Nursing level-IV

Providing Maternal and Child Health Care

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Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1- Providing care for a mother and her baby

1.1. Introduction

Care of childbearing and childrearing families has become a major focus of nursing practice today. To have healthy children, it is important to promote the health of the childbearing women and her family from the time before children are born until they reach adulthood. Prenatal care and guidance is essential to the health of women and fetus and to the emotional preparation of a family for childbearing.

Maternal mortality is one of the health indicator which shows the burden of disease and death; the greatest differential between developing and developed countries. More than 150 million women become pregnant in developing countries each year and an estimated 500, 000 of them die from pregnancy related causes.

Other than their health problems most women in the developing countries lack access to modern health care services and increase the magnitude of death from preventable problems. Lack of access to modern health care services has great impact on increasing maternal death.

Most pregnant women do not receive antenatal care; deliver without the assistance of trained health workers etc. The life time risk of death as a result of pregnancy or child birth is estimated at one in twenty – three for women in Africa, compared to about one in 10,000 for women in Northern Europe 75% of Maternal morbidity and mortality related to pregnancy and child birth are due to five obstetric causes. Hemorrhage, sepsis (infection), toxemia obstructed labor and complications from unsafe abortion.

1.1 .1 Anatomy and physiology of female reproductive organs

The Female Pelvis - Is a bony cavity through which the fetus passes during birth.

The female pelvis is structurally **adapted** for child bearing and delivery.

There are four (4) pelvic bones

- **2 Innominate bones,**
- **1 Sacrum and,**
- **1 Coccyx**

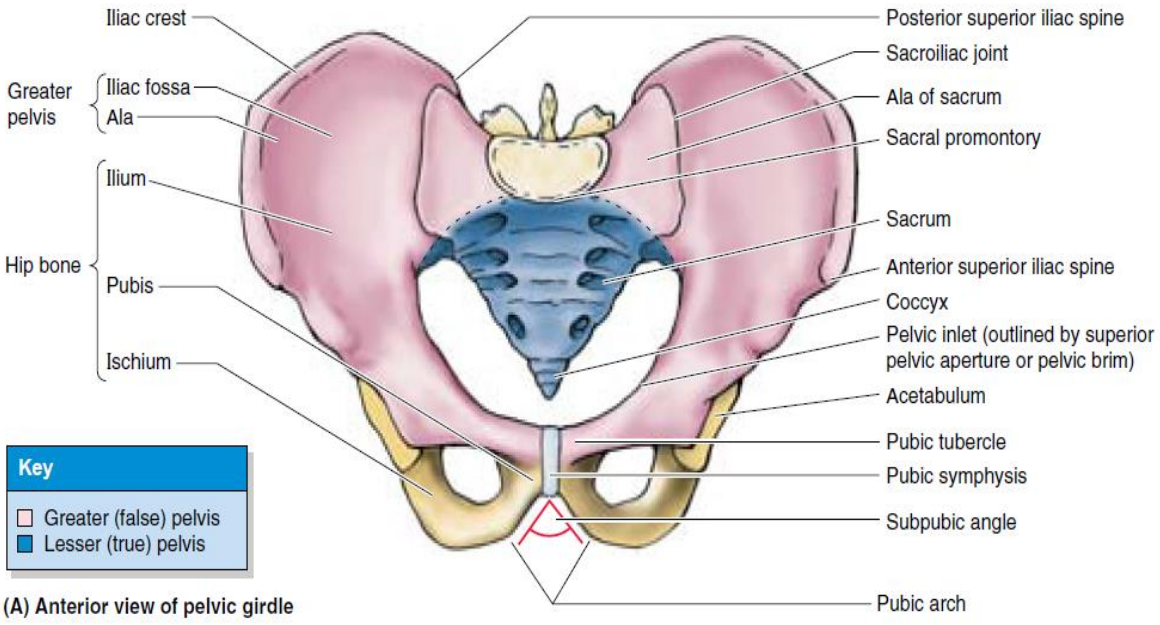


Figure 1 Structure of the Female Pelvis

1. Innominate Bones:

- Also called ‘os coxa, pelvic/hip/coxal bone
- Is a large flat bone, constricted in the center and expanded above and below
- Provides the main connection between the legs and the skeletal structures of the trunk and pelvis
- Supports the weight of the body during standing, walking, and running
- Composed of 3 parts: **ilium, ischium, and pubis bone**

A. **Ilium:**
The uppermost and largest widened part of the hipbone
Divided into two: **Body** and the **Wing**
Its landmarks are:

- Illiopectineal eminence
- Illiopectineal line,
- Iliac fossa and
- Iliac crest

B. **Ischium**

- The lower thick part
- Forms the lower and back part of the hip bone
- Has two important land marks; i.e**. the ischial Spine** and **the ischial tuberosity**

Ischial Spine: The sharp point which juts out between the greater and lesser Sciatic notch. If protrudes, it can prevent the fetus from being delivered

Ischial Tuberosity: the part on which we sit

In labour the station of the fetal head is estimated in relation to ischial spines.

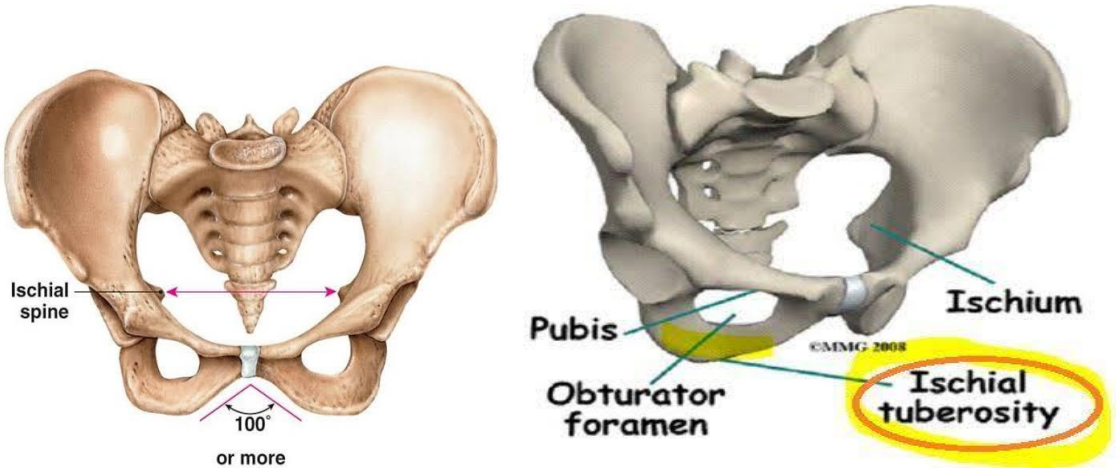


Figure 2. Anterior and lateral part views of female pelvis

C. The Pubis- Is the ventral (inferior) and anterior of the three principal bones

- Composes either half of the pelvis
- It is the smallest of the three bones
- Consists of a **body** and **2 rami**

- The space enclosed by the body of the pubic bone the rami and the ischium is called the **obturator foramen**

2. The Sacrum

- Is a triangular shaped bone which forms the back of the pelvis
- Consists of 5 fused vertebrae
- Its main landmark is the Promontory of the Sacrum
- Which is the center of the upper and inner border of sacral vertebrae
- If it protrudes it can prevent the head from entering the pelvis
- 2nd landmark is the Curve of the sacrum which allows the head to rotate in labor

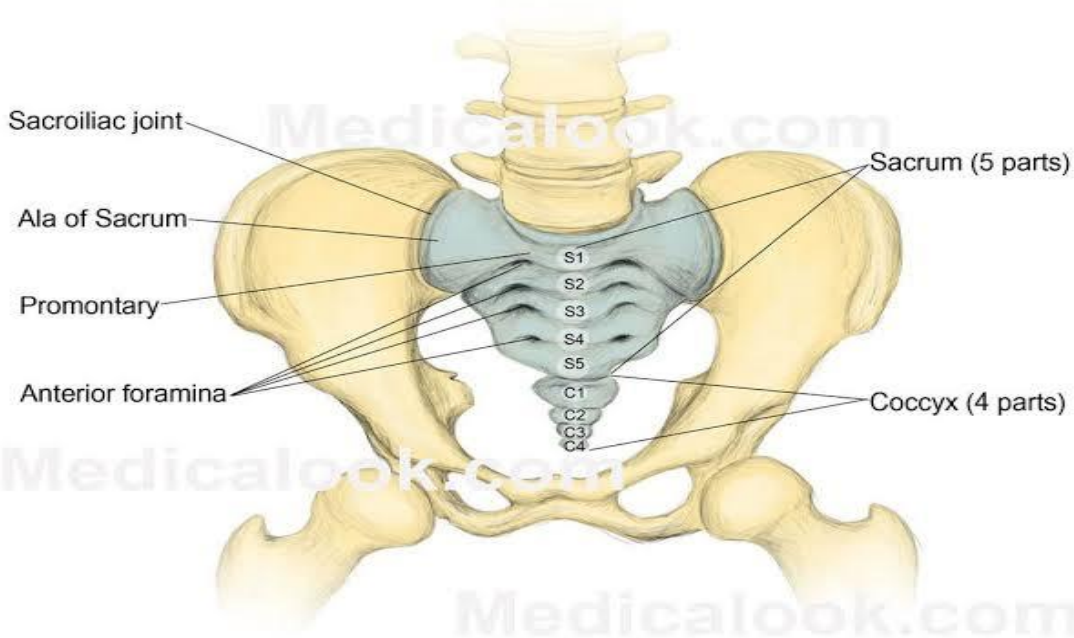


Figure. 3. Anterior view of the sacrum and coccyx bones

3. Coccyx

- The small terminal part of the vertebral column
- Consists of **four fused coccygeal vertebrae**
- Has the shape of an inverted triangle
- Two horns, or **cornua,** one on each side, that project upward to articulate or fuse

with similar downward-projecting cornua from the sacrum

- **Pelvic Joints**

There are four pelvic joints

- One Symphysis pubis joint
- Two Sacroiliac joints
- One Sacrococcygeal joint

The symphysis pubis is a cartilgeous joint formed by junction of the two pubic bones along the midline.

The sacroiliac joints are the strongest joints in the body.

The Sacrococcygeal joint is formed where the base of the coccyx articulates with the tip of the sacrum.

- ✓ In non pregnant state there is very little movement in these joints but during pregnancy endocrine activity causes the ligaments to soften which allows the joints to give & provide more room for the fetal head as it passes through the pelvis.

Pelvic ligaments

- Each of the pelvic joints is held together by ligaments
- Interpubic ligaments at the symphysis pubis (1)
- Sacroiliac ligaments (2)
- Sacrococcygeal ligaments (1)
- Sacrotuberous ligament (2)
- Sacrospinous ligament (2)

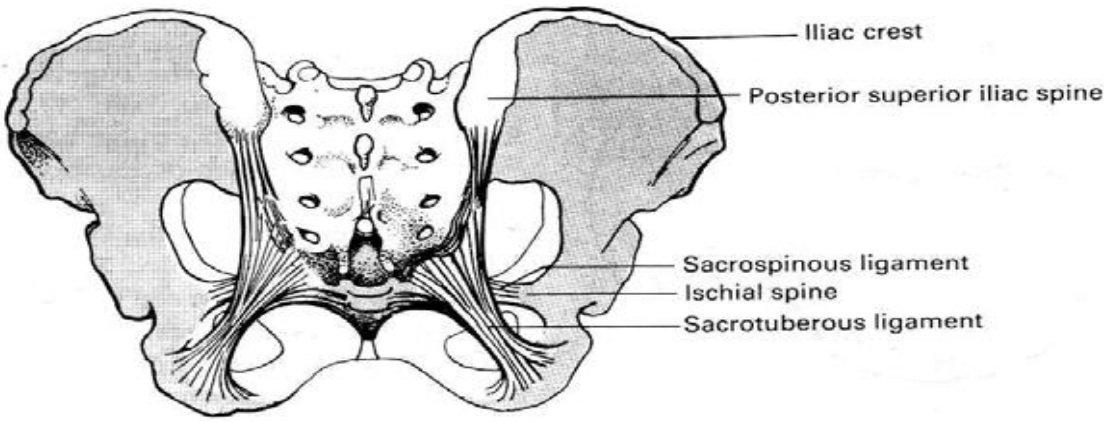


Figure. 4. Pelvic Ligaments on posterior view (Derexllewllyn, 1990)

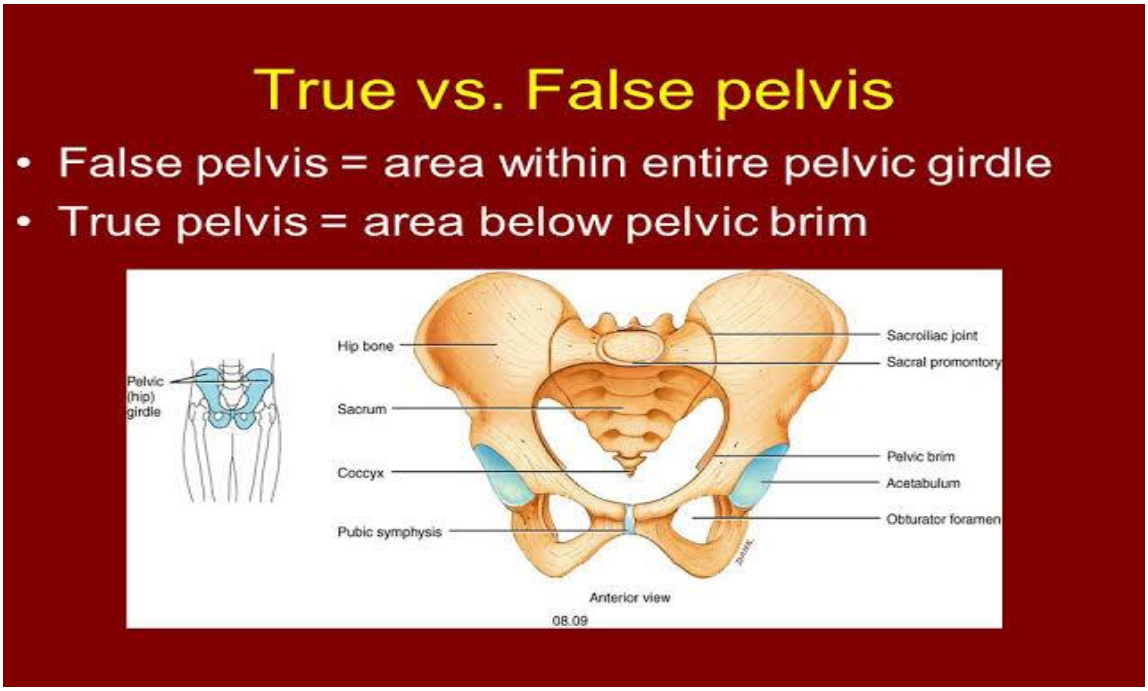
Divisions of the Pelvis

The True Pelvis

The true pelvis is the bony canal through which the fetus must pass during birth.

It has a brim, mid cavity and an out let.

The pelvic brim is rounded except where the sacral promontory projects into it. The pelvic cavity is extends from the brim above to the out let below



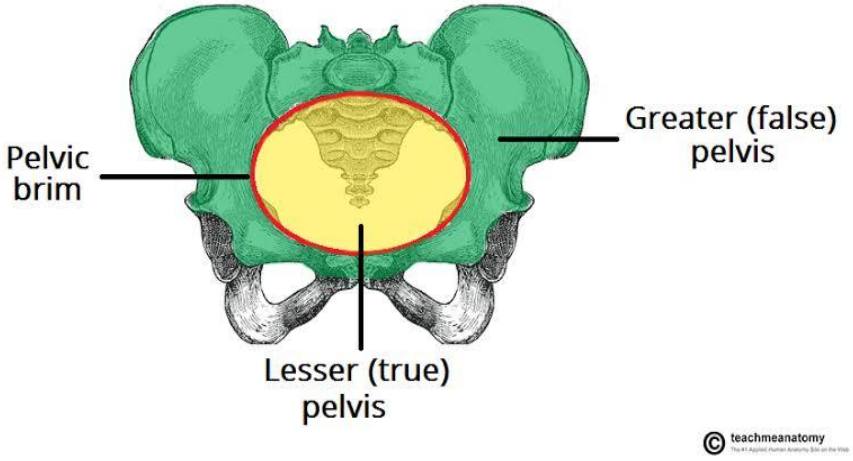


Figure 5. True Vs False Pelvis

- **False pelvis -** above the brim
- **True pelvis -** includes the brim, cavity and pelvic outlet

Important land marks of female pelvis

A. Pelvic brim is formed by

- ✓ Sacral promontory
- ✓ Ala of the sacrum
- ✓ Arcuate line of ilium
- ✓ Iliopubic eminence
- ✓ Pictineal line of pubis
- ✓ Pubic crest
- ✓ Symphysis pubis

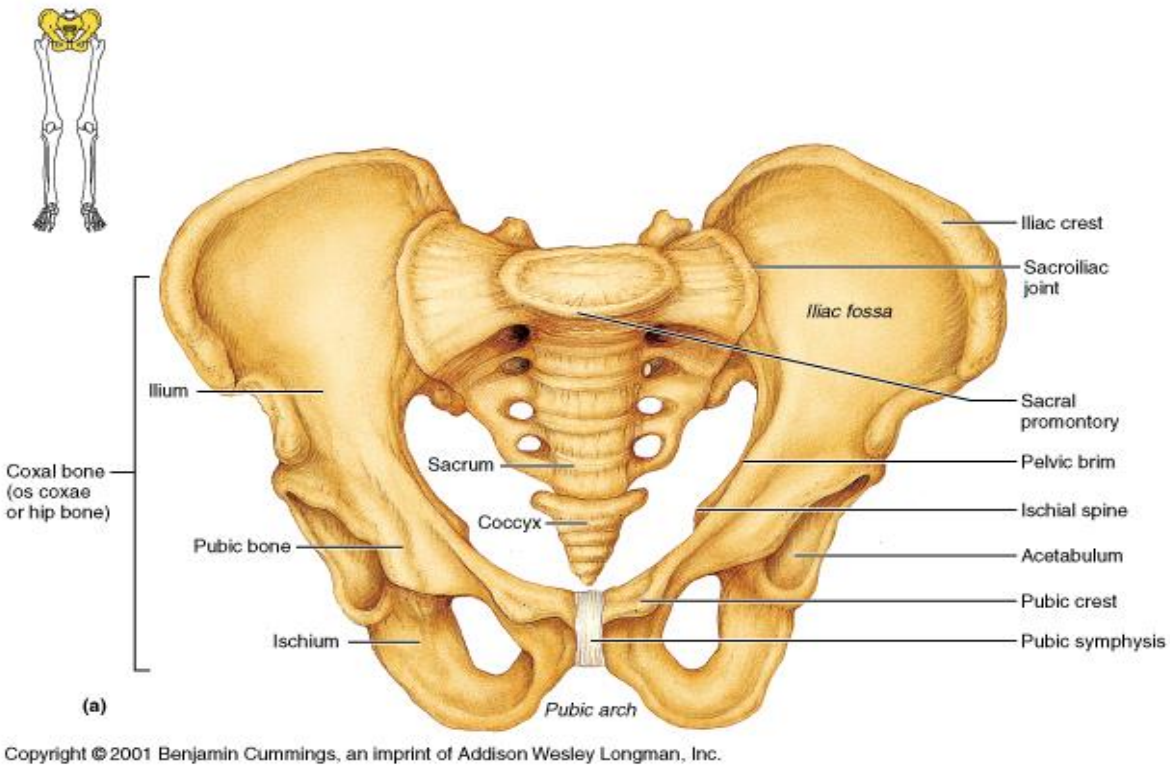


Figure 6 Important land marks of female pelvis

B. Mid cavity

Interspinous diameter-a line between the two ischial spines and measures 11 centimeter

C. The pelvic outlet: There are two outlet

Anatomical outlet: which is traced from the promontory of the sacrum to the ischial tuberosity and the tip of the coccyx

Obstetrical outlet: is traced from the promontory of the sacrum, to the ischial spines, and the lower part of the sacrum

Table 1. Measurements of the pelvic canal in centimeters

Pelvis	Antero posterior	Oblique	Transverse
Brim	11 cm	12cm	13cm
Cavity	12 cm	12cm	12cm
Outlet	13 cm	12cm	11cm

The four types of female pelvis

1. The gynacoid pelvis (female type)
2. The android pelvis (male type)
3. The anthropoid pelvis
4 The platypelloid pelvis

Table 2 .Features of the four types of female pelvis

Features	Gaynacoid	Android	Antropaid	Platypelloid
Brim	Round	Heart shaped	Long oval	Kidney shaped
Fore- pelvis	Genrous	Narrow	narrowed	Wide
Side walls	Straight	convergent	divergent	Divergent
isctial spines	Blunt	Prominent	blunt	Blunt
sciatic notch	Rounded	Narrow	wide	Wide
sub- pubic angle	90°	< 90°	>90°	>90°
Incidence	50%	20%	25%	5%

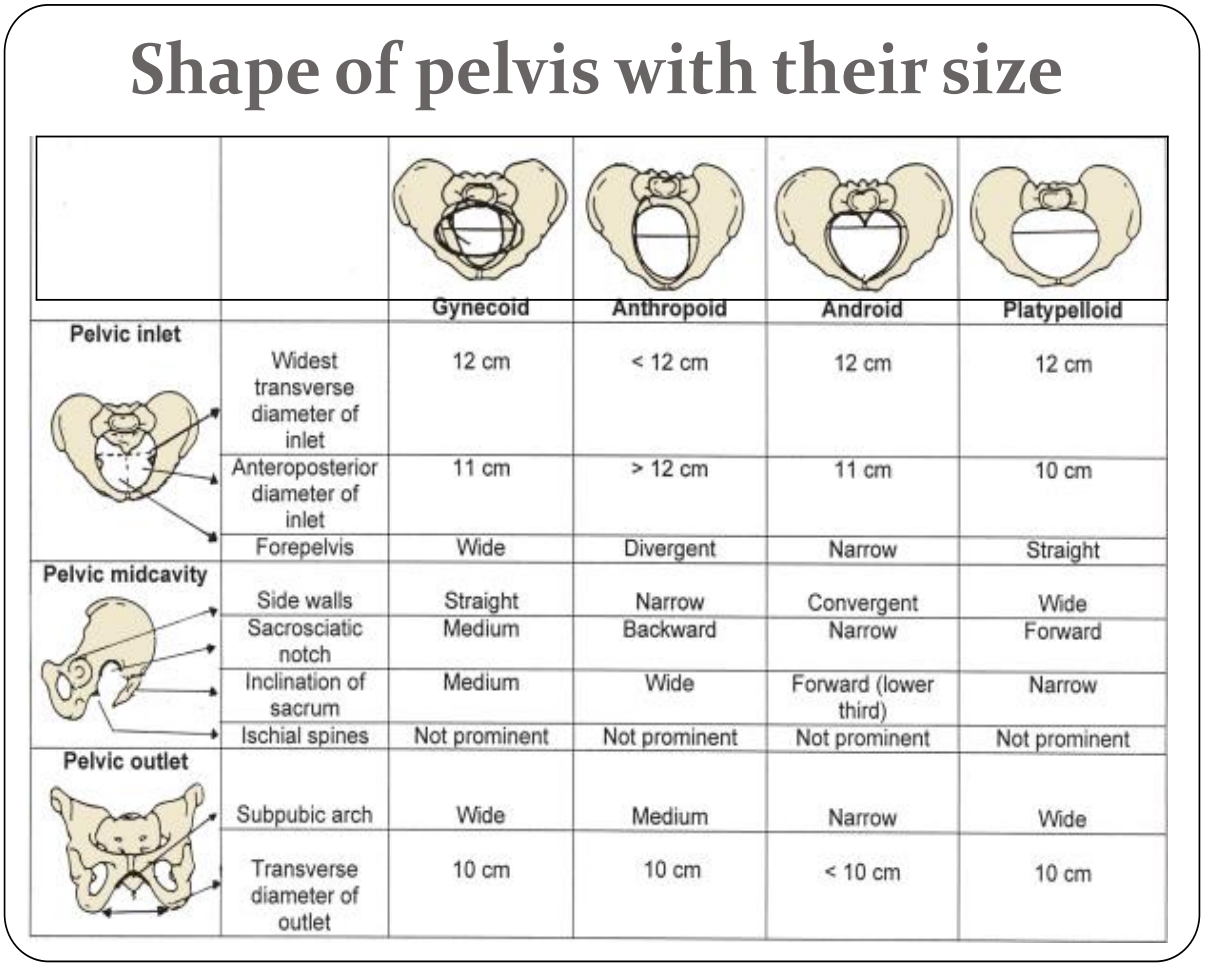


Figure 7 Types of female pelvis

THE FEMALE GENITALIA

- **The vulva**

This term applies to the external female genital organs. It consists of the following structures. **The mons pubis or mons veneris** - is a pad of fat lying over the Symphysis pubis. It is covered with pubic hair from the time of puberty.

Consists **mons pubis, labia minora** and **majora, hymen, clitoris, vestibule, urethra**, **Skene glands, Bartholin glands**, and **vestibular bulbs**

The boundaries include the mons pubis anteriorly, the rectum posteriorly, and the genitocrural folds (thigh folds) laterally

The clitoris is a small rounded organ of erectile tissue at the forwarded junction of the labia minora.

The vestibule is the flattened, smooth surface inside the labia

The vaginal orifice **Bartholin's glands (volvovaginal glands)** are located just lateral to the vaginal opening on the sides.

The furchette is ridge of tissue formed by the posterior joining of the two labia minora and the labia majora.

The vulvas blood supply comes mainly from the pudendal arteries and apportion of the inferior rectus artery. The blood drains through the pundendal veins.

Lymphatic drainage - inguinal glands

Nerve supply - branch of pudendal nerve

- **Labia**
  - The ***labia majora*** are 2 large, longitudinal folds of adipose and fibrous tissue
    - Extend from the mons anteriorly to the perineal body posteriorly
  - The **labia minora**
    - Also known as nymphae,
    - Are 2 small cutaneous folds

- Found between the labia majora and the introitus or vaginal vestibule
- Form the frenulum of the clitoris

- **Hymen**
  - Thin membrane found at the entrance to the vaginal orifice
  - Perforated before the onset of menstruation, allowing flow of menses
- **Clitoris**
  - The clitoris is an erectile structure found beneath the anterior joining of the labia minora
  - It is a very sensitive structure, analogous to the male penis
  - It is innervated by the dorsal nerve of the clitoris, a terminal branch of the pudendal nerve
- **Skene and Bartholin Glands**
  - The Skene glands secrete lubrication at the opening of the urethra
  - Bartholin glands are also responsible for secreting lubrication to the vagina, bilaterally, at the posterior aspect of the vagina

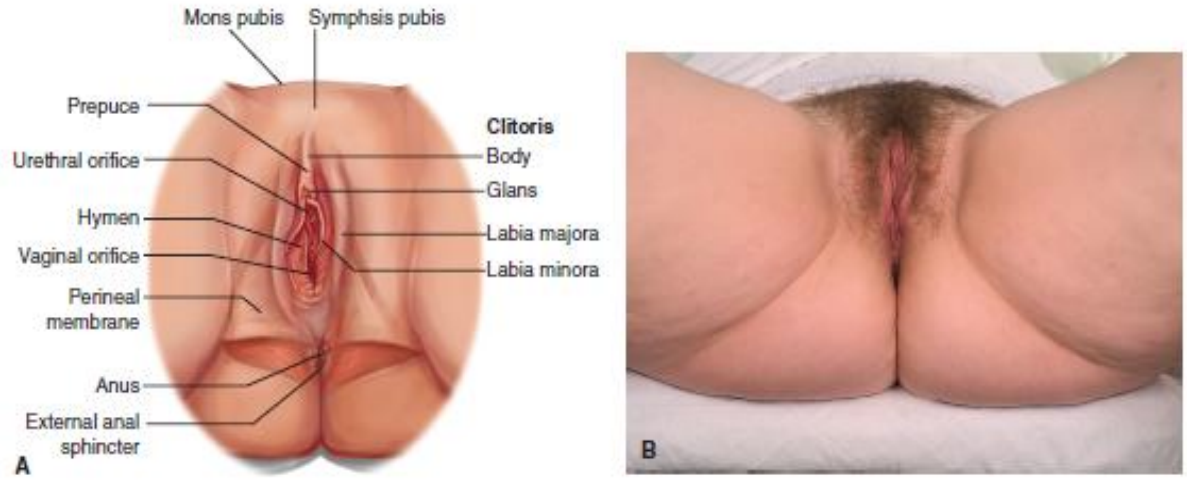


Figure 8. Female external genitalia

The vagina

Is a muscular canal (approximately 10 cm long)

- Serves as the entrance to the reproductive tract

- Extends from the vulva externally to the uterine cervix internally
- It is located within the pelvis, anterior to the rectum and posterior to the urinary bladder
- The vagina is held in place by endopelvic fascia and ligaments
- The nerve supply from the autonomic nervous system
- is a canal running from the vestibule to the cervix.

Relations:- A knowledge of the relation of the vagina is essential for the accurate examination of the pregnant woman and her safe delivery.

It is found in front of the rectum and behind the bladder and urethra.

Structure

- The posterior wall is longer than the anterior

- The vaginal walls are pink in appearance and thrown into small folds known as rugae. These allow the vaginal wall to stretch during intercourse and child birth.

Layers

- squamous epithelium, vascular connective tissue, weak inner coat of circular fibers and stronger outer coat of longitudinal fibers. Pelvic fascia surrounds the vagina forming a layer of connective tissue.

Contents

- the vaginal fluid is strongly acidic (PH 4.5)

Blood supply

- From braches of the internal iliac artery and drains through corresponding Veins.

Lymphatic drainage

- Via the inguinal, the internal iliac and the sacral glands drains the lymphatic fluid.

❑ **Uterus**

- Inverted pear-shaped
- Lies in the midline of the body, within the pelvis between the bladder and the rectum
- Non-pregnant size ~5 cm wide by 7 cm long
- Flexes anteriorly (**anteverted) 0r** it may flex posteriorly instead (**retroverted)**

- Separated into three section: Cervix, Body and Fundus
- Composed of three layers: Endometrium, Myometrium and Serosa
- Supported by
  - Laterally- broad ligament & cervical ligaments
  - Anteriorly - round ligament
  - Posteriorly- uterosacral ligaments
- Structurally, the endometrium consists of two layers:
  1. The **stratum basalis layer** does not shed during menses
  2. The **stratum functionalis** undergoes cyclic changes in response to ovarian hormones and is shed during menstruation
- The vasculature of the uterus is derived from the uterine arteries and veins
- The uterine vessels arise from the anterior division of the internal iliac, and branches of the uterine artery anastomose with the ovarian artery along the uterine tube

- **Cervix**
  - The inferior portion which separate the body of the uterus from the vagina
  - Cylindrical in shape, with an endocervical canal located in the midline, allowing passage of semen into the uterus
  - Has external os, and the internal os
  - The average length of the cervix is 3-5 cm
- **The Uterine Tubes**
  - Also called fallopian tubes or oviducts serve as the conduit of the oocyte from the ovary to the uterus
  - Located bilaterally at the superior portion of the cavity
  - Used to transport sperm toward the egg→ the site of fertilization
  - 10 cm in length and 1 cm in diameter
  - Situated within a portion of the broad ligament called the mesosalpinx

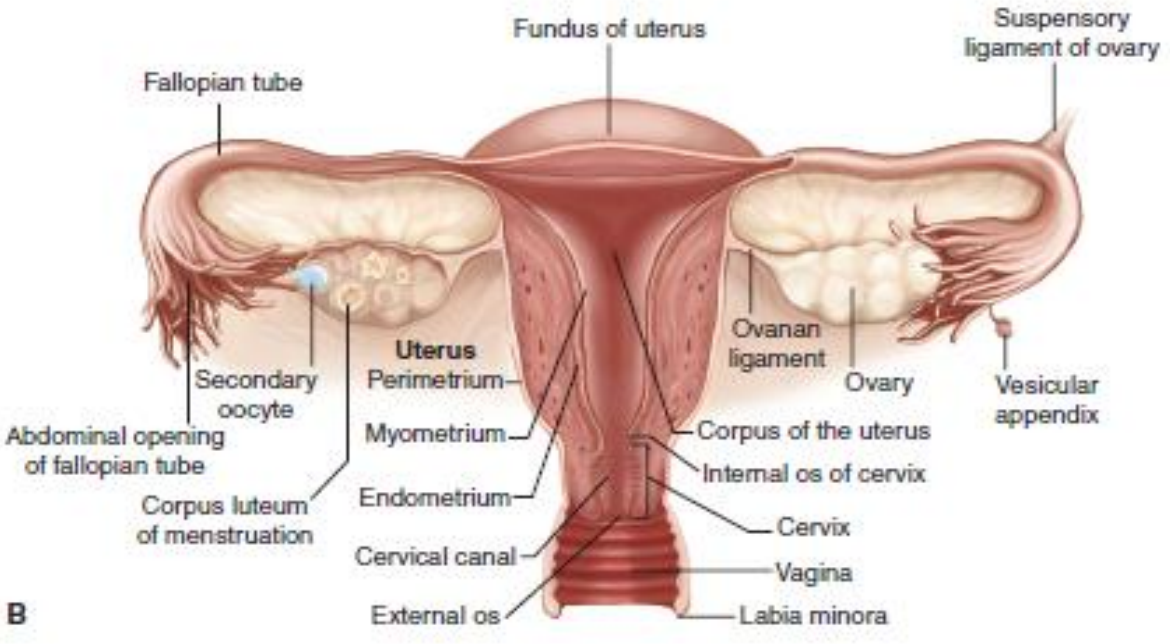


Figure 8 uterus and Adnexia

❑ **Ovaries**

- Paired organs located on either side of the uterus
- Responsible for housing and releasing the ova, or eggs, necessary for reproduction
- Small and oval-shaped, exhibit a grayish color
- At birth, a female has approximately 1-2 million eggs, but only 300 of these eggs ever mature and are released for the purpose of fertilization
- 3-5 cm in length during childbearing years and become much smaller and atrophic once menopause occurs
- Blood supply is via the ovarian artery

The Ureters

The tubes which convey the urine from the kidneys to the bladder are the ureters.

Function – They assist the passage of the urine by the muscular peristaltic action of their wall.

The upper end is funnel shaped and merges in to the pelvis of the kidney where the urine is received from the renal tubules.

Urethra

The female urethra is about 4cm long and courses downward and anterior to the bladder neck.

It terminates in the vestibule of the vagina between the labia minora and about 2.5cm posterior to the glans of the clitoris.

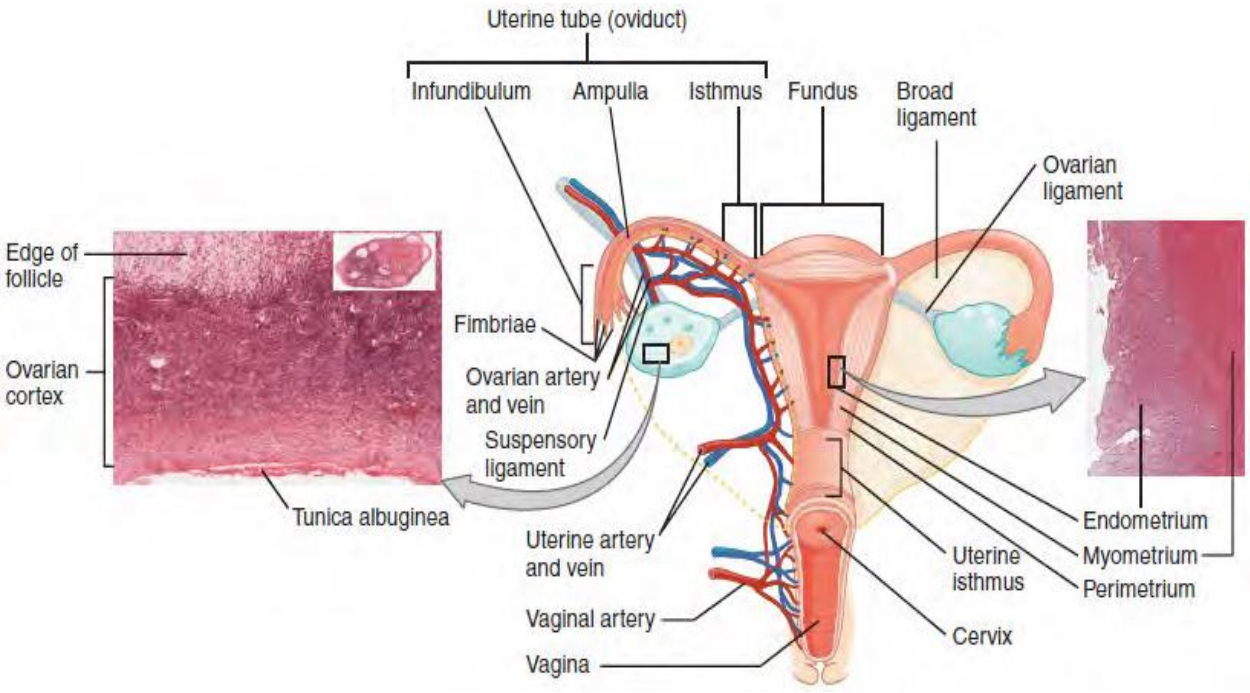


Figure 9. Anterior view of female reproductive organs

- **The Perineum**
  - Is the diamond-shaped space between the
    - Pubic symphysis (anteriorly)
    - Coccyx (posteriorly) and
    - Ischial tuberosity (laterally)
    - Lying just inferior to the pelvic diaphragm (levatorani and coccygeus)
  - Divided transversely into triangles, the anterior is the **urogenital triangle**, which includes the external genitals
  - The posterior is the **anal triangle**, which contains the anus

- **Physiology of the Female Reproductive Organs**

.Puberty - the age of sexual maturation

This is the stage of life at which secondary sexual characteristics appear. Girls begin dramatic development and maturation of reproductive organs at approximately age 12 to13 years, Although the mechanism that initiates this dramatic change is not well understood, the hypothalamus under the direction of the central nervous system may initiate or regulate mechanism set to “turn on” gonadal functioning at this age.There is a wide variation in the times that adolescents move through developmental stages; however the sequential order is fairly constant. In girls pubertal changes typically occur in the order of:

- Marked physical growth
- Increase in the transverse diameter of the pelvis
- Breast development
- Growth of pubic and axillary hair
- Vaginal secretion /Menarche

The menstrual cycle

A menstrual cycle (also termed a female reproductive cycle) can be defined as periodic uterine bleeding in response to cyclic hormonal changes or a serious of changes that occur on the ovary, uterus, and cervix in response to hormonal change. The average age at which menarche (the first menustral period) occurs at the average age of 12.8 years.

This may occur as early as age 9 or as late as age 17 years. The purpose of a menstrual cycle is to bring an ovum to maturity and renew a uterine tissue bed that will be responsive to its growth should it be fertilized.

The average age of onset of menstrual cycles is 21 to 35 days. The accepted average length is 28 days. The length of the average menstrual flow is 1-9 days and the average length is 5 days. Amount of flow is from spotting to 80 ml on average.

Four body structures that are involved in the normal physiology of the menstrual cycle are:

- The hypothalamus
- The pituitary gland
- The ovaries and
- The uterus.
- Cervix

For a menstrual cycle to be complete, all four structures must contribute their part, in activity from any part will result in an incomplete or ineffective cycle. Some women have symptoms of anxiety, fatigue, abdominal bloating, headache, appetite disturbance, irritability and depression in pre-menstrual period. Some women may experience abdominal pain during ovulation and the release of accompanying prostaglandins. Some even notice irritation when a drop or two of follicular fluid or blood spills in to the abdominal cavity.

This pain, called mitlelschmerz may range from a few sharp cramps to several hours of discomfort. It is typically felt on either side of the abdomen (near an ovary) and may be accompanied by scant vaginal spotting.It is known as Mittelschmerz.

Phases of menstrual cycle

Proliterative phase: - Immediately following a menstrual flow (occurring the first 4 or 5 days of a cycle), the endometrium, or lining of the uterus is very thin, only approximately one cell layer in depth. As the ovary begins to form estrogen (in the funicular fluid, under the direction of the pituitary FSH), the endometrium begins to proliferate, or grow very rapidly, increasing in thickness approximately eight fold. This increase continues for the first half of the menstrual cycle (from approximately day 5 to day 14). This half of a menstrual cycle is termed interchangeably as the proliferative, estrogenic, follicular, or postmenstrual phase.

Secratory phase- What occurs in the next half of in a menstrual cycle depends on whether the released ovum meets and is fertilized by spermatozoa. If fertilization does

not occur, the corpus luteum in the ovary begins to regress after 8 to 10 days. As it regresses, the production of progesterone and estrogen decreases.

With the withdrawal of progesterone stimulation, the endometrium of the uterus begins to degenerate (at approximately day 24 or day 25 of the cycle). The capillaries rupture, with minute hemorrhage, the endometrium sloughs off, and menustration starts.

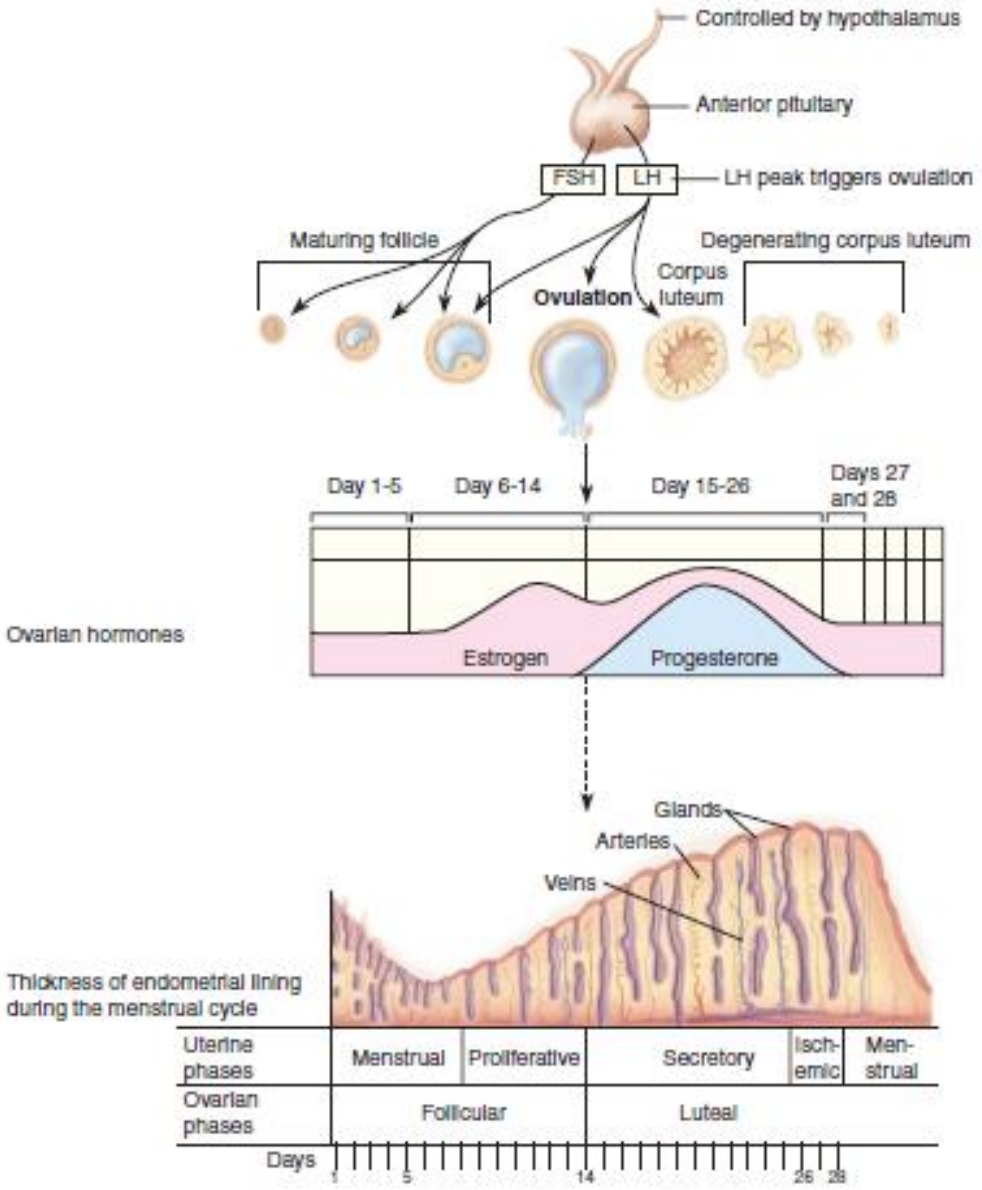


Figure 10. The menstrual cycle summery based on a 28 days (average) cycle

The Breast Anatomy

The female breasts

The female breasts, also known as the mammary glands, are accessory orgns of reproduction.

Situation One breast is situated on each side of the sternum and extends between the levels of the second and sixth rib. The breasts lie in the superficial fascia of the chest wall over the pectoralis major muscle, and are stabilized by suspensory ligaments.

Shape Each breast is a hemispherical swelling and has a tail of tissue extending towards the axilla (the axillary tail of spence).

Size The size varies with each individual and with the stage of development as well as with age. It is not uncommon for one breast to be little or larger than the other.

Gross structure

The axillary tail is the breast tissue extending towards the axilla.

The areoa is a circular area of loose, pigmented skin about 2.5 cm in diameter the centre of each breast. It is a pale pink colour in a fair- skinned woman, darker in a brunett, the colour deepening with pregnancy. Within the area of the areola lie 20 sebaceous glands. In pregnancy these enlarge and are known as montgeomery's tubercles.

The nipple lies in the centre of the areola at the level of the fourth rib. A protuberance about 6mm in length, composed of pigmented erectile tissue. The surface of the nipple is perforated by small orifices which are the openings of the lactiferous ducts. It is covered with epithelium.

Microscopic structure The breast is composed largely of glandular tissue, but also of some fatty tissue, and is covered with skin. This glandular tissue is divided into about 18 lobes which are completely separated by bands of fibrous tissue.

The internal structure is said to be resemble as the segments of a halved grape fruit or orgnge. Each lobe is a self-contained working unit and is composed of the following structures Alveoli: Containing the milk- secreting cells.

Each alveolus is lined by millk-secreting cells, the acini, which extract from the mammary blood supply the factors essential for milk formation. Around each alveolus lie myoepithelial cells, sometimes called ‘basket’ or ‘spider’s cells. When these cells are stimulated by oxytocin they contract releasing milk into the lactifierous duct. Lactifierous tubules: small ducts which connect the alveoli. Lactifierous duct: a central duct into which the tubules run.

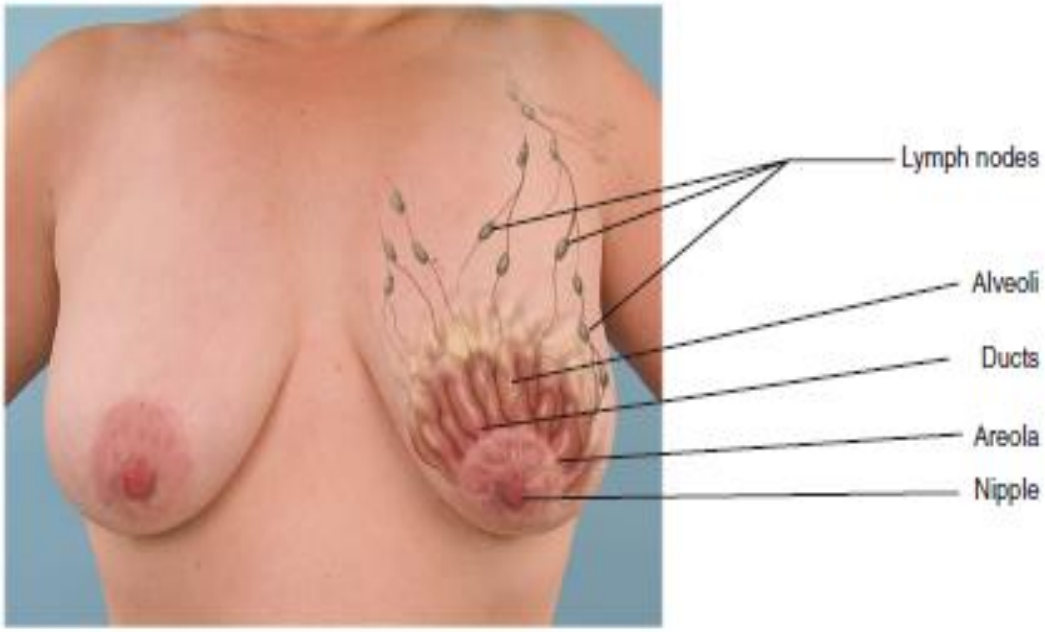


Figure.11. Anatomy of Female breasts (Photo by B. Proud.)

1.1.2 Fetal skull structure

The fetal head is the most difficult part to deliver whether it comes first or last. It is large in comparison with the true pelvis and some adaptation between skull and pelvis must take place during labour. An understanding of the landmarks and measurements of the fetal skull enables to recognize normal presentation and positions and to facilitate delivery with the least possible trauma to mother and child.

The skull is divided into the vault, the base and the face. The vault is the large dome shaped part above the imaginary line drowns between the orbital ridges and the nape of the neck. The base is composed of bones which are firmly united to protect the vital centre in the medulla.

The face is composed of 14 small bones which are also firmly united and non-compressible

Bones of the Vault

There are five main bones in the vault of the fetal skull.

A. The occipital bone lies at the back of the head and forms the region of the occiput.

B. The two parietal bones lie on either side of the skull.

C. The two frontal bones from the forehead or sinciput.

Sutures and fontanelles

Sutures are cranial joints and are formed where two bones adjoin. Where two or more sutures meet, a fontanell is formed.

Types of sutures

A. **The lambdoidal suture** is s- hped like the Greek letter lambda and separates the occipital bone from the two parital bones.

B. **The sagital suture** lies between the parital bones

C. **The coronal suture** separates the frontal bones from the parital bones, passing from one temple to the other.

D. **The frontal suture runs** between the two haves of the frontal bone

Types of fontanelle

A. **The posterior fontanelle or lambda** is situated at the junction of the lambdoidal and sagital sutures. It is small triangular in shape and can be recognized vaginally.

B. **The anterior fontanelle or bregma** is found at the junction of the sagital, coronal and frontal sutures and recognized vaginally.

The sutures and fontanelles, because they consist of membranous spaces, allow for a degree of overlapping of the skull bones during labour and delivery.

Regions of the Skull

A. The occiput lies between the foramen magnum and the posterior fontanelle. The part below the occipital protuberance is known as the suboccipital region.

B. The vertex is bounded by the posterior fontanelle, the parital eminences and the anterior fontanelle. Of the 96% of the babies born head first, 95% present by the vertex.

C. The sinciput or brow extends from the anterior fontanelle and the coronal suture to the orbital ridges.

D. The face is small in new born baby. It extends from the orbital ridges and the root of the nose to the junctions of the chin and the neck. The point between the eye brows is known as the glabella. The chin termed the mentum and is an important land mark.

Land Marks of the Fetal Skull

- Sinciput
- Occiput
- The vertex
- Occuputal protuberance
- Anterior fontanelle
- Glabella
- Posterior fontanelle
- The mentum

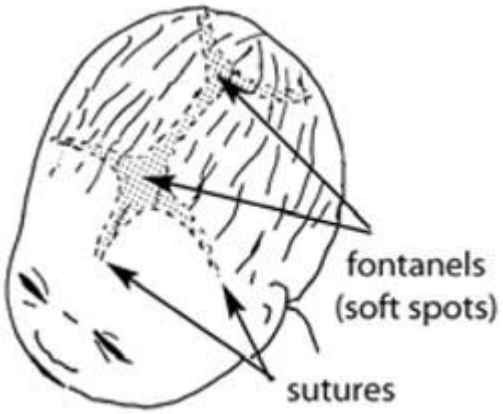


Figure 12 Sutures and fontanels in the newborn's skull.

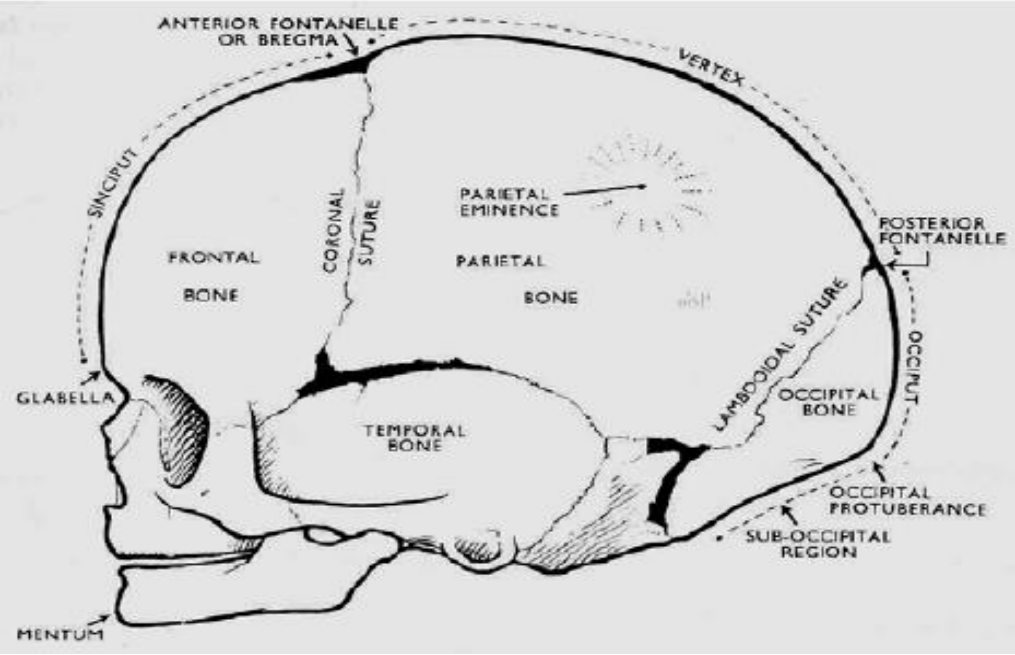


Figure 13. Fetal skull (V.RUTH BENNETT. LINDA K. BROWN, 1993)

Diameters of the Fetal Skull

The measurement of the skulls are transverse, anteropositerior or longitudinal.

- Transverse diameters

. Biparietal diameter 9.5 cm between the parietal eminence

. Bitemporal diameter 8.2cm between the furthers points of the coronal suture at the temples.

- Anteroposterior or longitudinal diameters

. Suboccipitobregmatic 9.5 cm from below the occipital protuberance to the center of the anterior fontanelle or bregma

. Suboccipitofrontal 10cm from below occipital protuberance to the center of the frontal suture

. Occipitofrontal 11.5 cm from the occipital protuberance to the glabella

. Mentovertical 13.5cm from the point of the chin to the highest point on the vertex slightly nearer to the posterior than to the anterior fontanelle

. Submentovertical 11.5 cm from the point where the chin joins the neck to the highest point on the vertex

. Submentobregmatic 9.5cm from the point where the chin joins the neck to the center of the bregma

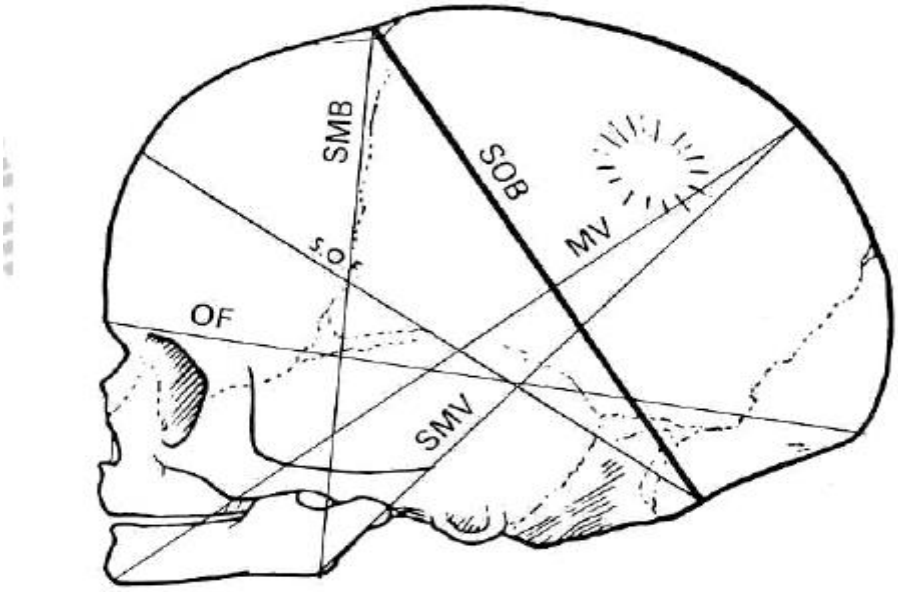


Figure 14. Anteroposterior or longitudinal Diameters of Fetal Skull (V. RUTH BenneTT. Linda K. Brown, 1993)

1.1.3 Physiology of pregnancy

Conception

Other terms used to describe this phenomenon are fertilization, impregnation or fecundation.

Definition -Fertilization is the union of the ovum and a spermatozoa.

Fertilization must occur fairly quickly after release of the ovum because it usually occurs in the outer third of a fallopian tube, the ampullar portion.

The functional life span of spermatozoa is about 48 hours / may be as long as 72 hours or longer. Therefore, sexual coitus during this time may result in fertilization /pregnancy.

Development of the Fertilized Ovum

After fertilization the ova passes through the fallopian tube and reaches the uterus 3 or 4 days later. Division takes place and the fertilized ovum divides into two cells, and then

into four, then eight, and sixteen and soon until a cluster of cells is formed known as the **morula**.

These divisions occur quite slowly about once every 12 hours. Next, fluid filled the cavity or blastocele appears in the morula which now becomes known as the blastocyst

Around the outside of the blastocyst there is a single layer of cell known as the **trophoblast** while the remaining cells are clumped together at one end forming the inner cell mass.

The trophoblast will form the placenta and chorion, while the inner cell becomes the fetus, umbilical cord and the amnion

Embedding of the blast cyst is normally completed by the 11^{th} day after ovulation and the endometrium closes over it completely.

The Decidua

This is the name given to the endometrium during pregnancy.

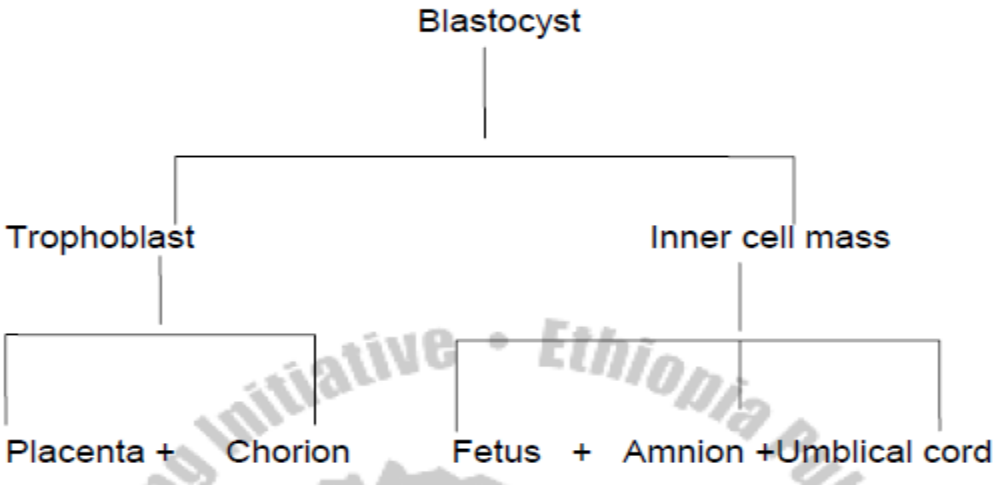
Three layers are found in decidua.

- The basal layer lies immediately above the myometrium.
- The functional layer consists of tortus glands which are rich in secretions.
- The compact layer forms the surface of the decidua and is composed of closely packed stroma cells and the neck of the glands

The Trophoblast

Those trophoblastic cells differentiate into layers, the outer syncitiotrophoblast (syncitium), and inner cytotrophoblast and below this, a layer of mesoderm or primitive mesenchyme. The syncitiotrophoblast is composed of nucleated protoplasm which is capable of breaking down tissue as in the process of embedding.

The cytotrophoblast is a well defined single layer of cells which produces a hormone known as human chorinic gonadotrophin (HCG).



The inner cell mass

While the trophroblast is developing into the placenta, which will nourish the fetus, the inner **cell mass** is forming the fetus itself.

The cells differentiate into three layers, each of which will form particular parts of the fetus.

- The ectoderm mainly forms the skin and nervous system
- The mesoderm forms bones and muscles and also the heart and blood vessles, including those which are in placenta.
- The endoderm forms mucous membranes and glands. The three layers together are known as the embryonic plate.

The amniotic cavity- lies on the side of the ectoderm; the yolk sac lies on the side of the endoderm and provides

Functions of Placenta

Respiration - As pulmonary exchange of gases does not take place in the uterus the fetus must obtain oxygen and excrete carbon dioxide through the placenta

Nutrition - Food for the fetus derives from the mother's diet and has already been broken down into forms by the time reaches the placenta site. The placenta is able to

select those substances required by the fetus, even depleting the mother's own supply in some instances.

- ✓ **Storage -** The placenta metabolizes glucose and can also stores it in the form of glycogen and reconverts it to glucose as required. The placenta store iron and the fat soluble vitamins.

- ✓ **Excretion -**The main substance excreted from the fetus is carbon dioxide; bilrubin will also be excreted as red blood cells are released relatively frequently.

- ✓ **Protection -** It provides a limited barrier to infection with the exception of the treponeoma of syphilis and, few bacteria can penetrate. Viruses, however, can cross freely and may cause congenital abnormalities as in the case the rubella virus and HIV virus.

- ✓ **Endocrine -** Human chorinic gonadotrophin (HCG) is produced by the cytotrophoblastic layer of the chorionic villi.
- Oestrogens as the activity of the corpus luteum declines, the placenta takes over the production of oestrogen, which are secreted in large amounts throughout pregnancy.
- Human placental lactogen (HPL) has a role in glucose metabolism in pregnancy.
- Progesterone

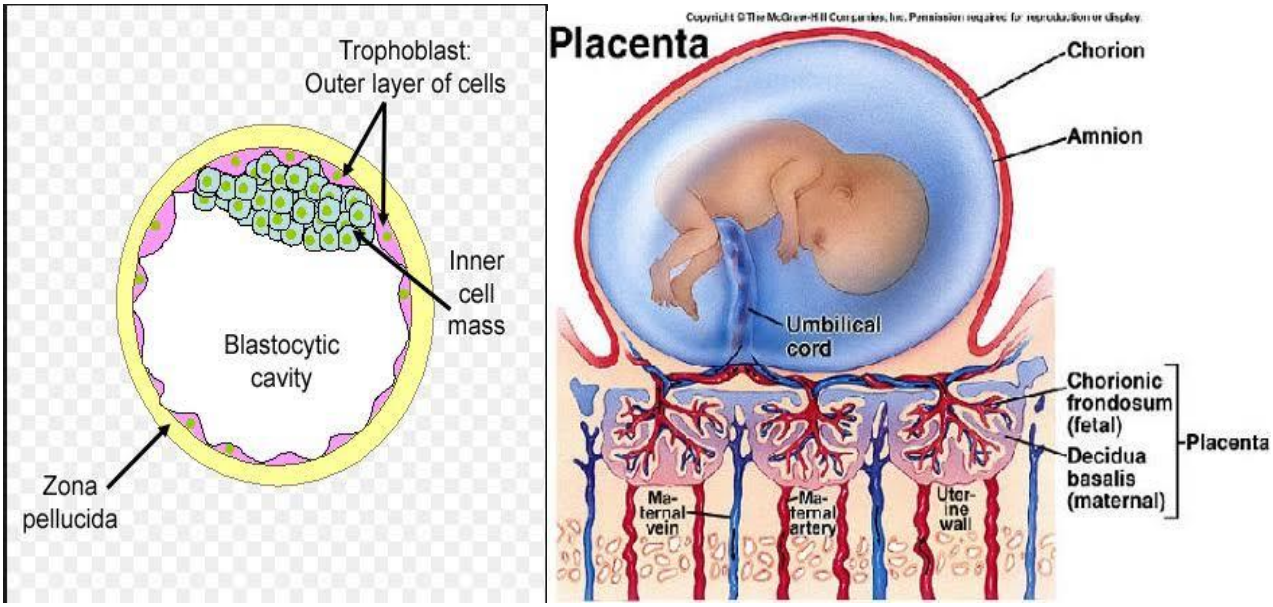


Figure. 15. that show Trophoblast

1.1.4 Physiology of fetus

Development of the Fertilized Ovum

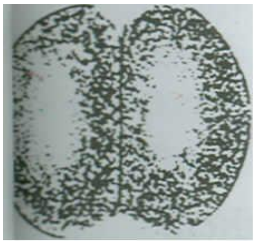
- ❑ **Fertilization**
  - Is also called **Conception**
  - It means that the sperm penetrates the ovum and fertilizes it
  - The fertilized ovum is known as the **zygote**
  - Fertilization only occurs at the time of ovulation
  - Neither sperm nor ovum can survive longer than 2 or 3 days
  - Thus, fertilization occurs when intercourse takes place no more than 48 hours before or 24 hours after ovulation

Therefore, fertilization take place 14 days before the next period is due

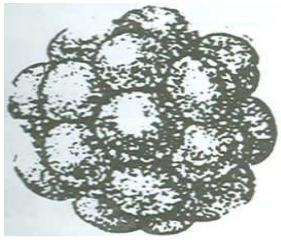
- ✓ **Zygote** is the beginning of the embryo

  It divides in two

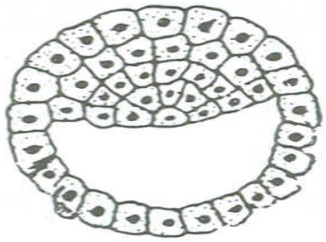
- ✓ Then each cell continues to divide, first into a cluster called a morula, then into the **blastocyst** which consists of an inner **cell mass** and a **cystic space**, surrounded by the **trophoblast**



Zygote

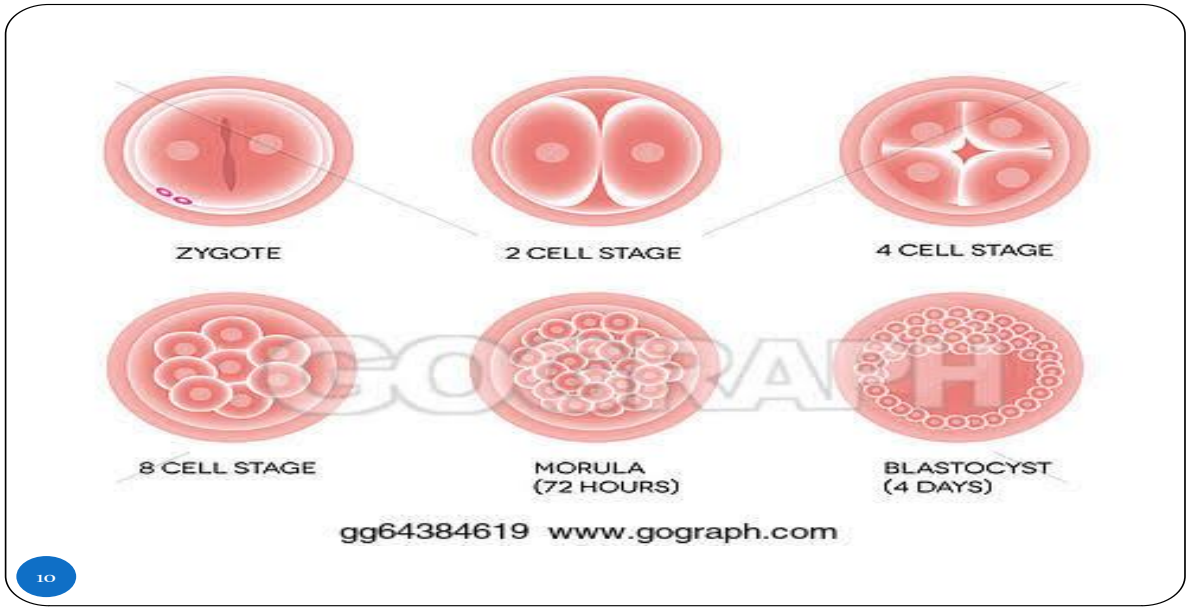


Morula



Blastocytes

- ✓ As the embryo is developing it travels along the fallopian tube, which takes about 3-4 days
- ✓ When it enters the uterus it embeds in the deciduas
- ✓ The process of embedding is completed by the 11th day after ovulation
- ✓ After this it continues to grow and develop
- ✓ The Trophoblast becomes the placenta and part of the inner cell mass
- ✓ The ectoderm, endoderm and mesoderm are the area from which the fetus develops



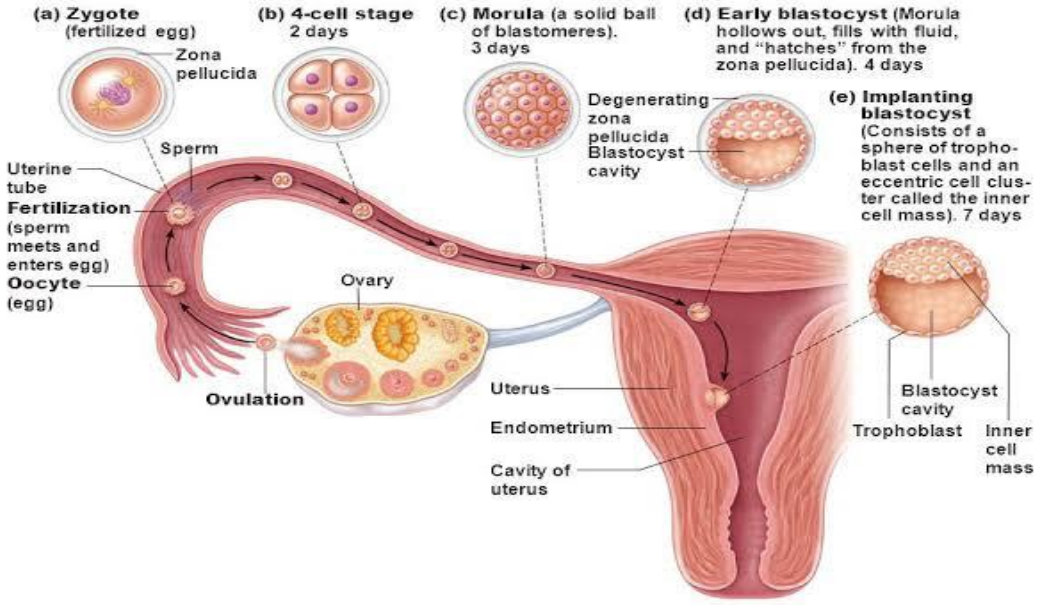
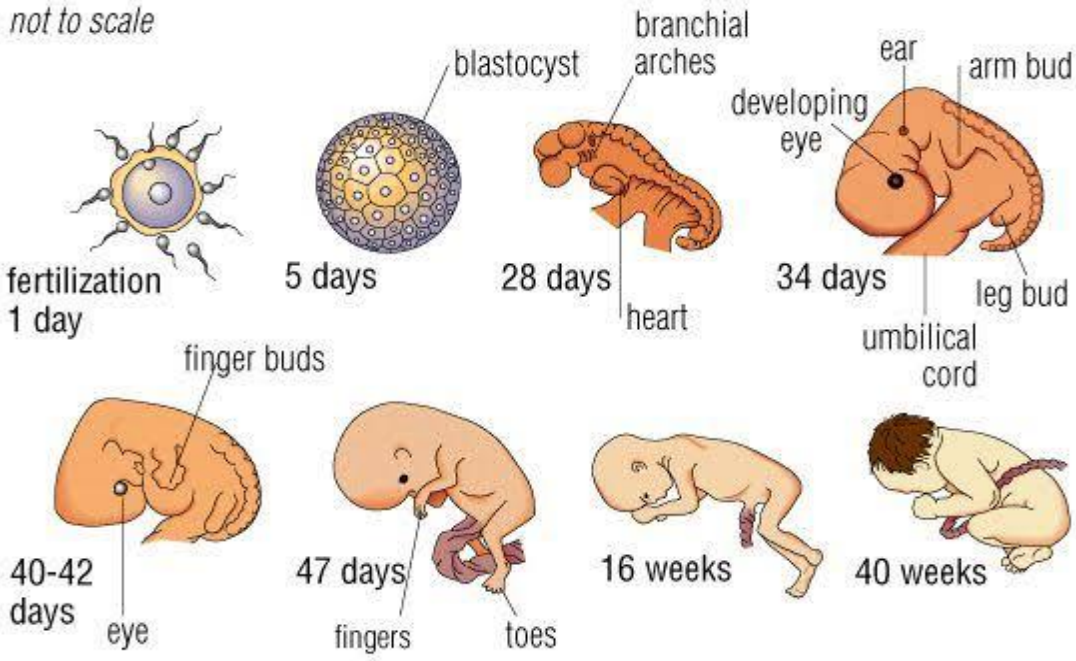


Figure 28.4



Fetal Circulation

- There is no mixture between the maternal and fetal blood
- The fetus although in utero has immature circulatory system, different from an adult circulation
- The fetal gastro-intestinal and respiratory systems are not functioning, so it obtains the necessary nutrient and oxygen from the mother

There are four temporary structures

1. **Ductus venous:** (from a vein to a vein) carries oxygenated blood from the umbilical vein to the inferior venacava. Thus the blood throughout the body is at best partially oxygenated

2. **Foramen ovale**: (oval opening) is a temporary opening between the atria which allows the majority of blood entering from the inferior venacava to pass across into the left atrium. The reason for this diversion is that the blood does not need to pass through the lungs since it is already oxygenated

3. **Ductus arteries**: (from an artery to an artery)connects the pulmonary artery to the descending the aorta

4. **Hypogastric arteries:-**
    - These are branches of the internal iliac arteries
    - They return impure blood back to the placenta
    - This is the only vessel in the fetus which carries unmixed blood.

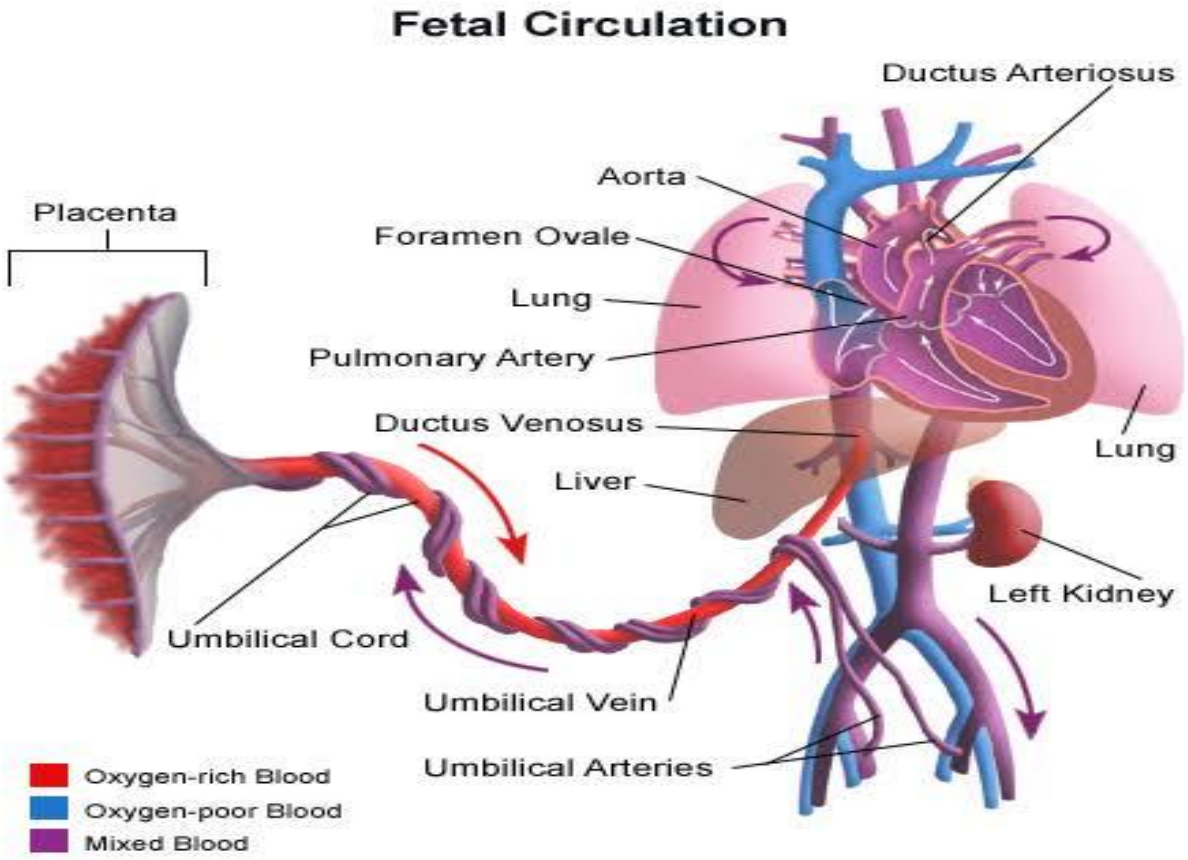


Figure.16. The fetal circulation

Adaptation to extra Uterine life

At birth the baby takes a breath and blood is drawn to the lungs through the pulmonary arteries. It is then collected and returned to the left atrium via the pulmonary veins resulting in a sudden inflow of blood. The placental circulation ceases soon after birth and so less blood returns to the right side of the heart. In this way the pressure in the left side of the heart is greater while that in the right side of the heart becomes less. This results in the closure of a flop over the foramen ovale which separated the two sides of the heart and stops the blood flowing from right to left.

The cessation of the placenta circulation results in the collapse of the umbilical vein, the ductus venous and the hypogastric arteries. These vessels after collapse change to the following structure.

The umbilical vein → the ligamentaum teres

The ductus venosus → the ligamentum venosum

The ductus arteriosus → the ligamentum arteriousm

The foramen ovale → the Fossa ovalis

The hypogastric arteries → the obliterated hypogastic arteries

Appearance of the Placenta at Term

The placenta measures about 20 cm in diameter and 2.5cm thick from its center. It weighs approximately one sixth of the baby's weight at term.

It has two surfaces.

1. The maternal surface maternal blood gives this surface a dark red colour and part of the basal decidua will have been separated with it. The surface is arranged in about 20 lobes which are separated by sulci

2. The fetal surface. The amnion covering the fetal surface of the placenta gives it a whitish, shiny appearance. Branches of the umbilical veins and arteries are visible and spreading out from the insertion of the umbilical cord which is normally in the center.

The aminotic sac consists of a double memberane.

Chorion – Outer layer adher to the uterine wall.

Amnion.-The inner layer of the aminotic sac containing an aminotic fluid and cover the fetal surface of the placenta and are what give the placenta its typical shiny appearance. Protects the fetus from any infection and the amniontic fluid is a clear, pale straw in colour. It secreted by the amnion and fetal urine also contributes to the volume from the 10th weeks of the gestation on wards.

The total amount of amniotic fluid is about 1 litter and diminished to 800ml at 38 weeks of gestation (term). If the total amount exceeds 1500 ml, the condition is known as **polyhdraminous** and if less than 300ml it is known as **oligohydraminous**. It constitutes

99% water and the remaining 1% is dissolved organic maters including substances and waste products.

Function

- Allows for free movement of the fetus
- Protects the fetus from injury
- Maintains a constant temperature for the fetus
- During labour it protects the placenta and umbilical cord from the pressure of uterine contraction
- Aids effacement of the cervix and dilation of the uterine os.

Anatomical Variations of the Placenta and the Cord

Succenturiate lobe of placenta: A small extra lobe is present, separate from the main placenta and joined to it by blood vessels which ran through the membrane to reach it.
The danger is that this small lobe may be retained in utro after delivery, and if it is not removed it may lead to hemorrhage and infection.

Identification On inspection, the placenta will appear torn at the edge, or torn blood vessles may extend beyond the edge of the placenta.

Circumvallate placenta In this situation an opaque ring is seen on the fetal surface. It is formed by a doubling back of the chorion and amnion.
Danger may result in the membranous leaving the placenta nearer the center instead of at the edge as usually.

Battledore insertion of the cord The cord in this case is attached at the very edge of the placenta in the manner of the table tennis bat.

Danger Likely it is detached up on applying traction during active management of the third stage of labour.

Velamentous insertion of the cord It is inserted into the membranes some distance from the edge of the placenta. The umbilical vessles run through the memberanous from the cord to the placenta.

Danger The vessels may tear with cervical dilatation and would result in sudden blood loss.

Bipartite Placenta Two complete and separate lobes are present, each with a cord leaving it. The bipartite cord joins a short distance from the two parts of the placenta.

Danger-The extra lobe may retained during delivery.

A tripartite Placenta is similar but with three distinct lobes.

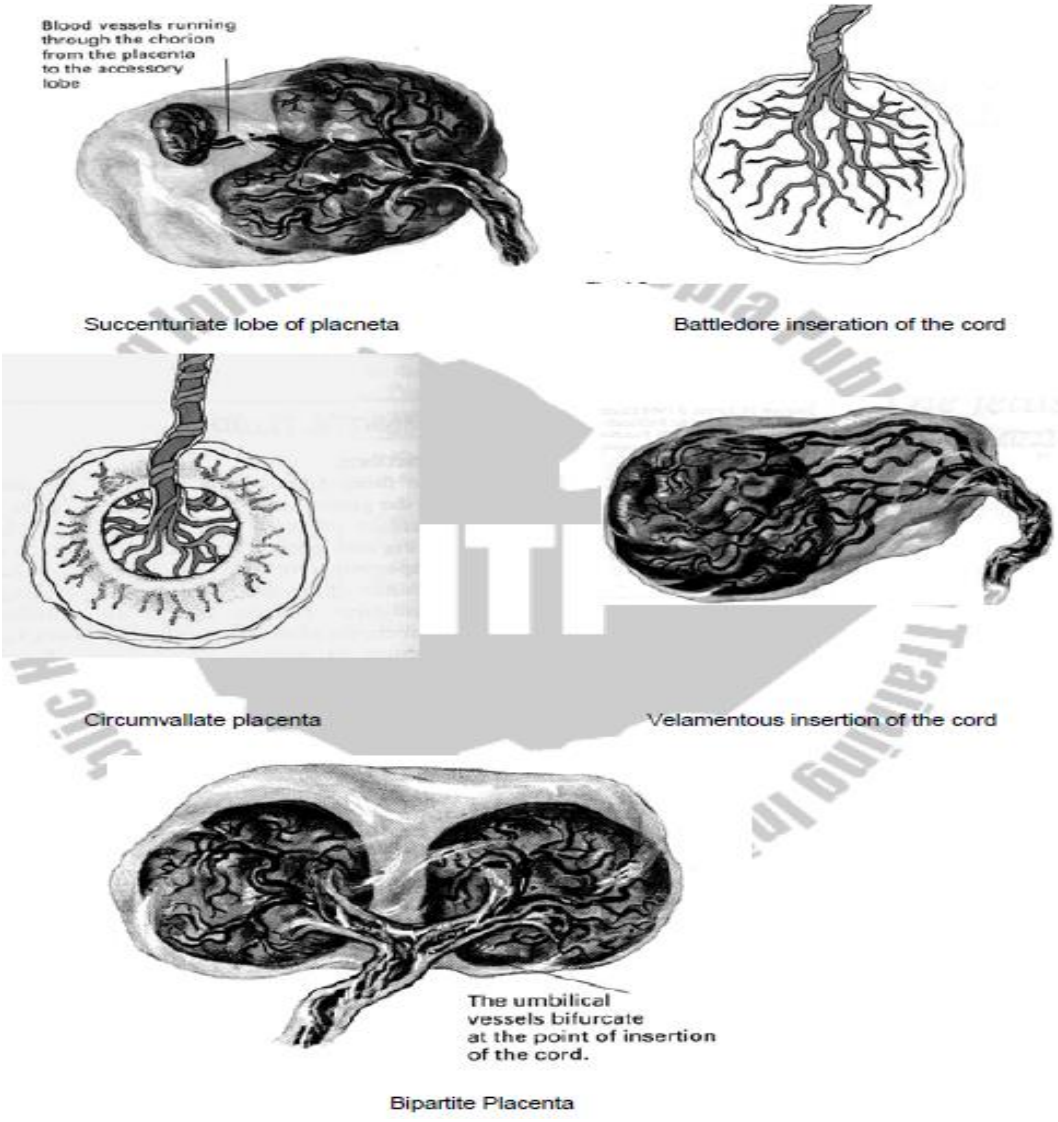


Figure 17 .Anatomical variations of placenta and cord insertion (Adele pillitteri,1995)

Placenta infraction

Placental infraction occurs when the blood supply to an area of the placenta is blocked and tissue necrosis results. It appears most commonly on the maternal surfaces and most often associated with vascular disease of the utero- placental unit secondary to maternal hypertension.

As the infarct at area becomes necrotic, fetal circulation is reduced because blood flow through the placenta will decrease. However, if the circulation through the rest of the organ is sufficient, a fetus may survive when as much as 20% to 30% of the placenta is infracted. Placental infractions can be treated.

Placental tumors (Haemongiomata of the Placenta) These tumors are relatively common, being found in approximately 1 percent of all placentas. Most tumors are small and without clinical significance but a few are large and associated with hydraminious, antepartum hemorrhage and premature labour.

The Umbilical Cord

The umbilical cord or funis extends from the fetus to the placenta and transmits the umbilical blood vessles, two arteries and one vein. These are enclosed and protected by Wharton's jelly, (a gelatinous substance formed from mesoderm). The whole cord is covered in a layer of amnion continuous with that covering the placenta. The length of the average cord is about 50cm. A cord is considered to be short when it measures less than 40cm

Physiological Changes of Pregnancy

• There are physiological biochemical and anatomical changes that occur during pregnancy. These changes may be systemic or local.

• Most of the systemic changes return to pre pregnancy status 6 weeks after delivery.

• These changes occur during pregnancy to maintain a healthy environment for the fetus without compromising the mother's health. And prepare for the process of delivery and care of the newborn.

• Understanding of the normal changes helps to understand coincidental disease processes.

. **Gastro Intestinal Tract (GIT)**

• Requirements for vitamin and minerals are increased so usually mother's appetite increase

• Pregnant women tend to rest more often conserving energy and thereby enhancing fetal nutrition

Oral cavity feels salivation

Gums- hypertrophic and hyperemic easily bleed (20 to increased systemic estrogen)

Gastrointestinal mobility May be reduced due to increased progesterone (w/c decreased the hormone motline stimulate smooth muscles in GIt) hence gastric emptying is slowed and similarly in other part of GIT constipation (due to increased water absorption)

Stomach Production of gastrin increase increased gastric volume and decreases PH, mucous production increased

PUD usually improve or disappear because of these changes during pregnancy, However during the pregnancy because of the enlarging uterus heart burn is common due to gastric reflux

Enlarging uterus slower emptying time, increase in gastric pressure increase acidity and increased gastric reflux The anatomical position of small and large intestine as well as appendix will shift because of the enlarging uterus

Gallbladder

Progesterone decreased motility → decreased empty time of bile →stasis →stone formation and infection.

Liver

No morphological changes but functional changes

Decreased plasma protein (albumen) and globulin (synthesized by liver) increases serum alkaline phosphates activity

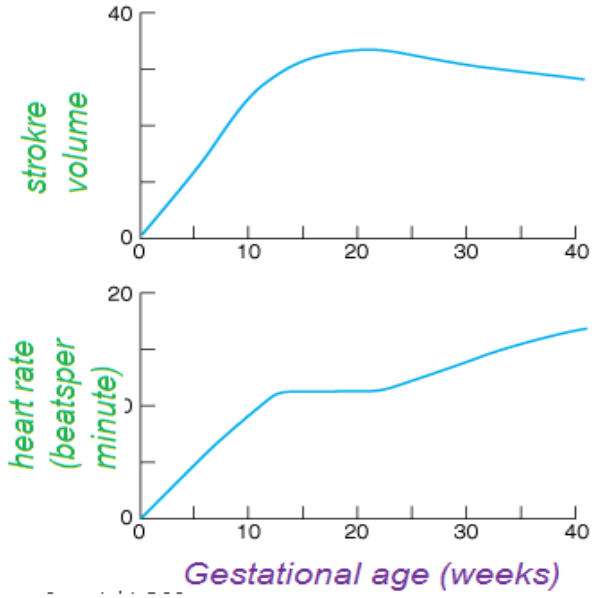
Cardiovascular System

- **Heart**
  - Most important changes occur in the first 8 weeks
  - Heart rotates on its long axis in a left-upward displacement

- Apical beat shifts laterally
- Resting pulse rate increases about 10-15 beats/min

Cardiac Output

- Increases as early as the fifth week of pregnancy,
  - ✓ Decrease systemic vascular resistance
  - ✓ Increase in heart rate
- Stroke volume increases 25–30%, reaching peak values at 12–24 weeks' gestation
- Increases in labor due to painful contractions



Increase in heart rate and stroke volume with gestational age

Urinary systems

- Each kidney increase in length and weight
- The renal pelvis and ureters dilate and lengthen

Thus there is an increase urinary stasis increase risk of infection and stone formation

• **Renal function**

- Change occur due to increased maternal and placental hormones
- (ACTH, ADH, cortisole, etc.) and increase in plasma volume
- Glomerular Filtration Rate increase by 50% (begins early and last up to term)

 Renal blood flow rate increase by 20-25% (early to mid trimester) after the end of 2nd trimester remain constant.

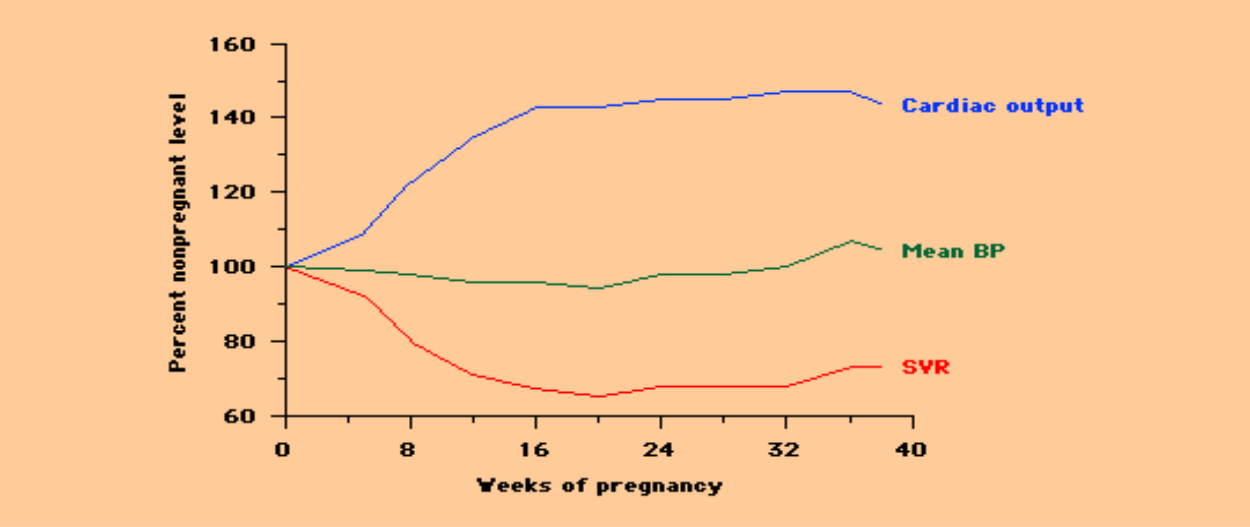
 Urine volume does not increase although Glomerular filtration rate increase because of reabsorption.

Blood Volume

- Increases markedly during pregnancy
- RBC mass begins to increase at the start of the 2nd trimester and continues to rise throughout pregnancy

Blood Pressure

- Systemic arterial pressure declines slightly
- Diastolic pressure decreases more markedly
- Pulse pressure widens
- Venous pressure increases in the lower extremities, supine, sitting, or standing (femoral)
- Venous pressure in the upper extremities is unchanged by pregnancy



Hemodynamic changes in normal pregnancy Normal pregnancy is characterized by an increase in cardiac output, a reduction in systemic vascular resistance, and a modest decline in mean blood pressure. These changes are associated with a 10 to 15 beat/min increase in heart rate.

❑ **Hematologic System**

- RBC mass expands by about 20-30%, or by 450 mL
- Maternal hemoglobin levels decreases → physiological anemia

- Leukocyte count increases from a pre-pregnancy level of 4,300– 4,500/L to 5000–12,000/L
- WBC counts 20,000–25,000/L
- Basophile counts decrease slightly
- Eosinophil counts remain unchanged

❑ **Clotting Factors**

- Circulating levels of several coagulation factors increase

Plasma fibrinogen concentrations increase from range of 1.5–4.5 g/L to 4–6.5 g/L

Respiratory System

- The major factors are:
- Mechanical effects of the enlarging uterus
- Increased total body oxygen consumption
- Respiratory stimulant effects of progesterone
- The diaphragm rises about 4 cm during pregnancy
- Sub-costal angle widens appreciably
- Transverse diameter of the thoracic cage increases about 2 cm
- The thoracic circumference increases about 6cm

❑ **Dyspnea of Pregnancy**

- The marked change in PCO2 to unusually low levels may result in the sensation of Dyspnea PCO2 decreases from 40 to 35

❑ **Pulmonary Function**

- The respiratory rate is little changed during pregnancy
- The tidal volume, ventilatory volume, and oxygen uptake increase as pregnancy advances
- The residual capacity and the residual volume decreases
- Lung compliance is unaffected by pregnancy
- Airway conductance is increased

Total pulmonary resistance is reduced

✓ **Changes in the Urinary Tract**

- Urinary collecting system, undergoes marked dilation

- Progesterone appears to produce smooth muscle relaxation
- As the uterus enlarges, partial obstruction of the ureters occurs
- Blood flow increase early in pregnancy
- GFR increases

✓ **Urine Analysis**

- Glucosuria is not necessarily abnormal
- Proteinuria normally is not evident
- +Ve HCG hormone

Reproductive Tract

Uterus

Non-pregnant uterus	**Pregnant Uterus**
• Almost-solid structure • Weighing about 70 g • Cavity of 10 ml or less	• Relatively thick-walled • Total volume ranges from 5 L – 20L • By term, 500 to 1000 times greater than in the non-pregnant state • By term weighs approximately 1100 g

Vagina and Perineum

- Vasscularity increases
- Softening of the underlying abundant connective tissue
- Increased vasscularity of vagina results in the violet color characteristic of the Chadwick sign
- Considerable increase in thickness of the mucosa
- Increased volume of cervical secretions → thick, white discharge
- pH is acidic, varying from 3.5 to 6

❑ Skin

- Melanocyte-stimulating hormone is activated
- **Striae gravidarum** or stretch marks reddish, slightly depressed streaks
- **Linea alba /** linea nigra
- **Mask of pregnancy** (cholasma or melasma gravidarum): irregular brownish patches of varying size on face or neck
- Pigmentation of the areola and genital skin may also be accentuated.

Vascular Changes

- **Spider angioma***:* minute, red elevations on the skin, Palmar erythema

❑ Breasts

- Breast tenderness and tingling occurs
- After the second month,
  - ➢ Breasts increase in size
  - ➢ Veins become visible just beneath the skin
  - ➢ Nipples become larger, deeply pigmented, and erectile
- After the first few months
  - ➢ **Colostrum-** a thick, yellowish fluid expressed from the nipples by gentle massage
  - ➢ Areola become broader and deeply pigmented

Analysis of Weight Gain based on physiological events during pregnancy (the average weight gain during pregnancy is approximately 12.5 kg)					
		Cumulative Increase in Weight (g)			
	Tissues and Fluids	10 Wks	20 Wks	30 Wks	40 Wks
	Fetus	5	300	1,500	3,400
	Placenta	20	170	430	650
	Amniotic fluid	30	350	750	800
	Uterus	140	320	600	970
	Breasts	45	180	360	405
	Blood	100	600	1,300	1,450
	Extra vascular fluid	0	30	80	1,480
	Maternal stores (fat)	310	2,050	3,480	3,345
	Total	650	40,00	8,500	12,500

1.1.5 Common terminology related with pregnancy, birth & new born care

Pregnancy- A condition of having a developing embryo or foetus within the body after conception

Ante version: The forward tilting of an organ but not bent at an angle

Retroversion: The tilting of an entire organ in posterior direction

Gravid: Pregnant = Containing developing embryo

Gravida: Total number of pregnancies

Para: Total number of deliveries after 28 completed weeks of pregnancy

Gestation: The period from conception to birth

Viability: Ability to live after birth

Primigravida: a pregnant woman during her first pregnancy

Nulipara: A woman who has never born a viable child

Multigravida: A woman who has been pregnant more than one time

Multipara: A woman who has had two or more pregnancies which suited in viable foetus

Grand Multipara: A woman who has had 5 or more pregnancies

Old primigravida: A woman pregnant for the first time after age of 35 years

Singleton pregnancy: having one foetus in the uterus

Multiple pregnancies: having more than one fetus in the uterus

Term: The time of gestation from 37 completed weeks to 42 completed weeks from 1st day of LMP

Pre term: the time of gestation before 37 weeks

Post term: the time of gestation after 42 weeks

Obstetrics: Branch of surgery that deals with the management of pregnancy, labour and Puerperium

Gynaecology: Branch of medicine specializing in the health care of the woman, especially the sexual and reproductive functions

Conception: The onset of pregnancy/unification of spermatozoa and ovum

Conceptus: The sum of derivatives of fertilized ovum at any stage of development from fertilization to birth

Implantation: Attachment of the blastocyst in the epithelium of the uterus

Zygote: The fertilized ovum

Embryo: The developing organism from the end of the 2nd week after fertilization to the end of the 8th week

Fetus : The unborn offspring from the 9th week of gestation to birth

Neonate: New born in the first 4 weeks

Infant: a baby with the age of < 1 year

Blastocyst (Blastula): Post Morula stage of conceptus

Morula: A solid cell mass after conception

Trimester: A period of three months of pregnancy

First trimester: From conception to 12 completed weeks

Second trimester: from week 13th to 27th completed week

Third trimester: from week 28th to 40th completed week

Still birth: Birth of dead fetus after 28 weeks of pregnancy

Neonatal death: Death of the baby with in the first 4 weeks after delivery

Lie: is the relationship of the long axis (spine) of the fetus to the long axis of the mother's uterus, and the normal lie is longitudinal Abnormal are transverse, oblique and variable.

Attitude: is the relationship of the fetal parts to one another, and the normal attitude is flexion, abnormals are **extensio**n and **deflection**

Presenting part: is the part of the fetus felt at the lower pole of the uterus and felt on abdominal examination and on vaginal examination.

Presentation: is the part of the fetus in the lower pole of the uterus and the normal presentation is vertex, abnormal are breech, face, brow and shoulder.

Position: is the relationship of the denominator to the six areas of the mother's pelvis, normal position is anterior or lateral abnormal is malposition is Occipital posterior position.

Crowned: When the Bi-parietals pass the ischial spines and the head no longer recedes between contractions.

Denominator: The part of the fetus which determines the position. (Vertex- occipute, breach -sacrum. Face- mentum).

Engaged: when the Bi-parietal diameters of the fetal head passes through the pelvic brim.

1.1.6 Diagnosis of pregnancy (signs and symptoms)

- **Pregnancy** is a condition where there is a developing embryo or fetus in the uterus

Sign and symptoms are divided into

- Presumptive signs
- Probable signs
- Positive signs

Presumptive Manifestations	**Probable signs**
• Amenorrhea • Nausea and vomiting • Breast changes • Quickening • Disturbance in urination • Skin changes • Fatigue • Strange cravings, food aversion • Increased BBT	☛ Enlargement of the abdomen ☛ Changes in the shape, size and consistency of the uterus ☛ Anatomical changes in the cervix ☛ Discoloration of the vaginal mucosa ☛ Change in cervical mucus ☛ Braxton Hicks contractions ☛ Ballottement ☛ Physical out line of the fetus ☛ Presence of hCG in urine or serum

Positive signs

- ✓ Fetal heart beat detection
- ✓ Perception of active fetal movements by the examiner
- ✓ Recognition of the embryo and fetus by ultrasound
- ✓ Radiographic demonstration of fetal skeleton at 6^{th} week onwards

Self-check-1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Choose the best answer (each 1point)

1._____ is a water-in-oil emulsion with the milk proteins acting as the emulsifiers.

A. Cheese B. Yoghurt C. **Butter** D) None

2. The commercial cream separator was introduced at the end of the ----- century.

A. 20th B) **19th** C.21th D None

Part II fill the blank space

1. List down the most common butter packing containers and storage system! (5%)

_____,_____

_____,_____

_____,_____

2. Mention the most milk product in Africa agricultural systems! (3%)

_____,_____,_____

Answer the following question!

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Score = _____

Rating: _____

Information sheet 2	Providing Antenatal care

1.2. Providing Antenatal care

1.2.1. Definition and Purposes of antenatal care

Definition: - Antenatal care (ANC) is the care given to pregnant women so that they have safe pregnancy and healthy baby

Or ANC is defined as the complex of interventions that a pregnant woman receives from organized health care services.

The objective of antenatal care (ANC) is to assure that every pregnancy culminates in the delivery of a healthy baby without impairing the health of the mother.

The purpose of ANC is to prevent, identify and treat conditions as well as help a woman approach pregnancy and birth as a positive experience.

Aims of antenatal care

1. To ensure maternal health & normal fetal development.
2. To recognize deviations from normal health status and provide management as required.
3. To prepare the mother physically & emotional for labour and breast feeding and for subsequent care of the baby.
4. To select the high risk mother for hospital delivery.
5. To give health education about immunization, personal hygiene, nutrition, place of delivery, breast feeding, and family planning.

N.B. Antenatal care is a corner stone of obstetrics.

Time and frequency of AN-visit

* WHO (World Health Organization) recommendation is the minimum antenatal visit is **four**

- First visit - 16 wks
- During the **1st visit** - history taking, physical examination laboratory investigation, screening for anemia, risk factor and medical problem.

2nd visit - 24 – 28 wks -follow up

3rd visit - check for multiple gestation, anemia & pre- eclampsia

4th visit - Check for abnormal lie, presentation

-- anemia.

* **When a woman has complication**.

e.g.: - raised BP – she should attend weekly.

Rights of the Pregnant Woman

Health care providers should be aware of the client's rights when offering antenatal care services. The pregnant woman has the right to:

* Information about her health
* Discuss her concerns, thoughts, and worries
* Know in advance about any planned procedure to be performed
* Privacy
* Confidentiality
* Express her views about the services she receives

1.2.2. General examination of the pregnant mother/client

The first visit

The first ANC visit should occur in the first trimester, around or preferably before 16 weeks of gestational age.

Objectives of first visit

To determine patients' medical and obstetric history with a view to collect evidence of the woman's eligibility to follow the basic component or need special care and/or referral to a specialized hospital (using the classifying form)

- To do pregnancy test to those women who come early in pregnancy,
- To identify and treat symptomatic STI
- To determine gestational age
- To provide routine Iron supplementation
- Provide advice on signs of pregnancy-related emergencies and how to deal with them including where she should go for assistance

- To provide simple written instructions in the local language that gives general information about pregnancy and delivery, HIV as well as any specific answers to the patient's questions.
- To give advice on malaria prevention and if necessary provide ITN
- To provide routine Provider-initiated HIV counseling and testing using the opt out approach
- To provide PMTCT services

NOTE:

* Ideally, the first visit should occur before 16th week of pregnancy. However, some women may come at a later gestational age in which case the provider has to enroll the woman as first visit but give her all the services required for fist visit as well as services appropriate for her gestational age.

* The first visit can be expected to take 30–40 minutes.

- **History Taking**

History taking:- Is a means of assessing the health of the woman to find out any condition which may affect child bearing

Personal history

- Name, Woreda, Kebele, house number, age, marital status, planned or unplanned pregnancy Age less than 18 years or greater than 35 years are considered as high risk mothers.

- Date of Last Menstrual Period (LMP); certainty of dates (regularity of cycle, hormonal contraception used three months prior to LMP).

Determine the expected date of delivery (EDD) based on LMP and all other relevant information. **Use 280-day rule (LMP + 280 days).**

- Gravidity, Parity, Number of children alive, number of abortions

- Socioeconomic status: monthly income, family size, number of rooms, toilet, kitchen

- History of Female Genital Cutting

Medical history

- Specific diseases and conditions: diabetes mellitus, renal disease, cardiac disease, chronic hypertension, tuberculosis, past history of HIV – related illnesses and Highly Active Anti Retroviral Treatment (HAART), varicose veins, deep venous thrombosis,

other specific conditions depending on prevalence in service area (for example, hepatitis, malaria), other diseases, past or chronic; allergy(-ies),

- Operations other than caesarean section
- Blood transfusions. Rhesus (D) antibodies
- Current use of medicines – specify, any medications

Obstetric history

- Previous stillbirth or neonatal loss
- History of three or more consecutive spontaneous abortion
- Birth weight of last baby < 2500 gm
- Birth weight of last baby > 4000 gm
- Last pregnancy: hospital admission for hypertension or pre-eclampsia/eclampsia
- Periods of exclusive breast-feeding: When? For how long?
- Thrombosis, embolus
- Previous surgery on reproductive tract (myomectomy, removal of septum, fistula repair, cone biopsy, CS, repaired ruptured uterus, cervical circulage)
- Any unexpected event (pain, vaginal bleeding, others: specify)

- **Physical Examination**

 General appearance, look for signs of physical abuse

 Vital signs: BP, PR, Temperature, RR; HEENT: Check for signs of severe anemia: pale complexion, fingernails, conjunctiva, buccal mucosa, tip of tongue and shortness of breath. Look for oral hygiene, dental carries

 Check for signs of jaundice record weight and height to assess the mother's nutritional status

 Do breast examination

 Chest: auscultate for chest and heart abnormality

 Abdomen: measure uterine height (in centimeters). A chart should be used to determine uterine height

 Gynecological Exam: consider vaginal examination (using a speculum), look for vulval ulcer, vaginal discharge, scratch marks, pelvic mass, cervical lesion and estimate uterine size in first trimester, genital malformation, severe FGM.

Clinical Observation

Height; - 150 cm or less needs special care.

Weight:- The average weight gain during pregnancy is about 12-14 kg in the first trimester a woman should gain o.4 kg per month and in the second and third trimester she should gain 0.4 kg per week. It is considered as excessive if it is more than 3 kg a month during the second and third trimester; it is less than normal if it is less than 1 kg per month during the second and third trimester. Women who are under weight coming in to pregnancy should gain more weight than the average (0.5 kg per month or week rather than 0.4 kg). And may gains less than average (0.3 kg). Sudden increase in weight that suggests fluid retention or a loss of weight

 Assess for symptoms of AIDS and HIV as per WHO Clinical Staging System for HIV status for HIV positive women

Abdominal Examination

AIMS

- To observe signs of pregnancy
- To assess fetal size and growth
- To assess fetal health
- To diagnose the location of fetal parts.
- To detect any deviation from normal.

Steps for Abdominal Examination

1. Inspection
2. Palpation
3. Auscultation

Inspection (5s)

a) Shape:-

- Note contour -is it round, oval, irregular or pendulous?
- Longitudinal, ovoid in primigravida
- Round in multipara.
- Broad in transverse lie.

b) Size:- Should correspond with the supposed period of gestation

c) Skin: - The dark line of pigmentation which is lineanigra is seen any rash?

d) Strae gravidarum

e) Scar - Any operation scar(c/s)

On Palpation:

Fundal height and fundal palpation (1st Leopoled Maneuver)

Fundal Height

At about 12 to 14 weeks of pregnancy, the uterus is palpated above the symphysis pubis as a firm globular sphere; it reaches the umbilicus at 20 to 22 weeks, the xyphoid process at 36 weeks, and then often returns to about 4 cm below the xyphiod due to "**lightening"** at 40 weeks.

Method: Measure distance of fundus with points on abdomen and assessing the fundal height in finger breadth below the xiphoid sternum or measure by centimeter.

A . Fundal Palpation

Purpose- To know lie and presentation**.**

Method: - Use 2 hands using palms of hands palpate on either side of the fundus. Fingers held close together, palpate the upper pole of then uterus and feel that as it is hard or soft or irregular.

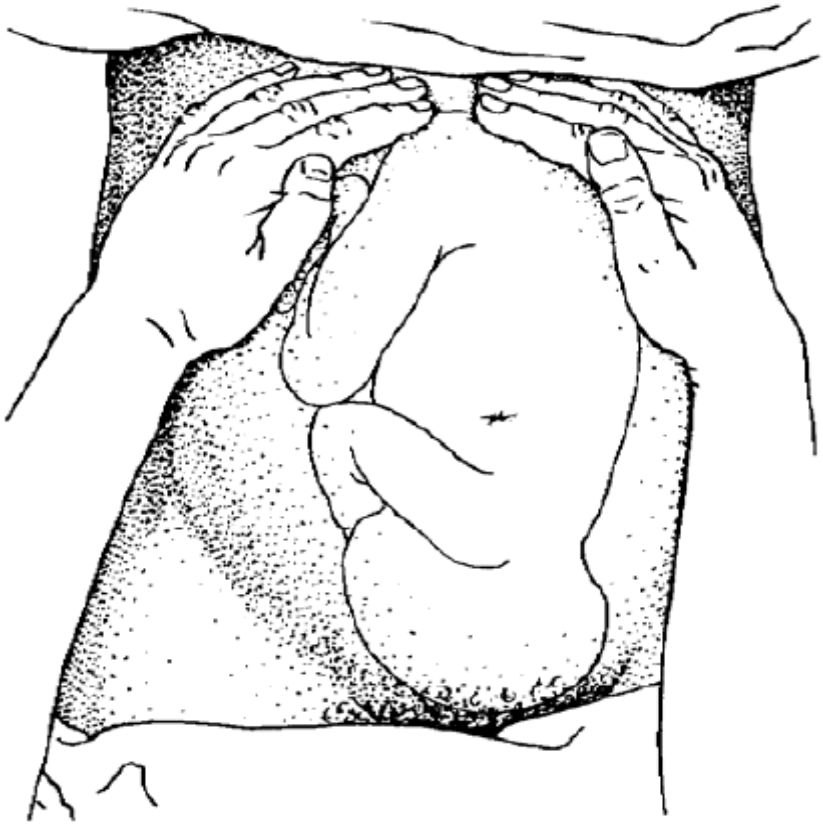


Figure:18 Fundal palpation (Derex llewllyn- Jones,vol.1,1990)

B. Lateral Palpation: (2nd Leopled maneuver)

Purpose-To know lie and position

Method: - always facing the mother, fix the hand on the center of the abdomen, fix the right hand and palpate with left hand and vise versa. Note the regularity; the regular side is the back.

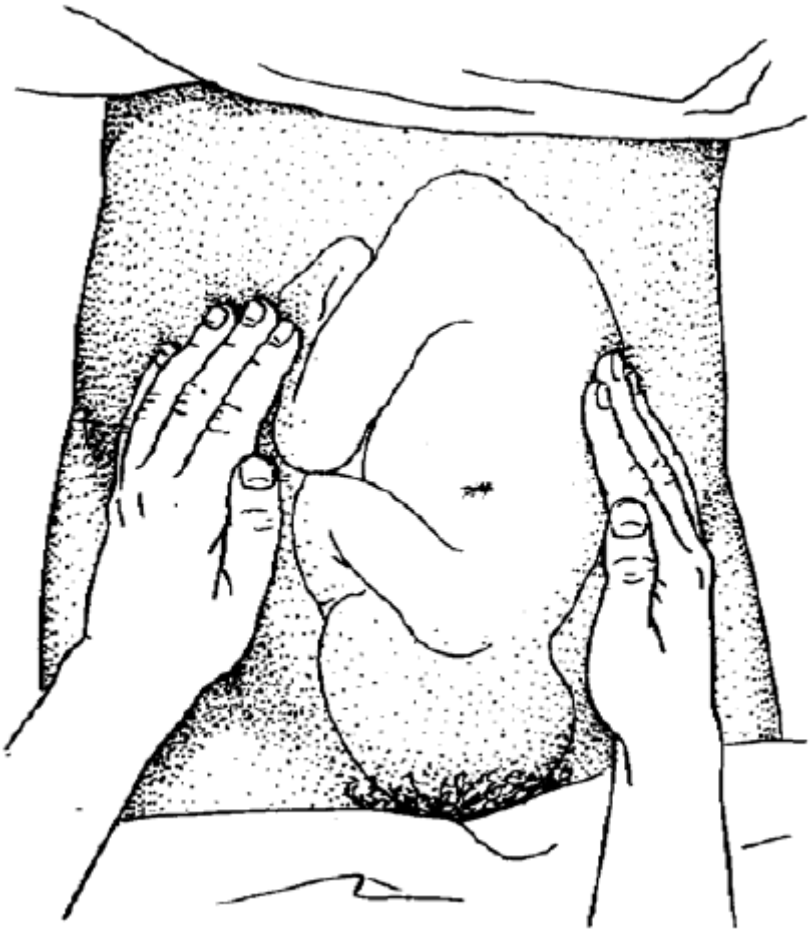


Figure ; 19 Lateral palpation (Derex llewllyn Jone, vol.1,1990)

C. Deep pelvic Palpation: (3rd Leopoled Maneuver)

Purpose -To Know Presentation & Attitude

Method: - Feel presenting part, is it hard or soft while palpating for the presenting part feel for eminences on back side.

Figure 20: Deep pelvic palpation (**Derexllewllyn-Jone, Vol.1,1990)**

D. Pawlick's Grip: (4th Leopard Maneuver)

The lower pole of the uterus is grasped with the right hand the midwife facing the women's head, feel the occiput and sinciput, note which is lower.

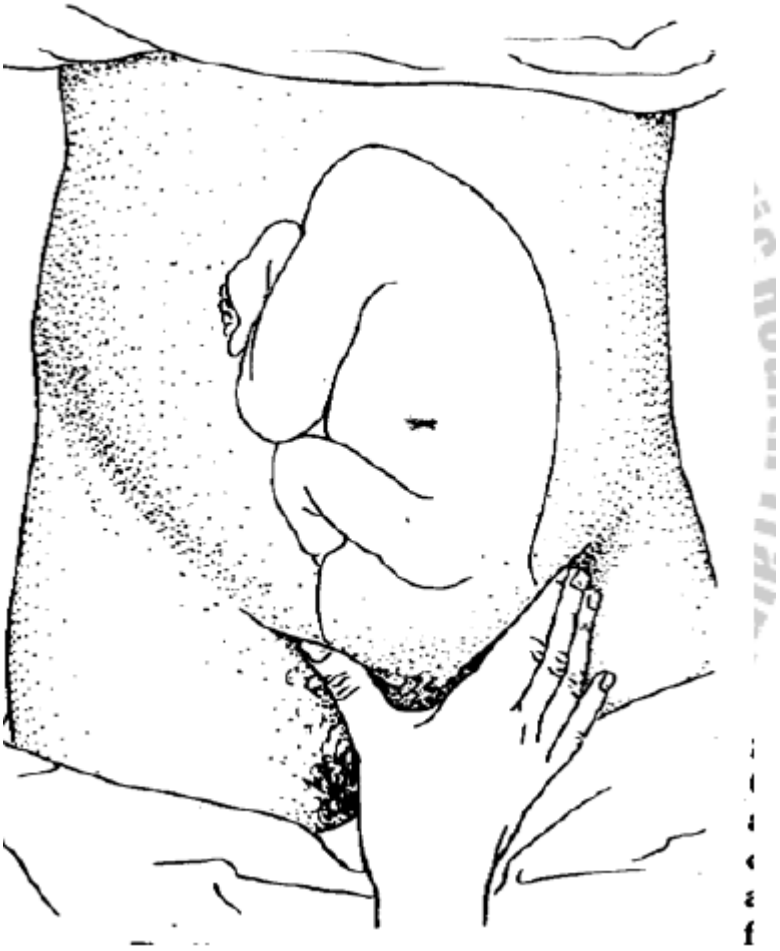


Figure 21. Pwlick's grip (Derexllewllyn-Jone,Vol.1,1990)

Auscultation: Check Fetal heart, rate and rhythm, count for one minute if regular.

Method: Use Pinards stethoscope

- hand should not touch it while listening,
- ear must be in close from contact with stethoscope,

Pelvic assessement

- By x-ray of the pelvis
- Clinical (assessing sign of contracted pelvis)
- Head fitting

Head fitting

The head is the best pelvimeter

METHOD 1: Head fitting, sitting patient, Method

Let her lie on a couch, place hand on the Symphysis pubes and get the woman to sit up by her own effort. The effort should force the head in to the pelvis.

METHOD 2 : Left hand grip method Grasp the fetal head with left hand and push it down wards and backwards if a sense of give is felt the head has entered and there is no over and no cephalopelvic disproportion.

Genito-Urinary System

- Frequency of micturation
- Check for abnormal discharge

Vaginal discharge

- Ask for vaginal discharge, the normal vaginal discharge white in colour, non-offensive and it is not itchy.
- Once the woman has identified what a normal she will then be able to report any changes.
- If the discharge is itchy, causes soreness is any colour other than creamy – white or has an offensive odour, infection must be suspected & investigated.

In later pregnancy - leucorrhoea changed in to discharge which has colour & consistency of egg white.

Calculation of the expected date of delivery

The duration of pregnancy is usually taken to be 40 weeks, with normal labour occurring between 38 and 42 completed weeks of gestation. Issues of premature and prolonged labour, therefore, surround the period before 38 weeks and after 42 weeks. The expected date is awaited with anticipation by the woman, who often becomes very disappointed if delivery does not occur around this date. The typical formula for calculation is nine calendar months, and seven days are added to the first date of the last menstrual period. This assumes that ovulation occurred 14 days after the first day of the last period, and that the last period of bleeding was a true period.

- **Anthropometric measurements (weight & Height)**

Anthropometry provides a simple, reliable and low-cost method of assessing maternal nutrition status which can be universally applied at the primary care.

Maternal anthropometry indicates the risk of intrauterine growth retardation and low birth weight. The measurements will made on the participants wearing a minimum amount of clothing.

The weights of pregnant women were recorded at the early first trimester during their first visit and continued in every trimester by using a digital weighing balance with a sensitivity of 100 g. Total gestational weight gain was estimated by subtracting the early first trimester weight from the last measured weight before delivery.

Height wil measured in cm using a locally made anthrop-meter. The pregnant women are asked to maintain an upright and erect posture with her feet together and the back of her heels touching the pole of the anthrop-meter. The height is measured when the horizontal headpiece is lowered onto the women's head.

Fundal height was measured by a midwife as the distance between the symphysis pubis and the highest point of the uterine fundus, defined with a gentle pressure on a plain at a right angle of the abdominal wall.

Gestational weight gain in relation to pregnancy Birth weights of neonates were taken within 24 hours after birth using a standard procedure. A beam balance with an accuracy of 50 g was employed for weighing the infants. The infants were weighed with minimum clothing while the child was restful.

- **Laboratory Invetigation**
  - Urine analysis preferably multiple dipstick test for bacteriuria and test for proteinuria to all women.
  - Blood: syphilis (rapid test - RPR if available or VDRL) result while waiting in the clinic.

- Blood-group typing (ABO and rhesus).
- Hemoglobin (Hgb) or hematocrit.
- Stool exam if the woman can afford or if it is provided for free or when presumptive treatment using mebendazole is not recommended
- Perform HIV test if the woman does not say “NO”. Encourage testing of partner
- Perform CD4 count for all HIV positive pregnant women, If CD4 determination is unavailable, HIV positive pregnant women should be staged clinically and using total lymphocyte count for antiretroviral treatment, ART, eligibility.
- Additional investigation that can be considered when available and affordable include: urine culture and sensitivity, ultrasound, Pap smear, HBsAg.

Implement the following interventions:

 Iron and folate supplements to all women: one tablet of 60-mg elemental iron and 400 micrograms folate per day. To enhance the absorption of iron, instruct mothers to take iron when eating meat or vitamin-rich foods (fruits and vegetables). Avoid tea, coffee, and milk at the same time when taking iron; it interferes with the body’s absorption of iron. Iron can also be taken between meals.

 If rapid test for syphilis is positive: treat, provide counseling on safer sex, and arrange for her partner’s treatment and counseling.

 Tetanus toxoid: give first injection.

 In malaria endemic areas provide ITN.

 Perform additional laboratory investigations and provide care and treatment of HIV positive pregnant women according to the Guideline for PMTCT of HIV in Ethiopia.

 Refer clients that need specialized care, according to diagnosis

Advice, questions and answers, and schedule the next appointment

The second visit

The second visit should be scheduled at 24-28 Weeks. It is expected to take 20 minutes.

The third visit

The third visit should take place around 30 – 32 weeks and is expected to take 20 minutes.

The fourth visit

The fourth should be the final visit of the basic component and should take place between weeks 36 and 38.

Backing for appointment

Women should attend: - Monthly up to 28 weeks

- Every 2 weeks up to 36 weeks
- Weekly 36 weeks thereafter.

N.B. High risk mothers eg. multiple pregnancy, suspected disproportion etc. should attend weekly.

1.2.3. Counseling on ANC

Antenatal care provides an important opportunity to improve maternal understanding about pregnancy, childbirth, and care of the newborn.

In addition to routine examination, screening, and treatment, the World Health Organization's focused antenatal care model recommends information and counseling be provided to all pregnant women in areas related to the health needs of the pregnant woman, birth and emergency preparedness, nutrition, preventative home practices, and support for care-seeking through danger sign recognition.

This includes advice that promotes the health of the mother and newborn during and following delivery. Relatively high coverage of antenatal care enables health care personnel to reinforce communication across visits.

Communication provided antenatally has been shown to be an effective strategy to improve maternal understanding and health practices

1.2.4Immunization of Pregnant mother

1.2.5. PMTCT service including option B+

Recent developments suggest that substantial clinical and programmatic advantages can come from adopting a single, universal regimen both to treat HIV-infected pregnant women and to prevent mother-to-child transmission of HIV.

This streamlining should maximize PMTCT program performance through better alignment and linkages with antiretroviral therapy (ART) programmes at every level of service delivery. One of WHO's two currently recommended PMTCT antiretroviral (ARV) program options, Option B, takes this unified approach.

Now a new, third option (Option B+) proposes further evolution—not only providing the same triple ARV drugs to all HIV-infected pregnant women beginning in the antenatal clinic setting but also continuing this therapy for all of these women for life.

Important advantages of Option B+ include: further simplification of regimen and service delivery and harmonization with ART programmes, protection against mother-to-child transmission in future pregnancies, a continuing prevention benefit against sexual transmission to serodiscordant partners, and avoiding stopping and starting of ARV drugs.

While these benefits need to be evaluated in program settings, and systems and support requirements need careful consideration, this is an appropriate time for countries to start assessing their situation and experience to make optimal programmatic choices.

Prevention of mother-to-child transmission of HIV (PMTCT) is a dynamic and rapidly changing field.

Current World Health Organization (WHO) PMTCT antiretroviral (ARV) guidelines on treating pregnant women and preventing infection in infants Option B+ advantages

Table 5. Three options for PMTCT programmes

	Woman receives:		Infant receives:
	Treatment (for CD4 count ≤350 cells/mm³)	**Prophylaxis (for CD4 count >350 cells/mm³)**	
Option A[a]	Triple ARVs starting as soon as diagnosed, *continued for life*	*Antepartum*: AZT starting as early as 14 weeks gestation *Intrapartum*: at onset of labour, sdNVP and first dose of AZT/3TC *Postpartum*: daily AZT/3TC through 7 days postpartum	Daily NVP from birth through 1 week beyond complete cessation of breastfeeding; or, if not breastfeeding or if mother is on treatment, through age 4–6 weeks
Option B[a]	*Same initial ARVs for both*[b]*:*		Daily NVP or AZT from birth through age 4–6 weeks regardless of infant feeding method
	Triple ARVs starting as soon as diagnosed, *continued for life*	Triple ARVs starting as early as 14 weeks gestation and *continued intrapartum and through childbirth if not breastfeeding or until 1 week after cessation of all breastfeeding*	
Option B+	*Same for treatment and prophylaxis*[b]*:*		Daily NVP or AZT from birth through age 4–6 weeks regardless of infant feeding method
	Regardless of CD4 count, triple ARVs starting as soon as diagnosed,[c] *continued for life*		

Note: "Triple ARVs" refers to the use of one of the recommended 3-drug fully suppressive treatment options.

[a] Recommended in WHO 2010 PMTCT guidelines

[b] True only for EFV-based first-line ART; NVP-based ART not recommended for prophylaxis (CD4 >350)

[c] Formal recommendations for Option B+ have not been made, but presumably ART would start at diagnosis.

The Option B+ approach of lifelong ART for all HIV-infected pregnant women, regardless of CD4 count, has important advantages over both Options A and B (if viral suppression is maintained) but needs to be evaluated in program and field settings. These advantages include:

1. Further simplification of PMTCT program requirements— no need for CD4 testing to determine ART eligibility (as required in Option A) or whether ART should be stopped or continued after the risk of mother-to-child transmission has ceased (as in Option B) (although CD4 counts or viral load assays are still desirable for determining baseline immunological status and monitoring response to treatment);

2. Extended protection from mother-to-child transmission in future pregnancies from conception;

3. A strong and continuing prevention benefit against sexual transmission in serodiscordant couples and partners;

4. likely benefit to the woman's health of earlier treatment & avoiding the risks of stopping and starting triple ARVs, especially in settings with high fertility; and

5. A simple message to communities that, once ART is started, it is taken for life

1.2.6. Minor pregnancy disorders

Minor disorders are only disorders that occur during pregnancy and are not life threatening.

1. Nausea and vomiting- This presents between 4 and 12 weeks gestation. Hormonal influences are listed as the most likely causes.

It is usually occurs in the morning but can occur any time during the day, aggravated by smelling of food.

Management:

- Reassure the mother
- Small frequent meals (dry meals)
- Reduce fatty and fried containing foods.
- Rest

2**. Heart burn: -** is a burning sensation in the mid chest region. Progesterone relaxes the cardiac sphincter of the stomach and allows reflex of gastric contents into esophagus.

Heart burn is most troublesome at 30-40 weeks gestation because at this stage is under pressure from the growing uterus.

Management:

- Small and frequent meal, sleeping with more pillows than usual.
- For persistence/sever case/ prescribe antacids.

3. Pica: - This is the term used when mother craves certain foods of unnatural substances such as coal, soil...etc.

The cause is unknown but hormones and changes in metabolism are blamed.

Management:

- Seek medical advice if the substance craved is potentially harmful to the unborn baby.

4**. Constipation**: - Progesterone causes relaxation and decreased peristaltic activity of the gut, which is also displaced by the growing uterus.

Management:

- Increase the intake of water, fresh fruit, vegetables and roughages in the diet.
- Exercise is helpful especially walking

5. Backache - The hormones sometime soften the segments to such a degree that some support is needed.

Management:

- Advice the mother to sleep on firm bed.
- Advice support mechanisms of the back.

6. Fainting: - In early pregnancy fainting may be due to the vasodilatation occurring under the influence of progesterone before there has been a compensatory increase in blood volume. The weight of the uterine contents presses on the inferior venacava and slows the return of blood to the heart.

Manageemnt: Avoid long period of standing

- Sit or lie down when she feels slight dizziness
- She would be wise not to lie on her back except during abdominal examination

7. Varicositis- Progesterone relaxes the smooth muscles of the veins and result in sluggish circulation. The valves of the dilated veins become insufficient and varicositis result.

It occurs in legs, anus (hemorrhoids) and vulva.

Management:

- Exercising the calf muscles by rising on the toes
- Elevate the leg and rest on the table
- Support thighs and legs
- Avoid constipation and advise adequate fluid intake.
- Sanitary pad give support for vulva varicositis

Most minor disorders can be advanced into a more serious complication of pregnancy.

The disorders require immediate actions are as follows (Danger signals of pregnancy)

- Vaginal bleeding
- Reduced fetal movements
- Frontal or recurring headaches
- Sudden swelling
- Rupture of the membrane
- Premature onset of contractions
- Maternal anxiety for whatever reason

1.2.7. Complication of pregnancy

Antepartum Haemorrhage (APH)

Antepartum haemorrhage is bleeding from genital tract in late pregnancy, after the 28 week of gestation till the end of second stage of labour.

Effect on the fetus

Fetal mortality and morbidity are increased as a result of severe vaginal bleeding in pregnancy.

Still birth or perinatal or neonatal death may occurred Premature placental separation and consequent hypoxia may result in the birth of a child who is mentally and physically handicapped.

Effect on the mother

If bleeding is severe, it may be accompanied by shock, disseminated interavascular coagulation and renal failure. The mother may die or be left with permanent ill- health.

Types of ante partum hemorrhage

Vaginal bleeding in late pregnancy is confined to placental separation due to placenta praevia or placental abruption.

Placenta praevia

The placenta is partially or wholly implanted in the lower uterine segment on either the anterior or posterior wall.

The lower uterine segment grows and stretches progressively often the 12th week of pregnancy. In late weeks this may cause the placenta to separate and sever bleeding can occur. Incidence- placenta pracvia occurs in 0.5% of all pregnancies.

Type 1 placenta praevia

- The majority of the placenta is in the upper uterine segment
- Vaginal delivery is possible
- Blood loss is usually mild
- The mother and the fetus remains in good condition

Type 2 placenta praevia

- The placenta is partially located in the lower uterine segment near the internal
- cervical os (marginal placenta pravia).
- Vaginal delivery is possible particularly if the placenta is implanted anteriorly
- Blood loss is usually moderate
- Fetal hypoxia is more likely to be present

Type 3 placenta pracvia

- The placenta is located centrally over the internal cervical
 Bleeding is likely to be sever particularly when the lower segment stretches and
- the cervix begins to efface and dilate in late pregnancy
 Vaginal delivery is in appropriate.

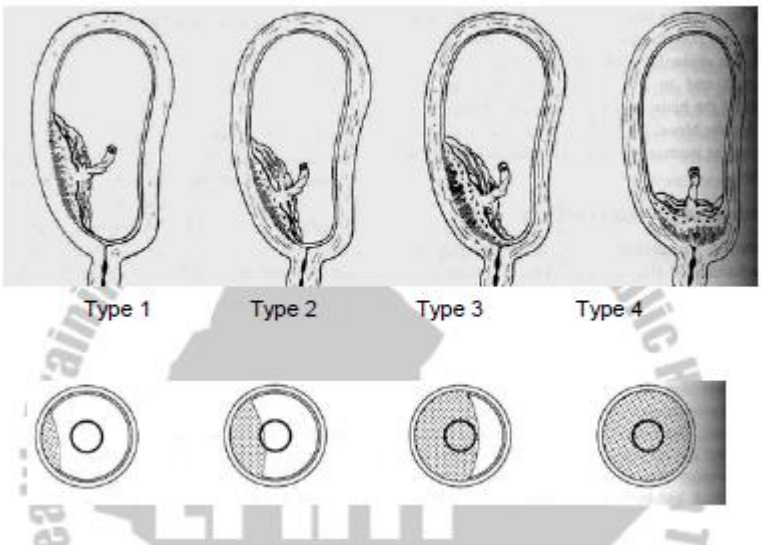


Figure 21 . Types of placenta praevia and relation of implantation with cervical os (V.Ruth Bennett. Linda k.rowen,1993)

Type 4 placenta praevia

- The placenta is located centrally over the internal cervical os and sever haemorrhage is very likely
- Vaginal delivery should not be considered

 Caesarean section is essential in order to save the life of the mother and fetus.

Pregnancy Induced Hypertension

Pregnancy induced hypertension (PIH) is spasm of arterial vessels during pregnancy

PREECLAMPSIA

Etiology

It remains obscure. It only occurs after 20 weeks of gestation & is uncommon before the 30 weeks.

Pathological changes

Whilst cardiac output appears to decrease as preeclampsia worsens, generalized vasoconstriction occurs when it affects much of the physiological activity of the tissues within the body.

Capillary permeability increases and the fluid which escapes contribute to the oedema within the tissues.

The presence of excessive fluid retention producing generalized oedema. The uterus is also affected, particularly the vessels supplying the placental bed. Vasoconstriction and DIC reduce the uterine blood flow and vascular lesions occur in the placental bed. Placental abruption can be the result.

The liver is affected in severe cases where intracapsular hemorrhages and necrosis occur. Oedema of the liver cells produces epigastric pain and impaired liver function may result in jaundice.

The brain becomes oedematous and this, in conjuction with D/C, can produce thrombosis and necrosis of the blood vessel walls resulting in cerebrovascular accident. The lungs become congested with fluid in severe cases oxygen is impaired and cyanosis occurs.

Diagnosis of pre eclampsia

Symptoms are rarely experienced by the mother until the disease has arrived at an advanced state. It is possible to identify the onset by the following which are known as the cardinal signs.

Blood pressure – A rise of 15-20 mmHg above the normal diastolic pressure or an increase above 90 mmHg on two occasions.

Proteinuria in the absence of urinary tract infection is indicative of renal damage. The amount of protein in the urine is frequently taken as an index of the severity of pre eclampsia.

Oedema It may appear rather suddenly and be associated with a rapid rate of weight gain. Generalized oedema is significant and be classified as occult or clinical. Occult oedema may be suspected if there is a marked increase in weight. Clinical oedema may be mild or sever in nature and the severity is related to the worsening of the pre-eclampsia.

The oedema pits on pressure and may be found in:

- Feet, ankles and pre-tibial region
- The hands –it may be noticed by that the mother's rings are tight.
- The lower abdomen
- The vulva
- Sacral oedema

Facial oedema – may be mild resulting in puffiness of the eye lids In the presence of two of the cardinal signs a provisional diagnosis of pre eclampsia may be made. Proteinaria is considered to be the most serious manifestation.

Classification

Mild – is diagnosed when, after resting, the mother's diastolic blood pressure rises 15-20 mmhg above the basal blood pressure recorded in early pregnancy or when the diastolic blood pressure rises above 90 mmHg. Oedema of the feet, ankles and pretibial region may be present.

Moderate – Preeclampsia is usually diagnosed when there is a marked rise in the systemic and diastolic pressure, when proteinuria is present in the absence of a urinary tract infection and when there is evidence of a more generalized edema.

Severe – Preeclampsia is diagnosed when the blood pressure exceeds 170/110mmhg, when there is an increase in the protein uria and where oedema is marked. The mother may complain of frontal headaches and visual disturbances.

Effects on the mother

- The condition may worsen and eclampsia may occur
- Placenta abruption may occur with all the complications
- Hematological disturbance can occur and the kidneys lungs, heart and liver may be seriously damaged.
- The capillaries with in the fundus of the eye may birreparably damaged and blindness can occur.

Effects on the fetus

- Reduced placental function can result in low birth weight.
- There is an increased incidence of hypoxia in both the antenatal and intranatal periods

- Placental abruption, if minor, will contribute to fetal hypoxia, if major, intra uterine death will occur.

Management

Depending up on the severity of the disease a mother may be admitted to the hospital. Treatment is symptomatic because the cause of pre eclampsia is unknown.

Bed rest

Diet: As for any pregnant woman a diet rich in protein, fiber and vitamin may be recommended fluid should be encouraged.

Weight: Should be estimated and recorded twice weekly if the mother is ambulant and oedema should be observed daily.

Urine: should be tested for protein and ketenes.

Fluid intake and out put should be continuously measured.

Blood pressure is ascertained 4- hourly in moderate pre eclampsia but will be taken 2 hourly or more frequently if the mother is severely affected.

Abdominal examination will be carried out, any discomfort, tenderness or pain experienced by the mother should be recorded and reported immediately. The fetal heart rate and fetal wellbeing is also recorded.

Sedation – may be prescribed

Management during labour

The nurse/midwife should remain with the mother throughout the course of labour. Preeclampsia can suddenly worsen at any time and it is essential to document the presence of oedema, the blood pressure, and urinary output. Positioning the mother on her left side will prevent supine hypo tension.

Care of the bladder is essential and the mother should be encouraged to void urine regularly. When the second stage commences the obstetrician and pediatrician should be notified. The latter will be present at the delivery in case the baby requires resuscitation.

Occasionally a short second stage is prescribed and in this instance the obstetrician will perform a forceps (vacuum) delivery.

Care after delivery

The blood pressure will be recorded after delivery and at least 4-hourly for 24 hours. If protein uria has been present the urine should be tested once or twice daily until it is clear and urinary output should be recorded.

Postnatal care will be as need strict follow up especially first 24-48 hours.

Signs of impending eclampsia

The nurse must be vigilant in monitoring the maternal condition and be alert to the following signs and symptoms which signal the onset of eclampsia:

- A sharp rise in blood pressure
- Diminished urinary output (oliguria)
- Increase in protein urea
- Head ache which is usually sever, persistent and frontal or occipital in location
- Drowsiness or confusion
- Visual disturbances such as blurring of vision or flashing lights due to retinal oedema
- Nausea and vomiting
- Epigastric pain

The midwife/nurse who observed any one of these signs in a woman with pre-eclampsia must make a full examination in order to establish if other are present and report for urgent action.

Eclampsia

Eclampsia is rarely seen. Usually pregnancy induced hypertension is diagnosed and treatment is instituted in order to prevent eclampsia.

The incidence of eclampsia is approximately 1 in 1500 pregnancies and of these about 20% occurs in the antenatal period, 25% occur intrapartum and 35% within the first few hours after delivery. Eclampsia is characterized by convulsions and coma.

The stages of an eclamptic fit

Premonitory stage (lasts 10-20 seconds)

The mother is restless and rapid eye movements can be noted.

- The head may be drawn to one side and twitching of the facial muscles may occur
- The mother has no perception of the impending fit and shows altered awareness.

Tonic stage (lasts 10-20 seconds)

- The muscles of the mother's body go into spasm and become rigid and her back may become arched.
- Her teeth will become tightly clenched and her eyes staring

The clonic stage (lasts 60-90 seconds)

- Violent contraction and intermittent relaxation of the mother's muscles produces conversions movements
- Salivation increases and foaming at the mouth occurs.
- The mother's face becomes congested and bloated and the features become distorted.
- She is unconscious, her breathing detorous and her pulse full and bounding. - Gradually the convulsion subsides.

Stage of coma

- Stertorous breathing continues and coma may persist for minutes or hours.
- Further convulsions may occur before the mother regains consciousness.

Emergency Care of a mother with eclampsia

- Clear and maintain the mother's air way (suction)
- Administer oxygen and prevent severe hypoxia
- Prevent the mother from being insured during the clonic stage.
- Monitor vital signs

Treatment may be given as follows:

Intravenous therapy will be commenced to maintain adequate hydration. The regimen will be prescribed according to the mother's needs and ketoacidosis must be prevented. Dextrose 5% will be used for intravenous drug administration.

- Sedatives to control convulsion Where the hypertension is sever and requires rapid reduction, intravenous hydrallazine may be given.
- The volume of urine and the albumin uria need to be monitored.
- Monitor intake and output
- Avoid disturbance (noise, light, etc)

- Keep emergency drugs ready

N.B. General management of eclampsia

- control convulsion
- Control blood pressure
- Deliver the baby

Complications of eclampsia

- **Cerebral:** hemorrhage, thrombosis and mental confusion
- **Renal:** acute renal failure
- **Hepatic**: liver necrosis
- **Cardiac**; myocardial failure
- **Respiratory:** asphyxia, pulmonary oedama, bronchopneumonia
- **Visual**: temporary blindness
- **Injuries:** bitten tongue, fractures
- **Fetal**: hypoxia and still birth

TWIN PREGNANCY

Multiple Pregnancy

Definition:- When there is more than one fetus is in utero, the term, plural or multiple pregnancy is applied.

Twin pregnancy occurs approximately 1 in 100 pregnancy

Triplets occur 1 in every 8000- 9000 pregnancies.

Types:- 1. Monozygotic (Uniovular)

2. Dizygotic (Binovular)

Monozygotic (Uniovular)

Monozygotic or single ovum twins are known as identical twins. Monozygotic twins develop from one ovum which has been fertilized by one spermatozoon, always of same sex,

They share one placenta and one chorion. A few have two chorions. There is a connection between the circulations of blood in the two babies. Finger and palm prints

are identical. Errors in development are more likely in monozygotic twins and conjoined twins are more common.

Dizygotic (Binovular) Twins

Diazygotic or double ova twins develop from the fertilization of two ovum and two spermatozoa and are more common than monoazygotic twins.

These twins have two placenta may be fused to form one amniotic sacs, two chrions and no connection between fetal circulations.

The babies may or may not be of the same sex and their physical and mental characteristics can be as different as in any members of one family.

Table 6. Difference between monozygotic and dizaygot twins

Monozygotic(Uniovular) twins	Dizaygotric(binovular) twins
One ovume	Two ovum
One spermatozoa	Two spermatozoa
One placenta	Two placenta(mat be fused)
One chorion(few have two)	Two chorions
Two amnion	Different sexes orsame sex
Same sex	

One fetus may be died and be retained in uterus until term, when it will be expelled with the placenta as a flattened paper like fetus called a fetus papyraceous. Twin babies are small and often preterm.

Diagnosis of twin pregnancy

Diagnosis of twin pregnancy may be difficult, although a family history of twins should alter the midwife to the possibility.

Ultrasound: -it will demonstrate two heads at 15 weeks when the outline of the head will be noted

X -ray- may be used after the 12 th week of gestation.

Abdominal examination

Inspection:- the size of the uterus may be larger than expected for the period of gestation after the 20th week.

Palpation:- The fundal height may be greater than expected for the period of gestation.

- The presence of two fetal poles (head or breech) multiple fetal limbs.
- Lateral palpation may reveal two fetal backs or limbs on both sides.
- Pelvic palpation one fetus may lie behind the other and make palpation difficult.

Auscultation:-Hearing two fetal hearts is not diagnostic.

Comparison of the heart rates should reveals difference of at least 10 beats per minutes.

Effect of Twins on Pregnancy

- Exacerbation of minor disorder
- Nausea, Morning Sickness and heart burn may be more persist.
- Anaemia
- Iron deficiency or folic acid deficiency anaemias are common. Early growth and development of the uterus and its contents make greater demands on maternal iron stores. In later pregnancy (after the 28th week) fetal demands for iron deplete those stores further.
- Pregnancy induced Hypertension

 More common in twin pregnancies May be associated with the larger placenta site or the increased hormonal out put the incidence tends to be greater in monozygotic twin pregnancies.

- Polyhydraminos

 It is common and associated with monozygotic twins and with fetal abnormalities. If acute polyhydraminous occurs it tends to lead to abortion.

- Pressure symptoms

. Tendency to oedema of ankle and varicose veins is increased

. Dyspnea and indigestion are more marked, backache is common.

Management of Pregnancy

- Early diagnosis is important so as to provide dietary advice on iron folic acid and vitamins which help to keep her haemoglobin level normal
- Frequent antenatal check up to detect P.I.H.
- Admission to hospital for relief discomfort in later pregnancy.

Labour and Delivery of multiple pregnancy

Effect on labour: - Labour occurs spontaneously before term due to over stretching of the uterus or may be induced early if complications arise. Preterm labour, babies light for dates and malpresentation.

Management of delivery

1st stage of labour: - should be conducted normally, preparation should be made for the reception of two immature babies. Good nursing care to alleviate minor discomfort.

If fetal distress occurs during labour, delivery will need to be expedited, often by caesarean section. If the uterine activity is poor the use of intravenous oxytocin may be required. If the pregnancy is preterm neonatal care unit should be informed.

Two incubators should be in readiness. The room should be warm.

2nd stage of labour: - An obstetrician, anesthetist and paediatrician should be present during this stage of labour because of the risk of complication.

Resuscitation equipment should be prepared. The delivery trolley should include equipments for episiotomy, aminiotomy forceps, and extra cord clamp and equipment for delivery.

An elective episiotomy may be considered if there are complication like preterm labour and fetal distress. The second stage is conducted as usual up to the birth of the first baby.

After delivery of the first twin an abdominal examination is made to ascertain the lie, presentation and position of the second fetus and to auscultate the fetal heart. If the lie is not longitudinal, an attempt is made to correct it by external cephalic version.

If the presenting part is not engaged it should be pushed in to the pelvis by fundal pressure before the second sac of membranes is ruptured. Stimulate the contraction with IV syntocinon.

When the presenting part became visible the mother is encouraged to push with contraction to deliver the second twin. With three or four good contractions and effective pushing the 2nd baby has to be delivered within 15 minutes.

The babies are labeled as ‘ Twin one ‘ and ‘Twin two’ a note of the time of delivery and the sex of the child is made. 3rd Stage of Labour:- An oxytoxic drug has taken effect, controlled cord traction is applied to both cords simultaneously and delivery of the placenta should be effected without delay.

Emptying the uterus enables the control of bleeding and the prevention of post partum haemorrhage.

The placenta should be examined for completeness and to detect deviation from the normal. The umbilical cords should be examined for the number of cord vessels.

Complications associated with multiple pregnancy Delay in the birth of the second twin

After delivery of the 1st twin, contraction has to start within 5 minutes.

Causes of Delay

- Poor uterine action
- Malpresentation of the second twin

Dangers (risk of) Delay

1. Intra uterine hypoxia, IUFD
2. Birth asphyxia following premature separation of placenta
3. Sepsis- an ascending infection may reult from from the first umblical cord which lies out side of the vulva.

4. The cervix closes to certain extent and will have to dilate again

Managements of closed cervix

Stimulate the contraction put the baby on the breast. If the lie is longitudinal the doctor will rupture the membranes and give an oxytocic drug. When the uterus begins to contracts he may apply forceps. If there appears obstructed caesarean section may be necessary.

5. Transverse lie of the second twin If the lie is transverse call the doctor and he/she attempts external version between contraction if the membranes are intact. Also after internal version may be a breech extraction may be done with intact membrane.

6. Premature expulsion of the placenta or bleeding before the birth of the second twin results in hypoxia of the unborn twin. Management - Massage the uterus and expel the 2nd twin by fundal pressure

7. Postpartum haemorrhage

8. Premature rupture of the membrane

9. Prolapse of the cord

10. Prolonged labour - malpresentation, poor uterine action

2. Locked Twins

In the second stage of labour the after coming head of the first twin may be prevented from descending into the pelvis by the head of the second twin.

Occurs in case of :-

a) Both twins presenting by the vertex

b) Twin one - breech presentation

Twin two - vertex presentation

Danger - Obstructed labour

Management - caesarean section

Complication of Multiple Pregnancy

- Abortion
- Polyhydraminous,
- Fetal abnormality

- Malpresentation
- Premature rupture of membrane
- Prolapse of cord
- Prolonged labour
- Locked twin
- Post partum hemorrhage

Management of Puerperium

General care is the same as the care given in single delivery. Involution of uterus may be slow. After pain are more troublesome. Information, education and service of family planning should be given.

Care of the babies maintenances of body temperature, hygiene to prevent infection.

Hyper Emesis Gravidarum

Excessive vomiting in pregnancy is a rare condition found in approximately 1 in 500 pregnancies. Nausea and vomiting exists and dehydration and keto-acidosis escalate with the result that the serum electrolyte balance is disrupted.

Cause:- It is unclear but it is known to be associated with:

1. Multiple pregnancy
2. Hydatidiform mole
3. A history of unsuccessful pregnancies

A proportion of women who experience this condition will have a recurrence in subsequent pregnancies.

Assessing the mother's condition

- Ask the woman whether normal diet has been resumed and tolerated.
- Identify any events producing stress or anxiety, as these may exacerbate any vomiting.
- Ascertain whether the nausea and vomiting are accompanied by pain; the location of any pain should be elicited.
- Dryness or inelasticity of the skin
- The mother's weight will be less than expected for gestation.

- The pulse rate will be weak and rapid and the blood pressure will be low.
- The urine will smell of acetone, be scant and dark in colour
- It is usual for a mother suffering from hyper emesis gravidarum to be admitted to hospital.

Treatment

- Calm, reassurance and giving sensitive information should be accompanied by competent attention to physical needs.
- The potassium and sodium levels will be corrected by intravenous therapy.
- The infusion will be continued until hydration and electrolyte return to normal.
- Vitamin B12 and C, folic acid and iron will be required to correct the anaemia.
- Observe the blood pressure, pulse rate and temperature at least 4-hourly.
- Measure the intake and out put of fluids, including vomitus,

Once vomiting has ceased for a period of 24 hours oral fluid may be commenced and if these are tolerated a light diet ma follow. Normal food is gradually introduced and intravenous therapy discontinued.

- **RH Incompatibility**

Rhesus

Rhesus factor and antibodies should be checked and preparations made to provide anti-D for Rh negative to non-sensitized women following any procedure/event that could result in fetomaternal transfusion, also on 28th week of gestation and after delivery

What is Rh incompatibility?

When a woman and her unborn baby carry different Rhesus (Rh) protein factors, their condition is called Rh incompatibility. It occurs when a woman is Rh-negative and her baby is Rh-positive. The Rh factor is a specific protein found on the surface of your red blood cells.

Like your blood type, you inherit your Rh factor type from your parents. Most people are Rh-positive, but a small percentage of people are Rh-negative. This means they lack the Rh protein.

How does Rh factor affect pregnancy?

A positive or negative symbol after your blood type indicates your Rh factor. For example, “blood type: AB+” might be written on your medical record.

Your Rh factor doesn’t directly affect your health. However, Rh factor becomes important during pregnancy. If a woman is Rh-negative and her baby is Rh-positive, then the woman’s body will approach the Rh-positive protein as a foreign object, if her immune system is exposed to it.

This means that if blood cells from your baby cross your bloodstream, which can happen during pregnancy, labor, and delivery, your immune system will make antibodies against your baby’s red blood cells.

Antibodies are parts of your body’s immune system. They destroy foreign substances.
If you have an Rh-negative blood type, you’re considered “sensitized” to positive blood types once your body has made these antibodies.

This means that your body might send these antibodies across the placenta to attack your baby’s red blood cells. Your placenta is the organ that connects you and your baby.

What are the symptoms of Rh incompatibility?

Rh incompatibility symptoms in your unborn baby can range from mild to life-threatening. When your antibodies attack your baby’s red blood cells, hemolytic disease can occur. This means your baby’s red blood cells are destroyed.

When your baby’s healthy red blood cells are destroyed, bilirubin will build up in their bloodstream.
Bilirubin is a chemical that’s created from the breakdown of red blood cells. Too much bilirubin is a sign that the liver, which is responsible for processing old blood cells, is having trouble.

Your baby may have one or more of the following symptoms if their bilirubin levels are high after birth: jaundice, a yellowing of the skin and whites of the eyes lethargy low muscle tone.

These symptoms will subside after completing treatment for the Rh incompatibility.

Who is at risk for Rh incompatibility?

According to the Stanford Blood Center, the percentage of blood types breaks down roughly as follows:

O+	37.4%
O–	6.6%
A+	35.7%
A–	6.3%
B+	8.5%
B–	1.5%
AB+	3.4%
AB–	0.6%

It takes time for the body to develop antibodies, so firstborn children usually aren't affected. However, if a mother became sensitized because of a miscarriage or abortion, her first live birth may be affected by Rh incompatibility.

A mother can be exposed to Rh-positive blood during certain prenatal tests or procedures. One example is amniocentesis. In this test, your doctor uses a needle to remove some of the fluid from the sac around your baby. This fluid can be tested for problems in the developing fetus.

How is Rh incompatibility diagnosed?

A blood test to determine your Rh status will likely be done at your first prenatal visit with your doctor.

If you're Rh-negative, your partner may also be tested. If your partner is also Rh-negative, you don't have anything to worry about. If your partner is Rh-positive and you're Rh-negative, your doctor will look for the following signs of Rh incompatibility.

A positive indirect Coombs test is a sign of Rh incompatibility. This test uses a blood sample to look for the presence of cell-destroying antibodies within the plasma of the blood.

Higher-than-normal levels of bilirubin in your infant's blood is a sign of Rh incompatibility. In a full-term baby who is less than 24 hours old, the levels of bilirubin should be less than 6.0 milligrams per deciliter.

Signs of red blood cell destruction in your infant's blood may indicate Rh incompatibility. This can be determined by the shape and structure of the red blood cells when examined under a microscope.
test baby's blood for the presence of maternal antibodies that are breaking down the red blood cells.

How is Rh incompatibility treated?

Treatment focuses on preventing the effects of the incompatibility. In mild cases, the baby can be treated after birth with:

- a series of blood transfusions
- hydrating fluids
- electrolytes, which are elements that regulate metabolism
- phototherapy

Phototherapy involves keeping your baby near fluorescent lights to help reduce the bilirubin in their blood.

These procedures may be repeated until the Rh-negative antibodies and excess bilirubin have been removed from your baby's blood. Whether it must be repeated depends on the severity of your baby's condition.

If the pregnant mother already developed antibodies against the baby, the pregnancy will be closely monitored.

prevent the effects of Rh incompatibility by getting an injection of Rh immune globulins (RhIg) during your first trimester, during a miscarriage, or while having any bleeding during your pregnancy.

This blood product contains antibodies to the Rh factor. If your baby has Rh-positive blood, you should get a second injection a few days after you give birth. In very rare and serious cases, a series of special blood transfusions can be performed while your baby is in your uterus or after delivery. However, the success of RhIg shots has made this treatment only necessary in less than 1 percent of cases of Rh incompatibility in the United States.

Are there any complications?

Severe cases, in which the effects of Rh incompatibility aren't prevented, can result in severe complications. These complications may include:

- brain damage to the baby, which is known as kernicterus
- fluid buildup or swelling in the baby
- trouble with mental function, movement, hearing, and speech
- seizures
- anemia
- heart failure

Death of the baby can also occur. Rh incompatibility is rarely a problem in countries with good medical care, however.

Can Rh incompatibility be prevented?

This condition is preventable. If you think you may be pregnant and have an Rh-negative blood type, you should talk with your doctor to determine the best plan. If the father of your child is Rh-positive or his blood type is unknown, receiving preventive treatment with immune globulins will prevent serious effects

Self-check 2	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Choose the best answer (each 1point)

1

Answer the following question!

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information sheet-3	Providing Nursing Care For Laboring Mother

1.3. PROVIDING NURSING CARE FOR LABORING MOTHER

1.3.1. Definition of labour, cause of labour, sign of labour

NORMAL LABOUR

At the end of this chapter students will be able to:

- Define labour
- Describe – mechanism of labour
- List the stages of labour with their features
- Identify the false sign of labour
- Mention management of second stage of labour
- Mention care of mother during labour
- Identify types of episiotomy with its indications.

Definition- Labour is described as the process by which the fetus, placenta and membrane are expelled through the birth canal.

Normal labour occurs at term and is spontaneous in onset with the fetus presenting by the vertex. The process should be completed with acceptable time with in **24 hours vaginally**. With no complications arise.

Cause of the Onset of Labor

Hormonal, Biochemical and mechanical charges that occur around term may trigger labour.

Hormonal

- release of oxytocin
- Altered Oestrogen progesterone ratio

Biochemical

- Prostaglandin

Mechanical

- Pressure from the presenting part

- Over stretched uterus

Table 6 Differentiation between the true and false labour contractions

False contractions	True contractions
Begin and remain irregular	Begin irregularly but become regular and predictable
Felt first abdominally and remain confined to the abdomen	Felt first in lower back and sweep around to the abdomen in a wave
Often disappear with ambulation	Continue no matter what the women's level of activity
Do not increase in duration, frequency or intensity	Increase in duration, frequency, and intensity.
Do not achieve cervical dilatation	Achieve cervical dilatation

- Labour is said to be established with regular painful uterine contraction occurs and effacement of cervix with 2 cm dilated.

1.3.2. Stages of labour

It has three stages. These stages are described as:

- **The first stage** of labour it begins with regular rhythmic contraction and is complete when the cervix is fully dilated.

- **The second stage** is begins when the cervix is fully dilated and is completed when the baby is completely born.

- **The third stage** begins with the delivery of the baby a and ends with delivery of placenta. It also involves the control of bleeding.

MANAGEMENT OF 1ST STAGE OF LABOUR

Is the care given throughout the 1st stage of labour

A. Admission procedure

Well coming the mother and her partner

on arrival - Greet the mother

- Introduce your self
- Inform relative to wait

B. Admission criteria

- Check- show
- rupture of membrane
- regular uterine contraction with progressive cervical dilatation

History

- Information from the mother
- Ask the mother on set of contraction
- Rupture of membranes / passage of liquor
- Show or any other bright red bleeding

Physical examination

- The general condition
- Exhausted, anemic, pain, dehydrated general edema
- Vital sign: Blood Pressure, Temperature, pulse, respiration

Abdominal examination

1. Inspection
2. Palpation lie, presentation, attitude engagement
3. Fundal height
4. Auscultation fetal heart rate & rhythm

Vaginal examination

To cheek if the mother is in labour

- cervical dilatation

. Membrane intact or not

To assess progress of labour

- Station, Position
- presenting part; moulding, caput and station

Investigations

. Hematology

. Hematocrit

. Hemoglobine

. Blood Group, Rh, cross- match

. Urine analysis

. Protein (Albumin)

. Sugar

. Ketone

Write on patient chart and inform relatives. Use partograph and record on it.

Emotional support

1. A good nurse will give comfort, relieve pain, make strength, prevent exaustion.

Maintain cleanliness, asepsis & antisepsis during labour.

Prevent complications, recognize early & promptly act when complication occurs until the arrival of the doctor.

These principles are not confined to labour only, for the management of labour begins during the ANC period, by building woman's heath gaining her confidence, promoting encourage & supervise. Detect abnormalities which may adversely affect labour. The nurse must handle child birth with sensitivity and compassion because the emotions of the woman in labour deeply influence her reaction to discomfort & pain of physical and mental exhaustion she will experience.

Fear of labour

Child birth and bring occasion - the husband is encouraged to stay with his wife this gives comfort with happiness to both, she needs the companionship, love with sympathy of those who are dean to her. Influence of the mid wife.

The qualities of a good nurse and mid wife are sympathetic understanding, patient & kind because women in labour are sometimes irritable not only must the midwife desire to give emotional support, she must demonstrate for her compassion by words & actions. Companionship is melded - the companionship of the woman in labour needs the professional presence of the nurse.

Example Communication style eg. No loud talking & noise

Relief of pain & promotion of comfort

Pain exhausts the woman physically & emotionally so it must be reviled by every obstetrically safe means. The clinical & midwife nurse by their kindly confident bearing & professional proficiency has an assuring beneficent influence. Back rub and explanation of the labuor process is very much important in pain relieving.

Fewer drugs are now being prescribed during labour. Eg. pethedine, analgesia.

Drug choice - if apprehensive a tranqulezer, if tired ahyponotic, for discomfort & pain an analgesic & sedative.

Diet during labour

In general encourage oral intake of liquid diet (tea, juice) but not hard foods Consider fluid diet as a source of water and energy for those mothers staying longer before delivery (e.g. small sips of sweetened tea or water)

Avoid dehydration. Prolonged labour can present serious problem. If dehydration present give I.V infusion 5 or 10 % Dextrose in water and also Glucose 40%.

Attention to the bladder

A full bladder will prevent the head from engaging, empty bladder every 2 hours.

Recordings:-

1. Half hourly- maternal pulse, contractions for length, strength and frequency, FHB
2. Every 1 1/2 - 2 hours check bladder
3. Every 4 hours – B/P. Temperature, abdominal examination for descent, VE, urine test acetone, albumin

Psychological methods of pain relief

The personality of the health professional is paramount importance in handing women in labour. Many midwives have by their sympathetic understanding manner unknowingly used psychological methods of pain relief.

Cleanliness Antisepsis, Asepsis

The woman must be protected by every available means from infection which may cause ill-health with loss of life. The woman is vulnerable to infection at this time.

THE PARTOGRAPH

Partograph – Managerial tool for the prevention of prolonged labour:- Measuring progress of labour in relation to time.

Observations charted on partograph

a) The progress of labour with time

- Cervical dilatation
- Descent of fetal head

Descent: abdominal palpation of fifths of head felt above the pelvic brim.

Uterine contraction

- Frequency per 10 min
- Duration /shown by different shading/

b) The fetal condition

Fetal Well - being monitoring

FHR - use Pinnard stethoscope for a women with no known problem

- Immediately after a contraction for 1 min
- every 30 min for a parturient without any risk and every 15 min for with a risk condition

Continuous electronic FHR monitoring for Known problem (external/internal)

FHR 100-180 BPM is normal for term normal fetus.

If FHR is less than 100 or higher than 180 manage as on reassuring fetal heart pattern (NRFHRP)

Status of liquor for meconium

Grades of meconium

Grade I - good volume of liquor, lightly meconium stained

Grade II - Reasonable volume with a heavy suspension of meconium

Grade III - Thick meconium which is undiluted

NB a newly appearing meconium is quite significant

Grading:

1) normal- space felt between the edged of parital bone in the sagital suture.
2) mild - the edge of parital bone comes very closer at the sagital suture.
3) moderate- the edge of the parital bone over lap at sagital suture but can be easily separated.
4) severe- over lap of the bones and not separable.

c) The maternal condition

- Pulse, B/P temperature
- Drug and IV fluids
- Urine /volume, protein, acetone/- Oxytocin regime

The progress of labour

The 1st stage is divided in to **the latent** and **active phases**

Latent phase- slow period of cervical dilatation from 0-.2cms and also it is the period of gradual shortening of the cervix.

Active phase-faster period of cervical dilatation from 3-10cms or full cervical dilatation

Starting the partograph

A partograph chart must only be started when a woman is in labour you must be sure that she is contracting enough to start a partograph.

In the latent phase contraction must be 2 or more in 10 minute each lasting 20 second or more.

In the active phase contractions must be 2 or more/10minutes each lasting 20 second or more. There difference is in dilatation of cervix.

In the center of the partograph there is a graph. Along the left side are numbers 0-10 against squares. Each square represents 1cm dilatation. Along the bottom of the graph are numbers 0-24: each square represents 1 hour. Dilatation of the cervix is measured in centimeter.

The dilatation of the cervix is plotted with an "x". The 1st V.E on admission includes a pelvic assessment & the findings are recorded.

The V.E is made ever 4 hrs unless contraindicated. However in advanced labour women may be assessed more quickly, particularly the multipara.

Plotting cervical dilatation when admission is in active phase. When a woman is admitted in the active phase the dilatation of the cervix is plotted on the alert line and the time written directly under the X in the space for time. If progress is **satisfactory**, the plotting of cervical dilatation will remain or to the left of the alert line.
The latent phase normally should not take longer than 8hrs. When admission is in the latent phase, diltation of the cervix is plotted at O time.

Transfer from latent to Active phase

Plotting cervical dilatation when admission is in the latent phase & goes in to active phase. When labour goes in to the active phase plotting must be transferred by a broken line to the alert line.

The recordings of cervical dilatition and time are plotted 4 hrs after admission then transferred immediately to the alert line using the letters "TR" leaving the area between the transferred recording blank. The broken transfer line is not part of the process of labour.

Points to remember

1. The latent phase is from 0-2cm dilatation & is accompanied by gradual shortening of cervix. It should normally not last longer than 8 hrs.
2. The active phase is from 3-10cms & dilatation should be at the rate of at least 1cm/hr.
3. When labour progresses well, the dilatation should not move to the rt of the alert line.
4. When admission to hospital takes place in the active phase the cervical dilatation is immediately plotted in the alert line
5. When labour goes from latent to active phase plotting of the dilatation is immediately transferred from the latent phase to the alert line.

Descent of the Fetal Head

For labor to progress well, dilatation of the cervix should be accompanied by descent of the head. However, descent may not take place until the cervix has reached about 7cms dilatation, but using O as the symbol. But before you can do that, you must learn to estimate the progress of fetal descent by measuring the **station** of the fetal head, as shown in Figure 21.

The station can only be determined by examination of the woman's vagina with your gloved fingers, and by reference to the position of the presenting part of the fetal skull relative to the ischial spines in the mother's pelvic brim.

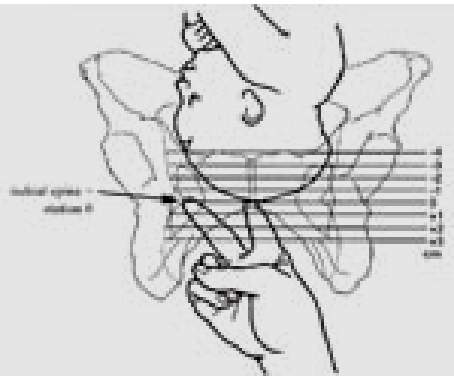


Figure 21 Assessing the station (descent) of the fetal head by vaginal examination, relative to the ischial spines in the mother's pelvic brim. (Source: WHO, 2008, Midwifery Education Module: Managing Prolonged and Obstructed Labour, Figure 7.28, page 132)

As you can see from Figure 21, when the fetal head is at the *same level* as the ischial spines, this is called station 0. If the head is *higher up* the birth canal than the ischial spines, the station is given a *negative* number. At station –4 or –3 the fetal head is still 'floating' and not yet engaged; at station –2 or –1 it is descending closer to the ischial spines.

If the fetal head is *lower down* the birth canal than the ischial spines, the station is given a *positive* number. At station +1 and even more at station +2, you will be able to see the presenting part of baby's head bulging forward during labour contractions. At station +3 the baby's head is **crowning**, i.e. visible at the vaginal opening even between contractions. The cervix should be fully dilated at this point.

Now that you have learned about the different stations of fetal descent, there is a complication about recording these positions on the partograph. In the section of the partograph where cervical dilatation and descent of head are recorded, the scale to the left has the values from 0 to 10. By tradition, the values 0 to 5 are used to record the level of fetal descent. Table 4.1 shows you how to convert the station of the fetal head (as shown in Figure 21) to the corresponding mark you place on the partograph by writing O. (Remember, you mark fetal descent with Os and cervical dilatation with Xs, so the two are not confused.)

When the baby's head starts crowning (station +3), you may not have time to record the O mark on the partograph!

Membrane:

I - Intact

R-Ruptured

A.R.M - Artificial Rupture of memberane

Colour of liquer:

M- Meconium stained

C-clear

A – Absent

Table 5 Corresponding positions of the station of the fetal head (determined by vaginal examination) and the record of fetal descent on the partograph**.**

Station of fetal head (Figure 21)	**Corresponding mark on the partograph**
–4 or –3	5
–2 or –1	4
0	3
+1	2
+2	1
+3	0

Assessing moulding and caput formation

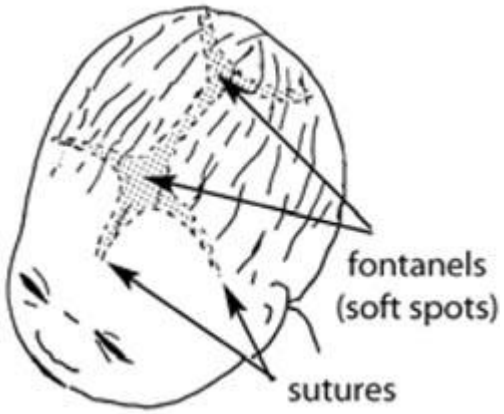


Figure 22 Sutures and fontanels in the newborn's skull.

The five separate bones of the fetal skull are joined together by sutures, which are quite flexible during the birth, and there are also two larger soft areas called fontanels (Figure 22). Movement in the sutures and fontanels allows the skull bones to overlap each other to some extent as the head is forced down the birth canal by the contractions of the uterus. The extent of overlapping of fetal skull bones is called **moulding**, and it can produce a pointed or flattened shape to the baby's head when it is born (Figure 23).

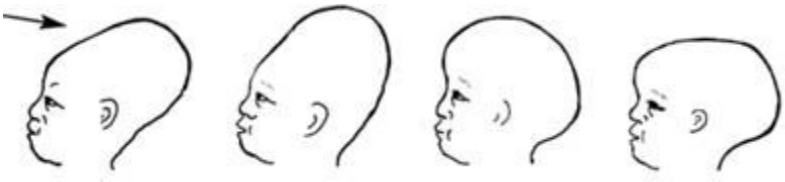


Figure 23 Normal variations in moulding of the newborn skull, which usually disappears within 1–3 days after the birth.

Some baby's skulls have a swelling called a **caput** in the area that was pressed against the cervix during labour and delivery (Figure 24); this is common even in a labour that is progressing normally. Whenever you detect moulding or caput formation in the fetal skull as the baby is moving down the birth canal, you have to be more careful in evaluating the mother for possible disproportion between her pelvic opening and the size of the baby's head. Make sure that the pelvic opening is large enough for the baby to pass through. A small pelvis is common in women who were malnourished as children, and is a frequent cause of prolonged and obstructed labour.

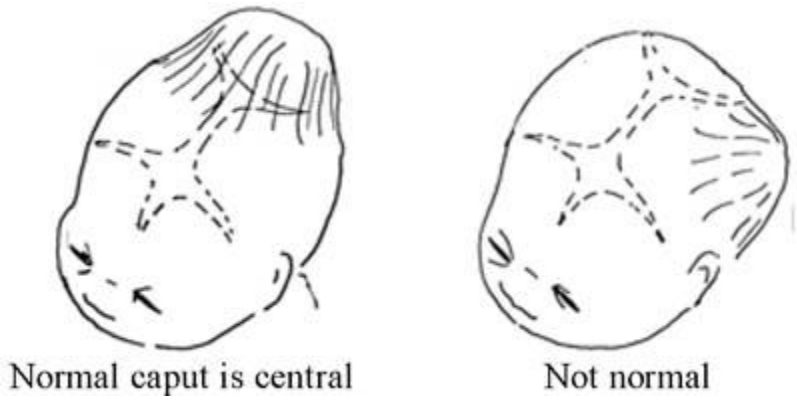


Figure 24 A caput (swelling) of the fetal skull is normal if it develops centrally, but not if it is displaced to one side.

A swelling on one side of the newborn's head is a danger sign and should be referred urgently; blood or other fluid may be building up in the baby's skull.

Recording moulding on the partograph

To identify moulding, first palpate the suture lines on the fetal head (look back at Figure 1.4 in the first study session of this Module) and appreciate whether the following conditions apply. The skull bones that are most likely to overlap are the parietal bones, which are joined by the sagittal suture, and have the anterior and posterior fontanels to the front and back.

- **Sutures apposed:** This is when adjacent skull bones are touching each other, but are not overlapping. This is called degree 1 moulding (+1).
- **Sutures overlapped but reducible:** This is when you feel that one skull bone is overlapping another, but when you gently push the overlapped bone it goes back easily. This is called degree 2 moulding (+2).
- **Sutures overlapped and not reducible**: This is when you feel that one skull bone is overlapping another, but when you try to push the overlapped bone, it does not go back. This is called degree 3 moulding (+3). If you find +3 moulding with poor progress of labour, this may indicate that the labour is at increased risk of becoming obstructed.


You need to refer the mother urgently to a health facility if you identify signs of an obstructed labour. You will learn more about this in Study Session

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

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

+1 Bones are just touching each other.

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

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

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

Moulding - degree of overlap

Normal separation /can feel sutures**/ -**

Bones meeting **+**

Over lapping can be pushed back **++**

Over lapping can't be separated **+++**

Fetal heart rate as an indicator of fetal distress

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

Abnormal fetal heart rates

A heart rate greater than 160/minute is tachycardia and a heart rate less than 120/minute is bradycardia and these conditions may indicate fetal distress.

If abnormal FHB is heard, listen it every 15 minutes for at least 1 minute immediately after contraction. If the fetal heart remains abnormal over 3 observations action should be taken unless delivery is very close.

- Fetal heart beat persistently (for 10 minutes or more) remains below 120 beats/minute (doctors call this persistent fetal bradycardia).
- Fetal heart beat persistently (for 10 minutes or more) remains above 160 beats/minute (doctors call this persistent fetal tachycardia).

Cervical dilatation

the first stage of labour is divided into the latent and the active phases. The **latent phase** at the onset of labour lasts until cervical dilatation is 4 cm and is accompanied by *effacement* of the cervix. The latent phase may last up to 8 hours, although it is usually completed more quickly than this. Although regular assessments of maternal and fetal wellbeing and a record of all findings should be made, these are *not* plotted on the partograph *until* labour enters the active phase.

Vaginal examinations are carried out approximately every 4 hours from this point until the baby is born. The **active phase** of the first stage of labour starts when the cervix is 4 cm dilated and it is completed at full dilatation, i.e. 10 cm. Progress in cervical dilatation during the active phase is at least 1 cm per hour (often quicker in multigravida mothers).

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

- Moving to the right of the alert line means warning.

Transfer woman from health center to hospital.

- Reaching the action line means possible danger. Decision needed on further management. /usually by obstetrician/.

Eg. Partograph

Name _____ gravida _____ para _____Reg No_____

Date of admission _____Time of admission _____ ruptured memberane _____HRS

Contraction					Frequency																			
					Duration																			
					Intensity																			
10	Latent phase						Active phase																	
9																								
8																								
7											Alert		Action											
6																								
5																								
4																								
3																								
2																								
1																								
0																								
Hrs		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Time																								
Pulse																								
B.P																								
Temp°C																								
Drugs Given and I.V Fluids																								
FHB																								

Vaginal Examination in Labour

When Doing Vaginal Examination Always Remember:-

1. The vaginal is not a sterile cavity, - the Uterus is. Every vaginal examination increases the danger of intrauterine infection, if carelessly performed.
2. A vaginal examination is uncomfortable and embarrassing for the patient.
3. Careful abdominal examination gives a lot of information.

   Do it always before vaginal examination.
4. When doing a vaginal examination, find out all the information you can, this may save it having to be repeated.

Indications

1. When in doubt about the presentation, dilatation, or position and to assess progress.
2. To assess the shape and size of the pelvis.
3. To know the cause in fetal or maternal distress.

4. When the memberanes rupture and the head is high or there is Malpresentation, to make sure there is not prolapsed cord.

Information: To be got on Vaginal Examination

1. Presenting Part

- Presentation
- Level of presenting Part
- Caput
- Sutures and Fontanelles.
- Overlapping or moulding

2. Membranes

Intact - Bulging or flat?

Rruptured - Colour of liquar

3. Cervix:

RIPE - firm or soft

EFFACEMENT - long or short - taken up.

OEDEMATOUS- thick or thin

APPLIED to the presenting part- Loose or well applied.

DILATION- Measure in cm.

4. Vagina:

Lax or tight, Warm or hot, Moist or Dray

5. Pelvis:

Cavity, sacral promontory

Curve of the sacrum, ischial spine

Lateral pelvic side walls- parallel or convergent

Now Co-relate your findings, after recording them and determine the stage of labour.

THE SECOND STAGE OF LABOUR

Definition: It is the stage from full dilatation of the cervix (i.e no cervix felt on V.E) until the Baby is born:-

Duration:

Primigravida 45 min – 1 hour, as long as 2 hrs

Multigravida 1/2 hour can be as little as 5 minutes.

N.B. there should always be advance or descent in this stage

Signs of Second Stage:

1. No cervix felt on vaginal examination (VE)
2. Contractions are much stronger, and last 30-50 seconds
3. The patient wants to push (Urge to push)
4. Sometimes head can be seen at the vulva

MECHANISM OF THE SECOND STAGE:

Before we deliver a baby we must understand the mechanics or mechanisms of how the baby passes down through the pelvis.

We also must know the pelvis, and certain definitions.

Mechanism: Is the series of movements of the fetus in its passage through the birth canal.

mechanism of Labour in a Normal Vertex Presentation

Position- Left OccipitoTransverse

Lie -Longitudinal

Attitude- Flexion

Presentation-Vertex

Position- Left occiputo transverse

The head engages the pelvis with the Sagital suture in the transverse diameter of the pelvic brim

1. Flexion and descent of the head: The head descends with increasing flexion; the occiput reaches the pelvic floor first.
2. Internal Rotation of the head: (Whatever reaches the pelvic floor first must rotate forwards). As the occiput reaches the pelvix floor it rotates anteriorly.
3. Crowing of the head: The occiput escapes under the symphysis put and the head no longer recedes between uterine contractions.
4. Extension of the head: The face sweeps the perineum and the head is born by extension.

5. Restitution of the head: This is the turning of the head to undo the twist in the neck that took place during internal rotation of the head.

6. Internal rotation of the shoulders: Meanwhile the shoulders have entered the brim in the oblique diameter, and descend. The anterior shoulder reaches the pelvic floor and rotates forward, this cause.

7. External rotation of the head:

8. Lateral flexion of the body: The shoulders escape under the symphysis, and the rest of the body is born by lateral flexion.

Note: The mechanism in any other position follows the same principles of engagement – descent – internal rotation, birth and external rotation.

Maternal Care And Wellbeing Evaluation In Second STAGE OF LABOR

- ✓ Vital signs : continued as 1st stage but more frequently
- ✓ Bp Q 30 min (if indicated more frequently)
- ✓ PR, temp., RR Q 1hr
- ✓ Evaluate general condition fatigue , pain, physical depletion and state of hydration
- ✓ Evaluate the presence of the urge to push and / or effort
- ✓ Avoid early push; it should start spontaneously.
- ✓ LLP till head is visible and preparation
- ✓ The woman should be encouraged to empty her Bladder before delivery

FHR Monitoring in second stage of labor

- ➢ Every 15 min for low-risk fetus
- ➢ Every 5 min for high-risk fetus or continuous electronic monitoring

Labor progress evaluation in second stage of labor

- ➢ Evaluate the degree of descent every 1 hr.

Management of Prolonged 2nd stage

- Reevaluate maternal and fetal condition
- Rule out inefficient uterine contraction and maternal expulsive effort, malposition, Malpresentation and CPD
- Act accordingly

Preparation for delivery

General

- Notify nursing staff that delivery is imminent.
- Move the woman to the delivery room if its is separate.
- Make sure all the equipment for delivery and newborn care are available at the delivery room.
- There should be a pre-warmed neonatal corner for neonatal care
- Position the mother to semi-sitting (back up and leg down)
- Attendant should be dressed and gloved appropriately (gloves, gowns, apron, masks, caps, eye protection)
- Sterile draping in such a way that only the immediate area about the vulva is exposed.
- Perineal care:- cleaning of the vulva and perineum with antiseptic (downward and away from the introitus). If pieces of faeces get expelled, wipe them downward.

Assistance of spontaneous delivery

Goal: - Reduction of maternal trauma

- Prevention of fetal injury
- Initial support of the newborn

Episiotomy: individualization is important. Routine performance of episiotomy should be avoided

Do episiotomy when there is

- Threat for a perineal tear
- perineal resistance for fetal head descent
- fetal/maternal distress to expedited delivery

Timing of episiotomy – performed when fetal head has distended the vulva 2-3cms unless early delivery is indicated.

Types- median or mediolateral

- Use analgesia/anesthesia for making episiotomy and repair.

Delivery of the Head

- Prevent rapid delivery and assist extension of the head.

- Assist using modified Ritgen's maneuver if extension does not occur with ease i.e., hand protected with sterile towel placed on the perineum and the fetal chin palpated and pressed up ward gently effecting extension.
- Check for cord around the neck
- disentangle it from around the head or clamp at two sites and cut in between if not reducible. After delivery of the head, wipe the mouth, oro-pharynx first (routine suctioning not recommended).

Complete delivery of the rest of the body

: After securing complete delivery, wipe the newborn's body dry with clean towels remove the wet towel and wrap them with a dry towel.

Cord clamping:- 4-5 cm from fetal umbilicus

 Put fetus at the level the of the introitus for 3 min before clamming (unless preterm, small, with Rh- isoimunization and HIV positive women or of unknown status)

 Take cord blood if indicated.

Management of third stage of labor

Definition:

Third stage of labor:

It is the time interval between the deliveries of the fetus up to the expulsion of the placenta

Active management of third stage of labor (AMTSL):

AMTSL is the administration of uterotonic agents (preferentially oxytocin) followed by controlled cord traction and uterine massage (after the delivery of the placenta).

Who should get AMTSL?

Every woman who come for delivery to the health facility. AMTSL is a standard management of third stage of labor.

Benefit of AMTSL

- Duration of third stage of labor will be short
- Less maternal blood loss
- Less need for oxytocin in post partum

• Less anemia in the post partum

Drugs used for AMTSL

• Oxytocin is the preferred drug for AMTSL and 1st line drug for PPH caused by uterine atony

• Ergometrine is the 2nd line drug for PPH though associated with more serious adverse events

• Misoprostol has the advantage that it is cheap and stable at room temperature. It can be distributed through community-based distribution systems.

• Uterotonics require proper storage:

• Ergometrine: 2-8°C and protect from light and from freezing.

• Misoprostol: room temperature, in a closed container.

• Oxytocin: 15-30°C, protect from freezing

Hemorrhage

Use of uterotonic agents

Within one minute of the delivery of the baby, palpate the abdomen to rule out the presence of an additional fetus(s) and give oxytocin 10 units IM.

• Oxytocin is preferred over other uterotonic drugs because it is effective 2-3 minutes after injection, has minimal side effects and can be used in all women.

• If oxytocin is not available, other uterotonics can be used such as: ergometrine 0.2 mg IM, syntometrine (1 ampoule) IM or

• misoprostol 400-600 mcg orally. Oral administration of misoprostol should be reserved for situations when safe administration and/or appropriate storage conditions for injectable oxytocin and ergot alkaloids are not possible.

Steps in controlled cord traction

• Clamp the cord close to the perineum (once pulsation stops in a healthynewborn) and hold in one hand.

• Place the other hand just above the woman's pubic bone and stabilize the uterus by applying counter-pressure during controlled cord traction.

• Keep slight tension on the cord and await a strong uterine contraction (2-3 minutes).

• With the strong uterine contraction, encourage the mother to push and very gently pull downward on the cord to deliver the placenta. Continue to applycounter-pressure to the uterus.

• If the placenta does not descend during 30-40 seconds of controlled cord traction do not continue to pull on the cord:

• Gently hold the cord and wait until the uterus is well contracted again;

• With the next contraction, repeat controlled cord traction with counterpressure.

• As the placenta delivers, hold the placenta in two hands and gently turn it until the membranes are twisted. Slowly pull to complete the delivery.

• If the membranes tear, gently examine the upper vagina and cervix wearing sterile/disinfected gloves and use a sponge forceps to remove any pieces of membranes that are present.

• Look carefully at the placenta to be sure none of it is missing. If a portion of the maternal surface is missing or there are torn membranes with vessels, suspect retained placenta fragments and take appropriate action.

Uterine massage

- Immediately massage the fundus of the uterus until the uterus is well contracted.
- Palpate for a contracted uterus every 15 minutes and repeat uterine massage as needed during the first 2 hours of the postpartum period.
- Ensure that the uterus does not become relaxed (soft) after you stop uterine massage.

Advantage of AMTSL: It allows the placenta to separate and descend without interference

Danger: The third stage may be longer Haemorrhage and infection may happen

Examination of the placenta, membrane and umbilical cord

Inspect the fetal side:-

a) Check the location of the insertion of the cord /central, marginal or velamentous

b) Trace blood vessels on the periphery to detect any torn vessels. It indicates a succentarete or extra lobe of the placenta.

c) Check second hole on the membrane

The umbilical cord

a) Check the number of blood vessels /two artery and one vein/

b) Check the length of the cord.(Long-50-55cm or short)

c) Check for the presence of a true knot or abnormalities

Inspect the maternal side:

a) Check the cotyledons

b) Observe for areas of Abruption, infarction or calcification

Control of bleeding

Methods:-

- Contraction & relaxation of uterine muscles
- The actions of living ligatures
- Extra clothing power in the blood

The third stage is the shortest and easiest but the most dangerous stage. Bleeding after third stage of labour stops spontaneously, because of:

1. “Living ligatures” The oblique muscles fibers of the uterus run in and out between the blood vessels when the uterus is contracted they clump the blood vessels very securely and the bleeding stops.

2. Extra clotting power: The mother has extra clothing power in her blood at this time the clotting mechanism is very powerful.

At the end of the third stage

1. The uterus should be hard, round and movable
2. The uterus should be mid way between the umbilicus and symphysis pubis
3. There should be no bleeding
4. The bladder should be empty

The Oxytocin Drugs

These drugs stimulate the uterus to contract. It is used before, during & after the third stage of labour.

Advantages:

1. It speeds up the delivery of the placenta

2. Lessen the blood loss
3. Contract the uterus

The oxytocin drugs are:-

1. Syntocinan, orastinon, pitocin, oxytocin one ampule contains 5 or 10 units
2. Ergometrine ampules – 0.5 mg or 0.25mg
   Ergometrine 0.25 or 0.5mg tablet form
3. Syntometrine1ml contains 0.5mg Ergometrine and 5 unites of oxytocin.

Ergometrine:- It is given during or after the third stage of Labour

Ergometrine Route Time to act Duration

Intramuscular 5 to 7min 2-4hrs

Intravenously 45 second to 1 min 1hr

Oral (PO) 8 to 10 minutes _

Indications

- To prevent or treat PPH
- To prevent bleeding in inevitable complete or incomplete abortion
- To treat sub involution during the Puerperium Contraindications: - It should not given for pre-eclamptic, cardiac and hypertensive mothers

Pitocin /oxytocin synotcinon, orastinon/

Actions: - To contract the smooth muscle

Advantages – It can be given before or at any stage of labour (1st, 2nd or 3rd of labour) It has a rapid action

Indication:

1. To induce /start/ labour
2. To accelerate /increase/ the contractions in labour
3. To prevent or treat post partum haemorrhage

Caution – The uterine contractions and fetal heart are continuously monitored

Contraindications- In the presence of malpresentation or C.P.D it is not start.

Danger

- Rupture of the uterus

- Tachycardia & an increased stroke volume increases the cardiac out put.
- Fetal distress

Syntometrine

It is a combined preparation of Ergometrine and oxytocin

Action:

1 ampule of syntometrine contains

Egometrine 0.5mg

Syntocinon 5 units

Action 2 ½ minutes when given intramuscular

Advantage- It has the quick action of the oxytocin and the long action of ergometrine

Indication – to prevent or treat post partum haemorrhage

Management of third stage of labour

Good management begins during prenatal period. In the 1st, 2nd and 3rd stage of labour to prevent prolonged labour Skill full management reduces the risk of hemorrhage, retained placenta, shock and infection

The guiding principles is to watch and wait and not to interfere

Rubbing the fundus causes irregular uterine activity which partly separate the placenta and allows bleeding

Position of the mother – the dorsal position

Advantages

- More comfortable to the mother
- Cord traction is applied more effectively
- Injuries to the birth canal is observed

Bleeding before placental delivery is due to:-

- Partial separation of the placenta
- Uterine relaxation

Prolonged third stage is due to:-

- Weak uterine contraction which causes failure of the placenta to separate
- Adherent placenta

- Full bladder

Danger: - Post partum hemorrhage and shock

If the fundus is more than 2.5cm above the umbilicus four cases must be considered.

a. There is another baby in uterus

- Palpate for fetal parts, auscultate for a fetal heart beat

b. The placenta is unduly large

causes- Rh negative baby suffered from hydrops fetalis

c. Blood clot is present in the uterus

This will prevent strong contraction of the uterus and cause post partum haemorrhage (contraction of oblique muscles of myometrium)

d. Full bladder

Clamping and cutting of the umbilical cord

The choices:

A. Clamp the cord soon after birth /1-3 minutes/ before it stops pulsation or

B. Wait until cord has stopped pulsating before clamping leave the maternal end of the cord unclamped when cord is cut.

Early cord clamping

Advantages: The length of the third stage of labour is reduced

Disadvantages: preterm babies have an increased incidence of respiratory distress. Early cord clamp is associated with lower haematocrit and levels in the baby. It increases the risk of Feto – maternal transfusion – Rhesus negative mothers caring rhesus positive babies are more likely to develop Antibodies

1.3.3. Types of delivery

At the end of this chapter the students will be able to:

- Mention different types of obstetric operations
- List complication of forceps delivery
- Describe absolute indication of caesarian section
- Differentiate type of destructive delivery
- Mention procedures of vacuum delivery.

Maternal and fetal risk in the intrapartal period may also be reduced by modifying the mode of delivery. Common obstetric interventions that modify mode of delivery include version, forceps and vacuum extraction, and cesarean birth, or operative abdominal delivery. And also allows prompt emergency delivery when either the mother or fetus is in danger.

Forceps Delivery

Forceps delivery is a means of facilitating the birth of the baby's head by providing traction and rotation with the aid of obstetric forceps when it is impossible for the mother to complete the delivery by her own effort.

Forceps deliveries are classified by the level of the head at the time the forceps were applied i.e. **high-cavity, mid-cavity or low-cavity.**

Low-cavity or out let forceps applications are done when the fetal head is visible on the perineum.

Mid-cavity or Mid forceps applications are for those in which the head is at the level of ischial spines and engaged.

High-cavity or High forceps applications are those in which forceps are applied through the cervix before the head is engaged in the bony pelvis.

Pre requisites of forceps delivery

There are certain conditions which must exist before forceps application including those conditions that require a shortened second stage labour: when mother or fetus is in jeopardy or when assistance with maternal bearing-down is needed.

- The fetal head must be engaged in the maternal pelvis.
- The cervix must be fully dilated.
- The membrane should be ruptured
- The bladder and bowel should not be distended to avoid trauma
- Positive identification of presentation and position
- Absence of cephalopelvic disproportion, sacral or pelvic out let abnormalities.
- Adequate anesthesia must be used

Indication for forceps delivery

- Fetal distress in the second stage of labour
- Delay in the second stage of labour – if the duration of the second stage exceeds 11/2 hours or more than one hour of pushing, or if the fetal head is delayed on the perineum for more than 30 minutes.
- Malposition: occipitolateral, occipitoposterior position
- Maternal exhaustion or distress
- For the delivery of the after coming head of a breach presentation.
- Preterm delivery: this is still a matter of debate, but some obstetricians and pediatricians like to protect the fetal head, with its soft skull bones, if delivery occurs before about the 36th week of gestation.
- Conditions in which pushing is undesirable, such as cardiac conditions or moderate to severe hypertension.

Assisting instrumental delivery

Preparation of the woman

A woman about to be delivered with forceps will often be get fully explanation about the procedure itself and the need for it is likely to result in greater retrospective satisfaction and relief.

Once the decision has been made, adequate & appropriate analgesia must be offered. When such analgesia has been instituted the woman's legs are placed in the lithotomy position. Both legs must be positioned simultaneously to avoid strain on the woman's lower back and hips. This is uncomfortable position, especially for a tired woman with a weighty gravid uterus who is in advanced labour.

The woman's legs should not be placed in the stirrups for longer than is necessary, and the vulval area should remain covered whenever possible. The minimum number of staff should be present, and interruptions should be discouraged she should be tilted towards the left at an angle of 150 to prevent aortovanacaval occlusion.

Preparations must also have been made for the baby and resuscitation equipment checked and in working order.

Procedure

The woman's vulval area is thoroughly cleaned and draped with sterile towels using aseptic technique; the bladder is emptied.

The obstetrician will perform a vaginal examination in order to confirm the station and exact position of the fetal head. It is to positively identify the forceps blades by assembling them briefly before proceeding.

Complications

Failure- Undue force should never be used. If the head does not advance with steady traction the attempt is abandoned and the baby is delivered by cesarean section.

In the infant:

Bruising: Severe bruising will cause marked jaundice which may be prolonged

Cerebral irritability - A traumatic forceps delivery may cause cerebral edema or hemorrhage.

Cephal haematoma - is a swelling on the neonate's skull, an effusion of blood under the periosteum covering it, due to friction between the skull and pelvis.

Tentorial tear- results from compression of the fetal head by the forceps. The compression causes elongation of the head and consequent tearing of the tentorial membrane.

Facial palsy-occasionally the facial nerve may be damaged since it is situated near the mastoid process where it has little protection.

In the mother:

Bruising and trauma to the urethra this may cause dysuria & occasionally haematuria or a period of urinary retention or incontinence.

Vaginal and Perineal trauma the vaginal wall may be torn during forceps delivery and the vagina must be inspected carefully prior to perineal repair. The episiotomy may extend or be accompanied by a further perinea tear and these must be repaired with care. As with any damaged perineum there may be bruising, oedema or occasionally haematoma formation.

Rupture of the uterus with increased risk of infection

Increased risk of uterine atony and **excessive bleeding**

Fracture of the coccyx and bladder trauma

Implications for nursing care

The nurse must be prepared to locate the appropriate types of forceps when requested. The nurse must support the mother if she is awake, explaining what is being done.

Maternal comfort level should be observed closely; forceps applications should involve sensations of pressure but adequate anesthesia or analgesia should be established so that no pain results.

The nurse should monitor the FHR closely during application and traction.

Fetal bradycardia may be observed as a result of head compression and is transient. The neonate delivered with forceps should be carefully examined for cerebral trauma or nerve damage.

The nurse must be alert for possible sequel of forceps deliveries. The mother should be observed carefully for excessive bleeding, severe perineal bruising and pain, difficulty in voiding, and cervical or vaginal lacerations.

Version

Version is the manipulation of the fetus to obtain a more favorable presentation of the baby.

E.g. From breech to vertex

Type of Version

- External version - Used to change the presentation in to cephalic.
- Internal version - Used to make the presentation in to breech and extract the baby.

Internal Version

It is the direct manipulation of the fetus inside the uterus. It is usually done to convert the malpresentation of second twin. Internal version poses significant risk to the fetus and is

now done only in extreme emergencies, such as profound fetal distress with a prolapsed cored or the need for the immediate delivery of a second twin when there is not enough time for caesarian delivery.

In this procedure the physician reaches up into the uterine cavity grapes feet of the fetus and draws them through the cervix and delivers the fetus as in breech presentation. This procedure is extremely rare in contemporary obstetric practice.

External Cephalic Version

External version is turning the fetus from a breech to a cephalic presentation after 34 weeks & before 37 weeks of gestation.

Danger of External Version

a. Separation of placenta
b. Rupture of membrane
c. One set of premature labor
d. Knotting of the umbilical cord
e. Rupture of uterus

Contra indications for external versions

- Ante partum hemorrhage
- .Rh negetive mother
- Previous caesarian section
- Hydrocephalus
- Hypertension or pre-eclamsia
- Premature labor
- Multiple pregnancy

Vacuum Extraction / Ventouse delivery/

Vacuum extraction is accomplished by use of a specialized vacuum extractor, which has a cap like suction device that can be applied to the fetal head to facilitate extraction.

Traction is applied by means of a chain and the fetal head is drawn out of the vagina.

Indications

Indications for use of vacuum extraction are similar to those for forceps application. in addition, vacuum extraction can be safely used through a partially dilated cervix to shorten fiststage labour in some cases.

- Mild fetal distress
- in the second stage of labour of late first stage.
- Malposition; occipitolateral and occipitoposterior positions
- Maternal exhaustion

Contra indications

- Profound fetal or maternal distress requiring rapid delivery
- Evidence of cephalopelvic disproportion
- Face or breech presentation

The Procedure

- The pre requisites are as for forceps delivery with the possible exception of full dilatation of the cervix.
- The head must be engaged.
- The woman is positioned and prepared as for forceps delivery.
- The position of the fetal head is determined
- An appropriately sized cup selected. The cup is placed against the fetal head as near to the occiput as possible, ensuring that no cervix is trapped beneath it.

The vacuum is then built up gradually, usually starting at 0.2 kg/cm2 is reached after 5-10 minutes once this pressure has been obtained the operator exerts steady gentle traction on the fetal head, in conjuction with uterine contractions and the mother's expulsive efforts.

The suction device should be kept in place no larger than 20 to 30 minutes, and slippage or "pull off" should be avoided because it can cause trauma to fetal scalp or maternal tissue.

Complications

- Failure
- Maternal – trauma to the mother is rare, if the cup is applied carefully.
- Fetal – The most common complication of ventouse delivery is trauma to the fetal scalp and some obstetricians prefer not to use it for this reason.

Chignon –this is an area of oedema and bruising where the cup was applied. Cerebral trauma

Figure. 25 The application of the ventouse cup and the chignon which usually results. (Derexllewllyn –Jones Vol.2, 1990)

1.3.5. Assisting destructive delivery

Destructive Vaginal Operations

Destructive vaginal operations (deliveries) are procedures undertaken to reduce the bulk of a dead fetus in obstructed labor to facilitate delivery.

The main advantages of these operations are prevention of cesarean delivery and dissemination of infection associated with obstructed and neglected labor.

They also prevent maternal trauma if vaginal delivery is undertaken without destructive operation on the dead fetus.

Various types of destructive vaginal operations are used depending on the cause of the obstructed labor:

- Craniotomy
- Craniocentesis
- Decapitation
- Evisceration
- Cleidotomy

Craniotomy

In craniotomy, the head of the dead fetus is perforated to evacuate the brain tissue; and decrease its size to effect extraction of the fetus.

Indication

Obstructed labor with a dead fetus due to

- Cephalic presentation: CPD, brow, face
- Entrapped after-coming head

Contraindication

- Severely contracted pelvis with true conjugate less than 7.5 cm won't allow the delivery of the uncompressible bimastoid which has 7.5 cm diameter.
- Ruptured uterus
- Dead fetus without obstruction
- Doubtful fetal demise

Prerequisites

- Dead fetus
- Fully dilated cervix
- Descent of 2/5 or less in cephalic presentation or entrapped after coming of head
- Ruptured membranes
- Intact uterus

Preparations

- Put up an IV drip; hydrate and resuscitate the woman as required;

− Determine hemoglobin, blood group, cross match and others based on complications

− Give broad spectrum antibiotics

− Avail consent of the patient/ parent

− Use aseptic & antiseptic care

− Give pain medication: pethidine (with or without diazepam), local, spinal or general anesthesia as required

− Alert the OR staff. It is preferred to perform the procedure in the OR.

− Put patient in lithotomy position

− Clean and drape the vulva and perineum

− Catheterize the bladder

Procedure

− Site of entry:

Vertex presentation:

• Make a cross-shaped incision through the skin of the head right down to the bone

• With a finger feel for a gap (a suture line or a fontanel) between the bones

• Push a perforator or scissors between the bones and enter into the cranium

Face presentation:

• Enter the cranium through the orbit/ or hard palate

Brow presentation:

• Enter the cranium through the frontal bones

After coming head

• Make an incision at the base of the neck; inter the cranium by inserting the perforator or scissors through the incision and tunneling subcutaneously to reach the occiput.

Perforate the occiput to drain the brain tissue as above.

− Introduce the perforator, with closed blade, under palmer aspect of fingers protecting anterior vaginal wall and bladder at predetermined site.

- Avoid sudden sliding of your instrument over the scull and getting into maternal tissue.

− Open the perforator or the scissors and rotate it to disrupt the brain tissue; the brain should now be coming out from the hole

− Put 3-4 strong volsellum forceps, kochers or heavy-toothed forceps on the skin and the bones and pull on the forceps to achieve vaginal delivery. In case of breech, pull on the delivered part of the fetus.

− Protect the vagina by avoiding sharp scalp bone edges tearing the vaginal wall by your finger or by removing the offending bones.

Craniocentesis

Skull puncture is performed in case of hydrocephalus to drain the CSF fluid to achieve vaginal delivery (or to deliver the hydrocephalic head through the uterine incision at time of cesarean section).

Procedure

Cephalic presentation

With dilated cervix

− Pass a large-bore spinal needle through the dilated cervix and through the sagittal suture line or fontanel of the fetal skull
− Drain / aspirate the CSF until the skull has collapsed and allow normal delivery to proceed With closed cervix
− Palpate for the location of fetal head

− Apply antiseptic solution to the suprapubic skin
− Pass a large-bore spinal needle through the abdomen and uterine wall and through the hydrocephalus head
− Drain / aspirate the CSF until the skull has collapsed and allow normal delivery to proceed After-coming head
− After the rest of the body has been delivered, insert a large-bore spinal needle through the dilated cervix and foramen magnum. Alternatively, the CSF can be drained by opening the spinal canal (spondylectomy). If the fetus has spina-bifede, the draining may be achieved by reaching the cranium through the defect and spinal cord.
− Drain / aspirate the CSF until the skull has collapsed and allow normal delivery to proceed.

Decapitation:

Decapitation is severing the fetal head of a dead fetus after obstructed labor followed by delivery of the trunk and the decapitated head separately through the birth canal.

Indication 2 Obstructed labor with a dead fetus in neglected shoulder presentation

Prerequisites and preparations

− Besides the prerequisites and preparations described for craniotomy, in transverse lie, the neck of the fetus has to be accessible for decapitation3.

− Under anesthesia (or sedation under diazepam and pethidine), assess the situation:

• If the neck and body are both still high in the birth canal, do a cesarean section;

• If the neck can be reached easily, attempt decapitation;

• If the neck is difficult to reach but the body is well down, attempt evisceration (see bellow)

Procedure

− If hand is not prolapsed –bring down a hand

− Ask an assistant to pull the hand and make the neck accessible & fixed

− By protecting maternal tissue, put the decapitation hook round the fetal neck4

− Make upward and down ward movements till the vertebral column is cut (sudden loss of resistance felt)

− Put a forceps on the head for holding the head after it is separated from the body

− Cut remaining soft tissue by the same hook or use scissors

− Remove the hook

− Deliver trunk first by pulling on the prolapsed arm

− Then retrieve the decapitated head with the forceps attached to it and deliver it as in the delivery of the after coming head in breech presentation.

− Explore the uterus and vagina to exclude rupture of the uterus & trauma to birth canal

Evisceration

Evisceration is removal of thoracic and or abdominal contents through an opening at most accessible site on the abdomen or thorax.

Indications

− Neglected shoulder presentation with dead fetus & neck not accessible for decapitation

− Fetal malformation (fetal ascitis, monsters, distended bladder & hydronephrosis)

Preparation and prerequisites

The preparation and prerequisites are similar as craniotomy and decapitation

Procedure:

In transverse lie, after collapsing the trunk with evisceration, the neck becomes accessible for decapitation; or delivered as breech or footling by pulling the breech or a foot.

− Let an assistant pull on the prolapsed arm.

− With a knife or a pair of strong scissors make a large opening in the abdomen and/ or chest.

− Using an ovum forceps or your fingers remove the intestine, liver, lung and heart. Sometimes you may need to perforate the diaphragm using scissors.

− Now reassess the situation:

• When the breech can be brought down by hooking a few fingers behind the fetal pelvis or a foot or leg can be felt easily; then delivered as breech.

• If the breech cannot be delivered easily, the neck can be brought down for decapitation by pulling on the arm.

• In the unlikely event that all this fails, perform cesarean section.

Cliedotomy

Cliedotomy is used to reduce the bulk of the shoulder girdle of the dead fetus by cutting one or both clavicle(s). It is indicated in shoulder dystocia.

The preparations are as in craniotomy.

Post-destructive operation care

− Explore the uterus, cervix and vagina and treat accordingly. Repair episiotomy.

− Keep a self retaining catheter for 7-14 days if there is prolonged pressure of the

presenting part on the bladder (obstructed labor) or trauma to the wall of the vagina;

- Manage the third stage actively and start 1000 ml D/S, Ringer's or saline fluid with oxytocin 20-40 IU intravenous drip;
- Treat infection: Broad spectrum antibiotics. Debridement of the dead tissue under general anesthesia may be needed to control infection from devitalized vaginal tissue.
- Continue with IV fluid and record vital signs and input/ output. Correct anemia and shock as indicated.
- Suppress possible breast engorgement
- Help the woman morn loss of her fetus and counsel her on future pregnancy

Complications of destructive operations:-

- Trauma to the birth canal including vaginal fistula
- Recto-vaginal fistula
- Post partum hemorrhage due to atonic uterus or genital trauma
- Shock due to hemorrhage or sepsis

1.3.6. Assisting Caesarian section

Cesarean Section (CS)

Cesarean section (delivery) is the delivery of the fetus(es), placenta and membranes through an incision on the abdominal and uterine wall at or after 28 weeks of gestation. An elective CS is a planned cesarean delivery performed before the onset of labor or the appearance of any complication that might constitute an urgent indication. When the CS is done in labor or due to any complication (excessive bleeding following placenta previa) that necessitates immediate cesarean delivery, the CS type is emergency cesarean section.

CS Types

- **Lower transverse uterine incision**

• The Misgav Ladach technique and its modification is considered now as over traditional techniques of cesarean section

incision is made horizontally, suprapubic called a ptannenstiel incision or the "bikinicut" and incision is made in the lower segment of the uterus after about 32 weeks of

gestation and is less muscular that the upper segment of the uterus. Since skin incision is low it is latter hidden by pubic hair.

Advantage

- This heals more rapidly and success fully
- Blood loss is minimal, few post delivery complications occur
- The incision is easy to repair.
- Less chance of rupture from the uterine scar in future pregnancies.

Disadvantage- the procedure takes larger to perform and thus is not useful in an emergency.

- **Lower vertical uterine(De Lee) incision**
- **Upper vertical uterine incision (Classical cesarean section)** is a vertical mid line incision is made in the skin and also in to the wall of the body of the uterus. Indication for this approach are gestation of less than about 32 weeks.

Indication- preferred when there are abdominal adhesions from previous surgery

- when the fetus is in a transverse lie
- In an emergency delivery

Disadvantage- blood loss is increased

There is a greater chance of rupture of the uterine scar in subsequent pregnancies and labour

Indications for cesarean section

Elective caesarean section- Decision to deliver the baby by caesarean section has been made during the pregnancy and before the onset of labour.

Definite indications include

- Cephalopelvic disproportion
- Major degrees of placenta praevia
- Multiple pregnancy with three or more fetuses
- Malpresentation

Possible indications include:

- The primigravida and often the multigravida with a breech presentation
- Moderate to severe pregnancy induced hypertension
- Diabetes mellitus
- Intrauterine growth retardation
- Antepartum hemorrhage
- Previous caesarean delivery

Emergency caesarean section- is performed when adverse conditions develop during labour

Definite indications include:

- Cord prolapse
- Uterine rupture (dramatic) or scar dehiscence (may be less acute)
- Cephalopelvic disproportion diagnosed in labour
- Eclampsia
- Failure to progress in the first or second stage of labour
- Fetal distress, if delivery is not imminent

Contra indications

- The presence of dead fetus
- An immature fetus that could not survive outside the uterine environment.

Complications

- The immediate complications are hemorrhage from the placental site, or the wound; gut distention and ileus; infection; pulmonary collapse and thrombo embolism.
- The late complications are abdominal hernia, intestinal obstruction due to adhesions, and vague abdominal pain.

Disadvantage- blood loss is increased

There is a greater chance of rupture of the uterine scar in subsequent pregnancies and labour

Generally Indications of CS for all is

Cesarean section is performed when safe vaginal delivery either is not feasible (absolute) or would impose undue risks to the mother or/ and fetus (relative).

The common indications include fetopelvic disproportion (FPD) including CPD, failure to progress in labor, placenta previa, fetal malposition and malpresentation, suspected fetal distress, cord prolapse, previous uterine incision, maternal infections (e.g. HIV, active Herpes simplex).

Prerequisites

- Appropriate indication
- Trained providers
- Appropriate facilities and equipments

Preoperative preparation

− Revise the clinical history including anesthetic risk assessment, drug history

− Plan CS procedure ahead of time based on the individual clinical situation:

• Type of anesthesia

• Position - In obstructed labor with an impacted head of the fetus, lithotomy position facilitates the push of the fetal head from inside the vagina by an assistant and delivery through the uterine incision.

• Skin incision type

• Uterine incision type - Choice of uterine incision for transverse lie Cesarean section

• Addition procedures (e.g., tubal ligation, cesarean-hysterectomy)

• Use double gloving

− Explain to the woman (and relatives) and obtain informed consent

− Lower transverse CS is done if there is with adequate amniotic fluid (intact or recently ruptured fetal membranes) and fetus's back is superior (dorso-superior)

− Vertical (low/ de Lee or high/ classical vertical) CS is preferred if there is prolapsed arm and fetus's back down (dorso-inferior)

− **Timing:**

• Elective CS

- Plan on days when the facility is fully functioning (working hours)
- Do in the morning (preferably start at eight- nine am.)

• Emergency CS cannot be planed.

- To minimize the increased risk of emergency CS, elective induction of labor should be limited to working hours; initiated before 08:30 am36; and preparation for possible CS be made.

Investigations:

- Hemoglobin / Hct
- Blood group (ABO) and Rh
- Urine analysis
- Investigate specific clinical complications required as in DIC
- Basic investigations done during pregnancy (e.g., VDRL, HIV) if they are not done previously

− At least 2 units of crossed matched blood should be prepared for conditions that have high possibility of transfusion need such as:

- Active bleeding
- Preeclampsia
- Anemia
- Coagulopathy
- Previous uterine scar
- Over distended uterus and other predisposing factors for atonic PPH

Feeding:

- Elective CS: NPO after mid-night and start IV fluid in the morning
- Limit feeding to fluid diet in laboring women with increased risk of emergency CS

− If necessary, clip the hair on the operation site but DON'T shave

− Administer antacid solution PO (or through NG tube)

- Magnesium trisilicate 300 mg
- 0.30% sodium silicate 30 ml

− Transfer the woman to the operation theater with stretcher in lateral position

− Catheterize

− Open IV line with a cannula of 16 or more gauge

− Position on operation table:

- Tilted the table to left or place a bellow under the woman's right lower back

- Make sure that the anesthesia team, the necessary drugs and equipments, neonatal resuscitation set and personnel are in place
- Check fetal heart beat before proceeding to the CS
- Apply antiseptic solution (iodine, chlorhexidine) on the incision and surrounding area
- Record maternal vital signs before anesthesia and during the CS

Major complications

Immediate complications

- Intraoperative damage to organs such as the bladder or ureters
- Anesthetic complications including aspiration pneumonia
- Haemorrhage
- Infection
- Thromboembolism
- Maternal mortality is greater after caesarean than vaginal delivery
- Transient tachyponea of the newborn is more common after caesarean section.

Long-term risks include an increased risk of

- Uterine rupture in subsequent pregnancies
- Limitation of number of children
- Placenta previa
- Placental abruption
- Placenta accrete

Postoperative follow-up

Immediate:

- Check and record vital signs on arrival to the ward and every 30 min once she is fully awake and stabilized
- Check urine output
- Check for vaginal bleeding and uterine consistency

Late:

- Check and record vital signs and urine output every 4-6 hours.

- Start sips of fluid after ascertaining that she conscious and bowel sounds are active
- Discontinue IV fluids once started fluid diet unless there is other IV medication
- Provide analgesics as required
- Ambulate early
- Look for evidences of PPH, pulmonary infection, UTI, and wound infection
- Initiate breast-feeding and skin-to skin contact with the baby as soon as the mother is awake
- Open the wound site and remove stitches on the sixth day (can be done at the OPD if the woman is discharged earlier)
- Discharge when vital signs are with in normal range, mother has started regular feeding, breast-feeding is initiated and there is no evidence of wound infection

1.3.7. Episiotomy

Episiotomy

Definition: The making of an incision into the prenium to enlarge the vaginal orifice.

Indications for Episiotomy

1. Delay due to rigid perineum, disproportion between fetus and vaginal orifice.
2. Fetal distress due to prolapsed cord in second stage.
3. To facilitate vaginal or intra uterine manipulation
   Eg. Forceps, breach delivery
4. Preterm baby in order to avoid intracranial damage
5. Previous 3rd degree repaired on the perineum.

Advantages of episiotomy

1. Fetal acidosis and hypoxia are reduced
2. Over stretching of the pelvic floor is lessened
3. Bruising of the urethra is avoided.
4. In sever pre – eclampsia or cardiac disease to reduce the effort bearing down.
5. A previous third degree tear which may occur again because of the scar tissue which does not stretch well is prevented.

Types of Episiotomy

1. Medio- lateral
2. Median
3. J- shaped
4. Lateral

1. Medio – lateral

The incision is begun in the center of the fourchette and directed posterio laterally, usually to the woman's right. Not more than 3cm long & directed diagonally in straight line which runs 2.5cm distance from the anus.

Advantages - bartholin glands are not affected

- Anal sphincters are not injured

2. Median: The incision begun in the center of the fourchette and directed posteriorly for approximately 2.5cm in the midline of the prenium.

Advantage:

- Less bleeding
- More easily and successfully repaired
- Greater subsequent comfort for the women

3. J – shaped: The incision is began in the center or the fourchtte and directed posteriorly in the midline for about 2cm and then directed towards 7 on the clock to avoid the anus.

Disadvantage

- The suturing is difficult
- Shearing of the tissue occurs
- The repaired wound tends to be pucked.

4. Lateral: The incision is begun one or more in distant from the condomned.

Disadvantages

- Bartholin's duct may be served
- The levatorani muscle is weakened
- Bleeding is more profuse

- Suturing is more difficult
- The woman experiences subsequent discomfort

Local analgesia for Episotomy

Lignocaine /lidocaine/ 0.5 percent of 10ml is safe and efficient.

It takes effect rapidly with in 1 & 2 minutes.

Timing the incision

1. The head should be well down on the perineum, low enough to keep it stretched and thinned
2. In breech presentation the posterior buttock would be distending the perineum
3. It must be made neither too soon nor too late

Making the incision

1. Avoid incision on the previous episiotomy scar
2. Not more than 3 cm from fourchette and 2.5 cm from anus
3. Position the mother in lithotomy
4. Wait one or two minutes after injection of local anesthesia
5. Insert two flingers between the perineum with the fetal scalp
6. Do the incision during a uterine contraction
7. It should be deliberate cut
8. The cut should be adequate to remove any resistance to fetal head
9. May straight blunt painted scissors 17.5cm commonly used.
10. Must be sharpened at frequent intervals

Hints on repairing the perineum

1. Should be sutured within one hour after local analgesia given
2. The area is cleansed with savalon solution
3. For any leakage from the uterus, vaginal tampon or pack should be inserted
4. Good light is essential
5. The two extent of the laceration is determined

Controlling methods of bleeding after episiotomy

1. Applying gauze swab on the area
2. The pressure exerted by the fetal head
3. If bleeding occurs after delivery – two Spencer wells forceps should be applied to the bleeding vessels.

Layers to be repaired

1. Vaginal wound a) Deep and superficial tissue
   b) Vaginal mucosa
2. Perineal muscles and fascia
3. Perineal skin and subcutaneous tissue
4. The first stitch inserted at the apex of the incision

   The most commonly used suturing material is 2/0 chromic catgut.

Remember:

1. Do not tie the sutures too tightly
2. The last stitches are important for they prevent excessive scar.
3. Press firmly on suture line with a pad to see if bleeding has stopped.
4. Remove perineal pad or suture pack from vagina. Rub up fundus put clean pad on perineum
5. Put gloved finger in to the rectum – to make suture that no stitch has one through the rectum
6. Make the women comfortable, clean and dry.

After care of episiotomy

1. Hot bath, clean wound care
2. If pus or fouls smelling discharge develop report to health personnel
3. Advise not to strain and avoid constipation

Self-check 3	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Choose the best answer (each 1point)

1

Answer the following question!

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____
Rating: _____

Information sheet 4	Providing Nursing care for postnatal mother

1.4. Provide Nursing care for postnatal mother

Postnatal care (Daily care)

Care of the mother

After the birth of the baby & expulsion of the placenta

- Clean perineum & apply sterile pad
- Make her comfortable
- Give her a cup of tea and something light to eat (immediate)
- Allow her to rest
- Record vital sign
  - 4 times daily for the 1st & 2nd day then twice daily
  - if elevated as doctor ordered
- Check for any bleeding

Care for the baby

1. Check frequently for bleeding. Give baby bath at birth and daily
2. Change napkin whenever wet or soiled have mother do it.
3. Take temperature twice daily or & hourly if necessary
4. If the baby's condition is good mother should be allowed to feed, as often as she wishes to do so.

6 Test breast feeding and body activity of the child

7. Bring up baby's wind often feeds.
8. Check cord for bleeding and signs of infection,

1.4.1 THE NORMAL PUERPERIUM

At the end of this lessone students will be able to:

- Define peurperium
- State physiological changes during peurperium
- Describe postnatal care given for mother and baby.

Defintion - Puerperium is period from the expulsion of the placenta to the time the reproductive organs returns to pregravid state lasts 6 weeks.

Puerperium is characterized by the following features

1. The reproductive organs return to the non pregnant state
2. Other physiological changes occurred during pregnancy are reversed (Involution)
3. Lactation is initiated
4. Recuperation of the mother from the stress of pregnancy and delivery and assumes responsibility for the care & nurture of her infant.

The care which required during the puerperium should be based up on 3 main principles

1. Promoting the physical well being of mother and baby
2. Encouraging sound methods of infant feeding and promoting the development of good maternal and child relationship.
3. Supporting and strengthens the mother's confidence in herself and enabling her to fulfill her mothering role within her particular, personal, family and Cultural situation.

Physiology of Puerperium

Involution of the uterus

Definition: the uterus returns to its normal site, tone & position of non pregnant state

Mechanism:

1. Ischemia: After the birth of the baby & placenta, the uterine muscle & blood vessels contracts so the blood circulation decreases. /A localized anemia/
2. Autolysis: muscle fibers are digested by proteolytic enzyme, waste product then pass in to the blood stream and are eliminated by the kidneys.
3. Lining of the uterus is cast off and is replaced first by granular tissue and then by endometrium.

Progress of change in the uterus after delivery

- Weight of uterus Diameter of placental site Cervix
- End of labour 900Gms 12.5cms Soft,
- End of 1 WK 450gms 7.5cms 2cms

- End of 2 WKS 200gms 5cms 1cm
- End of 6 WKS 60gms 2.5cm

Lochia- discharge from the uterus during puerperium. Reaction of lochia is alkaline which favors growth of organisms

Amount – varies with each woman

Odour- heavy and unpleasant but not offensive

The lochia undergo sequential change as involution progresses.

1. **Lochia Rubra** – Red in colour last 1-4 days consists of blood, chorion, decidua, amniotic fluid, lanugo, vernix caseosa and meconium.
2. **Lochia serosa** – purple, lasts 5-9 days contains less blood more serum as well as leukocytes & organisms.
3. **Lochia alba** – creamish pale discharge lasts 9-12 days

N:B: It is important that midwife/nurse realize the danger of retained products which is indicated persistent red lochia .

Changes in other body system

Urinary tract – Physiological changes which occurred during pregnancy are reversed. The urinary tract is revived from pressure of delivery.

Alimentary canal:- Heart burn improves due to hormonal fall and released pressure on the sphincter. Constipation presents for few days; painful perineum inhibits defecation.

Circulatory system:- blood volume decreases to pregravid level & blood regains its normal viscosity. Muscle tone of blood vessel improves cardiac output returns to normal and blood pressure returns to its usual level. The action takes place with in the 1st 24-48hrs after the birth of the baby.

Respiratory system- full ventilation because lungs are no longer compressed by the enlarged uterus.

Endocrine system – Oxytocin – is secreted by posterior pituitary gland and acts up on uterine muscles & upon breast tissue. It continuous to act upon uterine muscle fibers

that maintaining their contractions reducing the placental site & presenting hemorrhage. In women who choose to breast feed their babies, the sucking of the infant stimulates further secretion of oxytocin and this aids the continuing involution of the uterus and expulsion of milk. After the placenta is expelled the circulatory level of human chorionic gonadotrophin, HLP, estrogen and progesterone fall rapidly and this brings about a number of physiological changes.

Musculoskeletal system:- The softened pelvic joints and ligaments of pregnancy gradually return to normal over a period of about 3 months. The abdominal and pelvic floor muscles gradually regain their tone with the assistance of postnatal exercise.

Psychological state:- emotional liability /sucing of mood/ is very common during the early days of the puerperium. After delivery most women experience of mood elation but a few days later they may be depressed and tearful. It is probably a reaction to the physical and mental stress of child birth.

Management of the Puerperium

An important aspect of the midwife/nurse works whether in hospital or at home is her educational role. Advice the mother to care for herself and for her baby covering a wide range of subjects like hygiene nutrition, immunization, family planning, etc

Admission to post natal ward

The mother and baby are usually transferred to the post natal word with in an hour or 2 after delivery. The midwife/nurse should well come the mother and help her to settle in the ward. She will observe her general condition, palpate the uterus to note whether it is contracted or not and observe the lochia.

Sleep and rest

The mother should have sufficient sleep and rest. Keep a quiet comfortable atmosphere without disturbance. Inability to sleep must be regarded with concern and Doctor should be consulted. Hypnotics may be needed and it is given without hesitation. Undue

anxiety, sleeplessness and loss of appetite should be rewarded as serious. Rest is usually encouraged during the day preferably in prone position as this aids drainage from the uterus and vagina.

Ambulation: - mothers benefit a feeling of well being from this early activity and this reduces the incidence of thrombi embolic disorders.

Diet: - a good balanced diet should be taken as advised in pregnancy the woman's appetite usually returns very quickly fter labour is ended & has had some sleep. Protein foods are important particularly if she is breast feeding.

Excess fruit should be avoided as substances from this will pass to the baby in the milk & may cause diarrhea. The daily fluid intake should be from 2.5-3 liters of which at least 600ml should be milk.

Postnatal exercises – Advantages

1. Gives the women a sense of wellbeing ness
2. Maintains good circulation, lessens possibility of venous thrombosis.
3. Restores muscle tone of the abdominal wall & pelvic floor.
4. Promotes for normal drainage of lochia
5. Prevents hypostatic pneumonia
6. Helps in emptying the bladder, bowels and uterus
7. Permits her to enjoy a daily bath
8. Enables her to take early care of her baby.
9. Restores her body figure

The role of the nurse:- during this period now a days is largely for advice and educate the mother in the care of her baby and herself, to listen patiently to her fears and expression, to answer her questions and through out to given her encouragement and reassurance. This is an exchanging & highly responsible task for a competent and thoughtful midwife/nurse.

1.4.2. Discussion about contraception method

Postpartum and Post-Abortion Family Planning

Introduction

The provision of family planning is important for women in the postpartum and post-abortion periods because fertility can return surprisingly quickly after giving birth if not breastfeeding, or after having an abortion. In some cases, women have become pregnant before having their first menstruation following a delivery or abortion, and often the pregnancy is unwanted and may end up with a further abortion.

Unfortunately, a large number of women who wish to delay or prevent future pregnancies receive little or no information on effective family planning methods during the postpartum or post-abortion period, including how or where to obtain family planning methods, and how soon they should be started.

The majority of women receiving abortion or post-abortion care do not want to become pregnant again in the near future. It is because of these issues that it is important for you to know the family

planning needs of women during this critical period.

In this study session, you will learn about the provision of family planning following abortion and childbirth. You will discuss the reasons for giving post-abortion/postpartum family planning, and you will cover the definitions, essential components, advantages and family planning options for women.

Postpartum family planning is the initiation and use of family planning methods in the first six weeks following delivery (Figure 18). The aim is to prevent unintended pregnancy, particularly soon after childbirth, when another pregnancy could be harmful to the health of the mother or breastfeeding baby.

Figure 18 A postnatal checkup is a good time to counsel mothers about immunization and family planning. (Photo: UNICEF Ethiopia/Indrias Getachew)

The Labour and Delivery Care Module you learnt that after the delivery of the placenta, the inhibiting effects of oestrogen and progesterone are removed. So the levels of follicle-stimulating hormone and luteinizing hormone gradually rise, and ovarian functions begin again. Due to these effects, the menstrual cycle in non-breastfeeding mothers will start within four to six weeks of delivery (on average 45 days). However, if the mother is exclusively breastfeeding, the menstrual cycle may not return until six months after delivery.

■ **Why is family planning important during the postpartum period?**

□ When the menstrual cycle returns, there is a risk of pregnancy that could influence the health of the mother and infant.

Post-abortion family planning is the initiation and use of family planning methods immediately after, and within 48 hours of an abortion, before fertility returns.

In most women fertility returns on average about two weeks after an abortion; however, ovulation can occur as early as 11 days post-abortion.

Part of your role is to help prevent unintended pregnancies in women who do not want to be pregnant again, or for whom pregnancy may be dangerous.

You can begin post-abortion family planning immediately after post-abortion care for those women who wish to prevent pregnancy. Be aware that following an abortion in the first trimester, or first three months of pregnancy, a woman's fertility usually resumes within two weeks. However, following an abortion in the second trimester, a woman's fertility usually returns more slowly, within four weeks.

■ Based on the above descriptions of the postpartum and post-abortion periods, are the principles and guidelines of family planning the same for both?

□ Some health providers incorrectly think that the guidelines for postpartum family planning also apply to post-abortion family planning. There are differences though. For example, special concerns for postpartum family planning related to breastfeeding do not apply to post-abortion women.

As a result, women are often not offered family planning methods after an abortion that would be both appropriate and acceptable to them.

Postpartum and post-abortion family planning services

You will be involved in a variety of activities when you help women or mothers in their post-abortion or postpartum period (see Box below)

Your primary activity is to discuss family planning needs and to ensure protection against sexually transmitted diseases.

You can also give information and counselling about short- and long-term method choices, their effectiveness, and side effects. Once a woman has reached an informed choice, you should give her, or refer her for the relevant family planning method. Do not forget to make a follow-up appointment.

Important points about postpartum and posta-bortion family planning

It should include the following:

- Discussion about contraceptive needs, taking into account reproductive goals and protection against sexually transmitted infections.
- Information and counselling about methods, their effectiveness, and side effects.
- Short- and long-term contraceptive method choices.
- Assurance of contraceptive re-supply.
- Access to follow-up care.

Discharge Planning (Instructions)

The women will be given instructions by her physician or nurse midwife concerning her care at home. These instructions are summarized as follows.

Table 5.Post natal discharge instructions

AREA	INSTRUCTIONS
Work	All women should avoid heavy work (lifting or straining) for at least the first three weeks following birth
Rest	The women should plan at least one rest period a day and try to get a good night sleep
Exercise	The women should limit the number of stairs she climbs to 1 flight/day for the first week at home. Beginning the second week, if her lochia discharge is normal, she may start to expand this activity. She should continue with muscle-strengthening exercise, such as sit-ups and leg raising
Hygiene	The women may take either tub baths or shower, and continue to cleanse her perineum from front to back
Coitus	Coitus is safe as soon as the women's lochia has turned to alba and if she has an episiotomy, it is healed (about the third week after delivery)
Contraception	The women should begin contraception measures with the initiation of coitus (if she desire contraception).If she wishes an IUD, this may be fitted immediately following delivery or at the first postnatal check up. A diaphragm must be refitted at a 6-week check up .Oral contraception are begun about 2-3 weeks after delivery
Follow up	The women should notify her physician or nurse-midwife if she notices an increase, not decrease, in lochia discharge, or if lochia serosa or lochia alba becomes lochia rubera

Advantages of postpartum and postabortion family planning

There are a number of potential advantages in providing postpartum and postabortion family planning services. You will have several opportunities to contact your clients during antenatal care and the postpartum period, so introducing family planning services can be more efficient and effective.

When a woman comes to you for prenatal care, you will have an opportunity to discuss infant healthcare, breastfeeding, and family planning as well. You can also introduce these ideas at early prenatal visits, and discuss them in greater detail as the delivery date approaches.

When you assist a mother during delivery, it presents another opportunity to offer information about breastfeeding and family planning. In some cases, this may be the only contact the woman will have with you. You can also integrate family planning with postnatal or child healthcare, for example when giving vaccinations.

The period following the treatment of abortion is also an opportunity for you to help women look at family planning needs. During this time, the assessment of each woman should include her personal characteristics, her clinical condition, and the service delivery capabilities in the community where she lives and where the services will be provided.

Postpartum and post-abortion counselling

When you provide counselling for a postpartum mother, your goal is to help the woman decide if she wants to use a family planning method, and what the most appropriate method would be for her You will need to take into consideration whether or not she is breastfeeding.

Ideally, you should have already provided counselling during prenatal care. However, it is also possible to provide family planning counselling and services following delivery.

■ **Can you give counselling during labour?**

□ You should not give counselling during labour. You can provide useful advice on family planning only after the mother has recovered from the immediate physical and emotional stress of childbirth.

Issues for clients to consider before postpartum counselling

Before you provide postpartum counselling, encourage your clients to consider the following key issues:

- Whether they want more children, or whether they are happy with their current family size.
- If they want more children, how long would they like to wait before having another child?
- Their satisfaction, successes and failures with contraceptive methods used previously.
- Their plans regarding breastfeeding.

If a mother is interested in family planning, you should use your counselling skills to help her focus on which method, or combination of methods, may be most appropriate. She should be clear about the effects of family planning methods on breastfeeding, the correct use of methods, and the period before resumption of sexual relations following delivery.

Family planning options postpartum

In Ethiopia, more than 90% of all mothers breastfeed their infants for some period of time. In this case, the impact of contraceptive methods on breastfeeding, breastmilk, and infant health is of some concern

Effective breastfeeding should be encouraged for the benefit of the mother, and the health of the infant. Here are three general guidelines you should follow.

. Encourage women to exclusively breastfeed for the first six months.

. Ensure their chosen contraceptive method will not adversely affect breastfeeding or

the health of the infant.

. Be certain that breastfeeding is not discontinued in order to start a contraceptive Method.

For breastfeeding women, non-hormonal methods are the best choice and can safely be used. They do not interfere with a woman's ability to breastfeed, or the quality and quantity of breastmilk and there is no adverse effect on infant growth and development.

From your previous sessions in this module, you have learnt that non-hormonal methods include lactation amenorrhoea method (LAM), male or female condoms, spermicides, diaphragms, IUCDs, male or female voluntary surgical contraception (VSC), and natural family planning methods.

Progestin-only oral contraceptive methods are the next best choice, and are considered a suitable method for breastfeeding women six weeks after childbirth. This method has been shown not to affect breastmilk secretion and breastfeeding or infant growth and development. Options include progestinonly injectables, progestin-only pills, and implants put under the skin.

It is recommended that progestin-only methods be provided after the first six weeks postpartum. However, some find it more convenient to begin these methods immediately after delivery, since no adverse effects on the infant or breastfeeding have been observed.

Combined oral contraceptives are less frequently recommended for breastfeeding mothers, because they are known to decrease breastmilk secretion by inhibiting the secretion of prolactin. However, it is an option if the mother is no longer breastfeeding, or breastfeeding less frequently six months after childbirth. These methods include combined oral contraceptives and combined injectable contraceptives (Mesigyna and Cyclofem). See Table 4 for a summary of options for breastfeeding women.

Table 4. Summary of family planning options for breastfeeding women.

Best choice: non-hormonal methods	Alternative choice: progestin-only methods	Less preferable: combined oestrogen-progestin methods
• Lactation menorrhea method (LAM) • Diaphragm • Male and female condoms • Spermicides • IUCD • Male and female sterilisation • Natural Family Planning (NFP).	• Progestin-only pills • Injectables (DMPA, NET-EN) • Implants (Jadelle, Implanon).	• Combined oral contraceptive pills (COCs) • Monthly injectables (Mesigyna, Cyclofem).

Self-check 4	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Choose the best answer (each 1point)

1

Answer the following question!

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

1.5. Neonatal care

Provide basic delivery room care for the new born

- Identify high risk new born as early as possible and able to undertake basic neonatal resuscitation
- Provide proper nursing care for the normal neonate immediately after birth
- Perform assessment of the newborn before discharge
- Detect and manage the common neonatal problems
- Refer neonates with serious problems as soon as possible to higher facilities

1.5.1 Immediate newborn care

Defn:- Neonate is a newborn baby less four (4) wks old.

Immediate care:-

- Swab the eyes as soon as the head is born
- Clear the airway gently
- Identification Label before cutting the cord
- Clamp and cut cord
- Check APGAR score
- Keep the newborn dry and warm
- Physical examination

A) Care at birth:

- Clear air way (suction mouth and pharynx)
- Temperature control (dry and wrap with dry cloth)
- clamping the cord immediately after the birth of baby app. 2.5 cm from abdomen
- provide appropriate eye care to prevent Ophthalmia Neonatorum(TTC eye ointment
- Identification of newborn with mothers name
- Vitamin K injection to prevent hemorrhagic disease of the newborn
- Measurement (Weight, Height, Head circumference)
- Encourage rooming-in immediately after delivery

1.5.2 APGAR score

- Apgar score is assessed at 1 minute and 5 minutes after birth
- Medical aid should be sought if the score is less than 7

Sign	score	0	1	2
A	Color	Blue, Pale	Body pink extremity blue	Complete pink
P	Heart rate	Absent	< 100 bpm	> 100 bpm
G	Muscle tone	Limp	Some flexion of limbs	Active
A	Respiration (respiratory effort)	Absent	Slow, irregular	Good or crying
R	Reflex (response to stimuli)	None	Minimal	Cough or sneeze

If Apgar score is:-

0-2 severe asphyxia

3-4 moderate asphyxia

3-7 mild Asphyxia

8-10 no asphyxia

Asphyxia:- suffocation, condition where someone is unable to breath

First examination of the new born

- Once the baby is breathing properly, he should have his physical examination starting at the head and working down symmetrically.

Head:- any swelling or depressed fracture, abnormalities

Face:- facial paralysis

Mouth:- any cleft lip, cleft palate

Abdomen:- look for hernia, exomphalus

Back: - any spinal bifida?

Rectum:- see in the anal opening, if in doubt pass a thermometer

Limbs:- Any fracture, extra toes or fingers

B) Care in the Postnatal Ward:

- Handle the baby gentle
- Avoid infection (hand washing)
- Keep the baby warm
- Encourage and initiate exclusive breast feeding -4 months of age
- Encourage care of umbilical stump
- Give immunization (BCG & OPV0)

C) Assessment of the newborn before discharge:

- Take vital sign
- Check for sign infections (eye , cord ,skin)
- Check for birth trauma (cephalohematoma, fracture..)
- Check for anomalies (spina-bifda, imporforate anus, club foot…)
- Carryout systematic examinations (head to foot)

D) Classification of the newborn:

Newborns are classified based on their gestational age and birth weight.

Gestational age defined as:

- Preterm defined as gestational age below 37 complete weeks
- Term defined as gestational age above 37-42 weeks
- post term defined as gestational age above 42 weeks

Classification of Newborn by birth weight:

Low birth weight (LBW- is defined as birth weight < 2.5 kg , they may be Preterm or small for gestational age (SGA)

Very LBW - birth weight < 1500gm

Large for gestational age (LGA) - birth weight above 90th percentile

Appropriate for gestational age (AGA)- birth weight

Between and 10th and 90th percentile

Small for gestational age-(SGA) – birth weight below 10th percentile

Write findings, report any abnormalities

1.5.3 Breast feeding

The food for babies is undoubtedly human breast milk. Nurses and midwives should encourage and support mothers to breast feed even if it is only achieved for a few weeks.

However, if a mother has decided, for whatever the reason, to use a milk formula method of bottle feeding she should be given the same support, understanding, and help as the mother who breast feeds.

Good Reasons for Breast-feeding:

1. Promote bonding between mother and child.
2. Many infections are far less common in breast fed babies.
3. The fat in human milk is better absorbed than the fat in cow's milk
4. The danger of giving an over concentrated or a too diluted formula milk is avoided
5. The risk of eczema, asthma, and other allergic disorders is considerably reduced
6. Low birth weight and pre-term infants thrive best on breast milk
7. It helps for mental development

Preparation for Breast Feeding:

Ideally preparation for breast-feeding should be part of a health education program for both boys and girls while in secondary school. This early awareness should be expanded in antenatal sessions for both parents when baby is expected.

This session should include:

1. Knowledge of the physiology of breast feeding

2. Management and comfort of breast and nipples

3. The importance of a well balanced diet during pregnancy and of the need of extra protein and calories while breast feeding.

4. Practical demonstration and discussion with a breastfeeding mother

Management of Breast-Feeding:

Immediately after birth, while the mother still in the delivery room, all mothers should have the opportunity to hold the baby for 10-15 minutes quietly and contently.

If the mother tends to breast-feed, she should suckle her infant for 1-2 minutes at each breast.

Skin-to- skin contact and early suckling are important at this time in promoting “bonding” and to encourage the release of the prolactin and oxytocine hormones which stimulate milk secretion and help the uterus to contract.

Self-check 5	Written test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Choose the best answer (each 1point)

1

Answer the following question!

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

Information sheet 6	Providing Nursing care for mother with complications of labor

1.6. Providing Nursing care for mother with complications of labor

1.6.1. Early rapture of membrane

Definition:- this conditions occurs before 37 completed wks of gestation where rupture of the fetal membranes occur with out the onset of spontaneous uterine activity.

- if affects 2% of pregnancies
- This condition has a 21-32% recurrence rate in subsequent pregnancies.

Cause:- it may be associated with

- Cervical incompetence
- It is now believed that there is a strong association between PROM with maternal viginal coconistation with potentially pathogenic microorganisms. (Evidences suggest that if antibiotics are taken in PROM, pregnancy is prolonged, but the effect on infant morbidity is unknown).

Risks of PROM

→ Labour resulting in preterm birth.
→ Chorioaminionitis, w/h may be followed by fetal treated promptly.
→ Oligohydraminos if prolonged PROM occurs.
→ Psychological /psychological problems which resulting from uncertain fetal & maternal outcome
→ Long term hospitalization
→ Cord prolapse
→ Mal presentation

Mgt:-

- Because the pathophysiology of PRM is poorly understood the Mgt is controversial
- Psychological consideration of the mothers and couple's must be considered.

- If PROM is suspected, the women will be admitted to delivery room where PROM is confirmed with a sterile speculum examination.
- During speculum examination, any poling of liquor in the posterior fornix of vagina.
- Very wet sanitary towels (pads) over a six hr period offer a responsibly conclusive dx. If urine leakage has been excluded.
- Observations must also be made of the fetal condition; FHB (an infected fetus may have a tachycardia)
- Maternal infection screen, To, PR, RR, uterine tenderness, offensive purulent vaginal discharge. Then a decision on future Mgt will be made.

- If gestational age is less than 32, the fetus appears to be uncompromised, APH & labour have been excluded, she will be managed expectantly.

- She is likely to be hospitalized & offered frequent ultrasound scans to check the growth of the fetus & the extent of oligohydraminos.

→ Known vaginal infections will be treated with antibiotic & prophylactic antibiotics may be offered for mothers with out symptoms of infection:-

→ If gestational age is more than 32 wks, the fetus appears to be compromised, if APH and intervening labor is suspected or confirmed, Active Mgt will ensure.

→ Method of delivery will be decided & induction of labor or cesarean per formed.

1.6.2. Cord prolapse & cord presentation

Prolapse of the cord and cord presentation

1-cord prolapse

This is when the Umblical cord is felt in front of the presenting part & the membranes are ruptured.

2- cord (fonic) presentation :-

-This is when the Umblical cord is felt inside the vagina in front of the presenting part and the membranes are intact.

3- Occult prolapse;

-This is a condition is which the cord lies over the face or head of the fetus but can not be felt on internal examination

Possible causes:-

1- mal presentation(associated with contracted pelvis)
2- prematurity of the fetus (offers space between the fetus and the pelvis)
3- Amniotomy:- during version of the fetus or in other obstetric manipulation
4- Multiple pregnancy
5- Contracted pelvis
6- Poly hydraminous
7- Low implementation of the placenta
8- Abnormally long cord more than 75cm.

Diagnosis;-

1-presence of any predisposing factors

2-vaginal examination (which is mandatory immediately after membrane rupture)

Management:-

Emergency care:-

1- Relieve pressure
   - Raise foot of bed.
   - put mother in knee chest position

2- Do VE note dilation presentation pulsation

3-If membranes still intact avoid rupturing them.

Further management depends on findings.

1- Unless the cervix is fully dilated the mgt of choice is immediate c/s.
2- If cervix is fully dilated
   - Forceps delivery or
   - Breech extraction may be done.
3- If transverse lie and shoulder presentation internal version and breech extraction may be done by an experienced obstetrician & if fetus is small (absence of pulsation in the cord indicated fetal death)

4- Careful auscultation must be done and confirmed by the doctor before fetal death is diagnosed

- If the fetus is dead & is longitudinal lie no urgent Rx is required b/c SVD should be waited.
- If transverse lie further action is required to rule out contracted pelvis
- The best method of delivery in this case is caesarean section

- If the fetus is not alive and the presentation and position is normal vaginal delivery is possible

Complication:-

- Cord obstruction causes fetal hypoxia or anoxia.
- Marked or prolonged hypoxia causes fetal neurological defect or death.

1.6.3. Malpresentation & mal position

Malpresentation and Malpostion

Mal-presentation - A presentation other than vertex

Eg. Shoulder, face, brow and breech

Mal-position and mal-presentations have ill fitting presenting parts compared to a well flexed vertex presentations in a normal pelvis.

Causes: - polyhydraminous

- Abnormality of pelvis
- Abnormal shape of uterus
- Laxcity of uterine muscles
- Multiple pregnancies

All ill fitting part is associated with (results in):

1. Early rupture of membrane with risk of cord prolapsed
2. Premature labour
3. Slow, irregular, short-lived contractions
4. Uncoordinated and excessively painful labour after rupture of membranes

5. Prolonged and obstructed labour
6. Post partum hemorrhage
7. Fetal and maternal distress

Breech Presentation

Definition: When the fetus lies with his buttock in the lower pole of the uterus.

It occurs in 1: 40 cases of labor after 34 weeks

1. Breech with extended legs or frank breech- in this type of breech the thighs are flexed and the legs are extended along the fetal abdomen. It is the common one.

2. Complete breech the fetus lies in a flexed attitude and the legs are flexed on the abdomen. The presenting part is bulky and consists of buttocks external genitalia and both feet.

3. Footling- one or both feet present because neither hips nor knees are fully flexed.
4. Knee presentation. On this case both the hips are extended with the knees flexed.

Example

- Lie-Longitudinal
- Attitude-complete flexion
- Presentation- Breech
- Position- Left sacro Anterior
- Denominator- Sacrum
- Presenting part- is anterior buttock

Causes:- often no cause is identified but the following circumstances favor breech presentation.

- Poly hydromnios
- Prematurity
- Multiple pregnancy

- Placenta preveia
- Contracted pelvis
- Uterine abnormalities
- Hydrocephalus
- Extended legs

Diagnosis

On palpation

- Lie is longitudinal
- The fundus contains a firm, smooth and rounded mass which dependently moves with the back.
- On pelvic palpation no head is palpated pelvic has a soft and irregular mass.

On auscultation

The fetal heart beat is heard above the umbilicus if the breech is not engaged below the umbilicus if it is engaged.

Vaginal examination

No sutures and fontanels are felt. When the membrane are ruptured the anal sphincter grips the finger when fresh meconeum seen on the examining finger.

Antenatal management

The presentation may be confirmed by ultrasound scan or X-ray of abdomen. The obstetrician may decide to do an external cephalic version before 36 weeks of gestation.

Management in labor

The method of delivery is chosen depend on

1. Parity of the mother if she is primigravida
2. Size of the baby
3. Other obstetrical complication

The Principles of Management

- Intelligent observation
- Avoidance of unnecessary interference
- Prompt action carried out with manual dexterity when assistance is needed
- Avoidance of fetal injury and hypoxia

Mechanism of breech delivery

Descent takes place by increasing compaction due to increased flexion of the limbs. Bitrochantric diameter which is 10cm enters the pelvis in the oblique diameter.

- Internal rotation of the buttocks
- Lateral flexion of the body
- Restitution of the buttock
- Internal rotation of the head.
- External rotation of the body
- Birth of the head the chin face and sinciput sweep the perineum and the head is born in a flexed attitude.

N.B. Labor in breech is always considered as a trial

Management of Labor in Breech Delivery

It is managed depending on types of presentations

Types of delivery

- Spontaneous breech delivery
- Assisted breech delivery-assistances for delivery of extended legs arms and the head.
- Breech extraction this is the manipulative delivery to extract the breech when the mother is unable to deliver.

First Stage

- Careful observation
- Warn mother not to push
- Vaginal examination when membrane ruptures (to rule out cord prolapse).
- Sedation often necessary
- Be prepared for the delivery

Delivery of Flexed Breech

- Full dilatation of the cervix should be confirmed by vaginal examination before allowing the woman to push to prevent the breech slipping through incompletely dilated and the head may be trapped by the cervix.

- Active pushing is not commenced until the buttocks are distending the vulva.

 Encourage her to push with the contraction and the buttocks are delivered spontaneously episiotomy may be necessary

 The hands off the breech get mother to push when the buttocks are born pull down a loop of cord feel for pulsation put in to the hollow of the sacrum to prevent pressure and traction.

 Fell for the elbows on the chest the shoulder should be born easily with the arms flexed across the chest if not help them out by flexing the arm.

 Grasp the baby by iliac crest with the thumbs held parallel over his sacrum and tilt the baby towards the maternal sacrum to free the anterior shoulder.

 Wrap small towel around the baby hip to preserve the warmth and improve the grip on the slippery skin.

 When the anterior shoulder is born lift the buttocks towards the mother's abdomen to enable the posterior shoulder to pass over the perineum.

Delivery of the head

Delivery of flexed head (Burn's Marshal Method)

After the shoulder is born the baby is allowed to hang unsupported. Within one minute the nape of the neck (hair line) appears.

The baby is now grasped by the ankle and maintains traction while supporting the head on the perineum with the right hand.

Hold the baby on a stretch and slowly bring the feet up to an angle of 180 degrees. When the face appears get someone to clean the air ways then delivery the head very slowly taking 2 to3 minutes to allow the vault of the head to be expelled.

The mother should breath out the head.

Delivery of extended head (mauriceau smelle's veit method)

- When the baby is allowed to hang the neck and hair line is not visible, it indicates that the head is extended.
- Pick up the baby by the feet and lie him astride on the right forearm put the middle finger of the right hand in the baby's mouth far back to the roof of the tongue. With the other hand on the head and flex it down wards towards the floor applying traction. When the head is down bring it up gently delivery slowly taking 2 to 3 minutes to deliver it and so prevent cerebral damage

Delivery of extended breach

Get mother to push, when legs are seen it may be necessary to apply slight pressure in the popliteal space beyond the knee.

This will flex the legs and then they can be easily delivered. Pull down a loop of cord to prevent traction, feel for pulsation, and place it in the hollow of the sacrum to prevent pressure**.**

Delivery of extended arm

Get mother to push, when the axilla is seen it means that the arms are extended. So place the cord sacrum and fingers below the iliac crest, rotate shoulder in to the anterior posterior diameter of the pelvis, then rotate the posterior shoulder anteriorly keeping the back on top, now flex the arm over the face and deliver it, splint it, and now bring the other arm anteriorly, and deliver it by flexing it across the chest now the shoulders are born.

Dangers of breech presentation

1. Delay of the after coming head
2. Cerebral damage due to hypoxia
3. Asphyxia (fetal or neonatal), prolapsed of cord pressure on cord.
4. Permaturity

5. Intracranial hemorrhage due to trauma
6. Injuries to liver spleen adrenal glands or kidney
7. Erb's palsy due to damage of the brachial plexus
8. Facial nerve paralysis due to the twisting of the neck.
9. Fracture to femur, tibia, humorous or clavicle
10. Damage to spinal cord due to wrong handling
11. Pneumonia due to premature inspiration.

Brow Presentation

Definition:- When the sinciput or the area between the face and vertex is in the lower pole of the uterus.

Attitude – Between flexion and extension (mid way) engaging diameter mentovertical 13:5cm. It occurs 1 in 1000 deliveries

Causes:

1. Lax uterus, multiple pregnancy, hydraminous
2. Deflexed fetal head
   - Hypotonus of the neck muscle
   - Thyroid tumor
3. Anencephaly
4. Abnormal shape of pelvis

Diagnosis

On palpation – the head is big and high & does not enter the pelvis

On vaginal examination

- It is difficult to touch the presenting part
- A smooth hair less area is felt, with part of the berigman at one side
- The orbital ridges may be felt.

Management

If brow presentation is diagnosed early in labour, it may be converted to a face presentation by fully extension or it may be flexed to a vertex presentation, however, brow presentation will lead to obstructed labour.

- Cesearian section is the management for a live baby
- Craniotomy if baby is dead.

Shoulder Presentation

Definition- When the shoulder of the fetus lies in the lower pole of the uterus in labou.

A transverse lie becomes a shoulder presentation in labour.

Incidence - Occurs once in 250-300 deliveries.

Causes

- Laxity of uterus
- Placenta previea, hydraminous,
- Multiple pregnancy
- Uterine abnormality
- Preterm pregnancy

Diagnosis

- The uterus appear broad and the funds height is less than expected for the period of gestation
- Easily seen on abdominal examination. When labour progresses, the hand can be felt or the ribs on V.E.
- Arm may prolapsed when membrane rupture ultrasound

Management

- When diagnosed at antenatal clinic after 36 weeks external version will be attempted
- In labour caesarian section is method of choice when attempt of external version have failed.
- When membrane have ruptured before; if there is cord prolepses if arm prolepses even with dead fetus ceaserian section is mandatory.

Complications

Maternal Fetal

- Obstructed labour - Fetal death (cord prolapsed)
- Uterine rupture - Prematurity

- Death - Malformation
- Puerperal sepsis - Arm prolapse
- PPH

Face Presentation

Definition: When the attitude of the head is extension and the face lies in the lower pole of the uterus.

Cause

- Lax uterus, multiple pregnancies
- Hydraminous
- Deflexed fetal head
- Ancephaly
- Abnormal shape of pelvis

Diagnosis

Abdominal examination

Inspection- irregular abdomen and the shape of the fetal spine is that of an" S."

Palpation

- prominent occiput is felt on one the same side as the sinceput which is lower than the occiput. A deep groove is felt between fetal back and head Auscultation- the fetal heart is heard clearly at midline

Vaginal examination

- The presenting part is high
- A soft irregular mass is felt, the gums are felt and the fetus may examining finger - diagnostic
- Noting the position of mentum is important i.e Anterior, transverse or posterior

Mechanism of face delivery

- Instead of an increase in flexion there is an increase in extension
- The chin rotate instead of occput
- The engaging diameter is sub mentobregmatic 9.5 cm face presentation can be born normally except when the chin is posterior and gets caught in the hollow of the sacrum, when it develops into obstructed labour.

Management in labour

- Encourage and perhaps sedate because she will have extra discomfort.
- When membranes ruptures do vaginal examination to make sure no cord prolapsed and to note the position
- Rotation occurs below the level of spines
- If the chin is anterior let labour continue, if transverse, watch that it rotates anteriorly. When the face distends the perineum, perform an episiotomy, then hold back the sinciput and allow the chin to be born, when the chin is born flex the head and allow the occupt to be born.
- Always be careful not to damage the baby's eyes with fingers or antiseptic

Complications

- Obstructed labour
- Cord prolapse
- Facial bruising
- Cerebral haemorrhage & maternal trauma

Unstable lie

Definition:-When the lie is found to vary, breech, vertex or shoulder, presenting from one examination to another after36th weeks of pregnancy.

Causes

- Lax uterine muscles
- Multiparity
- Poly hydraminous

Management

Admission in hospital at the 36-37 week and remain in the hospital until delivery.

Attempts are made by the obstetrician to correct the abnormal presentation by external version. If unsuccessful, caesariansection is considered.

Some times AROM is done after correcting the transverse lie to ensure that the woman goes into labour with vertex presentation. An oxytocin drip is usually given after version.

- Extreme caution and close observation is mandatory throughout labour.

- Monitoring of Fetal Heart Beat frequently is very important
- The bladder and the rectum should be emptied to facilitate
- preservation of the longitudinal lie.

Compound or Complex Presentation

Definition: - When a hand or occasionally of foot, lies along side the head. This tends to occur with a small fetus or roomy pelvis seldom is difficulty encountered except in cases where it is associated with a flat pelvis. On rare occasions head, hand & foot are felt in the vagina, a serious situation which usually occurs with a dead fetus.

If diagnosed during the first stage of labour, attempt could be made to push the arm up words over the baby's face. If during the second stage hold the hand back directing it over the face.

Occupition Posteririor Position

It is a malposition of the head, occurs in 13% of the vertex presentations. Head is deflexed-larger diameter present.

Causes

Direct cause is unknown but associated with

- Pendulous abdomen
- Abnormal pelvis, Androld, Anthropoid, flat sacrum
- The placenta is in anterior wall

Diagnose

Inspection

Deep hollow between head and lower limbs

Palpation

The fetal head is found on one side

The limbs are in front and give hollowing above the head.

There is a saucer like depression around the umbilicus. There is a bulge like full bladder occiput and sinciput are at the same level. Limbs are found on both sides.

Auscultation

Fetal Heart is heard in the flanks and descends down

Vaginal examination

- Membranes may rupture early
- If infant may protrude through cervix as a finger like fore water or fill up the upper vagina
- Due to deflection, anterior fontanel is felt in the anterior part of the pelvis near ileo-pectineal eminence

Outcome

- If the flexion of the head increases the occiput strikes the pelvic floor and rotates anteriorly (ROP) to 45 then to 900 rotation and delivered normally.

- If the flexion remains incomplete, the rotation of the head takes place posteriorly brings the occiput in the hollow of the sacrum. This is known as short rotation. In this case the baby is born by face to Pubis.

- Some times the long rotation of occipitoposterior is arrested and the head is left in the Occipito- lateral position in the cavity of the pelvis.

Occipito frontal diameter is caught at the narrow spinous diameter of the outlet.This is known as deep transverse arrest or persistent occiptoposterior. The delivery could be by rotation of the head to anterior or by cesarean section.

Management

Encourage the mother to lie on the side where the fetus lies. Patient may have sever back pain analgesics may be given. Retention of urine is common catheterization is necessary. Patient feels the need to bear down before fully dilation. Twothird of cases will deliver normally.12% will deliver face to pubis. If the ischial spines are prominent the internal rotation may interrupted caesarian section is recommended. Identifying the ear by the root of the pinna (right or left) manual rotation can be done by, keep the right hand on the head and left on the abdomen and rotate than forceps delivery is performed.

1.6.4. Prolonged labour & Uterine atony

Definition:- Labour is said to be prolonged when it lasts longer than 24hrs or if using cervicograph when progress crosses the alert line.

- The old saying **"the sun should not set twice on a woman in labour"**

i.e - no woman should ever be in labour for 24 hrs, is a good principle

- Transfer a pt to hospital from HC- .

1-primigravida at 18hrs
2- Multigravida at 12hr } or when progress crosses the alert line.

Causes:-

- In considering the causes of prolonged labour three different factors should be in to account .(they are the **3"p"s**)

1-**passage faults** or any abnormality that makes the birth canal too narrow

2-**Passenger faults** or a large or badly presenting fetus.

3-**Power faults** or poor uterine contraction

- In most cases more than one factor is responsible for a prolonged labour and there is interaction between them

Nsg care:-

- Reassure the mother encourage her & explain to her what is happening
- Keep her as clean & dry as possible
- Prevent and treat dehydration
- General observation on dilation or Cx, descent of read uterine action v/s of the mother FHB general condition of fetus mother should be closely followed &recorded

Management of prolonged labour

- Doctor will assess and decide:-

1-enema may be repeated provided that head is descending

2- Doctor may order oxytocic drug in IV drip and rupture of membrane provided that there is no disproportion

- C/s may be decided depending on the findings.

If any disproportion

- condition of the mother & fetus

- ❖ When the 1st stage is prolonged the 2nd and 3rd stage are usually prolonged too

Delay in the second stage

- In the second stage progress is measured by descent of the presenting part
- Normal length is for primigravida one hour, for Multigravida half an hour
- Primigravida after 40 min if slow progress (vacuum at 1hr)
- Multigravida after 20 min if slow progress (vacuum at)

Danger (complication of prolonged labour)

Mother:-

1- Intra uterine infection

2- Acidosis & dehydration

3- Vesicovaginal fistula

4- Rupture of uterus due to undiagnosed CPD

5- PPH

6- Overstretching of perineum leading to Cystocele, rectocele& uterine prolapse.

Cystocele: - hernia of the urinary bladder in to the vagina.

Rectocele: - a condition where the rectum protrudes in to the vagina.

1.6.5. Obstructed labour

Obstructed Labor and Ruptured Uterus

Definition

− Obstructed labor (OL) is failure of descent of the fetus in the birth canal for mechanical reasons in spite of good uterine contractions22.

− Spontaneous rupture of the uterus is rupture of the unscarred uterus following obstructed labor usually in the multigravida or oxytocin use.

− In complete uterine rupture, all the three layers of the uterus are involved and there is a direct communication between the uterine and abdominal cavities.

In incomplete uterine rupture the peritoneum covering the uterus remains intact. A rare variety of uterine rupture is one that involves the serosa and the external myometrium, but the laceration does not extend into the uterine cavity23.

− Trial of labor is a planned and closely monitored labor to achieve safe vaginal delivery in cases of suspected CPD. The trial is not allowed till complications of OL take place.

Causes

− Cephalopelvic disproportion (CPD)

- Small or abnormal pelvis
- Fetal causes
  - Large fetus
  - Congenital abnormalities e.g., hydrocephalus, ascites or tumor
  - Fetal monsters
  - Locked twins
  - Shoulder dystocia

− Malpresentations and malpositions

- Breech presentation
  - Impacted large breech
  - Extended arm
  - Arrest of after coming head due to hydrocephaly, undilated cervix, deflexed head, or CPD
- Persistent brow
- Shoulder presentation (transverse lie)
- Persistent mentoposterior
- Occipitoposterior

− Abnormalities of the reproductive tract

- Uterine abnormalities (fibroid, congenital malformations) or ovarian tumors
- Stenosis of cervix
- Vaginal abnormalities
  - Scarring after female genital cutting, previous OL or caustic medications
  - Congenital malformation: transverse or longitudinal septa

− Tight perineum particularly in the primigravida

Risk assessment

− Malnutrition, rickets or osteomalacia

− Strikingly short24 is often associated with malnutrition.

− Previous uterine scare following CS, uterine perforation or operation on the uterus

− Previous stillbirth with prolonged labor

− Young age of mother (under 17 years of age)

− Female genital cutting

− Long distance to obtain skilled help

− Lack of transport and communication

− Traditional beliefs and practices regarding prolonged/ obstructed labor

− Custom of early marriage

− Community distrust of health care personnel

− Compromised training of staff in recognizing obstructed labor and its management

− Failure to act on risk factors (previous scare to deliver in hospital)

− Delay in referral to higher level of care (e.g. for caesarean section)

− Limited resource allocation for reproductive health services and programs

Complications

Maternal and neonatal mortalities and morbidities are greatly increased in OL due to complications arising from prolonged labor, mechanical effects of the obstruction or/ and operative interventions:

− Sepsis and septic shock leading to various organ failure (temporary or permanent)

− Hemorrhage (APH, PPH), shock and anemia

− Urinary or/ and rectal fistula: more common in nullipara mainly due to pressure necrosis of the vaginal wall entrapped between the fetal head and bony pelvis. Some are due to operative complications used to relieve the obstruction (e.g., bladder injury during CS or craniotomy).

− Ruptured uterus: more common in multipara

− Nerve injury: e.g., drop foot

− Infertility following postpartum PID or hysterectomy

− Psychological trauma due to the painful labor experience, loss of the baby, fistula and social isolation

Diagnostic approach

OL is an emergency condition and requires a concerted team approach. A rapid assessment of any patient on first contact is essential to identify critical patients and immediately instituting life saving measures.

Besides the prolonged labor, a woman with OL may have life-endangering signs such as loss of consciousness, breathing difficulty, bleeding, fever, or shock. The general condition and vital signs (respiratory rate (RR), blood pressure (P), pulse rate (PR) and temperature) may indicate the critical condition of the patients.

The initial assessment of the life-threatening conditions and early initiation of resuscitation, the management should incorporate close monitoring, thorough clinical evaluation and essential investigations.

History

− Age, height, gait, and any disability affecting the pelvis or lower limbs

− Gravidity, parity,

− Gestation age

− History of current labor:

Duration of labor is prolonged

• Change of labor pain characteristics to continue generalized abdominal pain (peritoneal irritation due to hemoperitoneum, infection and meconium) which may be preceded by a sudden sever pain at the time of uterine rupture (described some times as “something gives away”).

The woman may also give a feeling that the “fetus is moving upwards”.

− Past obstetric history:

• Any complications during previous pregnancy

• Reasons for any previous operative deliveries (instrumental deliveries , CS etc)

• Previous stillbirth or early neonatal death and cause, if known, and whether associated with prolonged labor

− Medical history, in particular rickets, osteomalacia, or pelvic injury

− If partograph has been used in following the labor; it may show:

• A prolonged first or second stage of labor with cervicogram crossing the alert line and then action line despite adequate uterine contractions.

• It may also reveal that little or no descent of the presenting part has taken place.

• Increasing moulding especially at high station or with little descent

• Increasing uterine contractions in frequency and duration, that become atonic later (mainly in a primigravida)

• Prolonged rupture of the membranes

• Drying of the amniotic fluid and gradual development of meconiumstained and foul-smelling discharge

Physical Examination

The physical findings depend on the duration, complications, cause of the obstruction and gravidity. For example, a primigravida with prolonged labor due to CPD is prone to atonic uterus with fistula formation while a multipara will have continued stronger contractions till the uterus ruptures. The findings include:

− Maternal exhaustion, anxiety, confusion, or unconsciousness

− Shock with rapid and weak pulse which may be due to both bleeding, sepsis and pain

− Fever

− Rapid respiratory rate

− Dehydration (sunken eyes, thirsty, dry mouth, dry skin)

− Anemia

− Decreased urinary output

− Abdominal examination:

• Fetal head above the pelvic brim; a big head (hydrocephalus); transverse (depending on cause of OL);

• Abnormal fetal heart rate (tachycardia, bradycardia or deceleration) or no fetal heart ton if the fetus dies from anoxia

• Distended abdomen with tenderness and rebound tenderness. The abdominal distension could be due to gas in the intestines and uterus and hypokalemia (paralytic ilues)

• Atonic uterus: common in primigravida and may lead to atonic PPH after delivery

• The uterus may also be in tonic contractions and tightly molded around the fetus

• Bandl's ring is a late sign of obstructed labor. It is the retraction ring which becomes visible and/ or palpable during labor. It can be seen as a depression across the abdomen at about the level of the umbilicus.

• The 'three tumor abdomen" is a warning sign of an impending uterine rupture. The three tumors are due to:

  o Grossly thickened and retracted upper uterine segment above Bandl's ring;

  o Thinly distended lower uterine segment bellow the ring;

  o Fully distended or/ and edematous bladder further distending the lower abdomen.

• In ruptured uterus (common in multiparous women), the findings include:

  o Shock

  o Abdominal distension/ free fluid

  o Abnormal uterine contour

  o Tender abdomen

  o Easily palpable fetal parts

  o Absent fetal movements and fetal heart sounds25

• Diagnosis could be more difficult if rupture is incomplete or the tear is small. In this case, the fetus will remain at least partially in the uterus and signs of shock are delayed until after delivery because the pressure of the fetus prevents bleeding to some extent. Symptoms in this case could be initially very slight, and labor may even continue. Suspect rupture if the fetus suddenly becomes distressed and the mother's pulse starts rising.

• Rupture of a uterus with a previous scar (e.g., previous CS) may be silent.

− Vaginal examination

• Foul-smelling meconium and dry vagina

• Vaginal bleeding after rupture of the uterus; There may be no vaginally bleeding if there is an impacted head in the birth canal (tamponad effect)

• Catheterization can be difficult due to the impaction of the presenting part; it may produce concentrated urine which may contain meconium or blood which may indicate rupture involving the bladder

• Edema of the vulva and cervix following prolonged pushing down and labor
• Depending on the cause of the obstruction, there may be:
    o Large caput succedaneum in CPD
    o Shoulder with or without prolapsed arm
    o Brow
    o Face presentation in mentoposterior.

Investigations

OL and ruptured uterus are diagnosed based on history and physical examination. Occasional paracentesis may be required to check for hemoperitoneum. Laboratory test are required for preoperative assessment and evaluation:

- Hemoglobin/ Hct
- Blood group (ABO, Rh)
- Urine analysis
- Renal function tests (especially with decreased urine output)
- Blood culture and sensitivity
- Others test depending on individual clinical findings

Treatment Plan

The initial management of OL and ruptured uterus involves two concurrently on going activities:

- Resuscitation and monitoring of the life endangering conditions such as shock, sepsis

- Identifying the cause of OL and other complications and treating accordingly

Resuscitation and monitoring

- Shock: If the patient is in shock (hemorrhagic or septic), treat shock aggressively (see specific sections for details). With the ongoing resuscitation, preparation for operative interventions (e.g., availing cross matched bloods, organizing the OR), has to be undertaken so that measures to stop bleeding or removal of septic focus (e.g., hysterectomy for ruptured uterus) are done as soon as possible. Whenever there is

ongoing bleeding (as in ruptured uterus), laparotomy should not be delayed till patient is resuscitated out of shock.

− Dehydration: If the woman is not in shock but she is dehydrated and ketotic, give 1 liter of ringers lactate rapidly and repeat till dehydration and ketosis are corrected. Then reduce to 1 liter in 4–6 hours.

− Monitor closely: Keep an accurate record of all intravenous fluids infused, drugs given, vital signs and urinary output.

− Sepsis: Give antibiotics if there are signs of infection, or the membranes have been ruptured for 12 hours or more. In sever cases with OL for days, the following antibiotic regimen can be used:

- Ampicillin 2 g every 6 hours or ceftriaxon and
- Gentamicin 5 mg/ body weight IV every 24 hours (adjusted with renal status) and
- Metronidazole 500 mg IV every 8 hours, Clindamycin or Chloramphenicol

If the woman is delivered by caesarean section or had laparotomy, continue antibiotics until the woman is fever-free for 48 – 72 hours. In less severe cases, ampicillin and gentamicin may be adequate.

− Supportive care: The woman's birth companion should be encouraged to stay with her to provide comfort and support. Staff should explain all procedures to the woman, seek her permission, discuss results with her, listen and be sensitive to her feelings.
− Analgesics can be given while resuscitating and preparing her for operative delivery. There is not any reason to withhold anti-pain treatment in a woman with peritonitis.

Mode of Delivery in OL:

A. Intact uterus with no imminent rupture

− If the cervix is not fully dilated, CS should be performed.

− If cervix is fully dilated, the method of delivery depends on factors such as fetal status, and descent. See section on abnormal labor (abnormal second stage) and instrumental deliveries for details of delivery methods.

B. Imminent uterine rupture

− Alive fetus ⇒ cesarean section

− Dead fetus: ⇒ Laparotomy under direct vision to undertake one of the following applicable procedure:

• Destructive vaginal delivery: If the uterus is intact without excessive thinning and bruising and unlikely to rupture, vaginal destructive operation is undertaken and the abdomen closed without opening the uterus. If the destructive vaginal delivery is observed to cause rupture of the uterus, destructive vaginal delivery is abandoned; and cesarean delivery is undertaken.

• If the lower segment of the uterus is dangerously thinned out, cesarean section is safer (though hazardous by itself in neglected labor).

C. Ruptured uterus

Destructive vaginal operation is a contraindication in ruptured uterus. Laparotomy is undertaken even when there is suspicion of rupture (see imminent uterine rupture above). Through a subumbilical vertical skin incision, one of the following operative procedures is undertaken for rupture of the uterus:

− Repair of uterine tear (with or without tubal ligation) Postoperative care and follow up

− Intensive resuscitation and monitoring should be continued till condition improves

− Blood transfusion

− Antibiotics IV till fever free for 2-3 days and continue coarse PO

− Investigation including blood and urine culture and sensitivity as indicated

− Analgesics including pethidine

− Breast care for those with stillbirths or neonatal deaths

− Close monitoring to identify complications early (e.g., abscess)

− Explain condition and counsel on future pregnancy

o Repaired uterine rupture without tubal ligation or CS: always hospital delivery

o Total or sub-hysterectomy or tubal ligation: infertility

o Hysterectomy: amenorrhea and infertility

o Severe postpartum infection: possibility of ectopic pregnancy in future pregnancy and need for early check up if pregnant; infertility (one child syndrome)

− Fistula care and follow-up: Women with fistula are kept in the hospital until infection is controlled. They should be explained about when and where they can have the fistula repair. Usually, the fistula repair is undertaken 2-3 months after delivery.

− Follow up schedule of women with OL after discharge depends on the type of complications, operative procedure and residence of the patient.

It is advisable to keep patients till infection and acute conditions are well controlled, especially in women coming from rural and distant areas. Besides the basic postpartum care, the follow up care focuses on the specific complication sustained after OL.

Shoulder dystopia

Definition

Shoulder dystocia is inability to deliver the shoulders after the fetal head has been delivered despite the performance of routine obstetric maneuvers. It is an acute obstetric emergency requiring prompt, skilful management to avoid significant fetal damage and death

Risk assessment

Shoulder dystocia cannot be predicted. Be prepared for shoulder dystocia at all deliveries, especially if a large baby is anticipated. Predisposing factors include:

− Macrosomia

− Diabetes mellitus

− Women with previous history of macrosomic babies

− Obesity

Complications

- Birth asphyxia and metabolic acidosis, shock, renal failure, seizure
- Neurological damage, mental retardation, cerebral palsy etc
- Traumatic birth injuries: fracture of the humerus and clavicle;
- Injury to the brachial plexus (Erb's palsy)
- Maternal complication of the cervix, vagina and perineum that may lead to excessive bleeding

Diagnosis

- The fetal head is delivered but remains tightly applied to the vulva
- The chin retracts and depresses the perineum.
- Traction on the head fails to deliver the shoulder, which is caught behind the symphysis pubis.

Management

- Make an adequate episiotomy to reduce soft tissue obstruction and for manipulation.
- In the lithotomy position, ask the woman to flex both thighs, bringing her knees as far up as npossible towards her chest. Ask two assistants to push her flexed knees firmly up onto her chest (McRoberts maneuver).

- After wearing high-level disinfected gloves undertake the following maneuvers to deliver the shoulder:

- Apply firm, continuous traction downwards on the fetal head to move the shoulder that is anterior under the symphysis pubis.

Avoid excessive traction on the head as this may result in brachial plexus injury.
Have an assistant simultaneously apply suprapubic pressure downwards to assist delivery of the shoulder

- If the shoulder still is not delivered, insert a hand into the vagina and apply pressure to the shoulder that is anterior in the direction of the baby's sternum to rotate the shoulder

and decrease the shoulder diameter. If needed, apply pressure to the shoulder that is posterior in the direction of the sternum.

− If the shoulder still is not delivered despite the above measures, insert a hand into the vagina; grasp the humerus of the arm that is posterior; and, keeping the arm flexed at the elbow, sweep the arm across the chest. This will provide room for the shoulder that is anterior to move under the symphysis pubis.

− If all of the above measures fail to deliver the shoulder, the last options is to fracture the clavicle to decrease the width of the shoulders and free the shoulder that is anterior; apply traction with a hook in the axilla to extract the arm that is posterior.

Prevention

Even though shoulder dystocia can not be predicted, the complication of shoulder can minimized by:

− Fetal weight estimation at term and, if the estimated weight of the fetus is 4 or more Kg, elective cesarean delivery is effected. Fetal weight estimation is especially required among women with:

- diabetes mellitus,
- previous history of macrosomic babies,
- obesity
- big abdomen

− Avoid mid-pelvic manipulation in the second stage

− Adequate training of providers

1.6.6. Retained placenta

Retained Placenta

Definition: - When the placenta remains undelivered after a specified period of time usually half to one hour following the boy's birth having left the upper uterine segment.

Cause

- Poor uterine contraction
- Hours glass contraction: a contraction ring in the third stage caused by giving ergometrine and not expelling the placenta in time
- Full bladder
- Mismanagement of third stage of labour.

Management of retained placenta

1. Careful observation - check pulse
   - Vaginal bleeding
   - Check bladder
2. Gently try to deliver by controlled cord traction
3. If not manual removal followed by antibiotics

Manual removal of Placenta

Method:-Place one hand on the fundus to support the uterus, let the other hand follow the cord until it reaches the placenta move hand up to the edge of placenta and find where it is partiality separated (remember it would not be bleed if it is not separated) then move your hand up and down, until you have it, completely separated then bring it out in your hand, examine it.

1.6.7. POST PARTUM HEMORRHAGE

Providing Nsg Care For Mother With PPH.(Post Partum Hemorhage

Definition:- PPH is bleeding from the genital tract during the 3rd stage of labour or with in 24 hrs after the delivery of placenta **to the amount of 500ml or more** or which adversely affects the woman's condition

- It is one of the emergencies b/c it is responsible for most maternal deaths-

Types of PPH

1-Atonic PPH

2- Traumatic PPH

3- Hypofibrinogenaemia.

Atonic post partum haemorrhage

- This is bleeding from the placental site when the uterus is not well contracted
- This occurs in:-

- Prolonged & obstructed labour
- Rapid expulsion of a large baby
- Anti partum haemorrhage
- Twin pregnancy poly hydraminous
- Retrained placenta that is partially separated
- Mismanagement of third stage.
- Fibroids.

Traumatic PPH

- perineum episiotomy or even from a ruptured uterus
- This is bleeding from laceration of the cervix vaginal wall This occurs in:-
  - ❖ Delivery through partially dilated Cx
  - ❖ Instrumental delivery
  - ❖ Difficult delivery eg . Face to pubis or the after coming head of a breech.
  - ❖ Spontaneous delivery of big baby.

Hypofibrinogenaemia

- This is bleeding from a clotting defect and the pt continues to bleed in spite of Rx for other types of post partum haemorrhage
- This occurs in :-
  - IUFD which is prolonged
  - Hepatitis
  - Blood coagulating defect

It is important to be able to differentiate between atonic and traumatic PPH

ATONIC PPH	**TRAUMATIC PPH**
- Uterus is lax & soft	- uterus is firmly contracted
- Bleeding starts after few minute	-Bleeding stars immediately after delivery & continue
- Bleeding is from placental site	- Bleeding is from injured site.
- The blood is dark red colour.	- Blood is bright red colour

Management of severe PPH

1- Massage the uterus and expel the placenta
2- Stay with your pt and shout for help
3- Give ergometrine 0.5 mg iv and put up Iv drip
4- Empty the bladder
5- If placenta is not out: Try to expel it by Fundal pressure with the contraction caused by ergometrine
    - It should come away, if not and if she is still bleeding severely in order to save life do manual removal of placenta.

1.6.8. Ruptured Uterus

Definition:-

- Is a condition where there is a tear in to the uterine wall
- It may be complete so that the fetus comes out in to the abdominal cavity or It may be incomplete where the endometrium and part of the myometrium are torn

Cause:-

1- obstructed labour
2- scar from previous c/s
3- trauma due to operative manipulation in internal version, destructive operation →(rare case)
4- incorrect (unwise) use of pitocine
5- extension of an old scare (tear) in the Cx

Silent rupture: - it is rupture in obstructed labour

Silent rupture:-

- This is the commonest cause of rupture
- The operation itself is not dangerous in C/ S but the scar is a hazard
- The scar can rupture in the last month of pregnancy or in the 1st stage of labour

Signs of silent rupture:-

- Rise in pulse
- Pain over the old scare & tenderness.
- Slight vaginal bleeding

- ❖ Vomiting shock which come on very slowly
- ❖ Labour will not progress & soon FHB will be negative.

Abrupt rupture:

Signs 1- Hx of obstructed labour if present

2- The lower segment is very tender (Bandl's ring is seen)

3- The contractions are very strong with little or no relation these contractions suddenly stop

4- Vomiting

5- The pt seems relieved from pain profound shock follows &the pt now feels that she will die.

6- There will be no fetal heart beat

Management

1- Lie pt flat.

2- Put Iv drip if possible take b/d first for grouping & cross matching

3- Give pethidine 50mg for pain and transfer her to the nearest hospital bring donors and go with the pt In hospital

- Lie flat
- Blood group& class match (take specimen)
- Put up Iv drip
- Call doctor & send for the OR- staff
- Get pt relatives to sign the consent form
- Give pre –operative care quickly
- **Baby**: - baby is usually still birth though if the rupture is incomplete & in hospital it is possible to have a live baby.

Post –operative care:-

- ❖ The pt usually comes from OR very shocked & extremely ill she needs expert care for the 1st few days.

Immediate care

1- Receive her in to a clean warm bed.

2- Check:

- Her breathing
- Ryle's tube
- Blood transfusion for correct flow
- Catheter for its function & position
- All V/S
- Wound for oozing bleeding
- Dr's instructions & carry out
- Suction & oxygen at hand

Continued care-

- Change position 4 hourly
- Give mouth wash
- Cheek V/S ½ hourly for 12 hrs then hourly and then 4 hourly.
- Follow intake &out put
- Administered ordered medications
- Get up and out of bed as soon as the sock has passed (early ambulation)

For a mother with ruptured uterus

1- Doctor will either do hysterectomy or

2- He may repair the uterus and tie the tubes or not tie them depending on her obstetric Hx &condition

Complication of ruptured uterus and specific prevention

1- Shock; - run Iv drip fast.

2- Peritonitis:- give her antibiotic on time

3- Paralytic ileus:-keep Ryle's tube in her stomach until she pass flatus

4- Pneumonia:- get her to do breathing exercise 4 hrly.

5- Venous thrombosis:-encourage her to do exercise (early ambulation)

6- Embolism

7- Pulmonary oedema. Follow intake &out put balance.

8- Septic wound:-give care full & appropriate wound care

Prevention of uterine rupture

"Remember it need never happen"

1-constant and careful ANC

2- Detect high risk mothers &select them for hospital delivery.

3- Previous C/S must always deliver in hospital

4- Careful use of pitocine

5- Care should be taken during manipulation

6- Care full observation of the mother in labour

1.6.9. Laceration & tear

TEAR (PERINEAL RELEGATION)

- It is a tear into the perineum
- It cannot be always be avoided

Types

First degree

- Damage to the skin
- The underlying muscle is exposed

Second degrees

- The posterior wall and perineal muscles are torn
- In some cases the anal sphincter can be damaged

third stage

- Called complete tear
- Skin, muscle anus and inner lining of the rectum are torn
- So that there is one opening or canal
- Very serious and must be avoided
- It must not be sutured by the nurse, but by a doctor in hospital under anesthetic

After care:-

- Stool should not be passed 7-8 days so the pt is kept on low residue diet and liquid paraffin is usually ordered to keep stool soft
- vulval swabbing should be done each time pt passes urine

Prevention of laceration

1- gain the woman's co-operation, explain, encourage, instruct her
2- control head, keep it flexed, so that smaller diameter emerges
3- get pt to breath when the head is coming out
4- perform episiotomy when the perineum is tight

If you get a complete tear in your health center,

1- continue with the 3rd stage and deliver placenta
2- do not attempt to suture, this laceration must be repaired by a doctor under general anesthesia

1.6.10. Fetal distress

Fetal distress refers to the compromise of the fetus due to inadequate oxygen or nutrient supply. This can occur due to maternal, fetal or placental factors. At its most severe it may lead to neonatal brain injury or stillbirth. Its presence may be suspected due to various factors but all have a high false positive rate.

Pathogenesis

The main cause of antepartum fetal distress is uteroplacental insufficiency.

Factors within labour are complex but processes such as uteroplacental vascular disease, reduced uterine perfusion, intrauterine sepsis, reduced fetal reserves and cord compression can be involved alone or in combination. Gestational and antepartum factors can modify the fetal response to them.

Reduced liquor volume, maternal hypovolaemia and fetal growth restriction are known associations.

Epidemiology

The overall risk of prompt caesarean delivery needed for fetal concern was shown to be 3.1% in an unselected population[1]. The risk exceeded 20% in patients with severe pre-eclampsia, post-term or fetal growth-restricted fetuses with abnormal Doppler studies and also in women with moderate/severe asthma or severe hypothyroidism.

The vast majority of cases of cerebral palsy in otherwise normal-term infants are not associated with intrapartum hypoxia-ischaemia.

Risk factors

Includes women with a history of:

- Stillbirth.
- Intrauterine growth restriction (IUGR).
- Oligohydramnios or polyhydramnios.
- Multiple pregnancy.
- Rhesus sensitisation.
- Hypertension.
- Obesity.
- Smoking.
- Diabetes and other chronic diseases.
- Pre-eclampsia or pregnancy-induced hypertension.
- Decreased fetal movements.
- Recurrent antepartum haemorrhage.
- Post-term pregnancy.

Maternal age over 35 years, and particularly over 40, is an independent risk factor for uteroplacental insufficiency, fetal distress and stillbirth; the highest risk is in older women who are also nulliparous

Presentation

See also the separate Intrapartum Fetal Monitoring article.

Fetal distress presents in varied ways and to differing degrees. It may be suspected by the following, which may also be used for further evaluation of suspected fetal distress:

Clinical suspicion when decreased fetal movements are felt by the mother or there is a slowing or stopping of the growth of serial symphysis fundal height.

Abnormal sonographic biometric parameters when IUGR or macrosomia is suspected.

Doppler ultrasound is particularly valuable when performed up to 34 weeks of gestation:

Umbilical artery Doppler may detect changes that reflect increasing placental vascular resistance.

Fetal arterial Doppler of, for example, the middle cerebral artery, may detect reduced resistance which has developed to maintain blood flow to the fetal brain when placental function is impaired.

Fetal venous Doppler may detect changes indicative of impaired cardiac function and fetal acidosis.

Cardiotocography (CTG) shows the fetal heart rate response to fetal movement and to maternal contractions. The trace it produces may be described as reassuring, non-reassuring or abnormal:

Antenatal CTG:

A normal fetal heart rate accelerates with fetal movement and is described as reactive.

Stillbirth rates have been shown to be significantly lower after a reactive trace than after a non-reactive trace

CTG interpretation is open to inter- and intra-observer variation but can be interpreted by computerised analysis. CTG should not be used as the only form of surveillance of a high-risk pregnancy

A contraction stress test, carried out during induced contractions using oxytocin, has no clinical benefits, and a false positive rate as high as 50%; it may also have significant adverse effectsIt is not used in the UK.

Intrapartum CTG:

See the separate Intrapartum Fetal Monitoring article for details.

CTG should not be used routinely as part of the initial assessment of low-risk women in early labour[9].

No decision about a woman's care should be made on the basis of CTG findings alone[

Biophysical profile (BPP) is time-consuming and rarely abnormal in the presence of normal umbilical arterial Doppler. It consists of a combination of CTG, fetal behaviour (including movement, tone and breathing) and amniotic fluid volume. This produces a BPP score to predict the degree of any compromise to the fetus. Available evidence does not support its routine use in high-risk pregnancies but observational data suggest it has good negative predictive value for fetal compromise[6].

Amniotic fluid volume, both oligohydramnios and polyhydramnios, has been shown to be associated with poor fetal outcomes. However, oligohydramnios is itself associated with intrauterine growth restriction and urogenital malformations, which were not controlled for in the studies, demonstrating an association with poor outcomes. Polyhydramnios, when clinically apparent, is related to poor neonatal outcomes but mild, idiopathic polyhydramnios, detected only on ultrasound, is not associated with adverse outcomes.

Fetal scalp blood sampling during labour, to measure lactate (in preference to pH if available), may be indicated for an abnormal intrapartum CTG See the separate Intrapartum Fetal Monitoring article for details.

A composite risk score, based on fetal Doppler flow resistance indices, has shown promise in identifying those fetuses antenatally who develop fetal distress intrapartum].

Management

There have been no recent trials of operative versus conservative management of suspected fetal distress

Signs of antenatal fetal distress require monitoring with a view to induction of labour or planned caesarean section.

Immediate delivery of a preterm fetus with suspected fetal distress may reduce the risk of intrauterine hypoxia but increases the risks associated with prematurity. Benefit may be gained by deferring delivery, especially if there is uncertainty; however, evidence is lacking to guide this decision[

Continuing fetal distress during labour may indicate the need for delivery to be expedited. Speed of delivery should take into account the severity of fetal heart rate and blood sampling abnormalities and relevant maternal factors.The urgency of caesarean section should be documented using the following standardised scheme in order to aid clear communication between healthcare professionals about the urgency of a caesarean section.

Class 1: immediate threat to the life of the woman or fetus. Perform this as soon as possible after decision. 30 minutes is an appropriate audit standard.

Class 2: maternal or fetal compromise which is not immediately life-threatening. In most situations, within 75 minutes of making the decision. However, this is not achieved in a substantial proportion of cases, although it is uncertain how significant this is clinically.

- There is some evidence that very short 'decision-to-incision' time (<20 minutes) may be inversely proportional to neonatal outcomes, ie lower umbilical pH and Apgar scores[16].
- Amnioinfusion has been shown to be beneficial in suspected umbilical cord compression (particularly when there is oligohydramnios), with a reduced risk of caesarean section
- In this process, sodium chloride or Ringer's lactate is infused transcervically or, if the membranes are still intact, via a needle inserted under ultrasound guidance through the uterine wall.
- The potential adverse effects include umbilical cord prolapse, uterine scar rupture and amniotic fluid embolism.
- The current evidence on the safety and efficacy of this procedure means it is not recommended in the UK for intrauterine fetal resuscitation it is only undertaken under special arrangements that include audit and research

Term or post-mature fetuses may produce meconium-stained liquor. Meconium can be detrimental to the fetal lungs by producing a chemical pneumonia if inhaled:

- Significant meconium is defined as dark green or black amniotic fluid that is thick or tenacious, or any meconium-stained amniotic fluid containing lumps of meconium[
- If significant meconium is present, fetal blood sampling and advanced neonatal life support may be required at delivery.
- If there has been non-significant meconium, the baby should be observed at one and two hours.
- Amnioinfusion has been used to reduce the risk of meconium aspiration by diluting the meconium present; however, it is unclear whether this is beneficial and it is not used in routine practice.

Self-Check -1	Written Test

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

1.

2.

3

4.

5.

Note: **Satisfactory rating - 8 and 15 points Unsatisfactory - below 8and 15points**

You can ask you teacher for the copy of the correct answers.

Answer Sheet

Name: _____ Date: _____

Score = _____

Rating: _____

LG #32	LO #2- **Interpreting the impact of sexual and reproductive health on a client/ their family**

Instruction sheet

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Definition of Terms
  - Reproductive health
  - Gender Vs Sex
  - Adolescent health
- Historical development of sexual and reproductive health
- The global context of sexual and reproductive health
- Components of Reproductive Health
  - Definition and over view
- The impact of population on service delivery and access
- Assisting Client to access relevant screening programs
- Identifying of male /female reproductive health conditions
  - Sign and symptoms
- Identifying sexually transmitted and reproductive tract infections
  - Definition and over view of STD
  - Sign and symptom
  - Vulnerable group
  - Mode of transmission
  - Ways of prevention and Treatment
- Impact of sexual and reproductive conditions on activities of daily living

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the “Information Sheets”. Try to understand what are being discussed. Ask your trainer for assistance if you have hard time understanding them
4. Accomplish the “Self-checks” which are placed following all information sheets.
5. Ask from your trainer the key to correction (key answers) or you can request your trainer to correct your work. (You are to get the key answer only after you finished answering the Self-checks).
6. If you earned a satisfactory evaluation proceed to “Operation sheets
7. Perform “the Learning activity performance test” which is placed following “Operation sheets” ,
8. If your performance is satisfactory proceed to the next learning guide,
9. If your performance is unsatisfactory, see your trainer for further instructions or go back to “Operation sheets”.

Information Sheet 1 Definition of Terms

2.1. Definition of terms

2.1.1. Reproductive health

A state of complete physical, mental and social well being and not merely the absence of disease or infirmity in all matters related to the reproductive system and its functions and process. This definition is taken and modified from the WHO definition of health.

Reproductive health implies that people are able to have a responsible, satisfying and safer sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so.

One interpretation of this implies that men and women ought to be informed of and to have access to safe, effective, affordable and acceptable methods of birth control; also access to appropriate health care services of sexual, reproductive medicine and implementation of health education programs to stress the importance of women to go safely through pregnancy and childbirth could provide couples with the best chance of having a healthy infant.

Reproductive health is life-long, beginning even before women and men attain sexual maturity and continuing beyond a woman's child-bearing years.

2.1.2. Gender Vs Sex

- Sex- refers to biological and physiological attributes that identify a person as male or female
- Gender – refers to socially constructed roles ascribed to men and women

2.1.3. Adolescent health

Defined as constellation of methods, techniques & services that contribute to reproductive health and well being by preventing & solving rep health problem

It includes sexual health, the purpose of it in the enhancement of life & personal relations and not merely counseling and care related to reproduction & STDs.

Objective of RH care

- Provide factual information of SRH & a full range of reproductive health services.
- Enable & support people to reach responsible voluntary decisions about child bearing & FP methods and to have information, education & means to do so.
- To meet the changing RH needs

Information sheet 2	Understanding Historical development of sexual and reproductive health

2.2. Historical development of sexual and reproductive health

It is helpful to understand the concept and to examine its origins. During the 1960s, UNFPA established with a mandate to raise awareness about population "problems" and to assist developing countries in addressing them. At that time, the talk was of "standing

room only", "population booms, demographic entrapment" and scarcity of food, water and renewable resources. Concern about population growth (particularly in the developing world and among the poor) coincided with the rapid increase in availability of technologies for reducing fertility - the contraceptive pill became available during the 1960s along with the IUD and long acting hormonal methods.

In 1972, WHO established the Special Program of Research, Development and Research Training in Human Reproduction (HRP), whose mandate was focused on research into the development of new and improved methods of fertility regulation and issues of safety and efficacy of existing methods.

Modern contraceptive methods were seen as reliable, independent of people's ability to practice restraint, and more effective than withdrawal, condoms or periodic abstinence. Moreover, they held the promise of being able to prevent recourse to abortion (generally practiced in dangerous conditions) or infanticide.

Population policies became widespread in developing countries during the 1970s and 1980s and were supported by UN agencies and a variety of NGOs of which international planned parenthood federation (IPPF) is perhaps the most well known.

The dominant paradigm argued that rapid population growth would not only hinder development, but was itself the cause of poverty and underdevelopment.

Almost without exception, population policies focused on the need to restrain population growth; very little was said about other aspects of population, such as changes in population structure or in patterns of migration. Given their genesis among the social and economic elites, it is perhaps hardly surprising that the family planning programs that resulted were based on top-down hierarchical models and that their success was judged in terms of numeric goals and targets – numbers of family planning acceptors, couple-years of protection, numbers of tubal ligations performed.

Donors, anxious to demonstrate that their aid money was being well-spent, encouraged such performance evaluation indicators. In the drive for efficiency and effectiveness, they supported the establishment of free-standing “vertical” family planning bodies, generally quite separate from other related government sectors such as health, often, indeed, set up within the office of the president or the prime minister as a mark of their importance.

The 1994 ICPD has been marked as the key event in the history of reproductive health. It followed some important occurrences that made the world to think of other ways of approach to reproductive health. What was the impetus behind the paradigm shift that Cairo represents and that has been reinforced in the recent special session of the UN General Assembly? Three elements are of particular importance.

- The first was the growing strength of the women’s movement and their criticism of the over-emphasis on the control of female fertility - and by extension, their sexuality - to the exclusion of their other needs.

- A second key development was the advent of the HIV/AIDS pandemic; suddenly it became imperative to respond to the consequences of sexual activity other than pregnancy, in particular sexually transmitted diseases. But perhaps more important, it became possible (and essential) to talk about sex, about sexual relations outside of marriage as well as within it, and about the sexuality of young people.

• A third development, that brought a unity to the others, was the articulation of the concept of reproductive rights. An interpretation of international human rights treaties in terms of women's health in general and reproductive health in particular gradually gained acceptance during the 1990s. Three rights in particular were identified:

• The right of couples and individuals to decide freely and responsibly the number and spacing of children and to have the information and means to do so;

• The right to attain the highest standard of sexual and reproductive health; and,

• The right to make decisions free of discrimination, coercion or violence. Subsequent articulations of reproductive rights have gone further, so that, for example, maternal death is defined as a "social injustice" as well as a "health disadvantage" thus, placing an obligation on governments to address the causes of poor maternal health through their political, health and legal systems.

These strands became fused in the concept of reproductive health, which was first clearly articulated in the preparations for Cairo and which has become a central part of the language on population. The new paradigm reflects a conceptual linking of the discourse on human rights and that on health.

It proposes a radical shift away from technology-based, directive, top-down approaches to programme planning and implementation. It argues that it is possible to achieve the stabilization of world population growth, while attending to people's health needs and respecting their rights in reproduction.

It reinforces and gives legitimacy to the language of health and rights, and validates concerns raised by the international women's movement and by health professionals who had recognized the needs of people in sexuality and reproduction beyond fertility regulation.

Information sheet 3	Understand The global context of sexual and reproductive health

2.3. The global context of sexual and reproductive health

Development of Reproductive Health

Before 1978 Alma-Ata Conference

• Basic health services in clinics and health centers

Primary health care declaration 1978

• MCH services started with more emphasis on child survival

• Family planning was the main focus for mothers

Safe motherhood initiative in 1987

• Emphasis on maternal health

• Emphasis on reduction of maternal mortality

Reproductive health, ICPD in 1994

• Emphasis on quality of services

• Emphasis on availability and accessibility

• Emphasis on social injustice

• Emphasis on individuals woman's needs and rights

Millennium development goals and reproductive health in 2000

• MDGs are directly or indirectly related to health

• MDG 4, 5 and 6 are directly related to health, while MDG 1,2,3, and 7 are indirectly related to health

• World Summit 2005, declared universal access to reproductive health

• "Sexual and reproductive health is fundamental to the social and economic development of communities and nations, and a key component of an equitable society."

Reproductive Health Indicators for Global Monitoring

There are seventeen reproductive health indicators developed by the United Nation Population Fund (UNFPA). The list and description of these indicators are given below.

1. **Total fertility rate**: Total number of children a woman would have by the end of her reproductive period, if she experienced the currently prevailing age-specific fertility rates throughout her childbearing life. TFR is one of the most widely used fertility measures to assess the impact of family planning programmes. The measure is not affected by the age structure of the female population.

2. **Contraceptive prevalence (any method**): Percentage of women of reproductive age who are using (or whose partner is using) a contraceptive method at a particular point in time.

3. **Maternal mortality ratio:** The number of maternal deaths per 100 000 live births from causes associated with pregnancy and child birth.

4**. Antenatal care coverage:** Percentage of women attended, at least once during pregnancy, by skilled health personnel for reasons relating to pregnancy.

5. **Births attended by skilled health personnel:** Percentage of births attended by skilled health personnel. This doesn't include births attended by traditional birth attendants.

6. **Availability of basic essential obstetric care:** Number of facilities with functioning basic essential obstetric care per 500 000 population. Essential obstetric care includes, Parenteral antibiotics, Parenteral oxytocic drugs, Parenteral sedatives for eclampsia, Manual removal of placenta, Manual removal of retained products, Assisted vaginal delivery. These services can be given at a health center level.

7. **Availability of comprehensive essential obstetric care**: Number of facilities with functioning comprehensive essential obstetric care per 500 000 population. It incorporates obstetric surgery, anesthesia and blood transfusion facilities.

8. **Perinatal mortality rate**: Number of perinatal deaths (deaths occurring during late pregnancy, during childbirth and up to seven completed days of life) per 1000 total births. Deaths which occur starting from the stage of viability till completion of the first week after birth (22 weeks of gestation up to end of first week after birth, WHO). Total birth means live birth plus IUFD born after fetus reached stage of viability.

9. **Low birth weight prevalence**: Percentage of live births that weigh less than 2500 g.

10. **Positive syphilis serology prevalence in pregnant women:** Percentage of pregnant women (15–24) attending antenatal clinics, whose blood has been screened for syphilis, with positive serology for syphilis.

11. **Prevalence of anaemia in women**: Percentage of women of reproductive age (15 49) screened for haemoglobin levels with levels below 110 g/l for pregnant women and below 120 g/l for nonpregnant women.

12. **Percentage of obstetric and gynaecological admissions owing to abortion**: Percentage of all cases admitted to service delivery points providing in-patient obstetric and gynaecological services, which are due to abortion (spontaneous and induced, but excluding planned termination of pregnancy)

13. **Reported prevalence of women with FGM**: Percentage of women interviewed in a community survey, reporting to have undergone FGM.

14. **Prevalence of infertility in women:** Percentage of women of reproductive age (15–49) at risk of pregnancy (not pregnant, sexually active, noncontraception and non-lactating) who report trying for a pregnancy for two years or more.

15. **Reported incidence of urethritis in men**: Percentage of men (15–49) interviewed in a community survey, reporting at least one episode of urethritis in the last 12 months.

16. **HIV prevalence in pregnant women:** Percentage of pregnant women (15–24) attending antenatal clinics, whose blood has been screened for HIV, who are sero-positive for HIV.

17. **Knowledge of HIV-related prevention practices:** The percentage of all respondents who correctly identify all three major ways of preventing the sexual transmission of HIV and who reject three major misconceptions about HIV transmission or prevention.

The RH Rights

A basic set of reproductive rights, including rights to sexual and reproductive health is implied by the rights recognized in international human rights instruments.

Promoting women's human rights is an essential part of improving women health. Personal freedoms include the rights to liberty & security of person, to be free from all forms of discrimination, to privacy, to be free from torture and ill treatment, to information, opinion, & expression, and to marry & found a family, seek to protect all people from interference from other individuals, communities, and governments.

Some of these have particular relevance to coercive practices that have arisen under some population programs. Human rights to survival, to education, to health and health care, and to benefits of scientific progress can be seen as entitlements which can apply to safe motherhood, abortion, and STI treatment. The following examples demonstrate this.

- **Right to life** can be used to promote Safe motherhood and advocate against Maternal Mortality and Morbidity, Infanticide, Genocide, and Violence.
- **Right to Liberty & Security** of the Person, among other things, implies Protection of women and children from sexual abuse, Protection from medical intervention carried out without the informed consent of the person, female genital mutilation, sexual harassment, sexual abuse, forced pregnancy, forced sterilization, and forced abortion.
- **Right to be Free from all forms of discrimination** can be used to campaign for laws which prohibit discrimination against women and their effective enforcement , freedom from practices which are based on the idea of the inferiority of women and campaign against discrimination with regard to access to sexual and reproductive health services based on sex, marital status, and/or age, discrimination which denies access to nutrition and care, discrimination which denies legal protection against violence.
- **Right to Privacy of Service** can be used to establish guidelines ensuring women's privacy and campaign against forced pregnancy or continuation thereof

and breach of confidentiality, and laws/regulations requiring spousal or parental consent for contraception or abortion.

- **Right to Information and Education** can be used to campaign for youth access to information and education, programmes which enable service users to make decisions on the basis of full, free, and informed consent and discourage programmes which do not give full information on the relative benefits, risks, and effectiveness of all methods of fertility regulation, prohibition of access to sex education and information for youth and education systems which discriminate against pregnant students and/or young mothers.
- **" Right to be Free from Torture and Ill Treatment"** can be employed to advocate for the protection of women and children from sexual exploitation, prostitution, sexual abuse, coercion in any sexual activity, and domestic violence and fight against trafficking in women, degrading treatment especially during times of armed conflict, domestic violence, legislation which prohibits abortion on the grounds of rape

Objectives of Reproductive Health Care

The broad objectives for reproductive health care were stated as follows:

- to ensure that comprehensive and factual information and a full range of reproductive health services, including family planning are accessible, acceptable and convenient for users;
- to enable and support responsible voluntary decisions about child bearing and methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law and to have information, education and means to do so; and
- To meet the changing reproductive health needs over the life cycle and to do so in ways sensitive to the diversity of circumstances of local communities.

Information sheet 4	Components of Reproductive Health care

2.4. Components of Reproductive Health Care

The Components of reproductive health care include the following:

- quality family planning counselling, information, education, communication and services;
- prenatal, safe delivery and post natal care, including breast feeding;
- prevention and treatment of infertility;
- prevention and management of complications of unsafe abortion;
- safe abortion services, where not against the law;
- treatment of reproductive tract infections, sexually transmitted diseases and other conditions of the reproductive system;
- information and counselling on human sexuality, responsible parenthood and sexual and reproductive health;
- active discouragement of harmful practices, such as female genital mutilation;
- Referral for additional services related to family planning, pregnancy, delivery and abortion complications, infertility, reproductive tract infections, sexually transmitted diseases and HIV/AIDS, and cancers of the reproductive system, including breast cancer. Wherever possible, reproductive health and family planning programs should include facilities for the diagnosis and treatment of STDs, recognizing that they often increase the risk of HIV transmission.

The Integrated Approach to Reproductive Health Services

The key points related to this approach are summarized below:

- It addresses a range of client reproductive health needs;
- It saves time and money for clients as services are obtained during a single visit;
- A single service provider may offer a range of reproductive health services;
- Clients gain confidence in the service provider;
- Client satisfaction with and utilization of services increases;
- the coordination and cost effectiveness of services are improved; and

Opportunities to create client awareness of the availability of other services increases

2.4.1 Definition and over view

IMPORTANT INDICATORS IN MCH/RH

A health indicator is usually a numerical measure which provides information about a complex situation or event. When you want to know about a situation or event and cannot study each of the many factors that contribute to it, you use an indicator that best summarizes the situation.

For example, to understand the general health status of infants in a country, the key indicators are infant mortality rates and the proportion of infants of low birth weight. Maternal health care quality, availability and accessibility can be measured using maternal mortality.

Reproductive health indicators summarize data which have been collected to answer questions that are relevant to the planning and management of RH programs.

The indicators provide a useful tool to assess needs, and monitor and evaluate program implementation and impact. Indicators are expressed in terms of rates, proportions, averages, categorical variables or absolute numbers.

DEFINITIONS OF TERMS

FERTILITY The actual production of live offspring. Stillbirths, foetal deaths and abortions are not included in the measurement of fertility in population.

FECUNDITY: The ability to produce live offspring. Fecundity difficult to measure since it refers to the theoretical ability of a woman to conceive and to carry a foetus to term.

GRAVIDITY: The number of pregnancies (Completed or incomplete) experienced by a woman.

PARITY: The number of full term children previously borne by a woman, excluding miscarriages or abortions in early pregnancy, but including stillbirths.

GESTATIONAL AGE: Strictly speaking, the gestational age of the foetus is the elapsed time since conception. However, as the moment when conception occurred is rarely known precisely, the duration of gestation is measured from the first day of the last menstrual period.

Preterm: < 37 completed weeks; < 259 days

Term: 37 - < 42 completed weeks: 259 - 293 days

Post term: ≥ 42 weeks; ≥ 294 days

PUERPERIUM: The period from delivery of the placenta until involution of the uterus is complete - approximately 6 to 8 weeks.

PERINATAL: The period from the end of the 28 week of pregnancy to the end of the 7 day of life of the newborn.

NEONATAL: That period corresponding to the first 28 days of life.

INFANT: While in the lay literature this definition varies, in epidemiology, it refers to the "child" less one year of age.

CHILD: The operational definition of child varies. In epidemiology it usually refers to a one to four year old (i.e. 365 days to 4 years and 364 days).

UNDER FIVE: A “child" less than 5 years old.

INFANT MORTALITY RATE: Number of infants (≤ 1 year) who died during a year divided by the number of live births during the year: expressed in terms of 1000 live births.

$$IMR = \frac{\#\text{ infant deaths}}{1000 \text{ live births}}$$

The IMR can be taken as indicator of economic conditions and the state of nutrition, education, sanitation and medical care. The IMR in combination with the economic indicator GNP (or GDP) per capita is often used to judge social equity in a country.

NEONATAL MORTALITY RATE: Number newborns, up to age 28 days, who died during one year, per 1000 live births in the same year.

$$\frac{\#\text{ Deaths} < 28 \text{ days}}{1000 \text{ live births}}$$

POST NEONATAL MORTALITY RATE: Number of children dying in the post neonatal period (29 days to one year of age) during one year per 1000 live births.

$$\frac{\#\text{ Deaths } 29 - 365 \text{ days}}{1000 \text{ live births}}$$

The post neonatal mortality rate is generally taken as an indicator of the status of nutrition and infectious diseases in a country. The dramatic reduction in IMR in the industrialized countries of North America and Western Europe has been as a result of a decrease in post neonatal mortality following improvements in nutrition and prevention and control of infectious diseases. The neonatal morality rate remains relatively constant and currently constitutes the bulk of IMR in industrialized countries, while the post neonatal mortality rate is a far more important component of the IMR in developing countries than is neonatal mortality.

STILL BIRTH RATE: Number of deaths after the 28 weeks of pregnancy occurring during one year per 1000 total births (still births and live births)

$$\frac{\#\ \text{Deaths } 29 > 28 \text{ weeks gestation}}{1000 \text{ total births}}$$

PERINATAL MORTALITY RATE: Number of still births and deaths in the first 7 days of life in one year per 1000 total births.

$$\frac{\#\ \text{Stillbirths + deaths} < 7 \text{ days}}{1000 \text{ total births}}$$

The perinatal mortality rate can be taken as indicator of the quality of obstetric and neonatal care.

The stillbirth rate and the perinatal death rate require knowledge of the number of total deaths which is less likely to be available than live births. They are therefore less frequently used.

CHILD MORTALITY RATE: Number of deaths of children 1 - 4 years of age in a given year, per 1000 children in the same age group at the mid point of the year.

$$\frac{\#\ \text{Deaths 1 - 4 years}}{1000 \text{ children 1 - 4 years at mid year}}$$

The CMR is an indicator of socio economic development and mainly reflects environmental factors: nutrition, sanitation, injuries, and infectious diseases.

UNDER 5 MORTALITY RATE (U5MR): Number of deaths of children under 5 years of age, in a given year, per 1000 children in this age group at the mid point of the year.

$$\frac{\#\ \text{Deaths}\ < 5\ \text{years}}{1000\ \text{children} < 5\ \text{years at mid year or some authors prefer}}$$

$$\frac{}{1000\ \text{live births}}$$

Like the CMR, the U5MR is an indicator of economic conditions. It combines infant and child mortality (i.e. it indicates a cumulative probability of a child to reach age 5) and reflects the same factors. These two indicators are more difficult to obtain in developing countries than those based on live births, since accurate population figures are seldom available. The number of live births in a given area is more likely to be known.

MATERNAL MORTALITY RATE: Number of deaths of women from puerperal causes in one year per standard number of total (live) births. The usual number is 100000 so that the maternal mortality rate is

$$\frac{\#\ \text{Pregnancy related maternal deaths}}{100000\ \text{(live) births}}$$

The denominator in fact includes only live births since it is more readily available than total births. In reality MMR is a ratio or index rather than a rate, since the numerator should include all deaths related to pregnancy and the denominator should include all pregnancies, which is impossible to count.

Though not a rate the MMR gives a useful indicator of risk associated with pregnancy.

Lifetime probability of maternal survival = 1 - P maternal survival

Where P maternal survival = $(1 - (\text{MMR} \times .001)^{\text{TFR}}$

The MMR is a reliable indicator of the quality of obstetric care, as well of economic conditions in general.

Sexual health

- It is a state of physical, emotional, mental, and social wellbeing in relation to sexuality; not merely the absence of disease, dysfunctions or infirmity.

- Positive approach and respect to sexuality and sexual r/ships as well as the possibility of having pleasure and safe sexual experiences.

Sexual health issues

- Sexual wellbeing(including sexual satisfactions, pleasure and dysfunction)
- STIs & reproductive tract infections
- Unintended pregnancy and unsafe abortion
- Infertility
- Female genital mutilation

Sexuality

- A broad term covering what we physically are, what we feel, and do in relation to the sex we have as well the social rules existing for each gender
- Involves our thoughts, emotions, feelings, & attitudes, cultural beliefs, religion, our idea of what it means to a man & women/gender role

It may expressed in many ways (the way people talk, walk, sit, dress, look)

Component of sexuality

1. Sensuality

- Awareness & feeling about our own body & other people's bodies, especially the body of the sexual partner
- It reflects our body image (feel attractive)
- It helps to experience pleasure and release from sexual tension
- It helps as to have fantasies about sexual behavior and experiences

2**. Sexual intimacy**

- This is ability to be emotionally close to another human being and have that closeness reciprocated
- Sharing intimacy makes personal r/ships rich
- Focus on emotional closeness
- Need to open up and share feelings and personal information

3. **Sexual identity**

- A person's understanding of who she or he is sexually, including the sense of being male or female
- It comprises
    - Gender identity
    - Gender role
    - Sexual orientation

4. Sexual relations

- Successfully only if there is shared respect, responsibility and understanding
- Having appropriate information is important prior to initiating sexual activities in order to prevent unwanted pregnancy and STIs.

5. Sexualization

- Using sex or sexuality to influence, manipulate or control other people's behavior
- Includes withholding sex from a partner to get something
- Selling products with sexual massages, sexual harassment, sexual abuse and rap

Gender and reproductive health

Gender concepts

- Sex- refers to biological and physiological attributes that identify a person as male or female
- Gender – refers to socially constructed roles ascribed to men and women
- Gender bias- refers to gender based prejudice

Violence against women

HARMFUL TRADITIONAL PRACTICES

Harmful traditional practices are known to affect the adversely the health of people, the goals of equality, the political, and social rights, and the process of economic development. Common harmful traditional practices in Ethiopia include: Female Genital Mutilation, Uvelectomy, Milk Teeth Extraction, Early Marriage, Marriage by Abduction, and Food Prohibition. However, over a hundred harmful traditional practices have been reported.

Female Genital Mutilation (FGM): is the removal of the whole of or some parts of the external female genital organs. The practice is not unique to Ethiopia and it is believed that various societies instituted it at different times throughout the ages.

Reasons for FGM

- Prevention of virginity – To be virgin is very important in most African cultures. Since it is very painful to have intercourse after FGM, it is believed that young girls will not indulge themselves in premarital sex and thus stay pure for their husbands.
- Enhancement of fertility – Certain societies believe that circumcised girls become pregnant very easily.
- Increase matrimonial opportunities – In societies where marriages are arranged by relatives, they make sure that the bride is circumcised. In some areas the bride price goes up with the tightness of the vagina.
- Prevention of promiscuity – In some African societies, it is believed that uncircumcised women have too much sexual desire that they might indulge in sex, both outside and inside the wedlock.
- Maintenance of cleanliness – Some communities believe that the female external genitalia produce secretions that make the woman wet and produce bad odour.
- Aesthetics – For some ethnic groups the female genitalia are ugly to look at and thus should be removed.
- Prevention of stillbirths in Primigravidae – Some communities such as those found in Burkina Faso and Nigeria believe that the clitoris has the power to kill the first born, if during delivery, the baby's head touches it.
- Societal privileges and positions – People who fail to accept traditions of a group may not get the privileges and benefits available to the rest of the rest of the community and thus are ostracized. Heads of households in which daughters and wives are not circumcised may lose the benefits
- Improvement of male sexual performance – It is believed that when the penis comes in contact with the clitoris, the man gets excited very fast, leading to an early ejaculation which may lead to matrimonial disharmony.
- Maintenance of good health – Circumcision is said to keep the women healthy and

cure her from diseases such as epilepsy, hysteria, insanity, depression, and melancholia.

Types of Female Genital Mutilation:

1. Sunna – In this type of mutilation the prepuce of the clitoris is incised.
2. Cltoridoectomy – is the removal of the prepuce and the clitoris.
3. Excision – is the removal of the prepuce, clitoris and the labia minora. The wound is left to heal naturally, by keeping the legs close together. The healing takes place by scaring which is tough, making sexual intercourse painful.
4. Infibulation or Pharonic circumcision – The prepuce, clitoris, labia minora, labia majora and the lower part of the vagina are removed. The edges are stitched together with thorn or thread leaving a small opening for the passage of urine and menstrual blood. After excision the legs are tied together. The wound is left to heal taking about two to three weeks. In societies where infibulation is practiced, the economic value of a girl depends on her virginity. There is support for infibulations from an economic point of view. The concept of preserving family honour further strengthens this practice.

Complications of FGM

Immediate Complications

Haemorrhage

Fall in blood pressure, Shock
Urinary Tract Infection
Renal failure
Septicaemia
Tetanus

Delayed and Long Term Complications

- Dysmenorrhoea – Painful menstruation
- Pelvic abscess

- Dysparenuia – Painful sexual intercourse
- Recurrent Urinary Tract Infections
- Infertility
- Calculus – stone formation in the urinary tract
- Bleeding due to forceful intercourse or use of instruments to cut the scar tissue open
- Recto – vaginal or vesico – vaginal fistula
- Prolonged labour leading to uterine inertia, haemorrhage, ruptured uterus, shock and death
- Still births, foetal distress due to prolonged or obstructed labour
- Sub – normal children due to foetal distress and cerebral anoxia.

What should be done?

- Education of women
- Creating awareness among youth, community leaders, religious leaders and men about the health, social and economic problems of FGM.
- FGM is unethical and should not be performed in health institutions
- Social and medical assistance should be made available to women on whom FGM has been conducted
- Training of educators and health workers on the hazards of FGM
- Support to programs that aim at abolishing FGM

Early Marriage (EM):

It has been a common practice, particularly in much of rural Ethiopia to get girls married at an early age as 10 – 15. The young adolescent or preadolescent girl is not ready physically and psychologically for intercourse, pregnancy, child bearing and child rearing.

Some of the reasons for early marriage are:

- Parents desire to see the marriage of their daughters and their grandchild before they die
- Strengthen the family or business ties between the two parties to be married
- Avoid the possibility of a daughter not getting married or becoming not eligible for

marriage

- Avoid premarital sex or loss of virginity and its consequences

Harmful effects of early marriage include:

- Psychological effect on the girl bride leading to different somatic problems. The small genitalia are traumatized ending up in tears, bruising, cystitis, and damage to the urethra.
- Preclampsia, prolonged and obstructed labour leading to fistula formation
- Haemorrhage and shock at delivery
- Still born babies
- Loveless marriage often ending in divorce
- Difficulty in managing a household by the young girl
- Deprivation of the girl of her education leading to poor opportunity for employment and gainful income

Marriage by abduction: is a gross violation of women's rights. It has been common in some parts of Ethiopia. In some cases the girl may be willing and ready to proceed with the marriage. In these cases the consequences are less grave. However, when the girl objects and fights against the abductors she can be severely hurt and even get killed.

Reasons for Marriage by Abduction:

- Refusal or anticipated refusal of consent by parents or girl
- Avoid excessive wedding ceremony expenses
- Ease the economic burdens of the conventional bride price
- Outsmart rivals when the girl has many suitors and/or the inclinations of the girl or her parents are not predictable
- Difference of ethnic origins or economic status of partners may also be reasons for possible abduction.

Harmful effects of marriage by abduction

- Battering, inflicting bodily harm, suffocation, and severe disabilities and death may ensue.
- Conflict created between families may lead to feuding lasting for generations.

There are incidents of ethnic conflicts due to marriage by abduction

- The outcome may be an unhappy, unstable and loveless marriage
- Psychological stress on the girl. Might end up in suicide.
- There are large expenses related to conflict resettlements as compensation to the family or for court cases
- Discontinuation of schooling and other opportunities for the girl.

Other harmful traditional practices that are prevalent in Ethiopia include uvulectomy, milk teeth extraction, food prohibitions for mothers, eye brow incision, and soiling the umbilicus of the new born with cow dung. Each of these traditional practices has mistakenly perceived advantages.

Uvulectomy is supposed to prevent problems of feeding (swallowing), avoid noisiness and improve speech. Milk teeth extraction is assumed to prevent diarrhoea and cure various diseases. Eye brow incision is undertaken to prevent eye diseases and blindness. Certain food items which contain important nutrients are believed to cause diseases in women and children. These harmful traditional beliefs and practices might result in serious health outcomes including serious bleeding, acquiring dangerous and fatal infection and malnutrition.

Suggested intervention strategies to minimize and eliminate harmful traditional practices include:

- Educate the community and the leaders by using acceptable and effective methods
- Provide legal support against the negative aspects of traditional practices and formulate legislative measures to eliminate them
- User friendly health facilities to deal with problems related to harmful traditional practices
- Endeavour to educate practitioners of harmful traditional practices about the dangers of such practices
- Imposing punishment on such practitioners if they persist with the practice

  Should a victim be willing to testify or discuss his/her dilemma, present the case to the public as example to others.

1. **Sexual assault**

- ➢ It may be defined as any sexual act performed another person with out consent
- ➢ It includes rape, child sexual abuse and r/ship to abuser
- ➢ It occurs in all age, racial, and socio-economic groups
- ➢ The very young, the mentally & physically handicapped and the very old are particularly susceptible
- ➢ It causes serious impact on the victim's health such as unplanned pregnancy, STDs, physical trauma and many psychological problems

- Rape and abduction
- ➢ The use of threat, physical force, intimidation sexual contact and non consent of victim
- ➢ It is a crime of violence that puts victim at risk for physical injury, emotional disturbances, unwanted pregnancy, and STDs.
- ➢ The victim of sexual assault may be premenarchial, child-bearing, or post menopausal age groups

Quality of RH care means

- Client should be treated with dignity
- Privacy should be maintained
- Short waiting time to be served
- HW should be inform about the available services
- Facilities should be clean
- Client flow should be organized
- Adequate flow of essential supplies
- Supervision should be involve

Reproductive right and polices

In particular three reproductive right and polices are identified

1. The right of couples & individuals to decide freely & responsibility the number & spacing of children and to have information and means to do so.
2. The right to attain the highest standards of sexual and reproductive health

3. Right to make decision free of discrimination, coercion or violence

Summary

- The physical and biological differences of male and female is called sex
- Sex can't be changed

Example:- woman can be pregnant & give birth, man can make woman pregnant

gender is a learned process and can be changed

Example:- she will be a great cooker! He will be a great doctor

Comparison of gender Vs sex

sex	gender
Physical & biological d/ce	not biological
Refers whether people are born male or female	Refers to the expectation of society from someone, because they are female & male
Naturally and biologically determined	is socially prescribed roles & responsibilities not natural
Unchanged	Can be changed

Gender based violence

Violence: WHO defines violence as the international use of physical force or power

Violence against women

- It is any act of gender based violence that result in physical, sexual, or psychological harm suffering to the women

Example:- rape, sexual harassment, abduction…

Impact of sexual violence on women's health

A. **Physical health**

- ❖ STDs & HIVAIDS
- ❖ Unwanted pregnancy
- ❖ Abortion
- ❖ APH
- ❖ Physical injuries, loss of vision, hearing & disfiguring

- ❖ FGM (hemorrhage, labor compilation)

B. **Mental health**

- Depression, fear, PTDS, low self esteem

Prevention of violence against

- make awareness on under laying cultural beliefs ,and social structure that perpetuate it
- Women empowerment
- conduct community awareness (drama, small group discussions on violence)

recognize international & national convention on women's right

providing family planning service

Definitions:-

- ❖ family planning means having the number of children you want when you want them
- ❖ (Includes planning for pregnancies)
- ❖ refers to action taken by individual , couples to have the desired number of children and spacing when they want
- ❖ preventing unwanted pregnancy by safe methods

Objectives

- limit family size
- adequately space children
- reduce maternal & children monthly (related to complications of unwanted and high risk pregnancies)
- help infertile couples to bear children

Benefits of FP

- FP helps women to protect themselves from un wanted pregnancies and its effects

  (I.e. MMR decreases)
- FP saves children life by helping women space birth (I . e occurrence of LBW ,malnutrition and mortality rates will be reduced)
- incidence & prevalence of STI including HIV/AIDS is reduced

- plays a great role in the development of communities, nations &the world at large both Socially and economically
  - Family planning means "FAMILY HEALTH" the following monuments show how FP Promotes family health

Food & other recourses are available

Anemia esp. iron deficiency is less common

Material mortality risk s decrease

Incidence & prevalence of STI including HIV/AIDS is reduced

Low birth weights are less likely

Young children & infants are less likely to die

Happier sexual r/ship can continue

Educational opportunities increase for all family

Accurate &early pregnancy testing is available

Lactation contributes to optimal health of the child

Teenage pregnancy rate decrease

Health screening tests are performed

None contraception benefits of FP

- Prevision from STDs,HIV/AIDS including PID and cervical cancer by using condom
- Oral contraception has also protective effect agent ovarian, endometrial cancer and PID

❖ To achieve the above objective of FP the service should be

✓ A range of contraceptive choices

✓ Counseling service for well informed consent

✓ Screening follow-up and referral services

✓ Integrated services like treatment of STIs

Types of FP methods

- There are several types of FP methods. For convenience we can classify it as follows

1. Natural methods

1.1 A. location amenorrhea method (LAM)

B. abstinence

C. coitus interrupts

1.2. Fertility awareness method

A. calendar method

B. basal body temperature

C. cervical mucus method

D. symptothermal

2. Artificial (modern methods)

A. barrier method

- Male & female condom
- Spermicidal tablets and foams
- Sponge and vaginal diaphragm

B. hormonal methods

- Contraceptive pills
- Implants
- Inject able contraceptives

C. IUCD

D. Surgical methods

- Tubal ligation
- Vasectomy

Natural methods

- These are the method of avoiding pregnancy by observation of natural signs and symptoms of fertile and infertile phases of menstrual cycle

A. Lactation amenorrhea method (LAM)

- Breast feeding delays the onset of ovulation and the return of menses after child birth
- It encourages starting another method at the proper time
  - A woman is naturally protected Vs pregnancy when

1. Her baby gets at least 85% of his/her feeding as breast milk & she feeds her baby both day and night and
2. Her menstrual periods have not returned, and
3. Her baby is less than 6 month old

- LAM is 98% effective with in the first 6 months

Advantages of LAM

- Effectively prevent pregnancy for at least 6 month
- Encourage the best B/F patterns
- No need to do during sexual intercourse
- Cost effective
- Health benefit for baby

Disadvantages of LAM

- Effectiveness after 6 month is not certain
- Inconvenient for some women, esp. working mother
- No protection Vs STDs/HIV
- Risk of HIV transmission (MTCT)

❖ A woman who uses LAM should be encouraged to:

1. Breast feed often (8-10 times a day)
2. Breast feed properly-counseling on B/F technique
3. Start other foods when the baby is 6 months old
4. Start another FP method when:
   - Her menstrual period return or
   - She reduced/stopped breast feeding or
   - Her baby is 6 month old or
   - She no longer wants to rely on LAM

B. Coitus interrupts

- Extremely common practice

- Coitus takes place but the penis is withdrawn immediately before ejaculation
- It prevents fertilization by stopping contact between spermatozoa and ovum

Advantage	Disadvantage
• Costs nothing	- for some couples decrease pleasure
• Requires no device	- doesn't for give if incorrect or inconsistent use
• Available in any situation	- high failure due to lack of self control
• Cause no medical side effect	- not protective VSTIs/HIV

NB .withdrawal is considerably better method of contraception than no method at all

C. abstinence

- The definition varies according to each individual or culture
- Some define as refraining from all sexual behavior in clouding masturbation
- Other defame abstinence as ref raining from any sexual behavior involving genital contact

  In our course
- This method is voluntary decision requiring much discipline and motivation

Fertility awareness method

- if this method are used the couple avoids inter course on the days during the menstrual

  Cycles when the women is most likely to become pregnant
- Fertility awareness is based on two foundations:

1. A scientific knowledge of the anatomy & physiology of male &female reproductive system
2. An understanding of the sign and symptoms that occur naturally during the menstrual cycle

A. Calendar method (rhythm method)

- It is designed to predict the time of fertility based on previous menstrual cycle

- Before relying on this method the women records the number of days in each menstrual cycle for 6-12 months. The 1st day of menstrual bleeding is always counted as a day one
- The women subtract 18 from the length of her shortest records cycle and 11 days from the length of her longest recorded cycles.
- The couples should avoid sex or uses a barrier method or withdrawal during the fertility time

B. Basal body temperature (BBT)

- It is used to identify the end of the fertile time
- The woman must take her body temperature at the time each morning before she gets out of bed
- The effect of progesterone during the secretary phase make the temperature rise by 0.2 or 0.5 0c (0.4-1 0 f) for at least 3 consecutive days

❖ The couple avoid sex; uses other method from the first day of menstrual bleeding until the women's temperature has risen above her regular temperature and staged for 3 full day (i.e. ovulation is occurring and passed)

✓ After this the couples can have unprotected sex until her next menstrual bleeding period begins.

Sites for taking temperature

1. Orally ……for 5 minutes
2. Vaginally ……. for 3 minutes
3. Rectally ……for 3 minutes

C. Mucus method

- Under the influence of estrogen & progesterone the cervical gland secret mucus which undergoes certain change that are recognizable as the vaginal entrance
- The observation of the mucus begins on the first day of the menstrual flow. The menstrual flow may be followed by 2-4dry days
- As estrogen level rises mucus will appear and become progressively wetter
- this fertile mucus is thin watery slippery &lubricative& we call it spinbrkeit

- the couple should avoid un protected sex starting from when she feels cervical secretion

❖ Beginning of fertile ti me → is the first day of mucus after menses

❖ End of fertile time → is night of the fourth after last day of fertile mucus

Instruction to client

- The woman should feels the vulva each day (morning)before any sexual arousal to detect the presence of mucus
- Carefully observe and record the characteristics of mucus
- Record the last most fertile mucus of the day
- Abstain intercourse on alternative dry day to minimize confusion in recognizing mucus secretion and seminal fluid
- Abstain from intercourse on the day when mucus appears regardless of its consistency until the 3rd evening after peak days then after inter course can be resumed to the onset of the next menstrual flow

Advantage of fertility awareness method

- no physical side effect
- very little or no cost
- Once learned may require no further help from health care provider
- Immediately reversible
- Religiously acceptable
- No effect on breast feeding and breast milk
- Involves men in family planning

Disadvantage

- not well effective
- Takes time to identify without fertile time
- Requires long period without inter course
- Not effective an less both couples are in evolved

FP counseling

- FP counseling is face to face communication in which clients are helped to make In formed & voluntary decision &act up on that decision
- what is needed for good counseling particularly for new clients there are six 6(six)

❖ Principles

❖ Topics to cover & steps in counseling procedures

6 principles

1. treat each client well
   - ✓ polite, respect openness
2. interact
   - ✓ Listen learn & resbound to the client
   - ✓ Encourage client to talk ask question
3. Tailor:-information to the client
4. Avoid to much in formation
5. provide the method the clients wants
6. Helps the client

Topics to be covered

1. Effectiveness- for some client effectiveness is the criteria to choose the method
2. Advantages &dis advantages
3. Side effects & practical instructions
4. How to use –clear &practical instructions
5. STD prevention
6. When to return - clients are welcomed any time for any reason ,for danger signs follow up appointments

<u>Steps in counseling</u>

- This is a sex steps process .those steps can be remembered with word GATHER
- good counseling is flexible
- some steps can be carries out in group presentation or group discussion & other need

one-to-one discussion

1. G-great clients in an open respectful manner
2. A-Ask clients about themselves= help clients talk about their needs, wants & any doubts
3. T- tell clients about choices
4. H-help clients an informed choice
5. E-explain fully how to use the chosen method
6. R-return visits should be welcomed

Characteristics of counselors

- Personal qualities and attitudes
- A desire to work with people
- Respect for the right and ability of people to make their own decision
- Un biased attitudes towards various population groups speak the client's languages

Information sheet 5	The impact of population on service delivery and access

2.5. The impact of population on service delivery and access

- During the 1960s, UNFPA established with a mandate to raise awareness about population “problems” and to assist developing countries addressing them. At that time, the talk was of “standing room only”, “population booms, demographic entrapment” and scarcity of food, water and renewable resources.

- Concern about population growth (particularly in the developing world and among the poor) coincided with the rapid increase in availability of technologies for reducing fertility - the contraceptive pill became available during the 1960s along with the IUD and long acting hormonal methods.

- In 1972, WHO established the Special Program of Research, Development and Research Training in Human Reproduction (HRP), whose mandate was focused on research into the development of new and improved methods of fertility regulation and issues of safety and efficacy of existing methods.

- Modern contraceptive methods were seen as reliable, independent of people’s ability to practice restraint, and more effective than withdrawal, condoms or periodic abstinence. Moreover, they held the promise of being able to prevent recourse to abortion (generally practiced in dangerous conditions) or infanticide.

- Population policies became widespread in developing countries during the 1970s and 1980s and were supported by UN agencies and a variety of NGOs of which international planned parenthood federation (IPPF) is perhaps the most well known.
- The dominant paradigm argued that rapid population growth would not only hinder development, but was itself the cause of poverty and underdevelopment. Almost without exception, population policies focused on the need to restrain population growth; very little was said about other aspects of population, such as changes in population structure or in patterns of migration. Given their genesis among the social and economic elites, it is perhaps hardly surprising that the

family planning programs that resulted were based on top-down hierarchical models and that their success was judged in terms of numeric goals and targets – numbers of family planning acceptors, couple-years of protection, numbers of tubal ligations performed. Donors, anxious to demonstrate that their aid money was being well-spent, encouraged such performance evaluation indicators.

- In the drive for efficiency and effectiveness, they supported the establishment of free-standing “vertical” family planning bodies, generally quite separate from other related government sectors such as health, often, indeed, set up within the office of the president or the prime minister as a mark of their importance.

- The 1994 ICPD has been marked as the key event in the history of reproductive health. It followed some important occurrences that made the world to think of other ways of approach to reproductive health. What was the impetus behind the paradigm shift that Cairo represents and that has been reinforced in the recent special session of the UN General Assembly? Three elements are of particular importance.

- The first was the growing strength of the women’s movement and their criticism of the
- over-emphasis on the control of female fertility - and by extension, their sexuality to the exclusion of their other needs.
- A second key development was the advent of the HIV/AIDS pandemic; suddenly it became imperative to respond to the consequences of sexual activity other than pregnancy, in particular sexually transmitted diseases. But perhaps more important, it became possible (and essential) to talk about sex, about sexual relations outside of marriage as well as within it, and about the sexuality of young people.
- A third development, that brought a unity to the others, was the articulation of the concept of reproductive rights. An interpretation of international human rights treaties in terms of women’s health in general and reproductive health in particular gradually gained acceptance during the 1990s.

Three rights in particular were identified:

- The right of couples and individuals to decide freely and responsibly the number and spacing of children and to have the information and means to do so;
- The right to attain the highest standard of sexual and reproductive health; and,
- The right to make decisions free of discrimination, coercion or violence.
- Subsequent articulations of reproductive rights have gone further, so that, for example, maternal death is defined as a “social injustice” as well as a “health disadvantage” thus, placing an obligation on governments to address the causes of poor maternal health through their political, health and legal systems. These strands became fused in the concept of reproductive health, which was first clearly articulated in the preparations for Cairo and which has become a central part of the language on population. The new paradigm reflects a conceptual linking of the discourse on human rights and that on health. It proposes a radical shift away from technology-based, directive, top-down
- approaches to programme planning and implementation. It argues that it is possible to achieve the stabilization of world population growth, while attending to people’s health needs and respecting their rights in reproduction. It reinforces and gives legitimacy
- to the language of health and rights, and validates concerns raised by the international women’s movement and by health professionals who had recognized the needs of people in sexuality and reproduction beyond fertility regulation

  In summary, three broad strategies are available to governments that consider current and expected population growth rates higher than desirable.

  1. Strengthen family planning programs to provide women with the knowledge and means to regulate their fertility. These programs can lower fertility if they successfully reach a broad clientele with high quality services because there is still a substantial unmet need for contraception and abortion. Meeting this need will reduce unwanted fertility and hence population growth.

2. Emphasize “human development" in particular education, gender equality and child health. Improvements in these factors are instrumental in reducing desired family size. Since desired family size is still above two in much of the developing world, population growth will continue until fertility preferences decline further.

3. Encourage delays in child bearing. This is a relatively new but potentially effective policy option aimed at reducing population momentum. Even though this momentum is responsible for nearly half of future population growth it has thus far received virtually no attention in policy discussions. One of the more desirable ways to achieve childbearing delays is by raising investments in education especially of girls, because it is associated with later marriage and onset of child bearing.

Information sheet 8	Identifying sexually transmitted and reproductive tract infections

2.8. Identifying sexually transmitted and reproductive tract infections

2.8.1 Definition and over view of STD

providing care for STDS & HIV/AIDS

Definition of terminologies (1)

- Sexually transmitted diseases (STDs)
  - Refers to infections with sexually transmitted pathogens that cause recognized symptoms or clinical signs in individuals.
- Sexually transmitted infections (STIs)

STIs:- are the infections that are passed from one person to another through sexual contacts

- Refers to infections that may or may not symptoms and recognizes the asymptomatic and sub-clinical nature of many of these infections.
- Batter relates to the concept of reproductive tract infections (RTIs)
- The term has been adopted by a wide range of scientific societies and publications.

The main etiology of STI:-

- Bacterial
  - Gonorrhea
  - chlamydia
  - syphilis
  - Gardner Ella vaginalis
- Viral :-
  - Herpes simplex
  - Genital warts
  - Cytomegalovirus &HIV
- Protozoal :- trichomoniasis
- Fungal :- vaginal candidiasis

- Ectoparasitis:- scabies ,lies pubis

Reproductive tract infections (RTIs)

- Iatrogenic infection:-infuction due to medical and other procedures ,e.g. staphylococcus ,auras pseudomonas specious
- Endogenous infection :-over growth of organisms ,.e.g. candida albicans and bacterial vaginosis.
- Sexually transmitted infections (STIs)

Mode of transmission of (STIs)

- Four known modes :-

1. Penetrative unprotected sexual inter course
2. Mother-to- child
3. Transfusions or contact with blood
4. Breast milk –e.g. HIV

Factors effecting transmissions

A) behavioral factors

- Frequent change of partners
- Having more than of partners
- Continuing to have sex with symptoms of an STI
- Not using condoms

b) personal factors

- delay in getting treatment
- absence of symptoms
- preference of alternative health source
- access and affordability
- reluctance to attend facilities four fear of stigma or discrimination
- not taking full treatment course
- Lack of health education
- cost of treatment

c) socio–economic

- Poverty

d) biological and clinical

- asymptomatic STIs
- age
- sex
- vulnerability
- circumcision

Distribution of STIs

- Prevalence higher in urban than rural
- Higher in unmarried& young adults
- More frequent among females than males between the ages of 14-19
- After the age of 19, there is slight male preponderance

Vulnerable groups

- ✓ Poor & homeless persons
- ✓ Pregnant adolescent
- ✓ Migrant workers
- ✓ Substance abuser
- ✓ Abused individuals
- ✓ Sexually active teenage girls
- ✓ Women or men who have several sexual partners
- ✓ Sex workers and their clients ,
- ✓ Men or women whose jobs separate them from their regular sexual partners for long periods of time

The link between STI & HIV

Both share same behavior & mode of transmission

- ❖ STIs facilitate the transmission of HIV
- ❖ The presence of HIV can make people more susceptible to the acquisition of STIs
- ❖ The presence of HIV increase the
    - Severity of STIs
    - Their resistance to standard treatment

Approaches to STI diagnosis

- ❖ Classical approaches

- Etiological diagnosis – using lab to identify the causative agent
- Clinical diagnoses- using clinical experience to identify causative agent

❖ Syndromic : identifying & treating the syndrome

- This is based on group of symptoms patient complains & clinical signs you observe during examination
- Different organisms that Couse STIs give rise to limited number of syndromes

<u>Syndromes approach</u>

- This is approach entails identification of a clinical syndrome and giving treatment targeting all the locally known pathogens which can cause the syndrome
- syndromic approach focuses on common STIs like syphilis ,chancroid ,gonorrhea ,chlamydial infection ,trichomoniasis and candidacies

❖ A syndrome is a group symptoms that the p/t describe the combined with the signs that providers observe during examination

<u>Why syndromic approach ?</u>

❖ STI sign and sytoms are really specific causative agent
❖ Laboratories are either non-existent or non functional due lack of resource
❖ Dual infection are quite common and both clinician and laboratory my miss one of them
❖ Waiting time for lab result my discourage some patients
❖ failure of cure at first contact
❖ shortage of STI specialists?

Components of syndromic management of STIs

❖ treat for (the Cause/causes)
❖ educate the patient
❖ counsel if needed
❖ promote/ provide condoms
❖ partner management
❖ offer HIV counseling and testing if both facilities are available
❖ advice to return if necessary

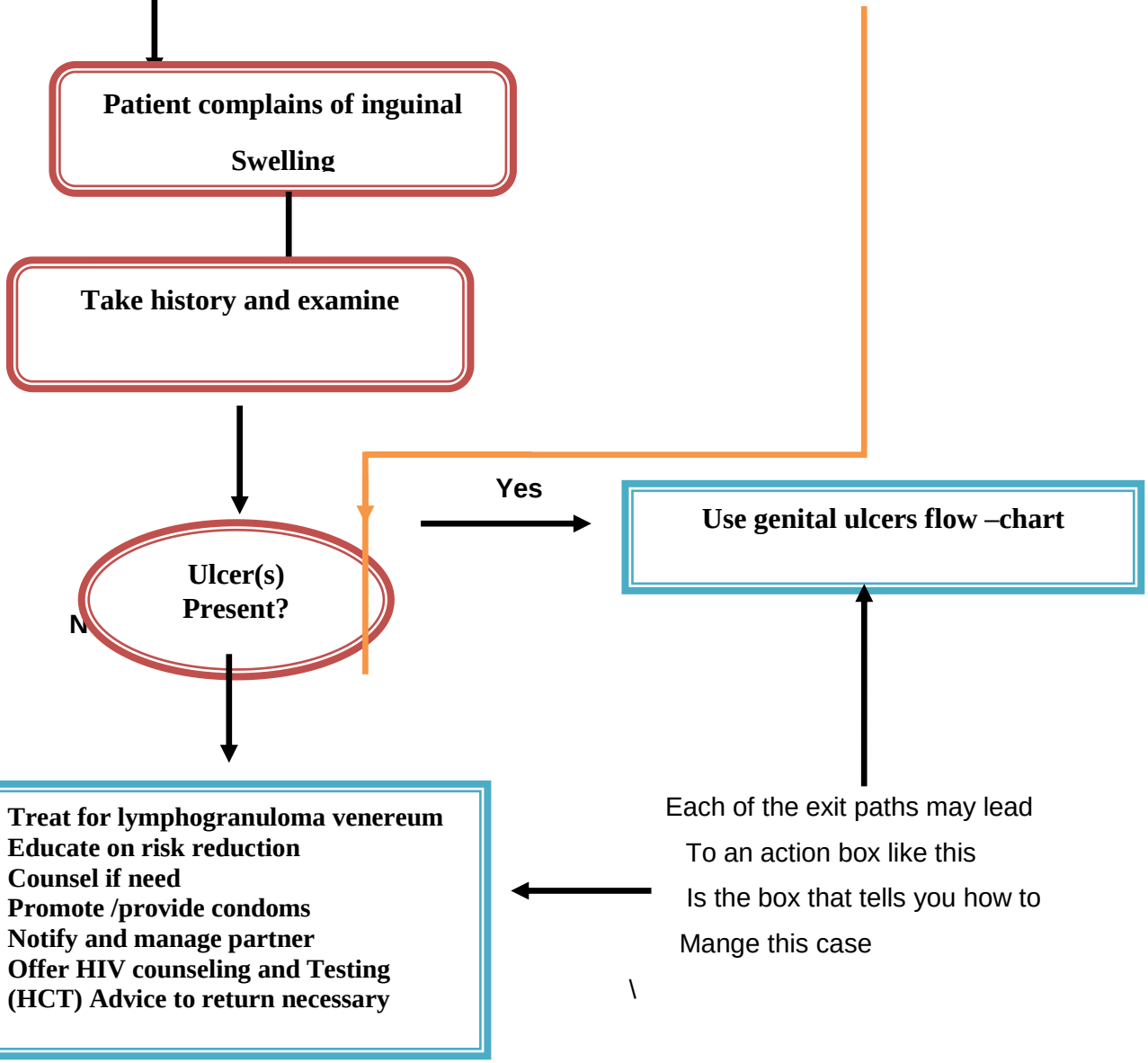
STI management flow-charts

- for each syndrome a clinical algorithm is developed to be followed in managing STI patients
- a flow –chart / an algorithm is a decision and action tree.
    - OR
- ”set of rules or procedures that must be followed in solving a problem
- each flow-chart is made up of a series of three steps:-
    1. the clinical problem/the patient’s presenting symptom
    2. the decision that needs to be taken
        - asking you to obtain information and make a decision
        - take history or examine the patient
        - A decision box always has two exit paths (Yes/No)
    3. The action that needs to be carried out
        - Tells you how to manage the case

Here is an example

This is the **clinical problem** Box, stating a symptoms it heads The flow- chart and has only One exit path

A decision box, asking you to obtain information and make a decision. A decision box always has two exit paths one for a “yes” Answer and one for a No answer



Each of the exit paths may lead To an action box like this Is the box that tells you how to Mange this case

\

- They can be used at any time in all types of health facilities,
- They suggest clear decisions,
- Most cases do not need to be referred,
- Standard treatment guidelines are established

The main STI syndromes

- Vaginal discharge
- Urethral discharge
- Genital ulcer
- Lower abdominal pain
- Scrotal swelling
- Inguinal bubo
- Neonatal conjunctives

SYNDROME	MOST COMMON CAUSE
Vaginal discharge	Vaginitis (trichomoniasis, candidacies) Cervicitis (gonorrhea, chlaymdia)
Urethral discharge in men	Gonorrhea, chlamydia
Genital ulcer	Syphilis, chancroid, herpes
Lower abdominal pain	Gonorrhea, chlamydia, mixed anaerobes
Scrotal swelling	Gonorrhea, chlamydia
Inguinal bubo	LGV, chancroid
Neonatal conjunctives	Gonorrhea

Advantage of syndromic

- Problem oriented (resbonds to patient's symptoms)
- Highly sensitive & does not miss mixed infections
- Treats the patient at first visit
- Can be implemented at primary health care level
- Use flow charts with logical steps
- Provides opportunity & time for education & counseling

Limitations of syndromic management

- Misses sub-clinical infection
- Needs validation study

- Require prior research to determine the common causes of particular syndrome and its treatment

- Needs training

Key features & steps in syndromic STI case management

- Syndromic diagnosis and treatment
  - Use flow charts: steps to be taken through a process of decision making & action
  - History taking and examination
- Education on risk reduction
- Providers initiated HIV counseling & testing
- Condom promotion and provision for safer sex
- Partners notification and management
- Follow up
- Referral

Criteria for the selection of STI drugs

- High efficacy
- Low cost/affordable
- Acceptable toxicity and tolerance
- Organism resistance unlikely to develop or likely to be delayed
- Single dose
- Availability
- Preferably oral administration
- Not contraindicated for the pregnant or lactating women

Management of STIs

1)Urethral discharge syndrome

Etiology

- N. gonorrhea
- C.trachomitis
- T. vaginalis

Clinical feature

- Dysuria

- Urethral discharge
- Mental excoriation

Recommended treatment for UDS

Ciprofloxacin 500 tablet mg po stat

- OR

Spectinomycin 2 grams IM stat

- PLUS

Doxycycline 100 MG po bid for 7 days

- OR

Tetracycline 500 mg po bid for 7 days

OR

Erythromycin 500 mg bid for 7 days if the patients has contraindications for tetracyclines (children, pregnancy)

2) Genital ulcers

Vesicular

- HSV2: genital herpes

Non-vesicular

- T. palladium: syphilis
- H. ducreyi: chancroid
- trachamoticsserovars L1-L3:lgv
- C . Granulomatous (Calymmatobacteriumgranulomatis): granuloma inguinal

Recommended treatment

Benzanthine penicillin 2.4million units IM stat or (in penicillinallergy)

Doxycycline 100 mg bid for 14 days

Plus

Ciprofloxacin 500mg bid orally for 3 days

Or

erythromycin tablets 500mg qid for 7days plus

Acyclovir 400mg TID orally for 10 days (or 200mg five timesperday of 10 days)

If only vesicular, recurrent & multiple ulcer

Acyclovir 400mg TID orally for 10 days (or 200mg five times per of days)

3) vaginal discharge syndrome

Common causes of vaginal discharge

- Sexually transmitted
  - Neisseria gonorrhea
  - Chlamydia trachomatis
  - Trichomonasvaginilis
- Endogenous infection
  - Gardnerellavaginalis
  - Candida albicans

Initial evaluation of patients with vaginal discharge include

- Risk assessment
  - Age less than 25 years
  - Having multiple sexual partner in the last three months
  - Having new partner in the last three moths
  - Having ever traded for sex
- Clinical speculum examination to determine site of infection

Vaginitis	Cervicitis
Trichomoniasiscandiasis bacterial vaginosis	Gonorrhea & chlamydia
Most common cause of vaginal discharge	Less common cause of vaginal discharge
Easy to diagnose	Difficult to diagnose
No complication	Major compilication
Partner treatment unnecessary	Partner treatment needed
Complication: PID, PROM, pre-term labor, infertility , chronic pelvic pains	

Recommended treatment

Risk assessment positive	Risk assessment negative
Ciprofloxacin tablets 500 mg po stat Or Spectinomycin 2 gmim stat	Metronidazole 500 mg bid for 7 days Plus

Plus Doxycycline 100 mg po bid for 7 days Plus Metronidazole 500 mg bid for 7 days	Clotrimazole vaginal tabs 200 mg at bed time for three days

Recommended regimens for pregnant women

- Metronidazole is not recommended for use in the first trimester of pregnancy
- Treatment may be given where early treatment has the best chance of preventing adverse pregnancy out comes
    - Metronidazole ,200 or 250 mg orally ,3 times daily for 7 days , after first trimester
    - Metronidazole 2g orally , as a single dose , if treatment is imperative during the first trimester of pregnancy

lower abdominal pain

Recommended treatment

Out patient	In patent
Ciprofloxacin tablet 500 mg po stat Or Spectnomycin 2 gm IM stat PLUS Doxycycline tablet 100 mg po bid for 14 days admit if there isno improvement with in 72 hours	Ceftriaxone 250 mg IV / IM daily Or Spectinomycin 2 mg IM bid Plus Doxycycline 100 mg bid for 14 days Plus Metronidazole 500 mg bid for 14 days or chloramphenicol 500 mg IV qid.

Scrrotal swelling

Recommended treatment

Ciprofloxacine 500mg po stat

Or

Specttinomycine 2 gmim stat

Plus

Doxycycline 100 mg po bid for 7 days

Or

Tetracyline 500mg po for 7 days .

Inguinal Bubo syndrome

- Apainful , often fluctuant , swelling of the lymph nodes in the inguinal region (groin)
- The common sexually transmitted pathogens associated with inguinal bubo include :
    - C.trachomatis (serovarsL1 ,L2 and L3):LGV:
    - H.ducreyi:Chancroid
    - C.Granualomatis (Calymmatobacteriumgranulomatis):Granulomaingunale
- Rarely systemic sysptoms except LGV

Recommended Treatment

Ciprofloxacine 500 mg bid orally for 3 days

Plus

Doxycyline 100mg bid orally for 14 days

Or

Erythromycine 500 mg poqid for 14 days

Neonatal Conjunctivitis

- It is a purulent conjunctivitis occurring in a baby less than one month of age. >>Sight –threatening condition
- Common presentation are Redness , Swelling of the eye lid &discharge from the eye (stick Eye)
- The Most important causes are gonorrhea,(20%-70%)and chlamydia (15%-35%)
- If caused by gonorrhea blindness often flows
- Foe babies older than one month ,the cause is unlikely to be an STI

Prevention

As soon as the baby is born ,carefully wipe both eyes with dry ,clean cotton wool

Then apply 1% silver nitrate solution or 1% tetracycline eye ointment into the infant's eyes other option ;0.5% erythromycin ointment or 2.5% povidone iodine solution

Treatment

Ceftriaxone 125mg IM stat (max 50mg /kg)or

Spectinomycin 25 mg /kg IM stat (max75mg)plus

Erythromycin 50 mg /kg PO in four divided doses for 14 day

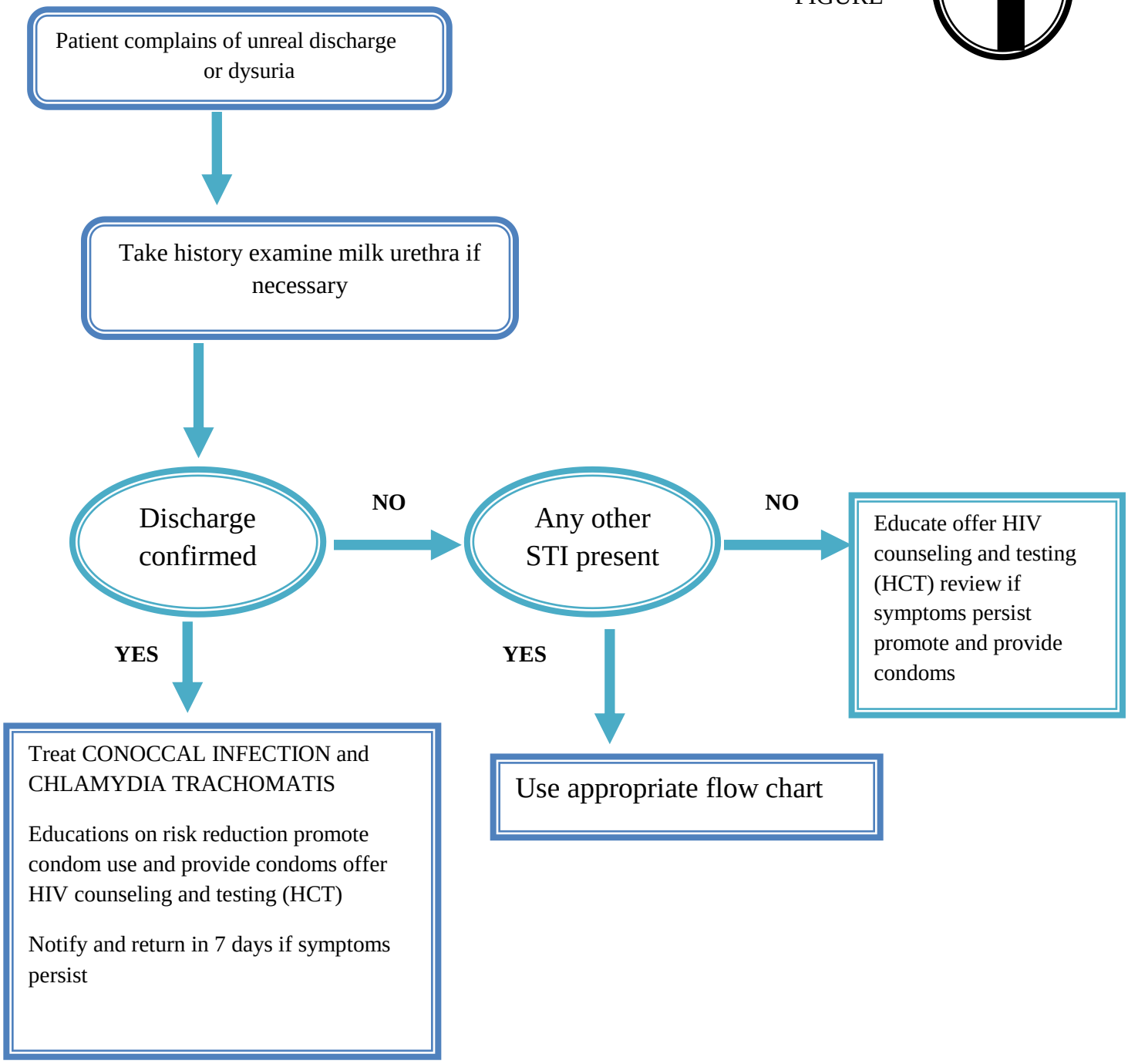
Approaches to STI case Management

Service provides generally use one of the following three diagnostics approaches etiologic, clinical and syndromic approach the table below outlines some of the advantage and disadvantages of these diagnostics approaches

diagnostic Approaches	Advantages	Challenges
Etiologic		
this is done by identifying the causative agent using laboratory test and giving treatment targeting to the pathogen identified	A voids over treatment conforms with traditional training satisfies patients who feel not properly attended to can be used to screen asymptotic patients	identifying the 30 or more STI causative agents requires skilled personal and sophisticated lab equipment testing facilities usually not available at primary health care level where level where a large number of patients seek care for STI lab test are expensive time consuming and result may be not be reliable delay in treatment and reluctance of patients to wait for lab results mixed infections often overlooked thus miss treatment /under treatment and continued can lead to complications and continued transmission
Clinical		
uses clinical experience to identify symptoms which are typical for a specific for a specific STI then giving treatment targeted to the suspected pathogen(s)	saves time for patients reduces lab expenses	requires high clinical skill mixed infections often overlooked doesn't identify asymptomatic STIs
Syndromic		
identification of clinical syndromic and giving treatment targeting all the locally known pathogens	complete STI care offered at first visit simple rapid and inexpensive patients treated for possible mixed infections Accessible to a broad range of health workers curtails unnecessary referral to hospitals	risk of over treatment requires prior researches to determine the common causes of particular syndromes Asymptomatic infection are missed has low specificity and positive predictive value for detecting cervical infection in women presenting with vaginal discharge

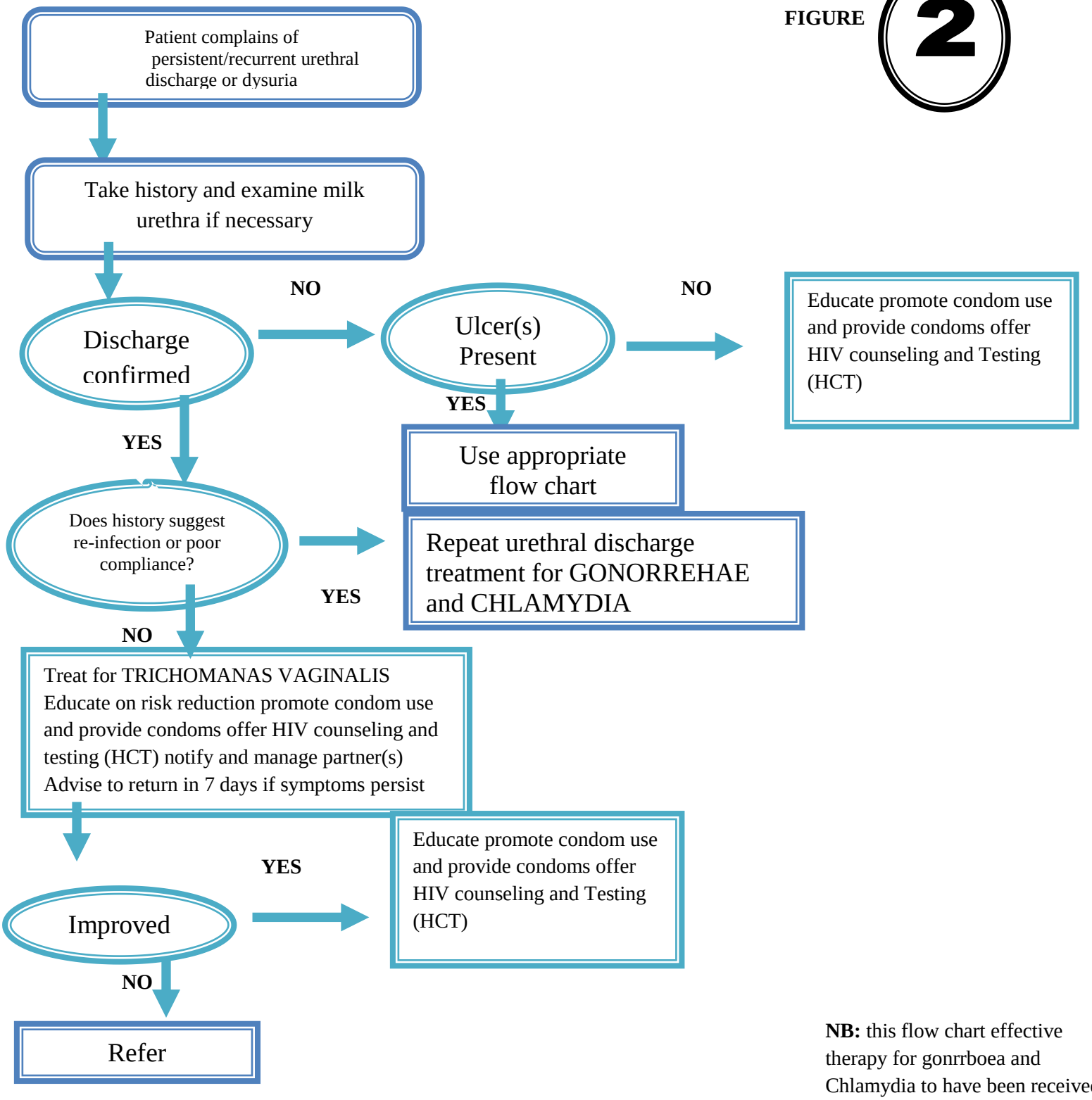
URETHRAL DISCHARGE SYNDROME

FIGURE 1



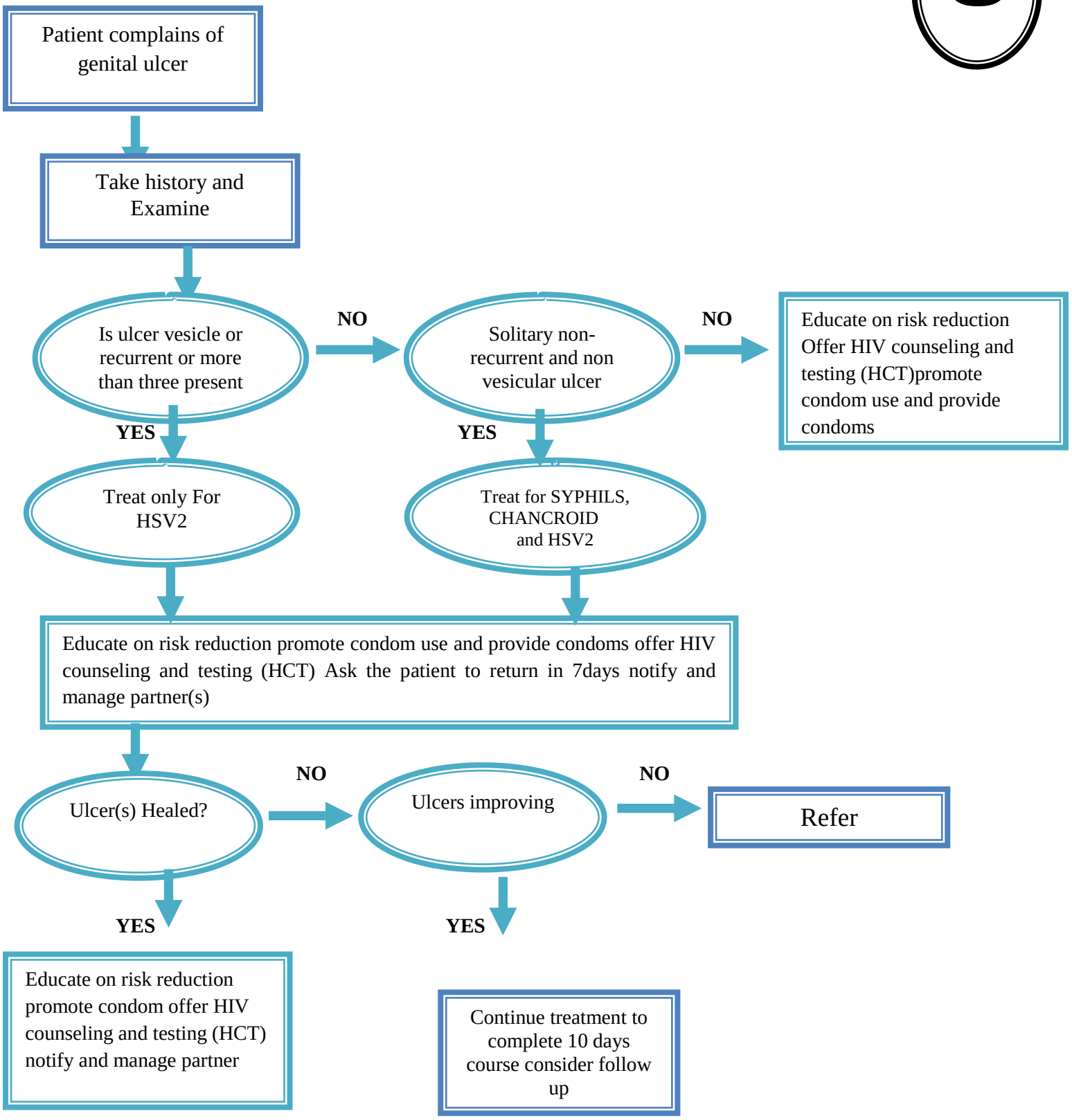
URETHRAL DISCHARGE SYNDROME

FIGURE 2

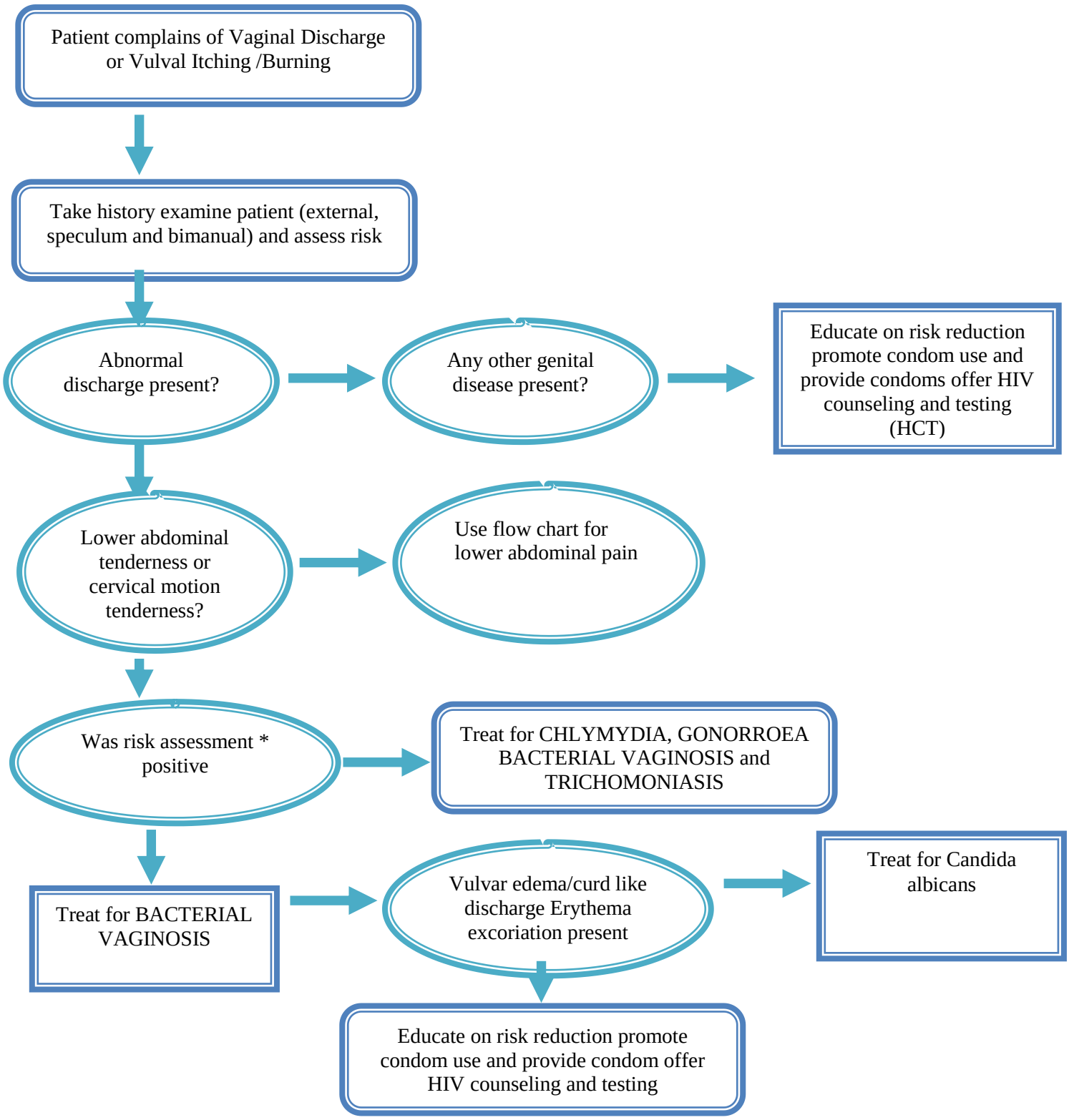


NB: this flow chart effective therapy for gonrrboea and Chlamydia to have been received and taken by the and taken by the patient prior to this consultation

GENITAL ULCERS SYNDROME **FIGURE 3**



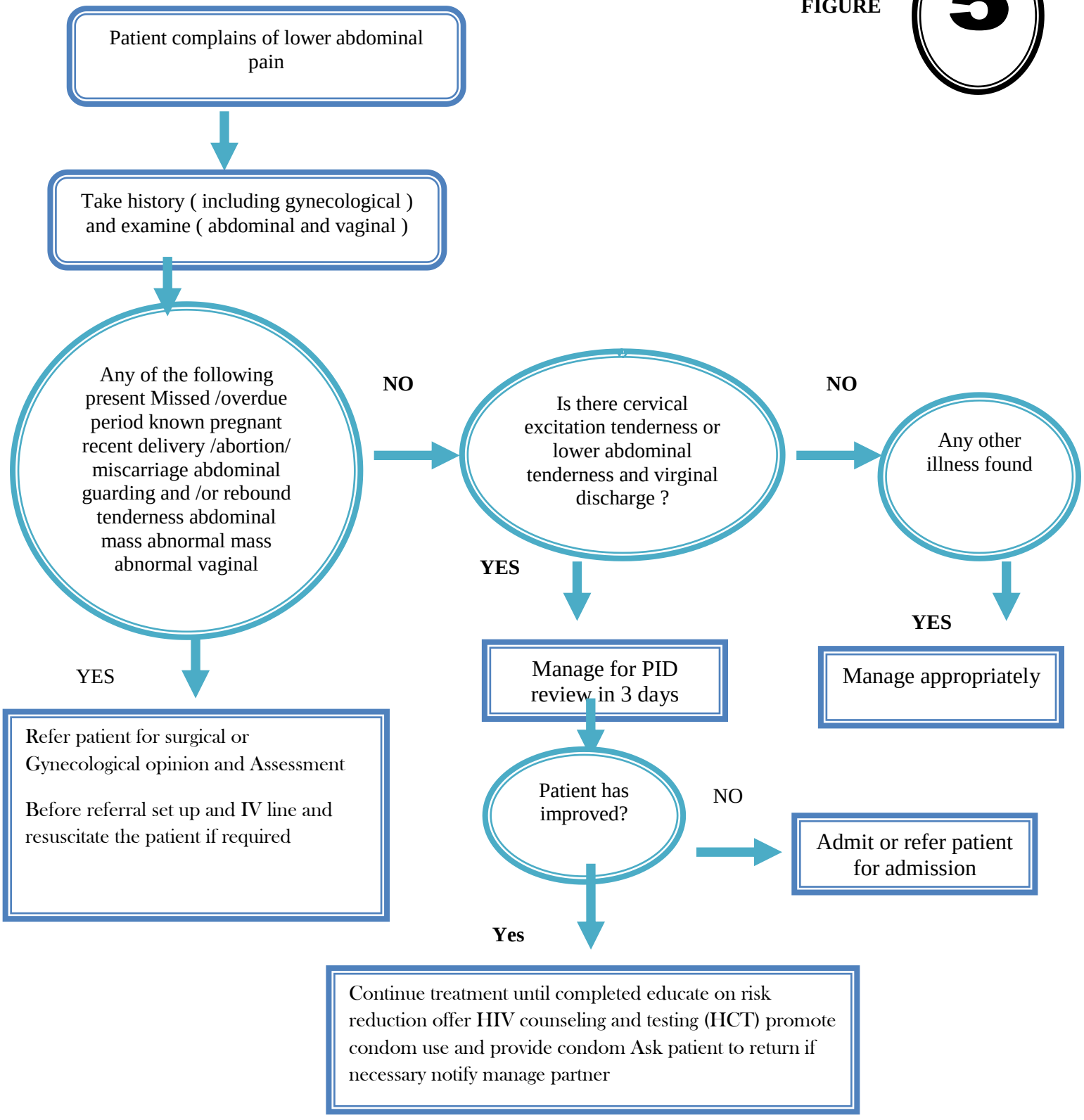
VAGINAL DISCHARGE (SPECULUM AND BIMANUAL FIGURE



- Risk factors include age <25 years trading sex multiple or new partner in the last 3 month

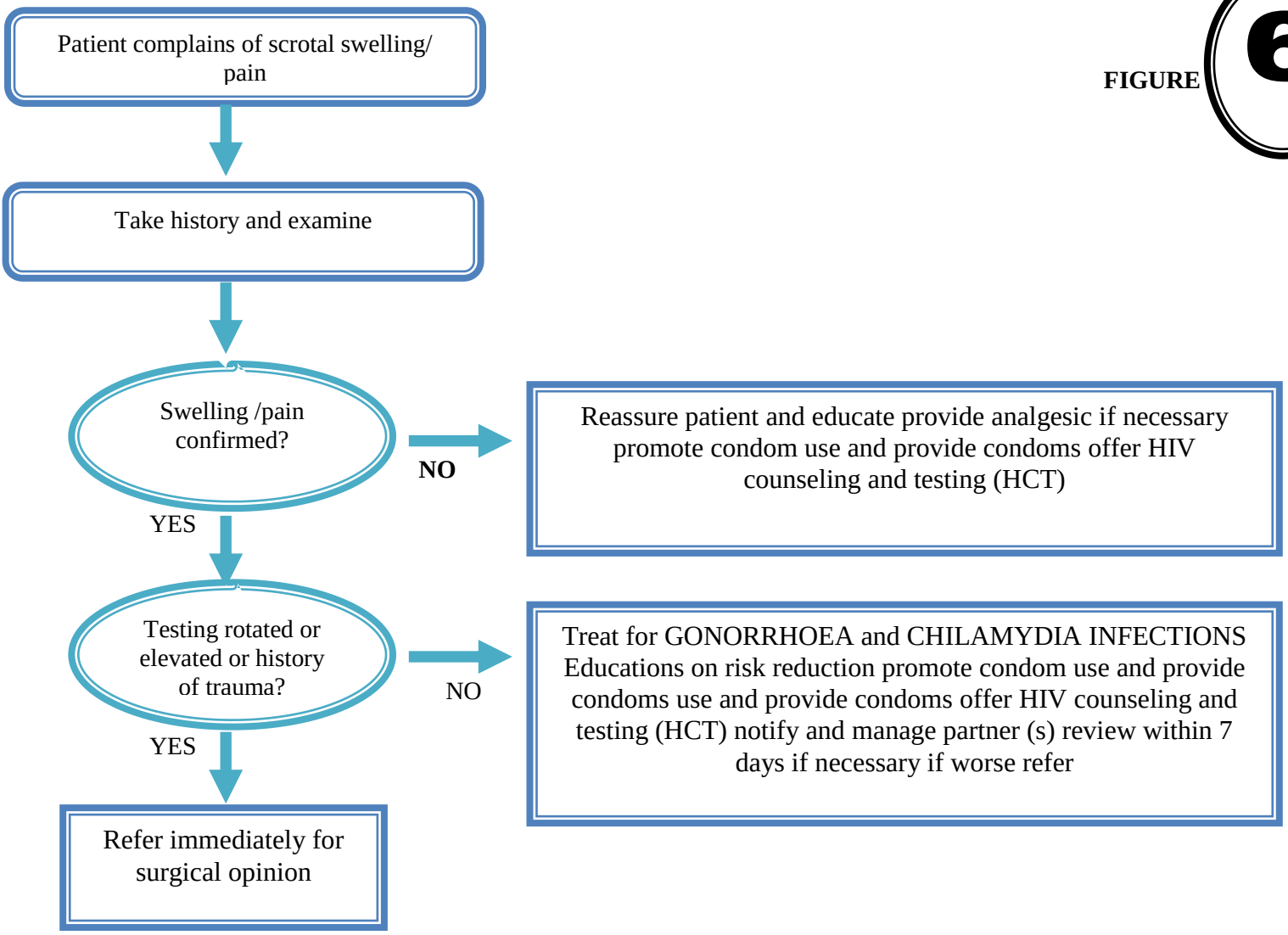
LOWER ABDOMINAL PAIN

FIGURE 5

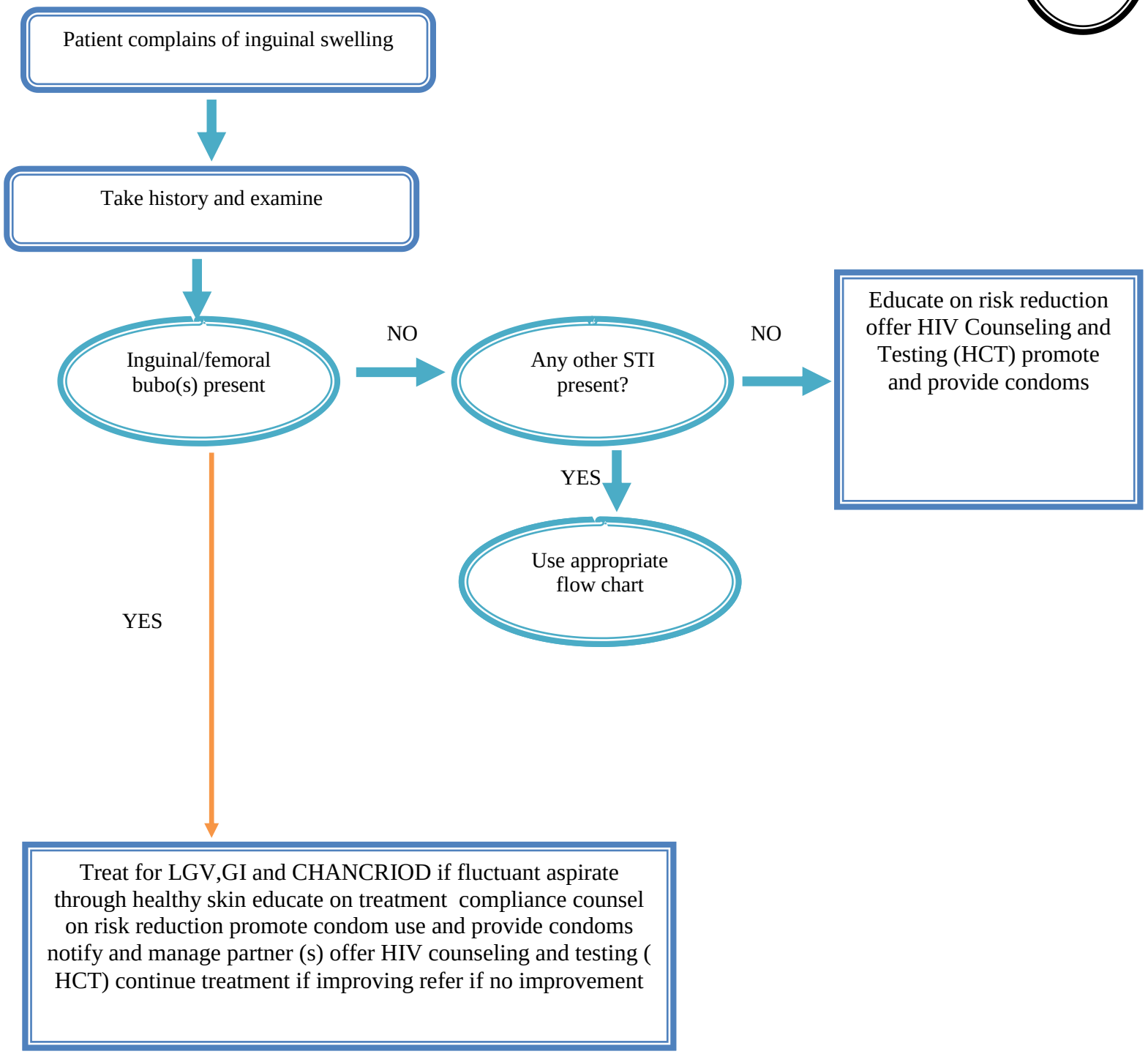


SCROTAL SWELLING

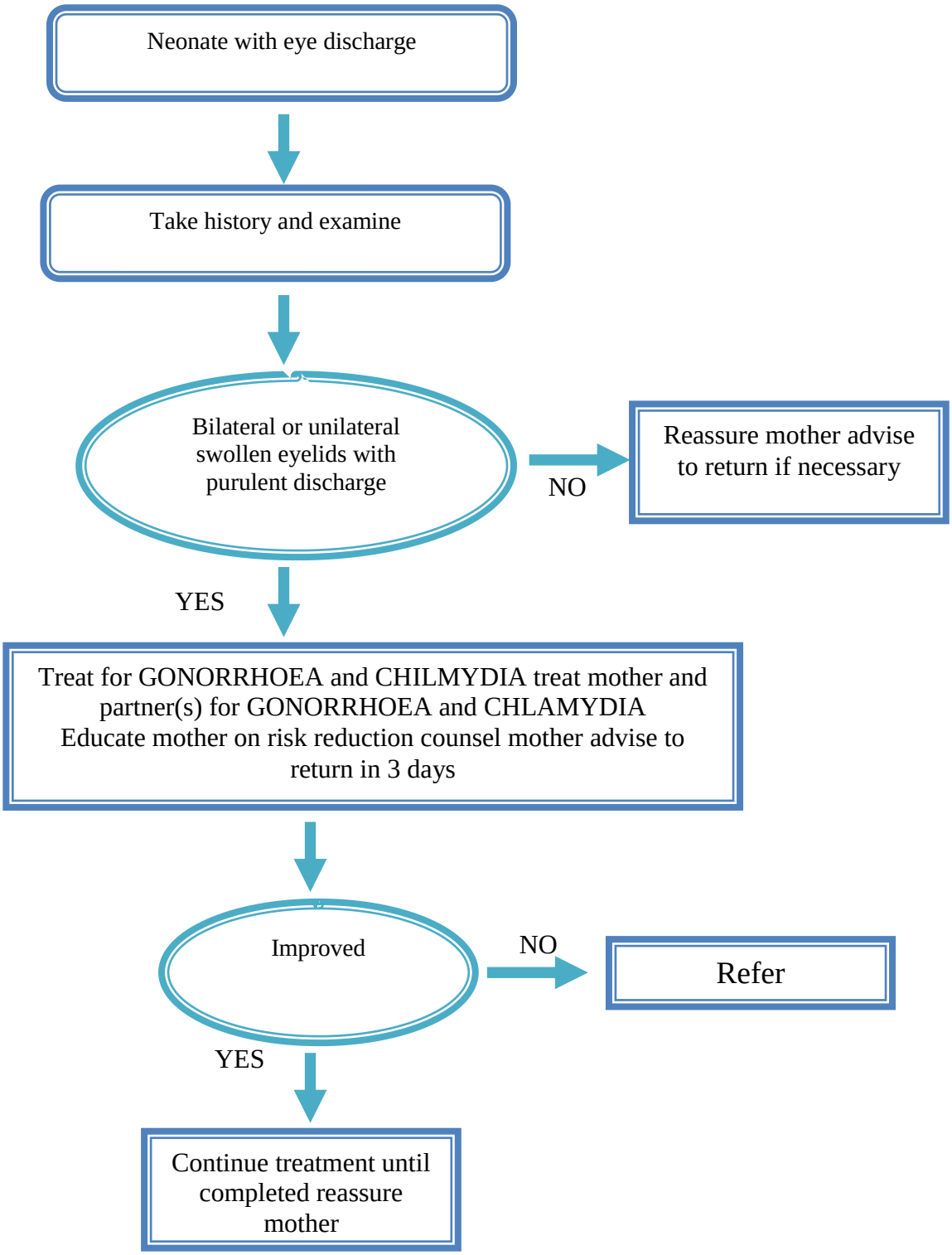
FIGURE 6



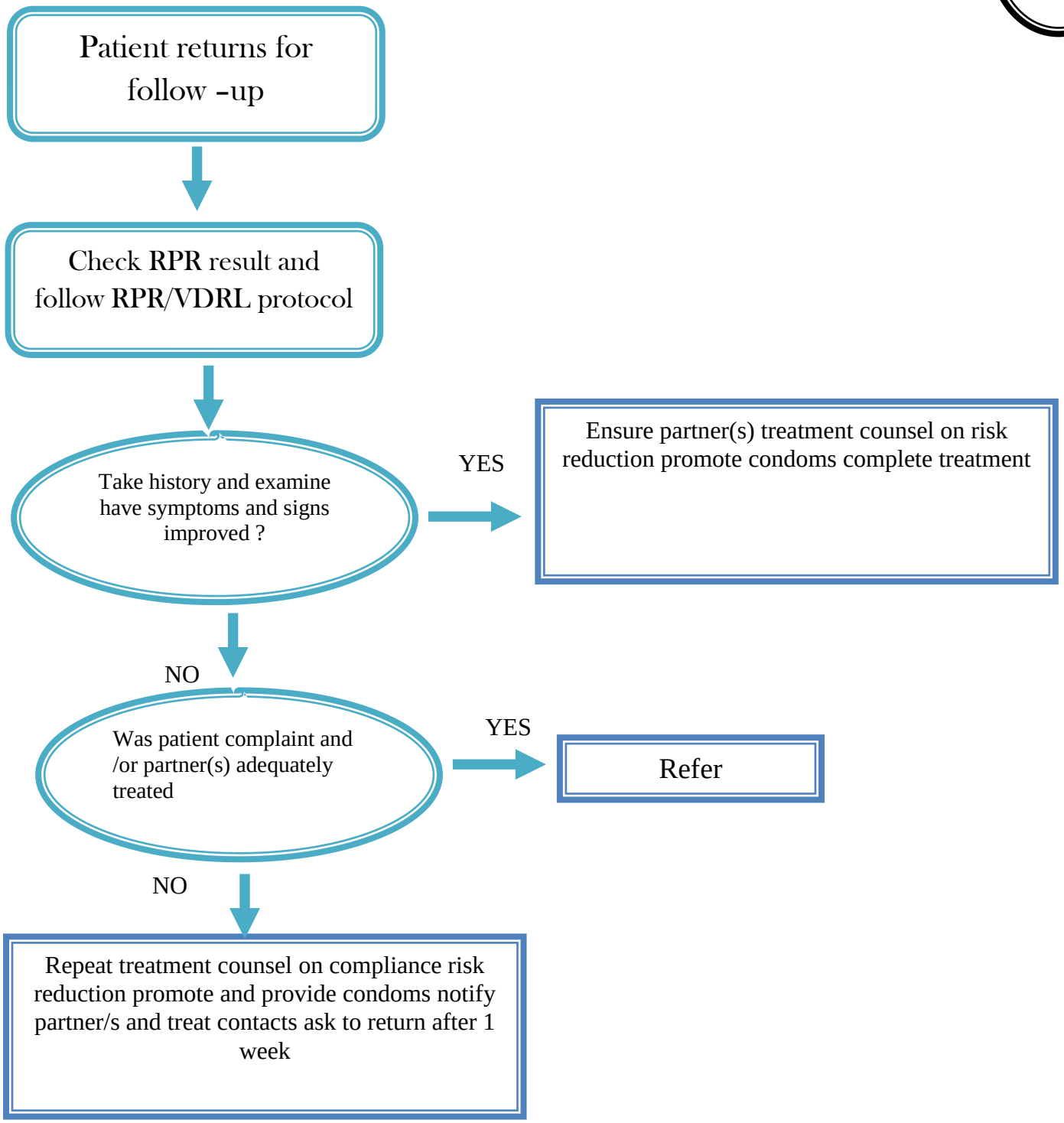
INGUINAL BUBO **FIGURE 7**



NEONATAL CONJUNCTIVITIS **FIGURE**



FOLLOW-UP VISIT **FIGURE 9**



Strategies of STI prevention and control

The main aims of STI prevention and control are

Interrupting the transmission of STI

Prevent development of disease and complication

Reducing the risk of acquiring and transmitting HIV

Prevention and control of STIs involves

Promotion of safer sexual behavior

Promotion of health care-seeking behavior

Early diagnosis and treatment

Targeting vulnerable groups

Primary prevention

Safer sexual behaviors

Abstention from sexual activity altogether

Delaying the age of sexual debut

Life-long mutual monogamy

Condoms (male or female) are used

Engaging only in non penetrative sex acts public education compaigns

Program and service package

Providing quality STI care

Providing non-stigmatizing and non-discriminatory service

Ensuring a continuous supply of highly effective drugs & condoms

Secondary prevention

Case finding and screening

Examining minimally symptomatic women attending clincs for maternal and child health and family planning

Partner notification and treatment

Education investigation and treatment of targeted population groups who may have placed themselves at risk of infection

Testing of blood donors for syphilis hiv and hepatitis b

Community –based screening

Provision of prophylactic antibiotics agaistmajor stis for victims of sexual violence

Integration of STI service with in primary cre

Training of service providers incase management

Rapid and effective treatment of people with STIs;

Comprehensive case managemant of SYI syndromes

To make a correct diagnosis

To provide correct antimicrobial therapy for the STI syndrome

To educate on the nature of the infection ,safer sexual behavior ,safer, sex sex acts and risk reduction in order to prevent or reduce future risk –talking behavior

To educate on treatment compliance

To demonstrate the correct use of condoms and provision of condoms

To advise on how the patient ‘s partner may be treated and to issue a partner referral card for for the patien to pass on his/her partner (s)

Potential complications of STIs:-

Chronic abdominal pain

Pelvic inflammatory disease (PID)

Infertility (both in men and women)

Death due to sepsis, ectopic pregnancy or cervical cancer,

Spontaneous abortion, stillbirth or perinatal death,

Potentially blinding eye infection or pneumonia in infants,

Urethral stricture in man

Other consequences of STIs

Social consequences

Social stigma

Personal damage due to infertility

Marital instability as the result of STIs

Eventually divorced women join prostitution

Economic consequences

Cost of management of patients which includes laboratory and drug costs

Cost of management of complications

Cost of management of HIV/AIDS

The indirect cost include lost days of productive life.

N.B:- all of these complications and consequences of STIs can be avoided if the correct treatment is provided sufficiently early.

providing counseling

Basic principles of counseling and health education

Health education – is the prevision of accurate and truthful information so that a person can become knowledge able about the subject and make an informed choice

Counseling- is a two way interaction b/n a client and a provider

It is inter personal , dynamic communication process that involves a kind of contractual agreement b/n a client and a counselor who is trained to an acceptable by a code of ethics and practice

Part one : providing post abortion counseling

Abortion is expulsion of the fetus before it reaches viability . it may be spontaneous or induced

Spontaneous abortions are those in which termination is not provoked deliberately while in induced abortions there is a deliberate interference with the pregnancy either by persons

Lacking the necessary skills or environment lacking the minimal medical standards or both

Unsafe abortion of the most easily preventable causes of maternal death (13%) and illness

Causes of abortion

Most women seeking abortion

To limit the size of their family

To space births

To avoid unwanted pregnancy

Causes of unwanted pregnancy

- Non use of contraception
- Contraceptive failure sexual coercion or rape
- Young age or single marital status
- Having to money children
- Unstable relation ship
- Mental or physical health problems
- Severe mal formation of the fetus
- Financial constraints

Complication of abortion

Acute complication	**long term complication**
In complete abortion	- chronic pelvic pain
Sepsis	- PID,EP
Hemorrhage	- tubal blockage and secondary infertility
Peritonitis	- increased risk of spontaneous abortion or premature delivery
In sequent pregnancies	

Leading causes of death related to abortion

Hemorrhage

Infection

Poisoning from substances used to induce abortion

Interventions

Ensure universal access to FP

Increase the availability of safe abortion services to the extent allowed by low

Improve the quality & accessibility of post abortion care

Educate communities about reproductive health and unsafe abortion

Offering post abortion care

What ever the legal status of abortion services for treating and managing complication of abortion should be accessible to all women

Key elements of post abortion care include .community and service provider partnership counseling ,treatment of incomplete and un safe abortion .FP services and links to comprehensive reproductive health service

Ground on which abortion is permitted

To save the women's live

To preserve mental or physical health

Rape or in cesti

Fetal impairment

The women mentally and physically unable to give care

STI/HIV COUNSELING

The importance of education and counseling

Patient are more likely to comply with treatment if they understand why it is important to do so

A person with STI has a high likelihood of being re- infected

Preventing re- infection requires sustained behavior change

Tips for counseling with active listening

Use eye contact – it shows interest (as long as this is culturally acceptable in your particular settings

Use open –ended questions , they allow clients to express

Check your understanding by summarize (paraphrasing)

Use acknowledge sounds that convey interest and keep the conversation flowing but avoid unnecessarily interrupting your client

Use a tone of voice that shows interest

Listen for feelings as well as facts

TECHNIQUES OF EDUCATION AND COUNSELING

Skills necessary for counseling

Instruction: telling patient what do or how to do some thing, such as use condom or take medication

Explanation: telling patient how or why some thing should should be

Modeling: present examples of how the recommended behavior or treatment has been successful in other cases

Reinforcing strength: pointing out a strength or positive attribute that you see in the patient –will help the patient recover or prevent the recurrence of STI

Exploring choices: reviewing the patient's alternatives or steps to words curing the current STI or preventing an other one

Rehearsing decision: when the patient has reached a decision on the appropriate safe behavior (S), ask him or her to work through the steps to put the decision into practice.

Confirming decision: this helps him or her to feel motivated on leaving the Centre. The patient is much more likely to practice the safer sex then before.

HIV COUNSELING AND TESTING

Health providers can counsel the patient or clients to enable them to make informed decisions about being tested for HIV infection. This is known as providers initiated HIV counseling and testing (PIHCT)

It is anonymous or confidential testing initiated by the health care provider and performed with the client's informed consent

The HCT process consists of pre-test, post-test and follow up counseling

It can be tailored to the needs of the client (s)

Pre-testing counseling

It provider initiated counseling and testing, the pre-test session is pre-test education or information and should be brief and focus on the benefits of testing and the services available for patients

The patient should also be informed of his/her right to decline the test

In pre-test counseling the health worker should:

Determine what the client understands about HIV and AIDS

Provide factual information when needed

Discuss potential implications of a positive or a negative test result

Explain and obtain informed consent

Review the test procedure with the client

Assess the ability to cope with a positive result

Establish a relationship as a basis for post-test counseling

When reviewing the test procedure the health care provider should:-

Explain how the test will be done

Explain when and how the client or patient will obtain the test result

Discuss how they will assure the client's or patient's confidentiality in terms of who will know about the test result

With post-test counseling following a positive test result, the health worker should:

Ensure that the client understands what a positive HIV test means

Discuss how he/she feels about being infected

Give support to help deal with these feelings

Discuss plans for the immediate future

Establish a relationship as a basis for future counseling

Schedule appointments for medical evaluation and follow-up counseling

Counsel his/her partner(s) on their own needs to be tested and the need for safer sex

Refer the client to the local community services, if available

Stress and educate on condom use

For post-test counseling following a negative test result, the health worker should:-

Ensure that the client understands what a negative HIV test result means

Counsel the client on the need for protection as a negative test result does not mean the patient is immune from HIV infection

Stress the need for safer sex through mutual faithfulness with uninfected partner, consistent condom use or abstinence

Mother-to-child transmission of HIV infection

- MTCT is the transmission of HIV from an infected pregnant woman to her offspring. The more technical term for MTCT is vertical transmission or prenatal transmission. The majority of children infected with HIV acquire the virus through MTCT.

- ✓ MTCT Of HIV can occur during Pregnancy, Labor and childbirth, and breastfeeding

Risk of Transmission without Interventions

- ❖ During pregnancy 5-10%
- ❖ During labor/delivery 10-20%
- ❖ During breastfeeding 5-20%
- ❖ Overall without breastfeeding 15-30%
- ❖ Overall with breastfeeding for 6 months 25-35%
- ❖ Overall with breastfeeding 18-24 months 30-45%

Risk factors for transmission

The most important risk factor for MTCT is the amount of HIV in the mother's blood, known as the viral load. The risk of transmission to the infant is greatest when viral load is high-which is often the case with recent(new) HIV infection or advanced HIV/ AIDS

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2		B			
4		B			
5		A			

Answer Key for self-check

Module Title:

LO #1- providing Maternal and Child Health Care

Directions: Answer all the questions listed below. Use the Answer sheet provided in the next page:

I. Choose the best answer (each 1point)

1.

2. .

3.

4.

5.

Self-Check 2	Written Test

I. Choose the best answer (each 1point)

1.

2. .

3.

4.

5.

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