**MIDWIERY LED APPROACHES IN ANTENATAL CARE & MANAGEMENT**

**SUBMITTED BY-**

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**INTRODUCTION –**

Every year, an estimated 200 million pregnancies occur around the world. Each of these pregnancies poses a risk to the woman and her unborn child.

While risks cannot be completely eliminated, they can be mitigated by providing effective and acceptable maternity care.

Health care should begin early in pregnancy and continue at regular intervals to be most effective.

**MEANING-**

Antenatal (Prenatal) care is the term used to describe systematic monitoring (examination and guidance) of a woman during pregnancy. Depending on the needs of the individual, the supervision should be ongoing and regular.

Antenatal care comprises of:

* Careful history taking and examination(general and obstetrical)
* The advicewas given to the pregnant woman

**DEFINITION-**

1. Antenatal care is the term used to describe the treatment provided to an expectant mother from the time of confirmation of conception to the start of labor.
2. Planned examination and observation for the woman from conception until the beginning of labor.

**AIMS AND OBJECTIVE –**

The aims of antenatal care are-

1. Identifying 'high risk' cases

2. Preventing or detecting and treating complications as soon as possible.

3. To provide ongoing risk assessment and primary preventive health care.

4. To alleviate fear and improve psychology by educating the mother about the physiology of pregnancy and labor via demonstration, charts, and diagrams.

5. Discuss the location, time, and mode of delivery with the couple, as well as newborn care.

6. Educate the couple on the importance of family planning and provide appropriate advice to a couple seeking services.

**OBJECTIVE –**

1. To ensure a healthy pregnancy.

2. Preventing, detecting, and treating pregnancy-related complications such as pre-eclampsia, eclampsia, and haemorrhage.

3. Medical disorder prevention, early detection, and treatment, such as anemia and diabetes.

4. Early detection of malpresentation, malposition, and disproportion that may influence labor decision.

5. Educate the pregnant woman regardig proper hygiene, diet, and warning signs.

6. Laboratory studies of parameters such as blood group, Rh typing, toxoplasmosis, and syphilis may have an effect on the fetus.

**CRITERIA OF A NORMAL PREGNANCY –**

A normal pregnancy is defined as the delivery of a single baby in good condition at term (38 - 42 weeks), with a fetus weight of 2.5 kg or more and no maternal complications.

**FREQUENCY OF ANTENATAL VISITS –**

* + - * Generally,acheck-up isdone at an interval of 4 weeks upto 28 weeks, at an interval of 2 weeks upto 36 weeks and thereafter till delivery.
			* WHO recommends the visit may be curtailed to atleast 4 visits,

1st visit – around 16 weeks

2nd visit – Between 24 -28 weeks

3rd visit – around 32 weeks

4th visit – around 36 weeks

**PROCEDURE AT THE FIRST VISIT -**

The first visit should not be referred beyond the second missed period.

**OBJECTIVES OF ANTENATAL VISIT –**

1. To assess the mother's and fetus's health.

2. To ascertain the fetal gestational age and to carry out a baseline investigation.

3. To identify "at risk" pregnancies and develop a plan for subsequent management.

**HISTORY TAKING –**

1. Vital statistics
2. General Examination of the Mother name, age, gravida, parity, expected date of delivery.
3. Period of gestation

• Gravida refers to a pregnant state, both current and previous, regardless of gestation period.

• Parity refers to the state of a previous pregnancy following the viability period.

c) Marriage duration- This is important for determining fertility or fecundity. Low fecundity refers to a pregnancy that occurs many years after marriage without the use of contraception, whereas high fecundity refers to a pregnancy that occurs soon after marriage.

d) Religion

e)Occupation - It aids in the interpretation of fatigue symptoms caused by excessive physical work or occupational stress. These women should be advised to limit their participation in such activities.

f) Husband's occupation-

• To determine the patient's socioeconomic status,

• To anticipate complications associated with low social status, such as anaemia, pre-eclampsia, prematurity, and so on.

• As part of family planning counseling, provide reasonable and realistic antenatal advice.

g)Gestational period- A pregnancy is measured in completed weeks, with any fraction of a week lasting more than three days considered a completed week. It is calculated from the first day of the last normal menstrual period (LNMP) in early pregnancy, and from the expected date of delivery in later months.

2. Complaints

Even if there is no complaint, questions concerning sleep, eating, bowel habits, and urination should be asked.

3. History of present illness

The major complaints are elaborated in terms of their onset, duration, severity, medication use, and progression.

4. History of Present pregnancy

* Last menstrual dates – Calculate expected date of delivery
* Cycle regularity
* History of recent oral contraceptive pill use
* Early ultrasound assessment of gestational age.
* Important complications in the current pregnancy should be noted carefully, including hyperemesis and threatened abortion in the first trimester, pyelitic features in the second trimester, and anaemia, pre-eclampsia, and antepartum haemorrhage in the third trimester. The status of immunization must be recorded. Any medication or radiation exposure, as well as medical surgical events, must be documented during pregnancy.

 5. Past Obstetrical History

Inquire about specifics such as the date of pregnancy, the outcome, the gestation period, the baby's weight and gender, and his or her current state of health. Labor or pregnancy complications, delivery mode.

6. Menstrual History

Inquire about age at menarche, frequency, duration and amount of flow, premenstrual symptoms, dysfunctional uterine bleeding.

Calculation of the expected date of delivery(EDD)- This is done according to Naegele’s formula by adding 9 calendar month and seven days to the first day of the last menstrual period. Alternatively, one can count back 3 calendar months from the first day of last period and then add 7 days to get the expected date of delivery.

7. Previous Medical History

A history of prior medical illness, such as a urinary tract infection or tuberculosis, must be obtained.

8. Past surgical History

Any previous pregnancy, whether general or gynaecological, should be investigated.

1. Family History

A family history of twinning, congenital fetal malformations, diabetes, hypertension, tuberculosis, numerous pregnancies, and non-hereditary diseases must be obtained.

9. Personal History

* About the nutrition, morning sickness, weight gain.
* Rest and sleep 8 hours during night and 2 hours during day time.
* Activity and exercise.
* Habits such as alcoholism, smoking, tobacco chewing.
* Marital, any consanguineous marriage and duration of marriage.
* Contraception such as pills or intra uterine devices.
* Drugs during pregnancy
* Sexual history- any intercourse during pregnancy.
* Elimination- Frequency of micturition, Constipation.

10. Previous Gynecological Problems

Inquire about any previous sexual transmitted infections, endometriosis, infertility, surgery, polycystic ovarian diseases.

**PHYSICAL EXAMINATION-**

1. General Appearance:
* Build-obese/average/thin
* Nutrition- Good/Average/Poor
* Height- Short stature is probably related to a narrow pelvis.
* Weight- In all cases, weight should be taken using an accurate weighing machine. Weight checking should be done in the same weighing machine on each subsequent visit.
* Pallor: Look for it in the nailbeds, tongue's dorsum, and the lower palpebral conjunctiva.
* Jaundice: The hard palate skin, underside of the tongue, and bulbar conjunctiva should be observed.
* Glossitis and stomatitis show evidence of malnutrition in the tongue, teeth, gums, and tonsils. Any infection in the mouth must be eradicated, as must any source of infection.
* Neck- Neck veins, thyroid gland, lymph glands are looked for any abnormality.
* Edema of the legs- Both the legs are to be examined, the sites are over the medial malleolus and internal surface of the lower 1/3rd of the tibia.
1. Vital Signs:

Assess the pulse, BP, respiration and temperature.

1. Systemic Examination:
* Heart, lungs, Liver and spleen- are to be check for any abnormality.
* Breast- Nipples should be checked (Cracked or depressed and skin condition areola).
* Eyes: Pallor, Jaundice
* Breast: Nipple cracked/ depressed, symmetry, Secondary areola, montgomery'stubercle

 4. Obstetrical Examination:

* Abdominal Examination – Assess for abdominal muscle tone, ay previous incisoonal scar
* Vaginal Examination
1. Routine Investigation
* Examination of the blood
* Urine is examined routinely for protein, Sugar and pus cells.
1. Special Investigation
* Serological tests for rubella and hepatitis B virus
* Ultrasonography examination
* Maternal serum alpha-fetoprotein
1. Booking should be done.

**Procedure at the subsequent Visits**

Generally check up is done at interval of 4 weeks up to 28 weeks ; at interval of 2 weeks up to 36 weeks and there after weekly till-the expected date of delivery. In the developing countries, as per WHO recommendation, the visit may be curtailed to at least 4 ; first in second trimester around 16 weeks, second between 24-28 weeks, the third visit at 32 weeks and fourth visit at 36 weeks.

**Objectives of subsequent visit-**

To assess-

• Health of the fetus.

• The number, lie, presentation, and position of fetuses.

• Fetal growth, preeclampsia, amniotic fluid volume, and anemia.

• Detect and treat conditions such as diabetes and cardiac disease.

• To decide whether to do an ultrasound amniocentesis or chorionic villous biopsy when necessary.

**History Collection**

Appearance of any new complaints, quickening, lightening, examination.

Weight, pallor, oedema of legs, BP monitoring Abdominal examination.

1st trimester: Height of the fundus

2nd trimester: External ballotment, fetal movements, palpation of the fetal parts, fundal height

3rd trimester: Identify lie, presentation, position, growth pattern, engagement, girth of the abdomen, fundal height.



FIG 1 : Figure showing Antenatal Examination

Uncover the patient’s abdomen from the xiphisternum to the public hairline, ensuring adequate exposure while allowing for patient modesty. Abdominal wall relaxation is maximized by the patient resting her arms alongside her abdomen, rather than behind her head. The patient’s legs may also be slightly flexed at the hips to aid relaxation.

**Inspection:**  The presence of an abdominal mass arising from the pelvis consistent with pregnancy, scars, pigmentation or other skin lesions are noted. Fetal movements may be observed.

|  |  |  |
| --- | --- | --- |
| **Fundal Palpation****(First Maneuver)** | * Fundal palpation can be done using the finger tips or palmar surface of the fingers.
* First nurse should face towards the women head.
* The entire fundal area is palpated with both hands flat on the skin to assess which foetal pole is located in the fundus.
* Palpate the fundus to feel for the foetal portion to check its size, shape, consistency, and mobility.
 | • The head is represented with a rounded, firm, easily movable portion that can be balloted between the fingers of both hands.• A breech is indicated by an irregular, bulky, less hard, poorly defined, or moveable portion.• Neither head nor breech suggests a transversal lie. |
| **Lateral Palpation****(Second Maneuver) or** **Umbilical grip** | * Maintain your gaze on the side of woman's head.
* Place your hands on both sides of the uterus, approximately halfway between the symphysis pubis and the fundus.
* Press one hand against the uterine side, pushing the fetus to the other side and stabilize there.
* Using smooth pressure and rotator movements, palpate the other side abdomen with the examining finger from the midline to the lateral side and from the fundus.
* Repeat the process for the inverse.
 | * A smooth, curved, hard resistant surface indicate back.
* Small, knob irregular parts or modules indicate limb.
 |
| **Pawlicks grip****(Third Maneuver)** | * Maintain your gaze on the woman's head side.
* The woman should be positioned with her knee bent.
* Using one hand's thumb and middle finger, grasp the area of the lower abdomen immediately above the symphysis pubis.
 | * If the fetal head is above the brim, it is easily movable and ballotable; if it is not ballotable, the head is engaged..
 |
| **Pelvic Palpation****(Fourth Maneuver)** | * The nurse should face the woman's feet, and the woman should be seated with her knees bent.
* Place the hands on the sides of the uterus, with the palms just below the umbilicus and fingers pointing towards the symphysis pubis.
* Press deeply into the lower abdomen with your fingertips and move them towards the pelvic inlet.
* When the head is not engaged, hand coverage around the presenting part.
 | * This maneuver determines the engagement of the head.
* If the head is presenting, the fingers of one hand will feel the occiput and those of the other hand the cephalic prominence.
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 **FIG 2:** Figure showing techniques of abdominal palpation

**FHR monitoring**: A Normal fetal heart rate is 110-160 beats per minute. The fetal heart is best heard over the fetal back, especially with a pinard stethoscope.

**Per Vaginal Examination:**

Per Vaginal examination in the early weeks of pregnancy helps

* To establish the diagnosis of pregnancy
* To decide whether the pregnancy is uterine or extra uterine.
* To ascertain whether there are any tumors or abnormalities in the genital tract complicating pregnancy.

In the later weeks and particularly near team, It aids in the diagnosis of the fetus's presentation and position, as well as the assessment of the pelvis.The risk of infection by a careless vaginal examination is always present: hence the examination should be with all antiseptic solution.

**The fetus – in - Utero**

**1. Lie:** The relationship of the fetus long axis to the long axis of the uterus or maternal spine is referred to as the lie.The lie can be longitudinal (99% of the time), transverse, or oblique.

**2. Presentation:** The part of the foetus that occupies the uterine lower pole. Cephalic (96%), podalic (3%), shoulder, and other (0.5%) presentations are possible.

**3. Presenting Part:** The portion of the presentation that is visible above the external os. Thus, depending on the degree of flexion of the head, the presenting part in cephalic presentation is the vertex (commonest), brow, or face.

**4. Attitude:** The relationship between the various parts of the foetus. Flexion is the most common attitude.

**5. Denominator:** It is an arbitrary bony fixed point that corresponds to the maternal pelvic quadrants.The following are the denominator of the different presentation occiput in the vertex, mentum in the face, frontal eminence in brow, sacrum in breech and acromian in shoulder.

**6. Position:**  It is the relation of the denominator to the different quadrants of the pelvis. The pelvis is divided into equal segments of 45 degree to place the denominator in each segment. Thus there are 8 positions with each presenting part such as LOA,LOP,LOT,ROA,ROP,ROT in cephalic presentation and LMA,LMP,LMT,RMA,RMP,RMT in Face presentation.



**FIG 3:** Figure showing position of fetus

**MIDWIFERY SERVICES IN ANTENATAL CARE:**

**Diet:** During pregnancy, the diet should be adequate to ensure:

 a) good maternal health

 b) optimal fetal growth;

c) the strength and vitality required during labor; and

d) successful lactation.

The increased calorie requirement during pregnancy is due to the increased growth of the maternal tissues, foetus, placenta, and increased basal metabolic rate.

During the second half of pregnancy, the calorie requirement increases by 300 over the non-pregnancy state. In general, the diet during pregnancy should be of the woman's choosing in terms of quantity and type. Women with normal BMI should eat enough to gain the appropriate weight (11 kg). Overweight women with a BMI of 26-29 should limit their weight gain to 7 kg, while obese women (BMI greater than 29) should gain less weight. Excessive weight gain raises the risk of antepartum and intrapartum complications, such as foetal macrosomia.

**Antenatal Hygiene:** In otherwise uncomplicated cases, the following recommendations should be made.

**Rest and Sleep:** The patient may continue with her normal activities during pregnancy. Excessive and strenuous work, on the other hand, should be avoided, particularly during the first trimester and the final four weeks of pregnancy. Recreational exercise is permissible as long as she is comfortable.

**Bowel:** Constipation is very common in the bowel. Backache and abdominal pain are possible side effects. Eating plenty of fluids, vegetables, and milk, as well as taking stool softeners before bed, can help with regular bowel movements. Rectal bleeding, painful fissures, or haemorrhoids may occur as a result of the hardness of the stool.

**Bathing:** The patient should bath every day, but should be careful not to slip in the bathroom due to imbalance. During her pregnancy, the patient may resume her normal activities. Excessive and strenuous work, on the other hand, should be avoided, especially during the first trimester and the last four weeks. Recreational exercise is permitted as long as she is at ease.

**Clothing, shoes, and belt**: Dress the patient loosely but comfortably. High heel shoes should be avoided when the centre of balance shifts during pregnancy. Excessively tight belts should be avoided.

**Dental care:** It is critical to maintain good dental and oral hygiene. A dentist should be consulted if necessary. If necessary, the caries tooth can be extracted or filled during the second trimester.

**Breast health care**: Breast engorgement in late pregnancy can be uncomfortable. A well-fitting brassiere can provide relief.

**Coitus:** Coitus is not generally prohibited during pregnancy. The release of prostaglandins and oxytocin during coitus may result in uterine contractions. Women who are at a higher risk of miscarriage or preterm labor should avoid coitus if their uterus is overactive.

**Travel:** It is best to avoid travelling in vehicles with jerks, especially during the first trimester and the last 6 weeks. Ideally, the long journey should be limited to the second trimester. The train route is better than the bus route. Traveling in pressurised aircraft for up to 36 weeks is safe. If you have placenta praevia, pre-eclampsia, severe anaemia, or sickle cell disease, you should avoid flying. Prolonged sitting in a car or plane should be avoided due to the risk of venous stasis and thromboembolism. Seat belts should always be worn.

**Smoking and alcohol:** Because smoking is harmful to one's health, it is best to avoid it not only during pregnancy but also afterward. Heavy smokers have smaller babies and are more likely to have an abortion. To avoid foetal maldevelopment or growth restriction, alcohol consumption should be severely limited or avoided.

**IMMUNIZATION:**

Live virus vaccines (rubella, measles, mumps, and yellow fever) should not be given to a pregnant women but Rabies, Hepatitis A and B vaccines, and Tetanus toxoids can be given to pregnant women .

**GENERAL ADVICE:**

The patient should be persuaded to come in for an antenatal check-up on the scheduled date. She is instructed to notify the doctor as soon as possible if any unusual symptoms arise, such as a severe headache, disturbed sleep with restlessness, urinary problems, epigastric pain, vomiting, or scanty urination.

Pregnant women is advised to come to the hospital for admission in case she experiences

* Painful uterine contractions every 10 minutes or less, lasting at least an hour- suggestive of the onset of labour.

• A sudden gush of watery fluid from vagina.

 • In case of vaginal bleeding, no matter how minor.

**RISK APPROACH OF OBSTETRICAL NURSING CARE AND SCREENING OF HIGH RISK PREGNANCY:**

High risk pregnancy is one in which mother, fetus and new born is or will be at increased risk for mortality and morbidities due to problems and complication during pregnancy.

The risk approach strategy is expected to have far-reaching consequences for the entire MCH/FP service organization, leading to improvements in health care coverage and quality at all levels, particularly primary health care. Maximum utilization of all resources is inherent in this approach, including some human resources that are not traditionally involved in such care, such as traditional birth attendants, community health workers, and women's groups.

**Risk Approach of Obstetrical Nursing Care**

A high-risk pregnancy is one in which some condition puts the mother, the developing fetus or both at higher-than-normal risk for complications during or after the pregnancy and birth.

**High Risk Mothers**

**The high risk mothers are :-**

1. Women below 18 years of age or over 35 years in primigravida.
2. Women who have had four or more pregnancies and deliveries.
3. Elderly grandmultiparas.
4. Women who had a history of previous CS, instrumental delivery.
5. Short statured primi(140 cm and below)
6. Malpresentation like breech, transverse lie, shoulder presentation etc.
7. Antepartum haemorrhage
8. Preeclampsia and eclampsia
9. Anaemia
10. Twins, hydraminos
11. Manual removal of placenta
12. Previous stillbirth, intrauterine death and Abortion.
13. Prolonged pregnancy(14 days – after expected date of delivery)
14. Pregnancy associated with medical disease like cardiac disease, epilepsy, psychiatric illness, thyroid disorder, spinal injury, kidney disease, hypertension, diabetes, tuberculosis, liver disease etc.
15. Unmarried mother of low economic status.
16. Those who have practiced less than 2 years or more than 10 years of birth spacing.
17. Obstructed labor
18. Congenital abnormalities of fetus.
19. Those with cephalo pelvic disproportion(CPD).
20. The mother with blood -Rh negative.
21. Those with obesity or malnutrition.

**Maternal Risk Factors**

Maternal risk is defined as the probability of experiencing serious injury as a result of pregnancy or child birth. The risk of developing problem and complications varies. Some are at risk than other depend upon various risk factors. These are discussed as under:-

**a) Young Primi (those under the age of 19)**

Because the teenage mother:

• Is still growing and is not adequately equipped to cope with pregnancy and labour, there is a grave risk to both mother and child.There is increasing chance of abortion, poor uterine function during labor premature labor, low birth weight baby, poor breast feeding due to incomplete development of breasts.

* Is not prepared for the responsibilities of marriage, pregnancy, and childrearing.This created tensions and discord in the family.
* Has increasing nutritional requirements by virtue of her own growth and the growingfoetus thus has greater risk of anaemia, malnutrition and low birth weight baby.

**b) Elderly Primi i.e. 30 years and older**

Having babies too late in life increases the risk of complications in pregnancy and labour, which include:

* Heavy bleeding before and after child birth.
* Malpresentation resulting in difficult labor.
* Aggravated blood pressure
* Forceps delivery or by caesarean operation
* Delay in expulsion of placenta.
* Low birth weight babies.

**c) Having too many children**

When the mother bears more than three babies, she is at high risk of developing problems due to repeated pregnancies and labor. This is due to weakening of tissues, depletion of nutrients and overall poor physical health of the mother which happens because of repeated pregnancies. Some of the complications due to multiparity includes:-

* Malnutrition leading to anaemia.
* Antepartum and postpartum haemorrhage
* Difficult and obstructed labor resulting in perineal tear, uterine rupture involving immediate surgical intervention.
* Prolapse of uterus
* Still birth
* Neonatal death
* Premature delivery
* Low birth weight baby

d) **Having close-spaced pregnancies**

When the interval between the two pregnancies is less than three years, it can create problems during the pregnancy because mother did not get enough time to recover completely and fully from the stress and strain of the previous pregnancy. Repeated pregnancies at short interval can cause nutrional deficiency, anemia, low birth weight baby and all the rest of the problems mentioned earlier when also the number of the children being born, increases.

Pregnancy at short intervals not only affects the health of the mother and child being born but also the health of other children in the family because they get neglected as mother cannot give her attention to them.

e) **Associated medical conditions**

This includes:

* Heart disease
* High blood pressure
* Kidney disease
* Tuberculosis
* Diabetes
* Repeated attacks of malaria
* Hepatic disorder

**f) Other maternal conditions**

* Mothers of short stature, or less than 145 cm, have a small and insufficient pelvis, among other things. These women typically experience challenging labour and need a caesarean section to deliver safely.

• Mothers who weigh less than 40 kg are more likely to experience pregnancy difficulties since they are typically malnourished and anaemic.Other conditions in mothers

• Mothers who weigh more than 70 kg experience labour difficulties. While under anaesthesia, they may also experience respiratory difficulty and issues. Mother's life may be lost occasionally.

• Mothers who are anaemic and malnourished. Because of their fragility, some moms find it difficult to handle the pressure and strain of pregnancy and childbirth.

**g) Previous abnormal obstetrical history**

These includes history of:-

* Antepartum haemorrhage, threatened abortion.
* Preeclampsia and eclampsia
* Malpresentations, twins, hydramnios.
* Intrauterine death, stillbirth, manual removal of placenta.
* Instrumental or caesarean delivery.

These conditions can pose serious problem to the life of both mother and baby. These can be reduced considerably with adequate proper care and timely medical attention.

**Prevention of High Incidence of High Risk Pregnancies**

• By improving women's prenatal health.

• Providing high-quality prenatal care.

• Screening all pregnancies for high-risk pregnancy.

• Provide timely clinical and technological care by specialists.

• MCH-FP care health education.

**Screening of High Risk Pregnancy**

1. **Biophysical Assessment**
2. Ultrasonography
3. Radiology in Obstetrics
4. Magnetic Resonance Imaging
5. **Biochemical Assessment**
6. Amniocentesis
7. Alpha-fetoprotien (AFP)
8. Percutaneous Umbilical Blood Sampling (PUBS) or Cordocentesis
9. Chrionic Villus Sampling
10. Maternal Blood Assessments
11. Placental Biopsy
12. **Electronic Monitoring**
13. Nonstress test
14. Contraction Stress Tests/ Oxytocin Challenge test
15. Daily Fetal Movement Count (DFMC) or Kick Counts.

**CONCLUSION:**

 Antenatal care, is preventive healthcare provided during pregnancy. During pregnancy, it is critical that the pregnant woman receives proper care, regular check-ups, and has all necessary tests performed on time. Throughout the course of a pregnancy, antenatal care is aimed at preventing potential health issues and promoting a healthy lifestyle for both mother and child.

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