s physical and physiological condition.
• Status of foetus.
• Should be legible and must be dated and signed.
• Nursing care provided.
• Partogram.

2nd stage of Labour:
• Labour record.
• Drugs administered.
• Duration and progress of labour.
• Date and time of delivery.
• Episiotomy or tear.
• Baby records
  • Sex
  • Weight
  • Height
  • Circumferences
Maternal Health

- Apgar score.
- Any abnormality found during examination.

3rd stage of Labour:
- Complete and accurate account of labour.
- Documentation of all drugs.
- Observation notes.
- Placental examination.
- Completeness of membranes.
- Observation of umbilical cord.
- Blood loss.

4th stage of Labour:
- Delivery notes.
- General condition of mother.
- General condition of baby.
- Transfer notes for postnatal ward.

Postnatal:
- Discharge summary.
- Follow up
- Immunisation for baby.

Remember the sample records maintained before during and after the delivery are given in Practical Course 3, Block 4, Unit 3

Recording and Reporting System
To capture MNH services, each facility must maintain the following records in form of registers, log books, case records, etc.

1) Admission Register
2) Labour room Register
3) Antenatal/postnatal Register
4) MTP Register
5) Interval and PPIUCD Register
6) OT Register
7) FP Register
8) Maternal Death Records and Registers
9) Laboratory Register
10) Referral In/Referral Out Register
11) MCP Card
12) Admission Sheets/Bed Head Tickets
13) Discharge Slip
14) Referral slip
15) Partograph

**Head Ticket (Maternity ward)**

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<tr>
<th>S. No.</th>
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<td>Date of admission:</td>
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<td>Date of discharge:</td>
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<td>Reason for admission:</td>
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<td>Date and time of delivery/any other obstetric procedure:</td>
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<td>Type of Delivery:</td>
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<td></td>
<td>Normal/Assisted/LSCS:</td>
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<td></td>
<td>Outcome of delivery (live birth/still birth/abortion):</td>
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<td></td>
<td>Sex of baby: (M/F)</td>
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<td>Weight of baby: in gms./kgs.)</td>
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<td>OPV:</td>
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<td>Hepatitis B:</td>
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<td></td>
<td>Date on which birth-day dose administered:</td>
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<td>PPIUCD inserted on:</td>
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<td>Name of unit in charge:</td>
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<td>Name of assisting doctor:</td>
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<td>Name of ASHA:</td>
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<td>If referred out: Referral Note, indicating reason and place of referral:</td>
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</table>

*If MCTS number is not there, then the MCTS no. is to be generated by the treating health facility*
3.8 LET US SUM UP

In this unit we have discussed labour, stages of labour, physiological changes in each stage of labour, Partogram and assessment and management of mother in each stage. We have also discussed normal vaginal delivery.

Your main responsibility is to observe and provide care to women and her foetus/new born, develop skill in conducting labour, prevention of complications of mother and baby. Keeping records and reporting are the essentials of the midwifery care.

3.9 KEYWORDS

Lightening: Few weeks prior to the labour in primigravida the presenting part is settling into the pelvis. It is due to active pulling up of the lower pole of uterus around the presenting part which diminishes the fundal height and minimises the pressure from the diaphragm. The mother experiences the sense of relief from the cardio respiratory embarrassment.

Partogram: It is a single page graphic chart, designed to record all the important information about the woman and foetus during labour. The progress of labor is recorded as a simple graph with time on horizontal axis and important features on vertical axis. Partograph provides a graphical illustration of the progress of labour and is considered by WHO (World health Organisation) to be available tool for managing intrapartum woman.

Episiotomy: It is a planned surgical incision made in the area between the vagina and anus (perineum). It is done during second stage of labour to expand the opening of the vagina to prevent tearing during the delivery of the baby. It is also called as perineotomy.

Foetal Presentation: It refers to the part of foetus which lie in the lower pole of uterus.

Meconium: First stool of the infant. It is greenish black in colour and contains bile pigments, salts, mucous and liquor amni.

Show: There is presence of blood stains cervical secretion with onset of labour.

3.10 MODEL ANSWERS

Check Your Progress 1

i) Normal vaginal delivery is the birth of offspring through vagina. It is a natural method of birth.

ii) Labour is set to be normal when:

- It occurs at term (between 37 and 42 completed weeks of gestation).
- Onset is spontaneous.
Intranatal Care

iii) Premonitory signs of labour are
* Lightening (Dropping, sinking of the uterus).
* Frequency of micturition
* Low backache
* Cervical Ripening (Softening, effacing, thinning out and dialiting)
* Increase vaginal secretion
* Mucous plug expelled
* Braxton Hicks Contraction
* Nesting Syndrome
* Weight Loss

iv) Pressure on cervix stimulates the hypothesis to release oxytocin from maternal posterior pituitary gland. As pregnancy advances, the uterus becomes more sensitive to oxytocin. Presence of this hormone causes initiation of the uterus.

Check Your Progress 2

i) a) **Fundal Dominance**: Uterine contraction starts from the fundus of uterus and moves downwards. Contractions of the funds are strong, intense and lasts for a longer time. This pattern permits the cervix to dilate and fundus to expel the foetus

b) **Polarity**: It is the neuro muscular harmony between upper and lower uterine segment. Contractions of the uterus takes place at the upper pole and there is slight contractions and dilatation of the cervix taking place at the lower pole.

c) **Show**: There is presence of blood stains cervical secretion with onset of labour.

d) **Formation of bag of membranes**: As the chorion detaches, a loosen sack of amniotic fluid buldges downwards into the dilating internal os. In case of complete flexion where the presenting part gets completely fixed, fluid cuts into two compartments, one compartment with foetus and some fluid called hind water and another compartment with fluid in front of the presenting part called bag of membranes:

ii) Characteristics of uterine contraction are:
- Intensity
- Frequency
- Duration
- Increment
- Acme
- Decrement
iii) Observation on Partogram are
- Mother’s information.
- Fetal wellbeing.
- Labour Progress.
- Medication.
- Maternal Well-being.

**Check Your Progress 3**

i) Physiological changes during second stages of labour are:

- **Descend**: Descend of fetal presenting part which begins during first stage of labour reaches its maximum at the end of first stage of labour continues through second stage of labour.

- **Uterine Action**: Contractions become stronger and longer approximately every 2 minutes lasting 60 to 90 seconds but may be less frequent giving mother and foetus a recovery period during resting phase. Nature of contraction changes become more expulsive as pressure is exerted on rectum and pelvic floor. Mother feels urge to push and the women begins to voluntary bear down.

- **Rupture of membrane**: The membranes often rupture spontaneously at the second stage of labour and there is gush of liquor amni per vagina. With the rupture of membranes the head flexion increases and progress of labour increases.

- **Dilatation, gaping of anus and perenial Bulging**: Deep engagement of presenting part and maternal pushing produces dilatation, gaping of anus and perenial bulging during late second stage of labour. Perineum possessively bulges during contraction and anus gaps, the vulval opening becomes circular during the expulsive phase. With each contraction the head descends and the pereium distends leading to perineal buldging.

- **Appearance of presenting part**: With perenial buldging, the scalp hair are visible through vulval opening. There may be desire to pass stool when head comes on the pelvic floor and the crowning of head occurs. Excessive Moulding may result from prolonged labour in the formation of a large caput which may protrude through the cervix prior to full dilatation.

- **Congestion of the vulva**: There is an intense pressure in the area of perineum and rectum as foetal presenting part descends the pelvic floor which leads to congestion of vulva due to stretching of the vulva. If the second stage lasts longer than two hours in primi Gravida or one hour for multi Gravida is considered abnormal.

ii) The occiput slips beneath the sub pubic arch and crowning occurs when the head no longer recedes back between the contractions and the widest transverse diameter (biparietal) is born.

iii) Nursing management during second stage of labour includes -

- **Observation**:
  - Pain
  - Bearing down
• Descend of fetus
• Vaginal signs
• Maternal signs
• Foetal effects

**General Measures:**
• Mother should be in bed.
• Under constant supervision.
• Administer analgesics if needed.
• Vaginal examination done for progress of labour.

**Promotion of comfort:**
• Encourage mother to rest and let muscles relax in between contractions.
• Sips of water to provide moisture and relieve dryness of mouth.
• Keep the women informed about the progress of labour.
• Assist women in her pushing effort by propup with additional pillows to assume semirecumbent position.
• Encourage her to relax between contraction and push during contractions.
• Maternal and fetal monitoring every 15 min.

**Preparation of delivery room:**
• Delivery room should always be ready for conduction of labour.
• Safety of the labouring mother should always be ensured.
• If the women is transferred from one bed to another it should be between contractions, supporting the mother inadequately.
• Provide enough privacy.
• Maintain strict asepsis in the conduction of labour.
• Make sure that room is warm enough for the baby.
• Ensure that the resuscitation trolley is ready for use.

**Preparation for Delivery:**
• Any comfortable position like side lying, leaning, knee chest, lithotomy but lithotomy is preferred.
• Nurse scrubs up and puts on sterile gown, mask and gloves.
• Toileting external genitalia and inner side of thighs.
• One sterile sheet is placed beneath the buttocks of the mother and one more over the abdomen.
• Sterile leggings are to be used.
• Essential aseptic procedures are followed as six cleans (6C’s) WHO like clean hands, clean delivery surface, clean cutting instrument, clean cord tie, clean cloth to wrap the baby, clean cloth to wrap the mother.
• Empty bladder if it is full.
Maternal Health

- Never leave the mother alone as she is bearing down.
- Encourage mother to push during contraction.
- Monitor vital signs after each contraction or after every five minutes.
- Conduct the labour.

iv) It refers to the sequencing of events related to posturing and positioning that allows the foetus to find the easiest way out. It is also defined as the series of passive moments of the foetus during its passage through maternal pelvis during labour.

v) Indications for giving episiotomy are:

- **Anticipating perineal tear in:**
  - Primigravida as an elective procedure.
  - Face to pubis or face delivery.
  - Big baby.
  - Narrow pubic arch.
  - Old perineal scar.
  - Rigid perineum.

- **Manipulative Delivery:**
  - To get more space for operative or manipulative delivery like
    - Breach
    - forceps
    - internal version
    - Vacuum extraction.

- **To cut short second stage in:**
  - Heart disease
  - Eclampsia
  - Post cesarean
  - Post maturity

- **Foetal Conditions:**
  - Foetal distress.
  - Premature baby (to prevent intracranial damage)
  - Breech delivery (to minimise compression of after coming head)
  - Mental retardation.

- **Common Conditions:**
  - Threatened perenial injury in primigravida.
  - Rigid perineum.
  - Forceps, breach, occipito posterior or face delivery.
Check Your Progress 4

i) Signs of separation of placenta are
   • Sudden tickle or gush of blood.
   • Lengthening of the umbilical cord.
   • Change in the change of uterus from discoid to globular.
   • The uterus contracts firmly.

ii) There are main three components of active management of third stage of labour
   • Use of Uterotonic drug.
   • Controlled Cord Traction (CCT).
   • Uterine Massage.

iii) Important observations to be made after delivery of the baby
   • Bleeding increases.
   • Women feels dizzy.
   • Severe head ache.
   • Visual disturbance.
   • Epigastria distress.
   • Complaints of breathlessness.
   • Increased abdominal or perenial pain.

3.12 REFERENCES

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