Indira Gandhi National Open University
SCHOOL OF HEALTH SCIENCE

CHO-0003

Public Health and Primary Health Care Skills

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन
राजस्थान



Maternal Health Skills

4

Indira Gandhi National Open University
SCHOOL OF HEALTH SCIENCE

CHO-0003

Public Health and Primary Health Care Skills

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन
राजस्थान

Maternal Health Skills

4

ignou
THE PEOPLE'S
UNIVERSITY

Indira Gandhi
National Open University
School of Health Sciences

CHO-0003
Public Health and Primary Health Care Skills

Block

4

MATERNAL HEALTH SKILLS

UNIT 1
Assessment of Health Status of Women 5

UNIT 2
Antenatal, Intranatal, Postnatal Examination and Care 20

UNIT 3
Organising Labour Room 57

UNIT 4
Conducting Normal Deliveries and Partograph 76

UNIT 5
Identification, Care and Referral of Complications during Labour 102

UNIT 6
Postnatal Examination and Care 126

UNIT 7
Emergency and Injectable Contraceptives and Follow-up Care 144

UNIT 8
Understanding Continuum of Care (CoC) and the Use of Digital Interventions in Rajasthan 158

Follow-up Care & Skills Checklist

Appreciation of Collaborative Efforts

The development of this Training Module for Community Health Officers (CHOs) is the result of a collaborative effort led by the Department of Medical, Health & Family Welfare, Government of Rajasthan, with valuable technical support from development partners. We sincerely thank all Directors, Project Directors, State Nodal Officers, and technical partners including Jhpiego, WHO, UNICEF, UNFPA, UNDP, IPE Global, IPAS, Evidence Action, JSI and others for their contributions. Their expertise, evidence-based inputs, and field insights have ensured the relevance and quality of this resource. This module aims to strengthen CHOs' capacity to deliver comprehensive, people-centered care at the community level, advancing our shared goal of improved health outcomes for all.

Acknowledging Contributors

The table below highlights the key contributors who played a critical role in the module's development, coordination, technical review, and partner support:

Coordination Committee

Dr. Rommel Singh (AD-Plan)	Ms. Shibumi Prem (Regional PO, Jhpiego)
Ms. Rachana (District Program Officer-NHM)	Dr. Manoj Sharma (Nursing Tutor)

OICs

Dr. Mushtaq Khan (SNO-MNJY)	Dr. Tarun Chaudhary (PD-MH)
Dr. Praveen Aswal (AD-RH)	Dr. Surendra Singh Shekhawat (PD-FW)
Dr. Pradeep Kr. Choudhary (PD- CH)	Dr. Mukesh Digarwal (PD-RKSK/RBSK & AD Ayush)
Dr. S.M. Swami (SNO-NMHP)	Dr. Raghraj Singh (PD-Immunization)
Dr. Nirmala Sharma (Deputy Director Malaria)	Sh. Rajendra Bhakher (Demographer, NHM)

Responsible Partner Coordinators

Mr. Arun Vashisht (NHM, Jaipur)	Ms. Karuna Singh (IPAS)
Dr. Zakariya Chouhan (WHO)	Mr. Devi Prasad Verma (IPAS)
Dr. Rashi Gupta (Jhpiego)	Ms. Manjri Singh (UNICEF)
Ms. Dande Venkata Sireesha (Jhpiego)	Dr. Kapil Agarwal (UNICEF)
Dr. Eshvita Bhadoo (Jhpiego)	Mr. Krishan Gopal Soni (UNFPA)
Dr. Pradeep Chaudhary (NIPI)	Mr Siyaram Sharma (UNFPA)
Ms. Pricella Bassin (IPE Global)	Dr. Abhay Bora (JSI)
Ms. Molshree Rathore (Evidence Action)	Mr. Mudit (UNDP)

CURRICULUM DESIGN COMMITTEE AND EXPERT COMMITTEE

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. R.S Salhan
Additional DGHS (Retd.) Advisor, NHSRC, New Delhi

Dr. R.K Srivastava
Former DGHS, Govt. of India New Delhi

Dr. Suneela Garg
Sub Dean & Head Dept. of Community Medicine, MAMC , New Delhi

Dr. Amarjeet Singh
Professor, Dept. of Community Medicine PGIMER, Chandigarh

Dr. Subodh. S. Gupta
Professor, Dept. of Community Medicine, MGIMS, Sevagram, Wardha

Mrs. Santosh Mehta
Principal, RAK College of Nursing, Lajpat Nagar, New Delhi

Dr. Prakasamma
Former Director, National Academy of Nursing Studies and Woman Empowerment (ANSWER) Hyderabad

Dr. Sushma Kumari Saini
National Institute of Nursing Education (NINE) PGIMER, Chandigarh. (U.T)

Dr. Sanjay Rai
Associate Professor Department of Community Medicine, AIIMS, New Delhi

Dr. Himanshu Bhushan
Advisor, NHSRC, New Delhi

Dr. Rajni Ved
Advisor, NHSRC, New Delhi

Dr. Dilip Singh
Advisor, NHSRC, New Delhi

Dr. Vinay Bothra
Sr, Consultant, NHSRC

Dr. Sumitha Chalil
NHM, MoHFW, New Delhi

Dr. Reeta Devi
Assist. Prof. (Sr. Scale) & programme Coordinator

Mrs. Rohini Bhardwaj Sharma
Assist. Prof. IGNOU

BLOCK PREPARATION TEAM

Writers

Unit-1 **Mrs. Bhavesh Kumari**
Lecturer, Safdarjung Hospital, New Delhi

Prof. Pity Koul
Director & Prog. Coordinator School of Health Sciences, IGNOU, New Delhi

Unit-2 and 3 **Dr. Manju Chugani**
Professor ,RufidaCollege of Nursing (CON)

Prof. Pity Koul
Director & Prog. Coordinator School of Health Sciences, IGNOU, New Delhi

Unit-4 **Prof. Rafiqua Bashir**
Principal and Professor Rajiv Gandhi College of Nursing, Jammu

Prof. Pity Koul Director & Prog. CoordinatorSchool of Health Sciences, IGNOU, New Delhi

Unit- 5 **Dr. Rafiqua Bashir**
Principal and ProfessorRajiv Gandhi College of Nursing, Jammu

Mrs. Gita Razdan
Senior Nursing Tutor CON, AIIMS.New Delhi

Prof. Pity Koul
Director & Prog. Coordinator School of Health Sciences, IGNOU, New Delhi

Unit-6 **Dr. Chetna Maliye**
Professor, MGIMS, Sewagram

Prof. Pity Koul Director & Prog. Coordinator School of Health Sciences, IGNOU, New Delhi

Unit- 7 **Dr. Pragya Sharma**
Associate Professor, MAMC, Dept. of Community Medicine New Delhi-2

Prof. Pity Koul
Director & Prog. Coordinator School of Health Sciences, IGNOU, New Delhi

Editors

Dr. H.Bhushan
Advisor
NHSRC, New Delhi

Prof. (Dr.)Pity Koul
Director and Programme Coordinator

Unit Transformation and format editing

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. Reeta Devi
Assist. Prof. (Sr. Scale) & Programme Coordinator

COURSE REVIEW COMMITTEE

Dr. Rajesh Kumar
Prof. & Head, Dept. of Community Medicine, PGIMER, Chandigarh

Dr. Suneela Garg
Sub Dean & Head MAMC, Departmant of Community medicine, New Delhi

Dr. Himanshu Bhushan
Advisor, NHSRC, New Delhi

Dr. A.K. Sood
Prof. & Dean of Educations & Training, NIHFW, New Delhi

Dr. Prabir Chatterjee

SHRC, Chattisgarh

Dr. S.B Sinha
Advisor HCT, NHSRC

Dr. M.M.Singh
Director & Professor MAMC, Community Medicine, New Delhi

Dr. Jugal Kishore
Director Professor VMMC, Safdarjung Hospital, New Delhi

Dr. Najam Khalique
Department of Community Medicine AMU, Uttar Pradesh

Dr. Dilip Singh Mairembam
Advisor, NHSRC, New Delhi

Dr. Manju Rani

WHO

Dr. Radhika Gupta
Consultant, NHSRC

Dr. Vinay Bothra
Sr, Consultant, NHSRC

Faculty SOHS, IGNOU

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. Reeta Devi
Assist. Prof. (Sr. Scale) & programme Coordinator

Mrs. Rohini Bhardwaj Sharma
Assist. Prof.

Brig.(Dr) Kanchan Sharma (Retd.)
Senior Consultant, IGNOU
R.K. Puram, New Delhi

CO-ORDINATION

Prof. (Dr.) Pity Koul
Director & Programme Coordinator
School of Health Sciences, IGNOU, New Delhi

Dr. Reeta Devi
Asstt. Professor. (Sr. Scale) & Programme Coordinator
School of Health Sciences, IGNOU, New Delhi

PRODUCTION

Mr. T.R. Manoj
Assistant Registrar (P)
SOHS, IGNOU, New Delhi

May, 2017
© *Indira Gandhi National Open University, 2016*
ISBN :
All rights reserved. No part of this work may be reproduced in any form, by mimeograph or any other means, without permission in writing from the Indira Gandhi National Open University.
Further information about the School of Health Sciences and the Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi-110 068.
Printed and published on behalf of the Indira Gandhi National Open University, New Delhi by **Prof. Pity Koul, Director**, School of Health Sciences.
We acknowledge the reference of material and figures from various sources like NNF, AIIMS, WHO, UNICEF, IGNOU, Govt. of India etc.
Laser Typesetting and Printed at : **Rajasthan State Cooperative Press Ltd., Jaipur**

BLOCK INTRODUCTION

Maternal health is a vital component of health care system and refers to the health of women during pregnancy, childbirth and postpartum period. As a skilled health care professional, you must have adequate knowledge and skills to take care of the mother during antenatal, intranatal and post natal period and make regular postnatal visits to ensure that the mother and baby are healthy in tackling maternal and newborn issues and enables to achieve the Sustainable Millennium Goals.

The focus on antenatal care, institutional delivery/skilled birth attendance, emergency obstetric care and postnatal care is essential for prevention of maternal morbidity and mortality.

This block has been designed to enable you to develop and enhance your skills in maternal care based on knowledge gained from the theory course material and contact sessions in making assessment, history taking, providing a maternal and newborn care, monitoring mother in labour and plotting of partograph, conducting safe normal delivery, identifying maternal and foetal complications during labour and post partum period and advising mothers for effective use of contraceptives. The focus is also on identification of high risk cases, appropriate referral and follow up

This block on Maternal Health Skills consists of seven units as given below

Unit 1 deals with Assessment of Health Status of Women

Unit 2 focuses on Antenatal, Intranatal, Postnatal Examination and Care

Unit 3 relates to Organising Labour Room

Unit 4 emphasizes on Conducting Normal Deliveries and Partograph

Unit 5 relates to Identification, Care and Referral of Complications during Labour

Unit 6 focuses on Postnatal Examination and Care

Unit 7 deals with Emergency and Injectable Contraceptives and Follow up Care

UNIT 1 ASSESSMENT OF HEALTH STATUS OF WOMEN

Structure

1.0 Introduction

1.1 Objectives

1.2 Health Assessment and Women's Health

- 1.2.1 Definitions and Aims of Health Assessment
- 1.2.2 Points to be Considered for Health Assessment of Women

1.3 Components of Health Assessment of Women

- 1.3.1 Registration
- 1.3.2 History Taking
- 1.3.3 Physical Assessment
- 1.3.4 Abdominal Examination
- 1.3.5 Examination of External Genitalia and Vagina
- 1.3.6 Investigations

1.4 Identification of Risk Factors

1.5 Health Advices

1.6 Let Us Sum Up

1.7 Appendix

1.8 Activity

1.9 References

1.0 INTRODUCTION

Women health is the key for the development of any country in terms of increasing equity and reducing poverty. The survival and well-being of women is not only important in their own right but are also central to solving large, broader, economic, social and developmental challenges.

Women's health care services are an imperative global health need. However, providing comprehensive women's health services across women's life span challenges health systems in both developed and developing countries. The demand for individualised services, which are in accordance with women's age, education, socio-economic status, culture, health practices and existing health care services is essential. In India Maternal mortality continues to be very high despite improvement in health care services so assessment of health status of women from time to time during pregnancy, postnatal period and in general is important to reduce mortality or morbidity.

Thus, promoting women's health by enabling them to increase control over health determinants and make choices consistent with a woman's personal values and preferences significantly improves well-being. In this unit you will learn the skills of health assessment of woman including registration, history taking, physical examination, investigations, identification of risk factors and health advices.

1.1 OBJECTIVES

After completing this practical unit, you should be able to:

- perform comprehensive health assessment and care of women;
- identify and differentiate normal and abnormal changes during examination;
- conduct complete physical assessment of the women;
- assess health education needs of women and advice as per the needs of women; and
- refer the women to the appropriate health agencies and do follow up assessment.

1.2 HEALTHASSESSMENTAND WOMENS HEALTH

Let us begin with Definition and Aims of Health Assessment.

1.2.1 Definition and Aims of Health Assessment

Women's health is a state of complete physical, mental, spiritual and social well-being for all female infants, girls and women regardless of age, socio-economic class, race, ethnicity and geographic location. (WHO 2007)

Health Assessment is a plan of care that identifies the specific needs of a person and how these needs will be addressed by the health care system or skilled nursing facility.

Aims of health assessment women are:

- To protect, promote and maintain the health of the women.
- To assess the nutritional status of women.
- To detect the high risk factors and to give them special attention.
- To prepare her to be physically fit and mentally alert to cope up with pregnancy.
- To sensitise her to the need of family planning.
- To reduce maternal morbidity and maternal mortality.

1.2.2 Points to be Considered for Health Assessment of Pregnant Women

- Keep the room ready for health assessment. It should be clean with good light, well ventilated and warm as per the season.
- Collect all required articles for health assessment.
- Prepare the woman physically and psychologically.
    - Explain the procedure to the woman.
    - Ensure that the bladder is empty.
    - Provide her comfortable and relaxed position.
    - Drape the woman and maintain privacy.
- Stand on the right side of the woman or the examination table.
- Collect relevant history.

- Perform thorough physical examination from head to toe and record the finding on health record.
- Explain and assist in collecting samples for investigation like blood, urine, pap smear etc.
- Record and report any abnormal signs if found on physical examination.
- Refer to the appropriate health agency and do follow up assessment.

1.3 COMPONENTS OF HEALTH ASSESSMENT OF PREGNANT WOMAN

The various component of health assessment are given below.

1.3.1 Registration

When a woman approaches a health can provide your responsibility as a health worker is as follows:

- Greet and welcome the woman in a pleasant manner.
- Introduces herself to the woman and any person accompanying her.
- Asks the reasons for visiting the clinic.
- Register the woman and maintain health record.
- Performs an overall visual assessment including the woman's general appearance, anxiety/ mood levels, movement, gait etc.
- Assess language skills and health literacy.

1.3.2 History Taking

As a Community Health care provider you have to take complete history of the woman. On occasion, when a woman reports several issues then you may need to prioritise, in which case woman need special attention.

Date of Registration:_____	Registration No._____
Identification Data:	
Name of the woman_____ Age_____ Religion_____ Education_____ Occupation_____ Contact No._____ Address_____	Name of the Husband _____ Age_____ Education_____ Occupation _____ Contact No._____

Personal History:

- Habits: Smoking/alcohol Drug/Tobacco/Excessive tea or coffee
- Diet: Vegetarian/Non vegetarian/egg vegetarian

- Life style: Sedentary/ exercise/ relaxation/ Yoga/ meditation/ any other
- Hobbies: _____
- Hygiene: Good/ Fair/ poor
- Rest and sleep_____
- Elimination habits: Bowel: Good/ Fair/ Poor
  Bladder: Good/ fair/ Poor

Personal Medical History:

- Childhood disease_____
- Immunisation status_____
- Hospitalisation (reasons and duration)_____
- Drug sensitivity (specify)_____
- Allergies (specify)_____
- Blood transfusion_____
- History of any of the following diseases:
  - Diabetes Mellitus_____
  - Hypertension_____
  - Tuberculosis_____
  - Asthma_____
  - Cancer_____
  - Thyroid disorder_____
  - Sexually transmitted disease _____
  - Heart disease_____
  - Rheumatic fever____
  - Malnutrition/ Anaemia_____
  - Blood dyscrasias_____
  - Renal/ Urinal tract infection____
  - H/o any operations _____
  - H/o accidents/injury _____
  - H/o blood transfusion _____

Menstrual History

- Age at menarche _____
- H/o menstrual cycle and duration_____
- Date of last menstrual period (LMP) _____
- Amount of blood flow _____
- Any complaints like dysmenorrhoea _____

Marital and sexual history

- Age at marriage_____
- Duration of marriage_____
- Duration of co-habilitation_____
- Relationship with spouse _____
- Sexually active/inactive_____
- Orientation/attitude towards sexuality_____
- Contraceptive history and practice_____

- History of presence of sexually transmitted disease (if any)_____

  Type_____

  Treatment_____

Obstetrical history

- Gravida_____. Para_____. Number of living children Number of Abortions (GPLA Score)_____
- History of abortion/still birth/infant death_____
- History of previous pregnancies/deliveries_____
- Any signs of present pregnancy _____
- History of any caesarean section_____

Psychosocial History

- Psychiatric and mental history

  H/o mood or anxiety disorders _____

  Mental illness_____

  Medication or treatment for psychiatric mental disorders_____
- Self concept or self esteem issues_____
- Supportive system: Husband/ family and others_____
- Stressors: Occupational or personal_____
- Past history of depression or suicidal tendency_____

  Emotional changes _____

  Adjustment to circumstances _____
- Emotional changes_____
- History of any domestic violence_____

Family History

- Health status of Parents/ siblings (if deceased , mention cause of death)_____
- History of the following diseases in Parents/siblings/Close relatives

  Diabetes mellitus _____ Hypertension _____

  Heart disease _____ Tuberculosis _____

  Congenital disease _____ Renal disease _____

  Asthma _____ Cancer _____

  Vascular diseases _____

  Neuromuscular condition_____

  Multiple pregnancy_____

  Complication of pregnancies _____

  Psychiatric disorders_____

1.3.3 Physical Assessment

- Height_____

- Weight_____
- Body Mass Index_____
- Blood Pressure_____
- Vital signs: Temperature_____ Pulse_____ Respiration _____
- Oral Examination

  Abrasion _____ Ulceration_____

  Oedema_____ Bruises _____

  Injury _____ Bad breadth _____

  H/o smoking/ tobacco consumption _____

  Check for loose teeth/broken teeth/missing teeth/decayed teeth.

- Nutritional Assessment

  Pallor_____. Oedema_____

  S/S of anaemia _____

  S/S of vitamin deficiency _____

  S/S if mineral deficiency _____

  Anthropometric measurement

  Height_____Weight_____

  BMI _____

  Middle upper arm circumference _____

  Skin fold thickness _____

- Breast examination_____

  (While doing examination, follow the procedure given in the appendix)

  H/o breast surgery/mass/cyst/tumour _____

  Observation of the breast –

  Scars

  Skin condition and textures _____

  Size of breasts_____

  Nipple retraction _____

  Discharge from nipple _____

  H/o Breast implants _____

  Lymph nodes palpable -Supraclavicular region _____

  Axillary region _____

- Head to toe examination (specify if any)_____

  Hair and scalp - healthy or infected

  Eyes - Colour of conjunctiva, sclera, any discharge or signs of infection Ear, Nose and Throat - healthy, enlarged or signs of infection

  Mouth, gums and teeth - Hygiene, cavities or signs of infection

Skin - any scar or sign of infection

Extremities - Upper——check hand and colour and shape of nails

Lower - any pain, tenderness, oedema or varicose veins

Back and spine - observe for any deformity

1.3.4 Abdominal Examination

(While doing examination follow the procedure given in appendix)

Tenderness _____ Uterine involution _____

Abdominal scars _____

Visual Inspection - observe and record

Scars _____ lesions _____skin conditions_____

Palpation - Palpate suprapubic, right iliac fossa and left iliac fossa regions and identify masses _____ Pain _____

Tenderness_____ guarding or rebound _____

Palpable lymph nodes in groin _____

1.3.5 Examination of External Genitalia and Vagina

(While doing examination follows the procedure given in appendix)

External genitalia: Observe for following

Skin conditions or lesions _____ Erythema _____

Excoriation_____,

Distribution of pubic hair_____

Introital bleeding or discharge_____

Masses_____ Prolapsed_____

Linear fissures_____

- Dryness or atrophy_____
- Foreign bodies (tampon or female condom) _____
- Type of discharge - amount, colour and odour.

Vaginal examination:

Speculum examination - Note the following

Appearance of the vagina_____

Presence of inflammation_____

Friability of tissue_____

Presence of a foreign body_____

Discharge or visible lesions in the vagina_____

-Observe the position and appearance of the cervix_____

presence of inflammation_____

colour and consistency of any discharge_____

bleeding_____ cervical ectropion_____

lesions_____, ulceration or polyps_____

presence or absence of contact bleeding_____

columnar epithelium on the ecto-cervix_____

-Note the colour, number and length of intrauterine device (IUCD) strings (if any present)_____

Bimanual examination_____

Identify position of uterus – anteverted position _____

Retroverted position _____

Mid position _____

- **Pelvic Floor Assessment** (while doing examination follow the procedure given in appendix for review)

  Pelvic floor tone assessment grade_____

  - Pelvic organ prolapse_____
  - Incontinence of urine/ stool_____

1.3.6 Investigations

Refer for procedure Course 3, Block 2, Unit 2.

- Complete Blood Count

  Haemoglobin_____

  ESR_____

  RBC _____

  WBC _____

  TLC _____

  DLC _____

  Blood Grouping _____

- Serum Cholesterol_____
- OGTT/Blood sugar_____
- Lipid profile_____
- HIV Test_____
- Syphilis Test _____
- HbsAg _____
- Urine for Pregnancy test_____
- Urine for Albumin _____
- Urine for sugar_____
- Urine for Nitrite & Leukocytes _____
- Pap Smear_____
- Mammography (if required)_____

Identification of High Risk Factors (Refer 1.4)

Utilisation of Health facility by women or Family members:_____

Information regarding appropriate action (taken by you):

Health education given_____

Remarks_____

(**Note:** Check Appendix at the end of this unit for procedure of breast examination, abdominal examination, external genitalia and pelvic floor assessment.)

1.4 IDENTIFICATION OF RISK FACTORS

After health assessment of pregnant woman, you may identify risk factors which need specific attention and appropriate action.

- Age : Below 18 or above 40 years
- Height : Short Stature <140 cm
- Weight : Less than 45 kgs or more than 90 kgs.
- BMI : 25 and above
- B.P. : above 140/90 mm of Hg
- Education: Low or illiterate
- Sedentary lifestyle
- Anaemia
- Deranged blood values/ urine test findings
- Pregnancy with or without any complication
- Positive Pap smear result suggestive of malignancy
- Grand Multiparity or bad obstetrical history
- Presence of any medical condition or psychiatric illness
- No use of contraceptives
- Multiple sex partners
- History of any surgery / sexually transmitted disease
- Presence of breast changes suggestive of malignancy
- Poor pelvic floor tonicity leading to pelvic organ prolapsed or incontinence of the urine or stool

(Note: If any risk factors are identified, refer the case to higher health facility)

1.5 HEALTH ADVICES

Following advices need to be given to woman.

- Regular health assessment atleast once a year.
- If age above 40 years and sexually active do Pap smear test.
- Breast self examination once a month in menstruating women after menstruation and on a fixed day in post menopausal women.

- Clinical Breast examination is done to check for lumps. Examine for enlargement of lymph notes in axilla. Initiate examination referral and following as per comprehensive guidelines.

1.6 LET US SUM UP

Women's health is increasingly recognised as an area that has emerged because of an increase in women's demand for unique health care services that consider gender, life circumstances, education and religion, economic and socio-cultural environment. Women play a major role in determining the health of the community since women are often health care givers and recipients at the same time. In this practical we have focused on general and specific assessment of woman.

1.7 APPENDIX

Procedure for Breast Examination (Clinical)

The women's history is taken for breast surgery, history of masses, cysts or tumors, family history of breast cancer, previous mammogram results, pain or changes in appearance of breasts.

- Wash hands, ensure privacy
- Ask the woman to remove all clothing from the thoracic region
- Observe with good light -
- Position the woman either sitting or standing with arms by her sides and visually inspect the breast and chest wall noting scars, skins conditions and textures especially puckering or dimpling, nipple retraction, difference between nipples or size of breasts, any overt nipple discharge, or if the woman has breast implants.
- Request the woman to raise arms above her head followed by pressing her on hips and roll shoulders forward contracting pectoral muscles all the while continuing visual inspection. Checking the lateral sides of breasts and chest wall, the symmetry in breast and nipple elevation and that there is not related skin retraction.
- Help the woman to relax shoulders and with hands on hips bend forward from the waist and to then slowly stand upright and note whether breasts fall freely from chest wall, then palpate the supraclavicular and axillary regions for lymph nodes.
- Help the woman to lie down and place small pillow under the scapula of the side being examined and place the hand of the side to be checked beneath the head and palpate the breast tissue superficially and deeply by varying the pressure whilst using the flat of the fingers to the outstretched hand, and maintaining contact with the breast tissue. Ensure a systematic examination of the breast, nipple and chest wall by using one of these methods.
- Repeat the examination on the other breast using the same technique followed by assisting the woman to the upright position so she may dress.

Systematic Examination of the Breast

Vertical	Circular	Quadrant
Vertical Palpation of the chest wall and breast tissue	Circular palpation of the breast tissue commencing and palpating into the nipple.	Dividing the breast into quadrant and palpating each quadrant and then the nipple area.

Referral to a medical practitioner or other appropriate service is required if any unusual findings are detected which require further assessment and management. If an abnormality is present the nurse will record a clearly labelled diagram including size, shape, consistency, mobility, tenderness, fixation and exact position in the health care record.

Abdominal examination

- You should note any significant history including LMP, previous pap smear test history, contraceptive history and hormone use.
- Throughout all phases of physical assessment the Nurse is alert for facial or verbal expression of pain, discomfort or distress and responds appropriately; halts the examination in case of discomfort, checks with patient and if necessary ceases the examination.
- Wash hands, asks the antenatal mother to empty the woman bladder, and position her in supine position with her head resting on one pillow, arms by her side and feet resting on bed.
- The abdominal examination can be done for woman in general and during postnatal and antenatal assessment of pregnancy.

Lower abdominal examination includes

- Visual inspection- observe and record scars, lesions and skin conditions.
- Palpation- palpate suprapubic, right iliac fossa and left iliac fossa regions to identify masses, pain, tenderness, guarding or rebound and check if groin lymph nodes palpable.

Postpartum abdominal assessment

Examine abdomen for tenderness, uterine involution, assess separation of abdominal rectus sheath muscle and assess caesarean section scar (if indicated)

Antenatal abdominal assessment

It includes assessment of duration of gestation, fundal height (in weeks and centimeters), abdominal girth, lie, attitude, presentation, position, engagement of presenting part, foetal heart rate and rhythm.

External genitalia and Vaginal examination

- Woman should be in supine position and to bend her knees and then allow them to fall apart to expose the external genitalia.
- Position the examination light appropriately, rewashes hands and put on gloves.

Observe for :

- Skin conditions or lesions, erythema, excoriation, distribution of pubic hair, introital bleeding or discharge, masses, prolapse, linear fissures.
- Dryness or atrophy, especially in lactating post menopausal women
- Foreign bodies such as tampon or female condom.
- Type of discharge- amount, colour and odour.

Post Partum Assessment

- Assess lochia
- Assess perineum and note bruising, swelling of the vulva and vagina. Episiotomy and perineal tears usually heal in 2–3 weeks although the site may remain tender in a significant proportion of woman for some months.
- Observe for signs of infection or scarring with painful ridging or narrowing of the introitus.

Speculum examination

- Choose a speculum size appropriate to the woman: metal or Plastic.
- Rinse metal speculum under warm running water, leave wet to lubricate and check temperature on inside of gloved wrist, then after informing the woman check again on the inner aspect of her thigh. Insert the speculum by using thumb and forefinger to part labia minora.
- When the cervix is visualised with the speculum blades positioned in the anterior or posterior fornices, tighten the screw of the upper blade to self retain the speculum in the vagina.
- Once the speculum is secured, the nurse will perform a visual assessment.
- Note the appearance of the vagina, presence of inflammation, friability of tissue, presence of a foreign body, discharge or visible lesions in the vagina.
- Observe the position and appearance of the cervix and note the presence of inflammation, colour and consistency of any discharge, bleeding, cervical ectropion, lesions, ulceration or polyps, presence or absence of contact bleeding, columnar epithelium on the ecto-cervix.
- Note the colour, number and length of intrauterine device (IUCD) strings (if any present)

Bimanual examination of the Pelvis

- The assess size, shape and consistency of the uterus, fallopian tubes, ovaries and to determine pelvis architechture.
- Lubricate the index and middle fingers of one gloved hand (vaginal hand)
- And separate the labia minora using the thumb and forefingers on the other gloved hand (abdominal hand to visualise the introitus.
- Slide the lubricated forefinger of the vaginal hand into the vagina, pressing downward slightly to assess the levators.
- Without causing discomfort, insert a second finger and follow the posterior vaginal wall until the cervix is palpable (on occasion only on finger may be inserted into the vagina to perform the examination, particular if the woman is post menopausal or has a narrow introitus).

- Turn the examining hand palm upwards and palpate the cervix, noting the position, size and consistency of the cervix and cervical os.
- Place the abdominal hand mid position above the symphysis pubic and press down to stabilise the pelvic organs. Elevate the cervix with fingers of the vaginal hand and palpate the position of the uterus by noting the position of the fundus with the abdominal hand.
- Identify the position of the uterus: If the fundus is not located, relocate the abdominal hand to the left or right of their central position, following location the uterus not the position, size, shape and morbidity by palpating the fornices.
- Anteverted Position: The fundus is palpated anterior to the axis of the vagina.
- Retroverted position: Vaginal fingers placed in the posterior fornix enables palpation.
- Mid position: The fundus is not usually palpable.

Identifying any masses or tenderness by

- Displacing the cervix laterally by placing a finger on each side of the cervix and rocking gently.
- Palpating the adnexa by moving the abdominal hand and vaginal fingers to the relevant lateral fornix and applying gentle pressure between your hand.
- Palpating the pouch of Douglas with vaginal fingers in the posterior fornix.

Pelvis Floor Muscle Tone Assessment

This examination is usually performed following a bimanual examination to assess the tone and functioning of the pelvis floor muscle.

- Examination for Pelvic Organ Prolapse should be performed in the dorsal lithotomy position at rest and then with maximal valsalva or cough.
- Re-examination in the standing position may be necessary if physical finding do not correspond to symptoms or if maximal extend of the prolapsed cannot be confirmed.
- Assessment for vaginal atrophy and a rectovaginal examination evaluate the posterior compartment and perineal body are important.
- A retractor or the posterior blade of a bivalve speculum is useful.
- The Community Health Nurse with gloved fingers locate centrally in the vagina, will ask the woman to 'contract' or 'pull up' her pelvic floor muscles and hold the contraction for as long as possible (up to 10 seconds) and grade the strength of the contraction as described below.

Muscle Tone Gradient

Muscle Tone Gradient	
Muscle Contraction	**Grade**
Flicker only with muscles stretched	1
A weak squeeze, Two second hold	2
A fair squeeze (where the contraction can be felt to move in an upward inward direction)	3

Muscle Contraction	Grade
A good squeeze, good hold and lift. The contraction **Must** be able to be repeated a few times to be graded as 4	4

If contraction is felt, ask the woman to relax and tighten the muscles again, the strength of contraction and degree of pelvic lift is noted. Also assess the strength of the second contraction in comparison to the first and grade according to muscle tone gradient.

Following the pelvis floor tone assessment, the Community Health Nurse will :

- Provide information about how to perform pelvic floor exercises.
- A review will be offered within three months if the pelvis floor muscle tone is assessed as below Grade 3.
- If muscle tone grading remains weak at the follow up assessment, the options for further assessment and management and referral to be considered.

Post Partum Assessment of Pelvic floor Muscle Tone:

- Pelvis floor muscle may be stretched following childbirth; this may impact on the quality of sexual activity by creating loss of sensation and arousal for both partners.
- Assess for any urinary/ faecal incontinence.

1.8 ACTIVITY

Perform health assessment of five women in your community field and record your findings as per the performa used in the text.

1.9 REFERENCES

1) RMNCH+A 5 × 5 Matrix, www.nrhm.gov.in
2) http://www.who.int/mediacentre/factsheets/fs348/en/
3) http://unicef.in/Whatwedo/1/Maternal-Health
4) http://data.unicef.org/maternal-health/maternal-mortality.html
5) http://pib.nic.in/newsite/PrintRelease.aspx?relid=123669
6) http://data.worldbank.org/
7) www.obgnursing.blogspot.com/2012/07july2012/midwiferyand obstetricnursing
8) www.pregnancycorner.com/labourcontraction
9) www.glown.com/episiotomy
10) www.pdf-assessmentof4thstageoflabour
11) A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) in India, Ministry of Health & Family Welfare Government of India January, 2013

12) India's Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH+A) Strategy, by USAID July 2014.

13) Guidelines for Standardization of Labour Room at Delivery Points. Ministry of Health & Family Welfare Government of India. March 2016.

14) Protocol Posters from FRU to MC. Ministry of Health & Family Welfare Government of India.

15) Maternal and Newborn Health Toolkit. Ministry of Health & Family Welfare Government of India. November 2013.

16) Guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/ CHVs/SNs. Ministry of Health & Family Welfare Government of India. April 2010.

17) Skilled Birth Attendance (SBA). A Handbook for Auxiliary Nurse Midwives, Lady Health Visitor and Staff Nurses. Ministry of Health & Family Welfare Government of India. 2010.

18) Skilled Birth Attendance (SBA). Trainers Guide for Conducting Training of Auxiliary Nurse Midwives, Lady Health Visitor and Staff Nurses. Ministry of Health & Family Welfare Government of India. 2010.

19) Handbook for RMNCH Counsellors. Ministry of Health & Family Welfare Government of India.

20) Subcutaneous Injectable Contraceptives. Ministry of Health & Family Welfare Government of India.

21) My Safe Motherhood Booklet. Ministry of Health & Family Welfare Government of India.

22) Skill Lab Operational Guidelines. Ministry of Health & Family Welfare Government of India.

23) Daksh Skill Lab for RMNCH + A Services Training Manual for Participants. Ministry of Health & Family Welfare Government of India.

24) IUCD Reference Manual for Ayush Doctors. Ministry of Health & Family Welfare Government of India. Jan 2014.

25) Reference Manual for Injectable Contraceptives (DMPA). Ministry of Health & Family Welfare Government of India. Mar 2016.

26) Reference Manual for Oral Contraceptive Pills. Ministry of Health & Family Welfare Government of India. Mar 2016.

27) Contraceptive Update Manual for Doctors (October 2005)

28) Elizabeth Marie "Midwifery for nurses," 1st edition 2010, CBS publishers, New Delhi.

29) Kumari Neelam, Sharma Shivani and Dr Gupta Preeti "A text book of midwifery and gynecological nursing," 2010 edition, PV Books, Jalandhar, India.

30) Bashir Rafiqa, "Manual on pregnancy, labour and puerperium," Daya publishing house, New Delhi.

31) Souza, D, Juliania, "Normal Labour and Nursing Management" Maternal Health Nursing, IGNOU School of Health Sciences, New Delhi.

UNIT 2 ANTENATAL, INTRANATAL, POST-NATAL EXAMINATION AND CARE

Structure

2.0 Introduction

2.1 Objectives

2.2 History Taking

2.3 Examination of Antenatal Mother

- 2.3.1 General Physical Examination
- 2.3.2 Abdominal Examination
- 2.3.3 PV for pelvic adequacy

2.4 Laboratory Investigations/Screening

- 2.4.1 Pregnancy Test Detections
- 2.4.2 Haemoglobin Test
- 2.4.3 Urine Test
- 2.4.4 Rapid Disposal Test (RDT) for Malaria
- 2.4.5 RDT for HIV
- 2.4.6 RDT for Syphilis
- 2.4.7 Oral Glucose Tolerance test

2.5 Prophylaxis during pregnancy

2.6 Planning for Birth – Micro Birth Planning

2.7 Identification and Prevention of Risk Factors

- 2.7.1 Early Identification
- 2.7.2 Prevention of Risk Factors
- 2.7.3 Maintaining Records and Reports

2.8 Identification and Management of High-risk pregnancy

- 2.8.1 Anemia in Pregnancy
- 2.8.2 Hypertensive disorders in pregnancy
- 2.8.3 Gestational Diabetes Mellitus
- 2.8.4 Maternal infections during pregnancy
- 2.8.5 Antepartum Hemorrhage
- 2.8.6 Threatened Preterm Labor

2.9 Referral Services

2.10 Let Us Sum Up

2.11 Activity

2.12 References

2.0 INTRODUCTION

In this practical we will review the essential components of antenatal care, and learn to provide antenatal care. Refer theoretical text in Course 2, Block 2, Unit 2. Minimum 4 Antenatal Care visits to be ensured. And explained to the mother the need for the visits.

2.1 OBJECTIVES

After completing this practical, you should be able to:

- identify signs and symptoms of normal and complicated pregnancy;
- carry out general abdominal examinations; and
- perform selected laboratory investigations.

2.2 HISTORY TAKING

Let us begin with importance of history taking.

Importance of history taking

- Diagnose pregnancy (first visit only)
- Identify medical or obstetric complications in present pregnancy
- Identify complications during previous pregnancies or family history

Points to be kept in mind while taking history

- Ensure privacy
- Ensure calm and quiet atmosphere
- Make the woman comfortable and relaxed
- Maintain confidentiality
- Establish rapport
- Record all facts on Mother & Child Protection (MCP/ Mamta) Card
- Highlight abnormal findings

i) **Start with**

- Age of woman
- Order of pregnancy
- Birth interval

Record LMP (1st day of woman's last Menstrual period) and calculate Expected Date of Delivery

EDD = First Day of LMP + 9 months +7 days

ii) **Ask for symptoms**

Normal symptoms during pregnancy

- Nausea & vomiting
- Heart burn
- Constipation
- Increased frequency of urination

These symptoms may cause discomfort to the woman.

Symptoms of complications

- Fever
- Persistent vomiting with dehydration

- Palpitations, tiredness
- Breathlessness at rest / on mild exertion
- Generalised swelling of body / facial puffiness
- Severe headache and/ or blurring of vision
- Passing smaller amount of urine or burning micturition
- Leaking or bleeding per vaginum
- Abnormal vaginal discharge / itching
- Decreased or absent foetal movements

iii) **Obstetric history**

- No. of previous pregnancies
- Date (month / year)
- Mode of Delivery (vaginal / caesarian)
- Outcome (live birth, still birth, preterm, abortion, ectopic, vesicular mole)
- Any past obstetric complications

  Recurrent pregnancy loss, Post abortal complications, APH, Hypertensive disorders of pregnancy, Malpresentation, Obstructed labour, PPH, Third degree tears, Puerperal sepsis, Thrombo-embolism etc.
- Any past obstetric procedures Cesarean section, Instrumental delivery, Manual removal of placenta

iv) **Any current / past systemic illnesses**

Record if there is any history of the following illness

- High BP
- Diabetes
- Heart disease : Breathlessness on exertion, palpitation
- Tuberculosis : Cough> 2 wks , blood in sputum, prolonged fever
- Renal disease
- Epilepsy : Convulsions
- Asthma : Attacks of breathlessness
- Jaundice
- Malaria

Any other history suggestive of RTI / STI; HIV / AIDS

v) **Family history**

Ask about history of systemic illness

a) Hypertension
b) Diabetes
c) Tuberculosis
d) Thalassemia or repeated blood transfusions
e) Multiple pregnancies or abortion

vi) **Personal history**

- Intake of alcohol or tobacco or smoking
- Drug intake or allergies
- Domestic violence

Check Your Progress 1

1) Calculate the EDD of antenatal mothers whose LMP is

   a) 10 Jan 2025

   b) 14 April 2025

   c) 12 Dec 2024

   d) 05 Jun 2025

   e) 15 Aug 2024

   f) 16 Nov 2024

2) What obstetric history will you take from antenatal mothers who have come for registration or check up?

2.3 EXAMINATION OF ANTENATAL MOTHER

Let us now discuss how to do general physical examination and abdominal examination.

2.3.1 General Physical Examination

Check for Pallor, Pulse, Respiratory Rate, BP, Oedema, Weight, Jaundice, Breast and any other as given below.

I) **Look for Pallor**

- Look for conjunctival pallor—ask the woman to look up and pull down the lower lid gently with the index finger. Observe the colour of the inside of the lid. It should be bright pink or red. If it is pale pink or white, the woman has pallor.
- Examine the tongue. If it is white and smooth, the woman has pallor.
- Examine the nails. If they look white instead of the usual pink, the woman has pallor.

II) **Look for signs of Jaundice**

- Look for yellowish discolouration of the skin and conjunctiva in natural light.
- If discolouration present, refer the woman to the MO.

III) **Check Pulse**

- Palpate (feel) the woman's radial pulse by placing the finger tips of 3 fingers on her wrist, below her thumb.

- Press against the radial artery and then slowly release the pressure until you can feel the pulse.
- Count the beats for a full minute. The normal pulse rate is between 60 and 90 beats per minute.

IV) **Check Respiration**

- Count the respiratory rate (RR) by placing your hand on the woman's chest and observing the rise and fall of the chest for 1 minute.
- The normal RR is 16–20 breaths per minute.

V) **Check for Oedema**

- Look for oedema over the ankles and shin by pressing your thumb against the bone for 5 seconds. If your thumb leaves an impression, it indicates the presence of oedema.

VI) **Measure Blood Pressure (BP)**

Follow following steps

If BP findings are 140/90 mm Hg and above, then repeat it after 30 minutes. If the recording is still high, she needs to be referred to Medical Officer for treatment and advice.
Refer check list in (Annexure)

VII) **Height measurement (Annexure)**

VIII) **Record Weight**

Ensure that the woman is wearing light clothing and is barefoot.

- Check the weighing machine for 'zero error' before taking the weight.
- Ask the woman to stand straight on the weighing machine, look straight ahead and hold her head upright.
- Record the weight to the nearest 100 g.
- Weight monitoring checklist (Refer Annexure)

IX) **Conduct Breast Examination (take verbal consent)**

- Help the woman on to the examination table, Place a pillow under her head and upper shoulders, and help her to relax.
- Examine the breasts. Examine each breast up to the axilla separately with the pad of your fingers for any lumps or tenderness. If either lumps or tenderness is present, refer the woman to the MO at the PHC.
- Observe the size and shape of the nipples. Look for inverted or flat nipples, and crusted or sore nipples.

2.3.2 Abdominal Examination

Before carrying out abdominal examination refer theory Course 2, Block 2, Unit 1 for details.

Purpose of abdominal examination

- To measure fundal height

- Foetal lie and presentation
- Foetal movement
- Monitor progress of pregnancy and foetal growth.

Components of Abdominal Examination include following:

- Measurement of fundal height
- Assessment of foetal lie and presentation

Assess the following parameters:

- Assessment of foetal movement
- Auscultation of foetal heart sounds
- Inspection for scars
- Other relevant abdominal findings

Preparation for Abdominal Examination

- Ensure privacy
- Examination room should be well lit and airy
- Woman is asked to empty her bladder
- Explain the women about the procedure/process
- To make her comfortable, keep talking to her
- Make her to lies supine with legs partially flexed
- Stand on her right side
- Palpate the uterus with warm hands

i) **Fundal Height**

It indicates the following:

- Duration of pregnancy
- Foetal growth
- Any abnormality in the pregnancy

Steps of Assessment of Fundal Height

a) Keep the necessary article for abdominal palpation and auscultation of FHS ready: mannequin on table, measuring tape, stethoscope/foetoscope, watch with a second hand

b) Stand on the right side of the mother

c) Ensure the bladder is empty and give semi-flexed position during examination

d) Observe the abdomen for any scar, size, shape and contour.

e) **Assess of fundal height (Fig. 2.1)**

- Keep the ulnar border of curved left hand on woman's abdomen parallel to symphysis pubis

- Start from xiphisternum and gradually proceed towards symphysis pubis25natal lifting the hand between each step till a bulge / resistance of uterine fundus is felt
- Mark the level of fundus

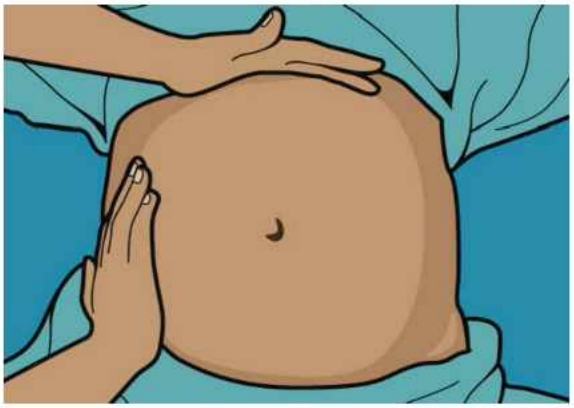


Fig. 2.1: Assessment of Fundal Height

Assess the following parameters:

Measure the fundal height using ulnar border of left hand

Measure in weeks as well as in centimetres. Follow the steps as given below:

Measurement of fundal height (Table 2.1) and Fig. 2.2

- Divide the abdomen by an imaginary lines passing through umbilicus
- Divide the lower abdomen in 3 parts with 2 equidistant lines between the pubic symphysis and the umbilicus
- Divide the upper abdomen into 3 parts again with 2 imaginary equidistant lines between the umbilicus and xiphisternum
- Measure the distance from the upper border of symphysis pubis along the uterine curvature to the top of the fundus with a tape.

Table 2.1: Measurement of Fundal Height

At 12th week	Just palpable above the symphysis pubis
At 16th week	At lower one-thirds of the distance between the symphysis pubis and umbilicus
At 20th week	At two-thirds of the distance between the symphysis pubis and umbilicus
At 24th week	At the level of umbilicus
At 28th week	At lower one-third of the distance between the symphysis pubis and xiphhisternum
At 32th week	At two-thirds of the distance between the symphysis pubis and xiphhisternum
At 36th week	At the level of xiphhisternum
At 40th week	Sinks back to the level of the 32nd week, but the flanks are full unlike that in the 32nd week

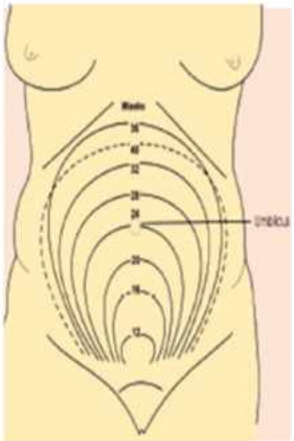


Fig. 2.2: Fundal Height

f) Palpate the abdomen with the following grips:

- Fundal grip (to find out pole of the foetus at the fundus)
- Lateral grip (to find out the side of foetal back)
- Pelvic grips (to find out the foetal head engagement)
- **Fundal Palpation / Fundal Grip:** Helps to determine lie and presentation of foetus (Fig. 2.3)



Fig. 2.3: Fundal Grip

- **Lateral Palpation / Lateral Grip**: Helps to locate foetal back (Fig. 2.4)

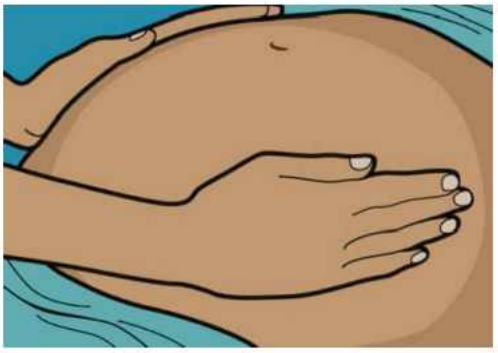


Fig. 2.4: Lateral Grip

- **First Pelvic Grip / Superficial Pelvic Grip:** Helps to determine whether head or breech is presenting at pelvic brim and whether the presenting part is engaged / fixed / free (Fig. 2.5)

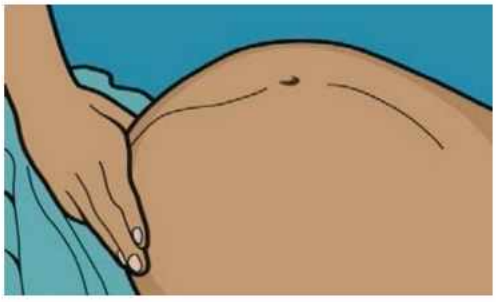


Fig. 2.5: First Pelvic Grip

- **Second Pelvic Grip / Deep Pelvic Grip**: Helps to know the degree of flexion of head (Fig. 2.6)



Fig. 2.6: Deep Pelvic Grip

ii) **Foetal Movements**

- Fetal movement are reliable sign of foetal well-being
- These are felt around 18–22 wks of pregnancy (felt earlier in multigravida than primigravida)
- Normally 10–12 foetal movements should be felt by the pregnant woman in a day
- Decreased foetal movements may be an indication of foetal distress
- Pattern of foetal movement may change prior to labour due to reduced space. But foetal activity should continue throughout pregnancy and labour

iii) **Foetal Heart Sound (FHS)**

a) Place the foetoscope on the side where foetal back was felt (Fig. 2.7)

- FHS is heard per abdomen by stethoscope / foetoscope after 24 weeks of pregnancy
- Normal FHR is 120–160 beats per min
- FHR < 120 beats per min or > 160 beats per min indicates fetal distress and calls for referral
- Confirm that you are listening to the FHS and not maternal pulse
- In vertex presentation FHS is best heard midway between the line joining the umbilicus and the anterior superior iliac spine on the side of the back
- In breech presentation FHS is heard above the umbilicus

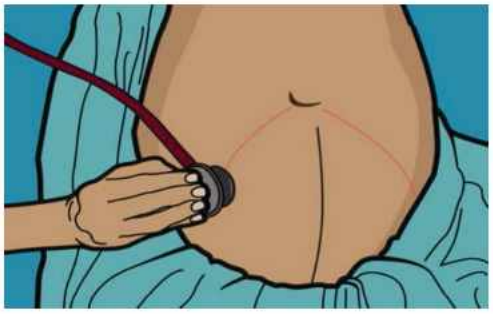


Fig. 2.7: Auscultation of FHS

b) Count the FHR for 1 minute using a watch with a second hand

Refer Fig. 2.8 which gives summary of Antenatal examination with specific reference to Fundal Height.

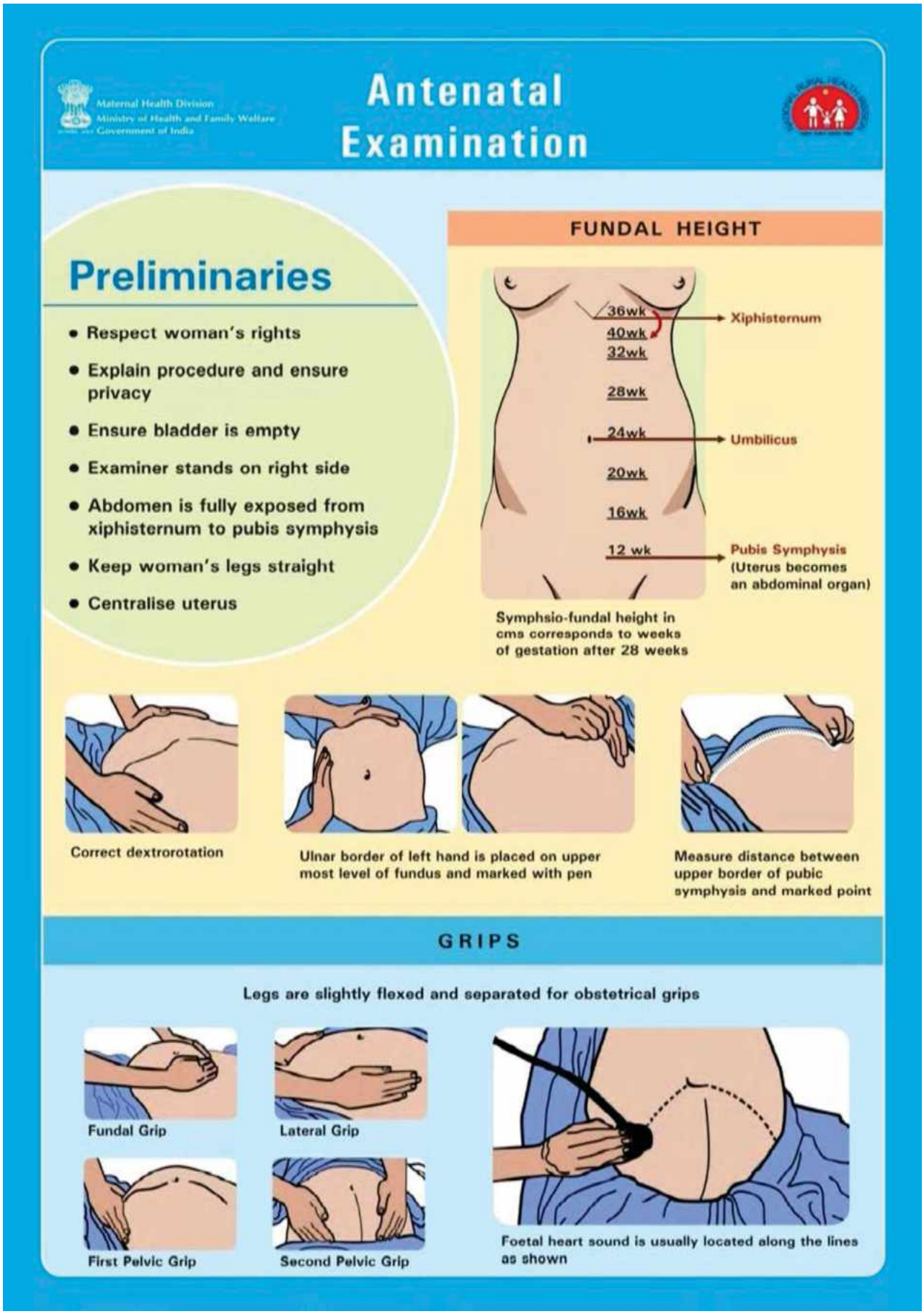


Fig. 2.8: Summary of Antenetal examination (Adopted from Govt. of India documents)

Key points to remember:

- An abdominal examination and auscultation of FHS must be recorded during each visit to monitor progress of pregnancy, foetal viability and growth
- Maintain privacy and obtain verbal consent before examination
- Expose only the area to be examined i.e. abdomen
- The bladder should be emptied before examination
- During palpation, ensure that the woman partially flexes her legs and knees
- Foetal lie and presentation may be ascertained in palpation during the 3rd trimester.
- The normal lie at term in the majority is longitudinal, with a cephalic presentation. Any other lie is abnormal and the woman must be referred to higher facility for delivery care.
- Correlate the fundal height in weeks with LMP and also correlate with fundal – symphysis pubic height in cm.
- If the foetal heart rate (FHR) is between 120 and 160 beats/minute, it is normal. If it is <120 beats/minute OR >160 beats/minute, the woman should be referred to higher facility for emergency delivery care.
- FHS can only be heard through the abdomen with the help of a stethoscope or foetoscope after 24 weeks of pregnancy. All findings must be entered on the MCP card.

2.4 LABORATORY INVESTIGATIONS

You should carry out following laboratory investigations.

2.4.1 Pregnancy Detection (Refer checklist in Course-2, Block-2)

Procedure

- Remove the pregnancy test card from the pregnancy kit.

  Keep this card on a flat surface.
- Use the dropper to take morning sample of urine.

  Put 2–3 drops in the well marked 'S'.
- Wait for 5 minutes.

Result:

- If one red band appears in the result window 'R', the pregnancy test is negative.
- If two parallel red bands appear, the pregnancy test is positive.

2.4.2 Haemoglobin Test

Procedure

- Clean the tip of the woman's ring finger with an alcohol swab.

- Prick the finger using the lancet and discard the first drop of blood.
- Allow a large drop of blood to form on the fingertip (do not press the finger tip to take out blood). Dip the tip of the Hb pipette into the blood drop and suck blood up to the 20 cmm mark on the pipette.
- Wipe the tip of the pipette with cotton. Immediately transfer the 20 cmm (0.02 ml) of blood from the pipette into the Hb tube containing N/10 HCl.
- After 10 minutes, dilute the acid by adding distilled water drop by drop. Mix it with the stirrer.
- Note down the reading (lower meniscus) when the colour of the solution exactly matches that of the comparator on both sides of the haemoglobinometer. This expresses the Hb content as g%. Hb colour strip.

Procedure for strip based hemoglobinometer

- If strip based hemoglobinometer is used, the system will undergo an auto-check and auto calibration after which the battery level, date, time and strip's batch code are displayed within 2 seconds.
- Enter the code mentioned on the strip bottle. The meter would flash 'strip' symbol on the display.
- Insert a fresh test strip into the meter with the arrows on the strip facing up andpointing towards the display.
- Ensure the correct positioning of the strip with the guiding V notch.
- The meter would flash 'drop' symbol on the display. Allow the second drop of the blood to fall to completely cover the white coloured test area.
- Read and record the result.
- Remove the used teststrip from the meter and dispose in appropriate biohazard container

2.4.3 Urine Test for Proteins and Sugar

The procedure for urine test for protein and sugar is explained below. **(See checklist 1.1)**

i) **Urine test for proteins**

Procedure using dipstick

- Remove one strip from the bottle of dipsticks and replace the cap.
- Completely immerse the regent area of the strip in urine and remove immediately to avoid dissolving the reagent.

  When removing the strip from the urine, run the edge against the rim of the urine container to remove excess urine.
- Hold the strip horizontally.
- Compare the colour of the reagent area to the colour chart on the label of the bottle, after the time specified (usually 60 seconds)

Procedure using hot test (boiling)

- Fill three-fourths of the test-tube with urine and heat the upper third of the urine over the spirit-lamp and allow it to boil.

  Keep the mouth of the test tube away from your face to prevent scalding.
- Turbidity of the sample indicates the presence of either phosphate or albumin.

Add 2–3 drops of 2%–3% acetic acid drop by drop into the test-tube.

- If the sample remains turbid, it indicates the presence of proteins.
- If the turbidity clears, it indicates the absence of proteins.

ii) **Urine test for sugar**

Procedure using dipstick

Follow the same steps as for protein and match the colour with the label on the bottle.

Procedure using the boiling method (Benedict test)

- Take 5 ml of Benedict solution in a test-tube. Boil it over the spirit lamp, holding the test-tube away from your face.
- If the colour of the solution does not change on heating, it is pure.
- Add 8 drops of urine with the help of dropper. Shake it well and boil.
- Allow it to cool and observe the colour.

Other investigations to be included are:

- Blood grouping and Rh status
- Blood VDRL to rule out Syphilis test done at PHC
- HBs Ag to rule out Heatitis B Carrier state of mother
- HIV status to implement measures to prevent mother and child transmission.

2.4.4 Rapid Disposable Test (RDT) for Malaria

We shall begin with procedure of preparing a blood smear. **(See checklist 1.5)**

Steps to prepare the thick and thin smear

- Select the second or third finger of the left hand
- Clean with antiseptic or sterile wipes
- Dispose of the cotton swab in the yellow bin
- Allow the finger to air dry
- Puncture the side of the ball of the finger, not too close to the finger bed
- Allow the blood to come up automatically - Don't squeeze the finger
- Hold the sides by the edges
- Touch the drop of blood with a clean slide
- Collect 3 drops to prepare the thick smear
    - To prepare a thin smear, take another fresh slide and touch the drop of blood from the edge of slide
    - Spread the drop of blood with the corner of the slide to make a circle or a square of approximately 1 cm in diameter
    - Bring the edge of the slide to the second drop of blood to the surface of the first slide, wait until the blood spreads along the whole edge
    - Hold it at an angle of 45 degrees and spread with a rapid but not brisk movement

- Write the slide number of the thin film and wait until the thick film is dry
- Wrap and send the slides to the laboratory for staining and to be examined under the microscope

Steps for Malaria testing using Rapid Diagnostic Test kit (RDT)

- Store the kits at the recommended temperature
- Check that the RDT kit is not damaged
- Check the expiry date on the kit
- Remove the RDT packaging. and the dropper from the foil pouch and place it on flat, dry surface
- Label the RDT with patient's ID and date the test was performed
- Allow the reagents to attain room temperature if kept in cold chain
- Select the finger for puncture, clean with spirit swab and allow to air dry
- Puncture the finger with a sterile lancet
- **Slowly add 1 drop of blood to the sample well and add 2 drops of the assay diluent**
- **As the test begins to work, a purple colour will be seen moving across the result window in the centre of the test device**
- **Interpret test* result at 5–20 minutes (Do not interpret after 20 minutes)**

***Interpretation of the result for Monovalent RDT kit:**

Negative result	If only 1 line (band) appears, the test has worked and the patient is negative for malaria
Positive result	If 2 lines (bands) appear within15-20 minutes, **the person is suffering from P. Falciparum malaria**
Invalid result	If no line appears within15-20 minutes, **discard and repeat the test**

***Interpretation of the result for Bivalent RDT kit:**

Negative result	If only 1 line (band) appears at C (Control), the test has worked and the patient is negative for malaria
Positive result	If 2 lines (bands) appear within 15-20 minutes at C (control) and T1, **the person is suffering from P. Falciparum malaria**
Positive result	If 2 lines (bands) appear within 15-20 minutes at C (control) and T2, **the person is suffering from P. Vivax malaria**
Positive result	If 3 lines (bands) appear within 15-20 minutes at C (control), T1 and T2, **the person is suffering from both P. Falciparum and P. Vivax malaria**
Invalid test	If no line appears within 15-20 minutes, **discard and repeat the test**

Remember:

Ultrasonography (USG)

- Do not encourage frequent USG abdomen

As per GOI guidelines only one USG is done at 19 weeks of pregnancy and is recommended for ensuring foetal outcome

Key points to remember:

- Store the kits at the recommended temperature
- Never read the result beyond 30 minutes
- In high malaria-endemic areas, pregnant women should be routinely tested for malaria at the first antenatal visit
- Screen the woman for malaria every month by conducting the RDT even if she does not manifest any symptoms of malaria.

- If a pregnant woman shows symptoms of malaria at any time, she should be tested. If the result is positive, refer her to a higher facility for further treatment.
- Chemoprophylaxis should be administered only in selective groups in high P. Falciparum endemic areas.
- No prophylaxis is recommended, but insecticide-treated bed nets or Long-Lasting Insecticidal Nets (LLIN) should be given on a priority basis to pregnant women in malaria-endemic areas.

2.4.5 RDT for HIV & Syphilis dual kit (See checklist 1.6)

2.4.6 Oral Glucose Tolerance Test (OGTT) (See checklist 1.7)

Logistics required for procedure:

Materials required for making glucose solution for OGTT	1. Glucose pouches 75 gm, one per test
	2. Measuring flask/beaker/jar
	3. Drinking water 300 ml, per test
	4. Disposable glasses and stirrers, one each per test
Equipment's for blood sugar testing	1. Glucometer with calibration fluid or calibration test strip (or as per the manufacturer's instructions)
	2. Sterile lancet, one per test
	3. Cotton, water swab or wipes, one per test
	4. Yellow, red and black dust bins
	5. Puncture proof container
Recording	1. Register to record the results

Oral GlucoseTolerance Test (OGTT) – Single Step Screening –

- 75 gm oral glucose is dissolved in approximately 300 ml of water and given to the pregnant woman to drink in 5-10 minutes, irrespective of the woman's last meal's status. Woman should not eat or drink anything (except water) in 2 hours' time and physical activity should be limited.
- Blood sugar level is measured 2 hours after taking the solution.
- A plasma standardized glucometer should be used to assess blood sugar level.
- If vomiting occurs within 30 minutes of oral glucose intake, the test must be repeated the next day. If vomiting occurs after 30 minutes, the test continues.

The blood sugar level of 140 mg/dL or more is the cut off for diagnosis of positive test for GDM

ON SUBSEQUENT VISITS

- Physical examination for maternal and fetal well-being including weight and blood pressure
- Laboratory tests including urine examination and hemoglobin estimation
- Iron and folic acid supplementation and medications as needed
- Immunisation against tetanus on first contact and thereafter in one month.
- Group or individual teaching on nutrition, self-care, family planning, delivery and parenthood
- Referral services, when necessary

2.5 Prophylaxis during Pregnancy

Preventive Measures				
Intervention	**Composition**	**Dose Regime**	**Timing& Duration**	**Condition**
Tablet Folic Acid	500 microgram	One tablet once a day	1st trimester (once pregnancy confirmed)	Neural tube defects in foetus
Tablet Iron Folic Acid(IFA)	60 mg of elemental Iron and 0.5 mg Folic Acid	One tablet once a day	In second and third trimester of pregnancy (12 week onwards) for 6 months (180 tablets) and continued for 6 months after delivery (180 tablets) taken after meals preferably after dinner	Anemia
Injection Tetanus Toxoid & Diptheria(TD)	0.5 ml TD	2 injections one month apart OR One Booster(I/M in upper arm)	1st dose at ANC registration,followed by 2nd dose after one month. Give only Booster if immunised with 2 injections in previous pregnancy within last 3 years	Maternal and Neonatal Tetanus and Diphtheria
Tablet Calcium	500 mg of elemental calcium and 250 IU Vitamin D3	One tablet twice a day (total 1 gm calcium daily)	From second trimester (14 weeks) onwards throughout pregnancy for 6 months (360 tablets) and continued for 6 months after delivery (360 tablets) taken in between meals. Note : Iron folic acid tablet and calcium tablets should not be taken together at the same time. There should be a gap of at least 2 hours between IFA and calcium for better absorption of both. Calcium should not be taken immediately after a meal.	Pregnancy Induced Hypertension and Preterm Births

Tablet Albendazole (Deworming)	400 mg	One tablet once only (under observation)	After 1st trimester (after 12 weeks)	Worm infestation, anemia, malnutrition
Insecticide Treated Bed-Nets (ITN)				Malaria

2.6 PLANNING FOR BIRTH – MICRO BIRTH PLANNING

Birth Preparedness

- Registration
- Identification of place of birth and a skilled birth attendant
- Benefits of institutional delivery
- Locate nearest functional FRU/ 24×7 PHC for referral
- Identify and arrange for transport
- Identify support people
- Identification of blood donors if required

Complication readiness

- Recognising signs of labour
- A bloody sticky vaginal discharge (show)
- Painful abdominal contractions every 20 min or less
- Advise the woman to go to a health facility or contact a SBA if she has any of the above signs
- Awareness and recognition of danger signs during pregnancy, delivery and postpartum period
- Identification of nearest functional FRU / PHC
- Identification of transportation facilities

2.7 IDENTIFICATION AND PREVENTION OF HIGH RISK CONDITION

2.7.1 Early Identification

Early identification of complication and its management by physicians or specialists at Basic Emergency Obsetetic Cava (BeMoc) or Comprehensions Emergency Obsetetic Cava (CeMoc) facilities. This will help averting maternal morbidities and mortalities and ensure maternal and foetal well-being.

While continuing to provide appropriate care for all mothers, 'high risk' cases must be identified as early as possible and arrangements to be made for skilled care. These cases comprise the following:

- Women below 18 years of age or over 35 years in primigravida.
- Women who have had four or more pregnancies and deliveries.
- Short statured primigravida
- Those who have practiced less than 2 years or more than 10 years of birth spacing.
- Those with cephalopelvic disproportion (CPD), genital prolapse.
- Malpresentations, e.g. breech, transverse lie etc.
- Antepartum haemorrhage, threatened abortion
- Preeclampsia and eclampsia
- Anemia
- Twins, hydramnios
- Previous stillbirth, intrauterine death, manual removal of placenta
- Elderly grandmultipara
- Those mother with blood Rh negative.
- Those with obesity and malnutrition.
- Prolonged pregnancy (7 days beyond expected date of delivery)
- Previous caesarean or instrumental delivery
- Pregnancy associated with medical conditions, e.g. cardiovascular disease, kidneydisease, diabetes, tuberculosis, liver disease etc.

2.7.2 Prevention of Risk Factor

- Administration of folic acid 5 mg daily atleast 1 month before conception.
- By improving pre-pregnancy health of woman, better nutrition, correction anaemia.
- Atleast 2 yrs gap between 2 deliveries
- Providing quality antenatal care.
- Screening all pregnancies for high risk.
- Provide appropriate clinical and technological care by specialist on time.
- Prevent all kinds of infection.
- Early diagnosis of malformation and termination.

- Avoidance of medication (without physician's prescription).
- Health education on MCH and FP care.

2.7.3 Maintaining of Records and Reports

Following records should be maintained at Sub-centre

- Mother and Child Protection (MCP/MamtaCard) This has been discussed in Theory block BNS-042, Block 4, Unit 4
- Village wise RCH Register
- Entry in PCTS portal
- Form-6

2.8 IDENTIFICATION AND MANAGEMENT OF HIGH-RISK PREGNANCY

High Risk Pregnancy (HRP)

High Risk Pregnancies are set of clinical conditions, which if left untreated can lead to poor outcome of pregnancy. Nearly 20% of all pregnancies develop some complications during pregnancy, childbirth or post-partum period.

The Government of India has expanded the list of high risk pregnancy from 10 categories to 25 high risk pregnancy categories to ensure early identification and timely management of complications to reduce morbidity & mortality and ensure institutional delivery by tagging with the nearest First Referral Unit (FRU). List of the 25 high risk pregnancy (HRP)categories is

GOI HRP Categories

Sl. No.	High Risk Pregnancy (HRP) Categories	Sl. No.	High Risk Pregnancy (HRP) Categories
1	Reactive for HIV	14	Abnormal fetal presentation
2	Syphilis Reactive	15	Teenage Pregnancy
3	Severe Anemia (<7 gm%)	16	High Fever
4	Pregnancy Induced Hypertension	17	RTI/STI
5	Gestational Diabetes Mellitus	18	H/O Still Birth
6	Hypothyroidism	19	Congenital Malformation
7	Tuberculosis positive	20	Rh Negative Blood Group
8	Malaria positive	21	Early Primi
9	Previous LSCS	22	Elderly Primi
10	Cephalo-pelvic Disproportion	23	Grand Multipara
11	Bad Obstetric History	24	Short Stature
12	Twins/Multiple pregnancy	25	Others specify
13	Hepatitis B positive		

High Risk Conditions in Pregnancy		
Based on previous pregnancy history	**Based on existing medical illnesses**	**Based on current pregnancy screening**
• More than 4 pregnancies • Caesarean Section/Any • Uterine surgery • LBW baby (Pre-term / SGA/Intra Uterine • Growth Restriction UGR)) • Early neonatal death/still birth/ birth asphyxia • Child with congenital anomalies • APH/PPH • Pregnancy Induced Hypertension (PIH - Preeclampsia/eclampsia) • Repeated spontaneous abortions of more than 3 times • Conceived after long period of infertility/Artificial Reproductive Techniques • Complicated delivery including obstructed labor. • Rh negative pregnancy • Severe anaemia • GDM	• Diabetes • Hypertension • Heart disease • Kidney disease • Active TB and • Leprosy • Thalassemia/Sickle • Cell disease • HIV positive • Other convulsive disorder • Syphilis • Anaemia/sickle cell anaemia • Rh negative	• 1st pregnancy below 18 years and above 35 years • Maternal age above 40 years • Height less than 140 cm • Severe anaemia Hb less than 7 gm% • Pregnancy Induced Hypertension (BP more than 140/90 mm of Hg)/pre-eclampsia/eclampsia • Presence of sugar and/or and nitrites/leukocytes in urine • Malaria/any high fever • Inter-pregnancy interval less than 18 months • Multiple pregnancy/multigravida • Pre-pregnancy/first trimester weight less than 45 kg • Weight gain per month after 1st trimester less than 500 gm or more than 3 kg • Rh negative woman • Hepatitis B positive/Jaundice • Maternal infections like HIV /RTI/STI, TB • Bleeding PV • Premature Rupture of Membranes/Leaking P/V • Foul smelling vaginal discharge • Decreased/no fetal movements • Pre-term labor ○ Over distended/unusually large size of uterus ○ Excessive pain in abdomen during 1st trimester ○ Post-dated pregnancy (More than 7 days from EDD)

List of high-risk conditions during pregnancy

2.8.1. Anaemia During Pregnancy

Anemia is a condition in which the number of red blood cells, (RBCs) and consequently their oxygen-carrying capacity, is insufficient to meet the body's physiological needs. Anemia is a significant public health challenge in India. It results from one or more of the following:

- Defective red cell production
- Increased red cell destruction or blood loss

Anemia during pregnancy is associated with premature birth, intra and post-partum hemorrhage, low birth weight, stillbirths and maternal deaths.

Types of anaemia:

1. **Nutritional Anemia:** It is caused due to deficiency of micro-nutrient such as minerals (iron, zinc, copper, selenium etc.) and vitamins (Folic acid, Vit. B12, Vit. B6
   - Most common prevalent nutritional deficiency in India is iron deficiency anemia (50%)
2. **Non-nutritional Anemia:** Due to haemoglobinopathies (thalassemia and sickle cell anemia), Soil Transmitted helminths inflammation, fluorosis and malaria and chronic diseases such as tuberculosis etc.

Most common prevalent nutritional deficiency in India is iron deficiency anemia (50%)

Grading of anaemia as per WHO is as mentioned in Table below:

Population	Anemia		
	Mild	Moderate	Severe
Pregnant women	10.0-10.9gm/dl	7-9.9 gm/dl	<7gm/dl

Nutritional anemia:

The cause, signs and symptoms of nutritional anemia is as under:

Causes of nutritional anaemia:

- Inadequate intake of the dietary iron
- Improper absorption of iron
- Loss of iron from the body
- Worm infestations

Non-nutritional anemia:

Non-nutritional anemia can be due to chronic blood loss in conditions such as heavy menstruation and/or haemorrhoids. Non-nutritional anemia can also be due to haemoglobinopathies such as sickle cell disease and thalassemia. In areas endemic for malaria, fluorosis and haemoglobinopathies, non-nutritional anemia is a common finding.

In the endemic areas, special focus should be given to integrate screening and treatment of anemia, along with screening and treatment of malaria, haemoglobinopathies and fluorosis respectively.

Prevention & Control of anaemia: Intake of adequate and balanced nutrition will cover all the required nutrients to prevent nutritional anaemia.

Sources of dietary iron: Iron from food comes in two forms: heme and non-heme. Heme is found only in animal flesh like meat, eggs and fish etc. Non-heme iron is found in plant foods like whole grains, nuts, seeds, legumes, and leafy greens. Non-heme iron is also found in animal flesh (as animal consume plant foods with non-heme iron) and fortified foods.

Sign and symptoms: -

• **Symptoms: -**	• **Signs: -**
➢ Easy fatigue and weakness ➢ Irregular Heartbeat ➢ Shortness of breathing ➢ Dizziness & Light Headedness ➢ Chest pain ➢ Cold hand & Feet ➢ Headache ➢ Tingling sensation and leg cramps	➢ Pallor conjunctiva, tongue & skin ➢ Glossitis ➢ Stomatitis ➢ Brittle pale nails ➢ Generalized swelling.

Effects of Anemia:

Pregnant Women	Fetus
➢ Abortion ➢ Increased risk to infection ➢ Pre-eclampsia ➢ Premature rupture of membrane ➢ Preterm labor ➢ Abruptio Placenta ➢ Post partum Hemorrhage ➢ Puerperal sepsis	➢ Fetal Distress ➢ Prematurity ➢ Low Birth weight ➢ Birth Asphyxia

Measuring Hemoglobin is the confirmatory test for anemia.

Hemoglobin level and management: -

<table>
<tr><td rowspan="2">Gestational Age</td><td colspan="5">Hb levels</td></tr>
<tr><td>11>=gm/dl</td><td>10-10.9 gm/dl</td><td>7-9.9 gm/dl</td><td>5-6.9 gm/dl</td><td>< 5gm/dl</td></tr>
<tr><td>First trimester (first 13 weeks)</td><td colspan="4">Tab. Folic Acid 0.4mg (400 microgram)</td><td rowspan="3">Blood transfusion</td></tr>
<tr><td>Second trimester (14-28 weeks)</td><td rowspan="2">1 IFA tablet/day</td><td rowspan="2">2 IFA tablet/day</td><td rowspan="2">• IV iron sucrose 200 mg 2-3 doses (at the interval of one day)
• After iron sucrose therapy based on Hb levels give IFA tablets.</td><td>• IV iron sucrose 200 mg 4-5 doses (at the interval of one day)
• After iron sucrose therapy based on Hb levels give IFA tablets.</td></tr>
<tr><td>Third trimester (28 weeks-till delivery)</td><td>• < 34 weeks - IV iron sucrose 200 mg 4-5 doses (at the interval of one day).
• <u>> 34 weeks - Ensure blood transfusion</u></td></tr>
</table>

FCM to be administered in case of moderate/severe anemia after 1st trimester

Follow up of pregnant women after Intravenous administration of iron:

- The hemoglobin level of the pregnant women should be checked four weeks after administration of intravenous iron.
- If there is no improvement in Hb level (<1 g/dl increase after four weeks), other causes of anemia should be investigated.
- IFA tablets need not be given to pregnant women post full dose of IV iron as the iron deficit and body's iron stores have been replenished.

NOTE: IV Irom must be given at higher facilities by MO

2.8.2. Hypertensive Disorders in Pregnancy (HDP)

Hypertensive Disorder in Pregnancy is the commonest medical disorder or obstetric complication during Pregnancy. It is the second leading cause of maternal mortality (14%). The Spectrum of severity ranges mild to severe. HDP is responsible for a high proportion of hospital admission, labour inductions, fetal morbidity and mortality.

Definition: Hypertension

"It is recommended that a diagnosis of hypertension require at least 2 determinations of elevated BP > or = 140/90 mm Hg at least 4 hours apart, although on occasion, especially when faced with severe hypertension, the diagnosis can be confirmed within a short interval (even minutes) to facilitate timely antihypertensive therapy."

Effects of High BP on Mother and Child during Pregnancy

Hypertensive disorders increase the chances of death in both mother, foetus, and newborn. Early diagnosis and referral help in reducing this risk.

Effects on mother:	Effects on Foetus and Newborn
Antepartum Haemorrhage	Intrauterine Growth Restriction
Postpartum Haemorrhage	Intrauterine Death
Preterm labour	Prematurity
Maternal Death	Low birth weight

Classification of Hypertensive Disorder of Pregnancy

1. **Gestational hypertension (PIH)**
   - B.P. > 140/90 mm of Hg for first time during pregnancy after 20weeks of gestation
   - No proteinuria
   - B.P. returns to normal within 42 days of post-partum.
   - Almost half of the women subsequently develop preeclampsia syndrome during pregnancy.
2. **Pre-eclampsia**
   - B.P.≥ 140/90 mm of Hg but less than 160/90 mm of Hg after 20 weeks of gestation.
   - Proteinuria trace/1+ or up to 2 + in dip stick test.

3. Severe Pre-eclampsia

- Hypertension ≥160/110 mmHg
- Proteinuria - ≥300mg/24 hour or Dipstick ≥ 3+ protein
- And/or presence of danger signs (headache, blurred vision, oliguria <500 ml in 24 hours, pain in upper part of abdomen, abnormal oedema over face, hands, abdomen and vulva).

4. Eclampsia

- Convulsions/fits is the sign of eclampsia in PW with symptoms of pre-eclampsia. It may occur during ante-partum, intra-partum & post-partum period (up to 10 days).

Management

Administration of Magnesium Sulphate

First dose of Inj. MgSO4 should to be given in the case of Eclampsia and Severe Pre-Eclampsia and refer to FRU

- First dose (at non-FRU level)/referral dose: **Total 10 grams**
- 5 g (10ml) magnesium sulphate deep IM in each buttock
- Patient should reach FRU in 2 hours for further management.

Calcium supplementation for prevention of Pre-eclampsia/Eclampsia (PE/E)

- Every woman would be given calcium supplementation for 6 months during ANC period after 1st trimester and for 6 months during lactation.
- Two calcium tablets would be given daily, one in the morning and one in evening time.
- Each tablet shall contain 500 mg elemental Calcium and 250 IU Vitamin D3. Daily dose of calcium not to be exceeded 1000 mg in a day.

2.8.3. Gestational Diabetes Mellitus (GDM)

Gestational Diabetes Mellitus (GDM) is defined as Impaired Glucose Tolerance (IGT) with onset or first recognition during pregnancy.

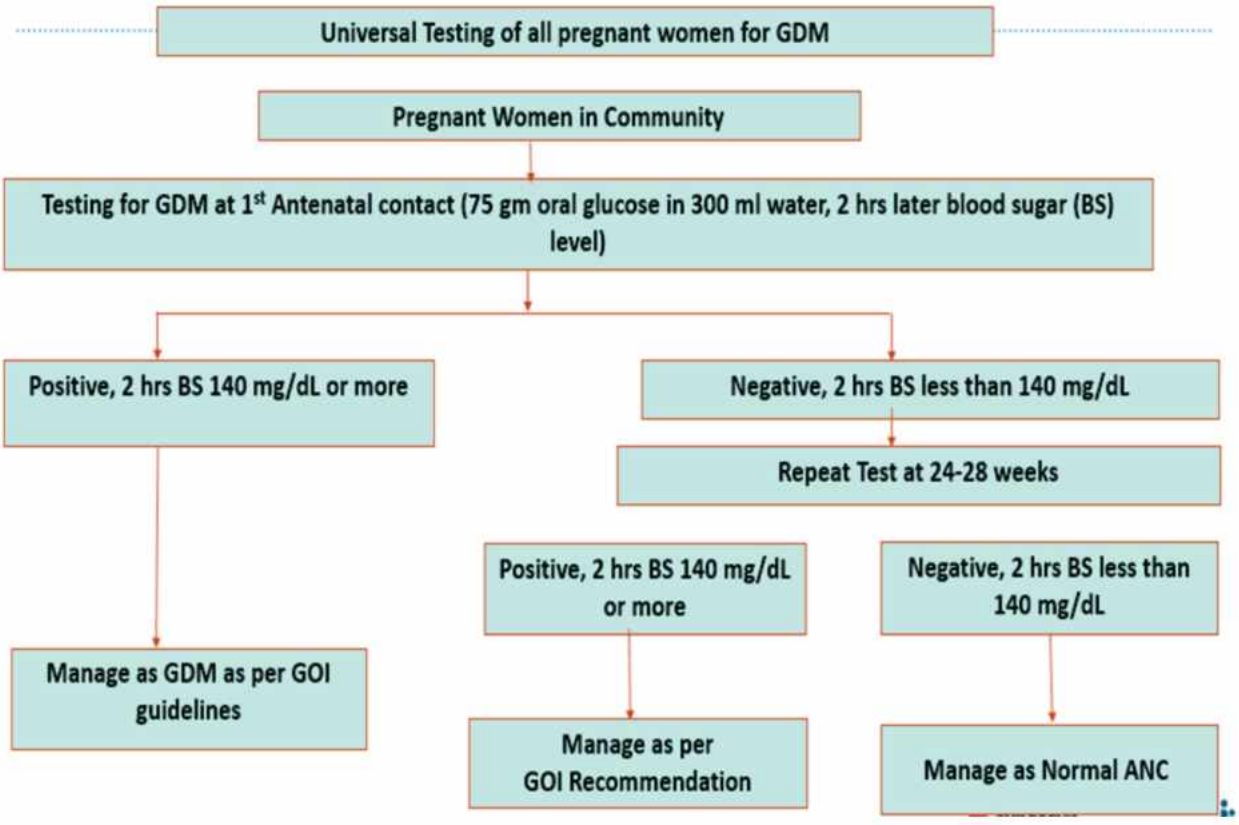
Out of 100 pregnant women in various parts of the country, 10-14 women have GDM. 50% of GDM positive women will develop Type 2 diabetes in next 5-10 years.

Effect on Mother	Effect on Newborn
Spontaneous abortion	Intra -uterine death
Polyhydramnios leading to preterm or premature rupture of membranes	Fetal macrosomia
Pre - eclampsia, fits	Shoulder dystocia
Prolonged labor leading to assisted delivery	Birth Injuries, stillbirth
Obstructed labor leading to caesarean section	Infant respiratory distress syndrome
Uterine atony leading to PPH	Neonatal hypoglycemia and hypocalcemia
Infection	Congenital malformation

Screening and Testing for Gestational Diabetes Mellitus

- Considering the fact that there is high prevalence of GDM in Indian women and associated adverse impact on maternal and child health outcome, it is recommended to screen all pregnant women during antenatal period.
- Single step oral glucose tolerance test (OGTT) is recommended for universal screening. Screening helps in early detection and initiation of appropriate management for better maternal and child outcome.
- Testing for GDM is recommended twice during ANC. The first test should be done during first antenatal contact as early as possible in pregnancy. Test to be done for all pregnant women at the time of first contact, even if she reports late in pregnancy.
- The second test should be done during 24-28 weeks of pregnancy if the first test is negative. It is important to ensure second test as many pregnant women develop blood sugar intolerance during this period (24-28 weeks) Moreover only one third of GDM positive women are detected during first trimester. If it could not be done during this time, then it can be done any time after 24 weeks of pregnancy.
- There should be an interval of 4 weeks between the two tests. (4 weeks gap between 2 tests should be maintained if pregnant woman comes late in the pregnancy but before 28 weeks)
- If woman comes beyond 28 weeks for the first time, only one test is to be done at first point of contact.

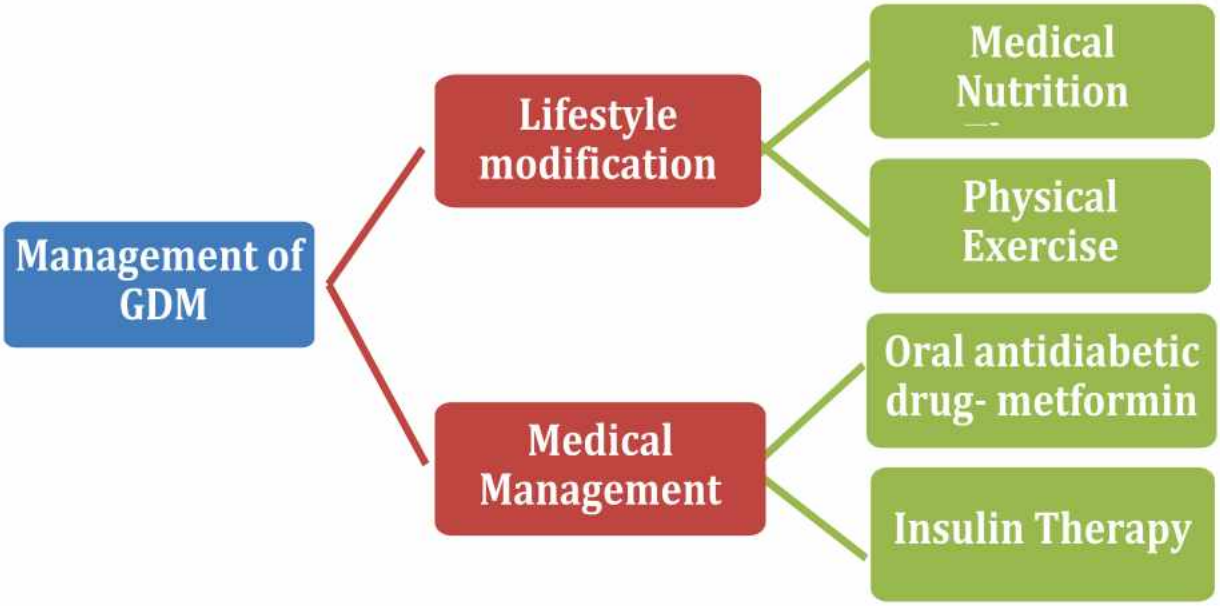
OGTT procedure: Refer 2.4.7.



Management of GDM - Medical Nutrition Therapy and Physical Exercises (Lifestyle Modification)

Main goal of treatment of GDM is to achieve normal blood sugar level (FBS less than 95 mg/dl and PPBS less than 120 mg/dl) throughout pregnancy, during labor, delivery and in postpartum period.

This can be achieved by lifestyle modification and medical therapy.



2.8.4 Maternal Infections during Pregnancy

Maternal infections in pregnancy can be bacterial, viral, parasitic or protozoal.

Types of Maternal Infections (MIs)

Bacterial infections	Viral infections	Parasitic infections	Protozoal infections
• Syphilis • Gonorrhea • Chlamydia Trachomatis • Group B Streptococcus • Bacterial Vaginosis • Asymptomatic bacteriuria (ASB) • Tuberculosis	• Hepatitis B and C • Rubella • Cytomegalovirus • Herpes simplex • HIV	• Intestinal Worms	• Malaria

Effects of Maternal Infections (MIs) on Mother, Foetus and Newborn

On Mother	On Fetus/Newborn
• Fever, nausea, fatigue, muscle pains, decrease in appetite. • Anaemia specially with malaria and worms • Jaundice and hypoglycemia specially with malaria • Abortions due to Toxoplasmosis, Rubella, Cytomegalovirus and Herpes Simplex infections (TORCH), syphilis and malaria • In severe cases multiple organ dysfunction, shock, coma and death	• IUGR and IUD • Stillbirths • Preterm births • Small for gestational age (SGA) and low birth weight (LBW) • Wasting and stunting in later life • Developmental anomalies specially with TORCH infections • Congenital disease affecting CNS, CVS and the liver. • Postnatal persistence of infections specially with TB, syphilis and malaria in newborn

(i) Asymptomatic Bacteriuria (ASB)

This is defined as true bacteriuria in the absence of specific symptoms of acute urinary tract infection, when a bacterial count of more than 1,00,000 cfu/ml bacteria of the same species is detected in mid-stream clean catch specimen of urine in 2 urine cultures obtained 2-7 days apart.

If not treated, approximately 25 to 30% of infected women will develop symptomatic infection during pregnancy. It can lead to cystitis and pyelonephritis. May lead to pre-term birth or low birth weight baby.

Screening methods

- ✓ Urine Multireagent dipsticks for presence of nitrites and leucocyte esterase
- ✓ Urine routine examination: Need to document pyuria (pus cells more than 10/HPF)
- ✓ Gram's staining
- ✓ Urine culture

Management of Asymptomatic Bacteriuria (ASB):

Refer to the nearest health center for further management by medical officer.

(ii) Sexually Transmitted Infections (STIs)

STIs are infections that are transmitted by sexual intercourse.

STI/RTIs present as a syndrome, a combination of symptoms and signs caused by more than one organism. It is recommended by NACO to manage STIs/RTIs based on the syndromes because mixed infections with more than one organism occur frequently. Syndromic case management helps immediate treatment for all the most important possible causative organisms. This helps to identify the syndrome correctly and manage accordingly. Syndromic treatment can quickly make the patient non-infectious. STIs/RTIs are important causes of maternal and perinatal morbidity and mortality. They can cause pelvic inflammatory disease, ectopic pregnancy, abortions, still birth, pre-term birth and congenital infections (syphilis, Herpes Simplex virus, Hepatitis B virus and Human Papilloma Virus

diseases).

Common symptoms of STIs in females

Abnormal vaginal discharge, itching in genital organs, pain in lower abdomen, pain during intercourse, ulcer in and around mouth, lips, genital organs and genital Warts

Risk factors for STIs

Having multiple sexual partners, early marriage, unsafe sex, not using condoms, recipients of blood transfusion.

Syndromic approach for case Management

Treat for the most common organisms causing syndrome.

Other components of syndromic approach for case management are -

- Counselling
- Partner treatment
- Condom promotion
- Referral for HIV testing

(iii) HIV Infection

- This is an infection caused by human immunodeficiency virus which can be transmitted during sexual contact from an infected partner; through infected blood transfusions; contact of mucosa with infected body secretions or through infected needles and injections.
- A mother's risk of contracting HIV is increased in the presence of STI and during pregnancy in general. Mother to child transmission of HIV is the primary route of transmission for HIV among children.
- This transmission is known to occur during: Pregnancy, Delivery, Breast-feeding period

Without any intervention the risk of transmission of HIV from infected mother to her child is between 20 to 45%, but with effective use of Anti-retroviral (ARV) drugs, this risk reduces significantly.

High risk behavior

- Unprotected sex with multiple partners
- Unprotected sex with HIV infected partner
- Intravenous drug use

Risk to pregnant woman and her baby

- Abortions
- Preterm births
- Foetal loss
- Low birth weight baby
- Mother to child transmission of infection

Identification

Screening of all pregnant women for HIV by rapid diagnostic test at the first antenatal care visit must be done and maintain confidentiality of results.

Management of HIV positive cases

- Maintain confidentiality.
- Counselling for safe sex, condom use
- Refer to integrated counselling testing centre (ICTC) for further counselling, investigation and management with lifelong antiretroviral therapy (ART) of three drug regimen.
- Follow-up for adherence to ART and ANC

Note: ARV prophylaxis in newborn and Syrup Nevirapine to HIV positive newborn starting from birth till 6-12 weeks.

(iv) Syphilis During Pregnancy

Syphilis is a sexually transmitted infection caused by the spirochaete bacterium Treponema Pallidum. The primary route of transmission is through sexual contact; it may also be transmitted from mother to foetus during pregnancy or at birth resulting in congenital syphilis.

The signs and symptoms of syphilis vary depending on which of the four stages it presents (primary, secondary, latent and tertiary). The primary stage classically presents with a single chancre (a firm, painless, non-itchy skin ulceration); secondary syphilis with a diffuse rash which frequently involves the palms of the hands and soles of the feet; latent syphilis with little to no symptoms and tertiary syphilis with gummas, neurological or cardiac symptoms

Protocol for Investigation and Management of Syphilis

- All pregnant women should be tested for syphilis in the first ANC visit itself, which should be as early as possible, by a POC test at the sub-centre level or at any other facility.
- Those who found positive should be referred to MO with their spouses for further investigation and treatment.
- Women who are at high risk for syphilis (Women with current or past history of STI, Women with more than one sexual partner, Sex workers, injecting drug users), those who live in areas of high prevalence of syphilis, those who have had adverse outcomes of pregnancy previously or those who were untested earlier, should be screened again in the third trimester or at the time of delivery.

(v) Malaria in Pregnancy

Malaria is caused by bite of infected Anopheles mosquito and transmitting the parasite (plasmodium) into the bloodstream of the pregnant woman. Plasmodium is of 3 types – Plasmodium vivax, falciparum and ovale. Malaria is more common in endemic areas of these mosquitoes.

Diagnosis of malaria: Clinically through signs and symptoms

Symptoms	Signs
• Fever • Chills • Sweating • Headache • Muscle pain • Nausea • Vomiting • Diarrhoea, Cough	• Jaundice • Elevated temperature • Perspiration • Pallor • Splenomegaly • Respiratory distress

Investigations:

- Rapid diagnostic test kits
- Preparation of thick and thin smear for microscopy
- In endemic areas: Screen every Pregnant woman in first ANC Visit and repeat every month.
- In non-endemic areas, only symptomatic PW are to be screened.

Prophylaxis

All Pregnant women should be provided with ITNs (insecticides treated bed nets) based on priority.

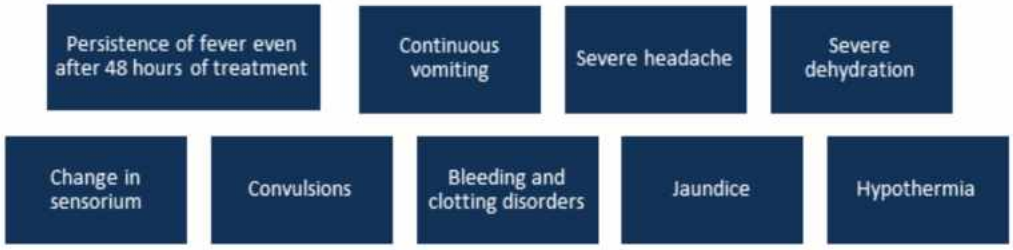
Investigations:

- Rapid diagnostic test kits
- Preparation of thick and thin smear for microscopy
- In endemic areas: Screen every Pregnant woman in first ANC Visit and repeat every month.
- In non-endemic areas, only symptomatic PW are to be screened.

Prophylaxis

All Pregnant women should be provided with ITNs (insecticides treated bed nets) based on priority.

Danger signs that indicate immediate referral in malaria:



(vi) Tuberculosis

It is an infection caused by mycobacterium which infects lungs in most cases.

India contributes 20.6% of global burden of all active TB among pregnant women. Annually 20,000- 40,000 pregnant women are likely to suffer from active TB in India.

The risk of latent TB infection activation is much higher during pregnancy due to immunological changes.

Effects of TB on Pregnancy

- Preterm birth
- Low birthweight
- Intrauterine growth restriction
- Perinatal death
- Congenital TB

TB Screening and management of pregnant women at outreach/facilities

- Screen all the pregnant women for TB during ANC visit.
- Screen for 4 symptoms complex i.e. Cough more than 2 weeks, fever more than 2 weeks, weight loss- in last 3 months, night sweats.

- For extra-pulmonary symptoms- localized swellings/lumps in the body (lymph node), pain and swelling of joints or any other organ specific symptoms.
- If symptomatic, referral of patient or sample (Sputum/FNAC) transportation to TB diagnostic centre.
- Refer the women to facility with laboratory services for diagnosis.
- If diagnosed, refer the pregnant woman for initiation of treatment by MO as per NTEP Guidelines. Link Positive women with NTEP (DOTS Centre)
- Counsel the women for lifestyle and diet management.

2.8.5. Antepartum Hemorrhage

Bleeding per vagina anytime during pregnancy is a danger sign and an obstetric emergency. The women must seek for immediate help. If APH is not managed in time it can lead to fatal effect in women and baby.

APH is divided into two types.

1. Early pregnancy bleeding (Bleeding up to 20 weeks)
2. Late pregnancy bleeding (Bleeding after 20 weeks)

Causes of bleeding:

Vaginal bleeding before 20 weeks of gestation	Vaginal bleeding after 20 weeks of gestation
Abortions	Abruptio placentae
Hydatidiform mole	Placenta previa
Ectopic pregnancy	Ruptured uterus
Injury to uterus (violence)	Injury to uterus (violence)

Vaginal bleeding in early pregnancy:

The probable causes could be a threatened or spontaneous abortion, an ectopic pregnancy or a hydatidiform mole.

a. Incomplete spontaneous abortion

The following are the signs of incomplete spontaneous abortion:

- There is heavy bleeding and lower abdominal pain.
- There is a history of expulsion of the Products of Conception (POC).
- Abdominal examination shows the presence of uterine tenderness, and the fundal height is less than the period of gestation.

Management:

- If retained POC are seen in the vagina, remove them gently with a finger. The procedure must be carried out under aseptic conditions.
- If the bleeding does not stop and/or the woman is in shock, establish an intravenous line immediately and give intravenous fluids rapidly.

- Send the woman to the MO with a referral slip.

b. Complete abortion

The following are the signs of complete abortion:

- There is light bleeding or there has been heavy bleeding which has now stopped.
- There is lower abdominal pain.
- There is a history of expulsion of POC.
- Abdominal examination shows a uterus that is softer than normal, and the fundal height is less than the period of gestation.

Management:

- Observe the woman for 4-6 hours. Advise her to take rest.
- If the bleeding decreases or stops, explain the facts to her, reassure her and advise her to go home after you have checked her vital signs.
- Advise her to return to you or the MO if the bleeding recurs.

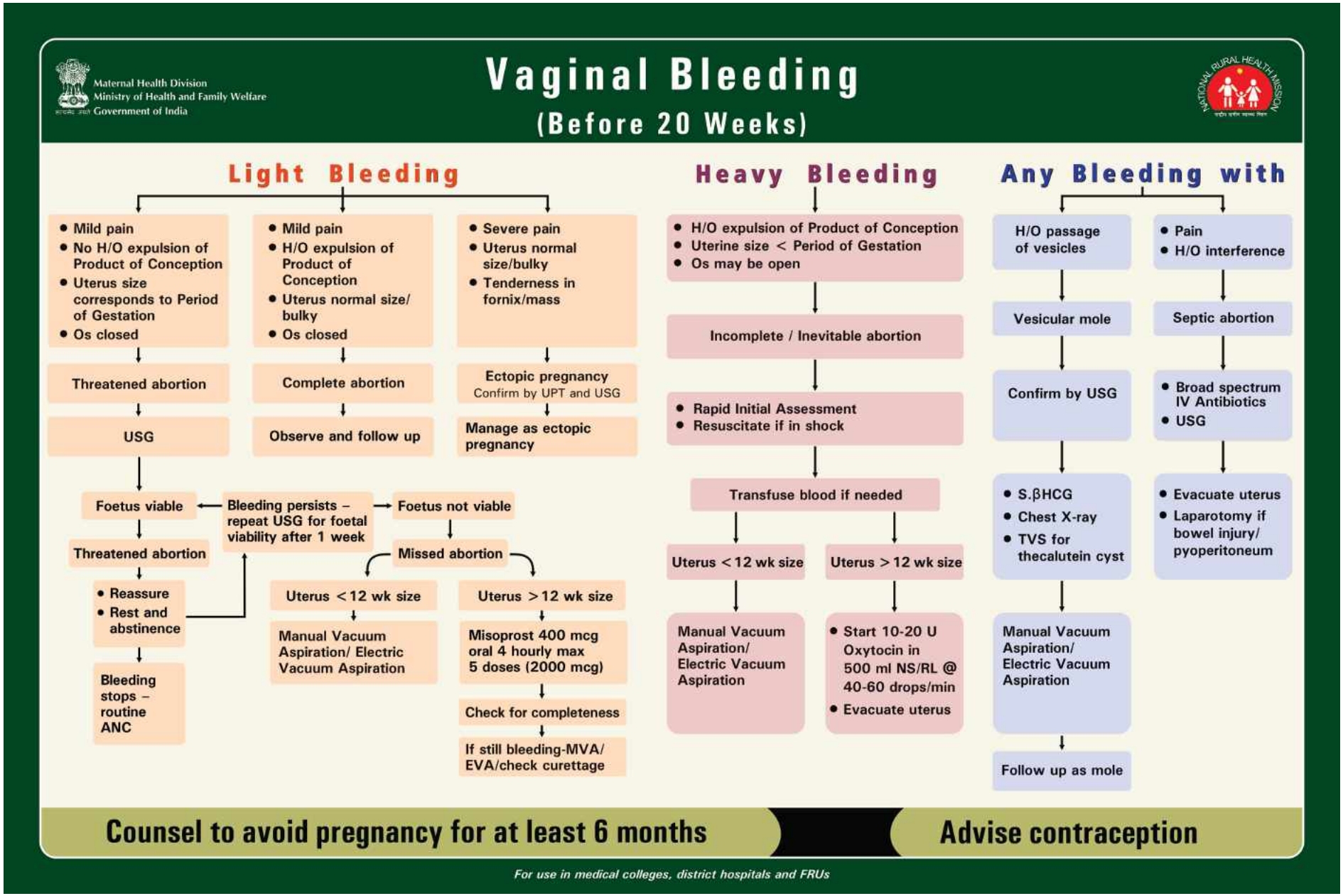
c. Threatened abortion

The following are the signs of threatened abortion:

- There is light bleeding.
- The woman complains of lower abdominal pain.
- There is no history of expulsion of POC.
- Abdominal examination shows the uterus to be softer than normal, and the fundal height corresponds to the period of gestation.
- On P/V examination, the cervical os is found to be closed.

Management:

- If the bleeding decreases or stops, explain the facts to the woman, reassure her and advise her to go home after you have checked her vital signs.
- Advise her to avoid strenuous exercise/work and to avoid sexual intercourse.
- Advise her to take bed rest.
- Send her to the MO with a referral slip for further advice.


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Vaginal Bleeding
(Before 20 Weeks)
NATIONAL RURAL HEALTH MISSION
Light Bleeding
• Mild pain
• No H/O expulsion of Product of Conception
• Uterus size corresponds to Period of Gestation
• Os closed
Threatened abortion
USG
Foetus viable
Threatened abortion
• Reassure
• Rest and abstinence
Bleeding stops – routine ANC
Bleeding persists – repeat USG for foetal viability after 1 week
Foetus not viable
Missed abortion
Uterus < 12 wk size
Manual Vacuum Aspiration/ Electric Vacuum Aspiration
Uterus > 12 wk size
Misoprost 400 mcg oral 4 hourly max 5 doses (2000 mcg)
Check for completeness
If still bleeding-MVA/ EVA/check curettage
• Mild pain
• H/O expulsion of Product of Conception
• Uterus normal size/ bulky
• Os closed
Complete abortion
Observe and follow up
• Severe pain
• Uterus normal size/bulky
• Tenderness in fornix/mass
Ectopic pregnancy
Confirm by UPT and USG
Manage as ectopic pregnancy
Heavy Bleeding
• H/O expulsion of Product of Conception
• Uterine size < Period of Gestation
• Os may be open
Incomplete / Inevitable abortion
• Rapid Initial Assessment
• Resuscitate if in shock
Transfuse blood if needed
Uterus < 12 wk size
Manual Vacuum Aspiration/ Electric Vacuum Aspiration
Uterus > 12 wk size
• Start 10-20 U Oxytocin in 500 ml NS/RL @ 40-60 drops/min
• Evacuate uterus
Any Bleeding with
H/O passage of vesicles
Vesicular mole
Confirm by USG
• S.βHCG
• Chest X-ray
• TVS for thecalutein cyst
Manual Vacuum Aspiration/ Electric Vacuum Aspiration
Follow up as mole
• Pain
• H/O interference
Septic abortion
• Broad spectrum IV Antibiotics
• USG
• Evacuate uterus
• Laparotomy if bowel injury/ pyoperitoneum
Counsel to avoid pregnancy for at least 6 months
Advise contraception
For use in medical colleges, district hospitals and FRUs

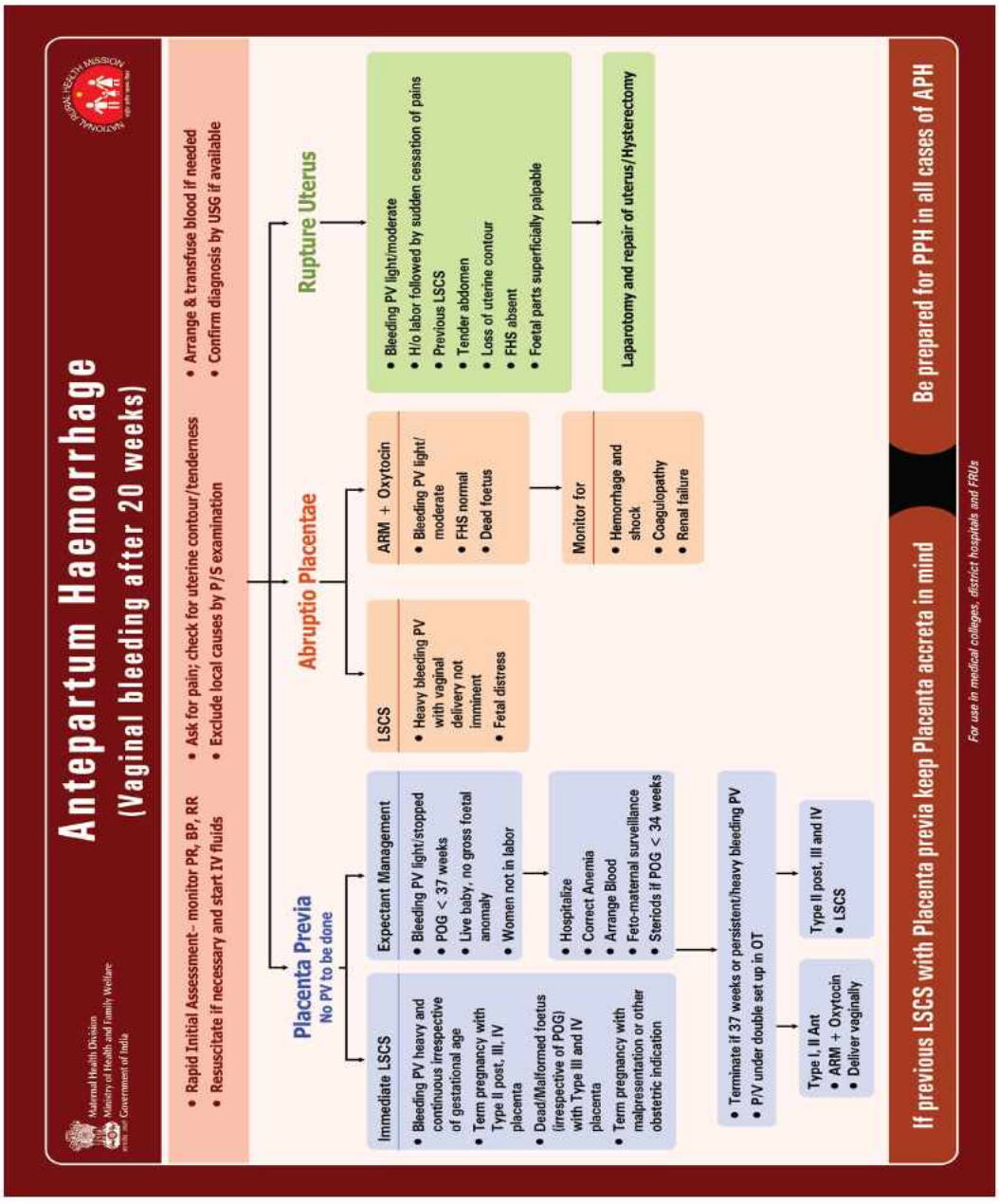
Vaginal bleeding in late pregnancy (APH):

The most serious causes are placenta praevia (placenta lying at or near the cervix), abruptio placentae (detachment of the placenta before the birth of the foetus) or a ruptured uterus. ***Any bleeding (light or heavy) at this time of pregnancy is dangerous.***

> **Remember:**
> P/V should not be performed in women who have bleeding during pregnancy beyond 20 weeks.

Management:

A woman with placenta praevia, abruptio placentae or ruptured uterus should not be managed at the SHC-HWC because there are no facilities for blood transfusion or surgical intervention, if required. Refer such a woman immediately to an FRU equipped with facilities for surgical obstetrics, blood transfusion and anaesthesia after establishing an intravenous line.



2.8.6. Threatened Preterm Labour

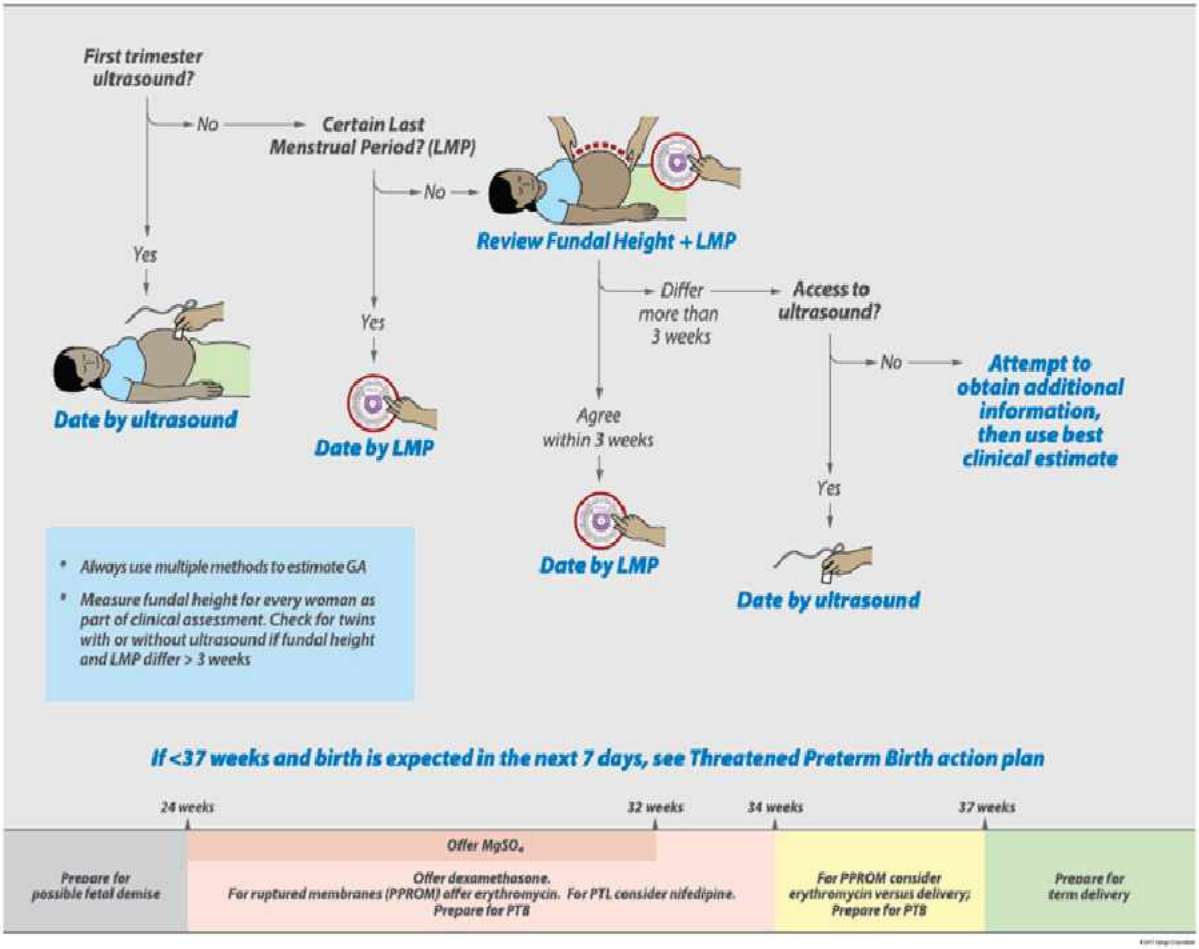
Preterm labor before 37 weeks of pregnancy leads to preterm birth. This preterm newborn baby is small, has low birth weight and is at risk of sustaining life.

Preterm babies are at increased risk of:

- Respiratory distress syndrome (RDS) due to lack of surfactant development in alveoli leading to immature solid lungs.
- Neurologic complications like increased chance of intraventricular hemorrhage (IVH), cerebral palsy, major motor neuron dysfunction
- Necrotizing enterocolitis (NEC)
- Hypothermia
- Infections
- Asphyxia
- Feeding problems due to poor sucking or incoordination between sucking, swallowing and breathing
- Neonatal deaths-prematurity is a leading cause of neonatal mortality, around 34%.

It is critical to assess correct gestational age to diagnose preterm labor. The methods to assess gestational age have been discussed earlier during abdominal examination (refer to checklists for abdominal examination and estimation of gestational age). The flow chart below shows how to estimate correct gestational age.

Methods of Correct Estimation of Gestational Age (GA):



- **Management:**
  - Identify any case of threatened preterm birth by correctly estimating the gestational age.
  - Give first dose of injection Dexamethasone (6 mg) IM if the client is having true labor pains and the gestational age is between 24-34 weeks.
  - If Inj. dexamethasone is not available, Give Inj. Betamethasone 12mg IM and refer to FRU.
  - Refer the client to FRU for delivery if there is some time.

2.9 REFERRAL SERVICES

It is important that the danger signs be recognised at the earliest so that the antenatal mother can be referred in time to FRU or PHC for further management. The maternal conditions requiring referral are mentioned below: (Table 2.2)

Table 2.2: Maternal Conditions requiring referral

Visit FRU	Visit PHC
Malpresentation pain, too weak to get out of bed	High fever with or without abdominal
Multiple pregnancy	Fast or difficult breathing
Any bleeding P/V during pregnancy and after delivery (a pad is soaked in less than 5 minutes)	Consuming IFA tablets for 30 days
Severe headache with blurred vision anything orally	Excessive vomiting, unable to take
Haemoglobin <7 g%	Breathlessness at rest
Convulsions or loss of consciousness	Reduced urinary output with high BP
Decreased or absent foetal movements	High BP (>140/90 mmHg) with or without proteins in the urine
Active labour lasting longer than 12 hours in primipara and more than 8 hours in a multipara	
Continuous severe abdominal pain	
Premature rupture of membranes (PROM) before 37 weeks	
High BP (>140/90 mmHg) with proteins in the urine, and severe headache with blurred vision or epigastric pain	
Temperature more than 38°C Foul smelling discharge before or after delivery/abortion	
Ruptured membranes for more than 18 hours	
FHR >160/minute or<120/ minute	
Perineal tear (2nd, 3rd and 4th degree)	

2.10 LET US SUM UP

In this practical on Antenatal Care you have learned about the history taking abdominal examination (various steps for abdominal examination/palpation in a pregnant women), laboratory investigation (like urine analysis, haemoglobin test, urine test for protein and sugar, RDT for malaria), birth planning and identification of prevention of risk factors. You have also learnt about records and reports and referral services.

2.11 ACTIVITY

Select five antenatal mothers in DH/PHC, CHC/PHC/SC registered them in clinic.

1) Conduct and Record antenatal examination of mothers registered at the clinic.
2) Perform pregnancy detection test on 5 mothers who have registered in the first trimester of pregnancy.
3) Carry out blood Hb test of 10 antenatal mothers in the first, second and third trimester of pregnancy.
4) Urine Test for protein and sugar on 10 antenatal mothers.

2.12 REFERENCES

1) Daksh Skills Lab (RMNCAH+N) Training Manual for trainers Govt. of India.
2) Daksh Skills Lab (RMNCAH+N) Training Manual for participants Govt. of India.
3) Ministry of Health & Family welfare GOITraining manual on Care during pregnancy and child birth for CHO

UNIT 3 ORGANISING LABOUR ROOM

Structure

3.0 Introduction

3.1 Objectives

3.2 Mother and Baby Friendly Environment

3.3 Infrastructure

- 3.3.1 Improving Existing Infrastructure
- 3.3.2 Creating New Infrastructure

3.4 Maternity Wing

- 3.4.1 Examination Room
- 3.4.2 Pre-Delivery Observation Room (1st Stage Area)
- 3.4.3 Delivery (Labour) Room
- 3.4.4 Service Area
- 3.4.5 Post-Delivery Observation Room (4th Stage Area)
- 3.4.6 General Requirements for Labour Room
- 3.4.7 Infection Prevention in Labour Room
- 3.4.8 Do's and Don'ts For Labour Room

3.5 Newborn Care Corner (NBCC)

- 3.5.1 Equipment and Accessories Needed at NBCC
- 3.5.2 Services Provided at Newborn Care Facilities of DH/FRU/CHC
- 3.5.3 Expected Services to be Provided at Newborn Care Facilities
- 3.5.4 Newborn Care

3.6 Septic Room and Eclampsia Room

3.7 Let Us Sum Up

3.8 Activity

3.9 References

3.0 INTRODUCTION

All facilities providing Maternal and Newborn Health (MNH) services should have a mother and newborn friendly environment. Dignity and safety (privacy and choice) of clients should be ensured. Staff deputed at such facilities should adhere to clinical protocols/standards of service delivery and ensure infection prevention measures.

This unit provides an outline for planning infrastructure, equipment, drugs and supplies, record keeping, reporting and monitoring. It is the responsibility of the facility in charge and service providers to ensure that the institution and its premises remain clean, safe and client friendly. A nodal officer should be designated at every institution for assuring quality of services. All staff including support staff should be oriented and trained on relevant protocols including infection prevention. Audit of sample prescription/case sheets should be weekly exercises by faculty members or treating physicians to ensure rational treatment as per clinical standards.

In this unit you will learn about organising a labour room which include infrastructure and equipment required for a labour room and newborn care corner.

3.1 OBJECTIVES

After completing this practical, you should be able to:

- Identify infrastructure needed to set up a labour room; and
- Recognise and collect all the equipments needed in labour room a newborn care corner.

3.2 MOTHER AND BABY FRIENDLY ENVIRONMENT

- Respecting the right of every mother and baby to stay safe in the facility and with dignity
- Designing the infrastructure for easy mobility and comfortable stay
- Training the service providers for necessary behavioural and technical skills
- Providing integrated maternal newborn and child health services in accordance with protocols with required competency.
- Practice of infection prevention and bio-medical waste management as per guidelines
- Establishing assured referral linkages
- Monitoring quality of service delivery and establishing a process for improvement of quality.
- Ensuring functional grievances redressal system both for client and service providers
- Assessing client satisfaction periodically
- For smooth planning at each level of facility, the plan should take care of infrastructure, equipment, drugs and supplies, record keeping, reporting and monitoring.

3.3 INFRASTRUCTURE

While planning for infrastructure, planners may face two situations:

a) To improve existing infrastructure

b) To create additional infrastructure particularly where bed occupancy is more than 70%

3.3.1 Improving Existing Infrastructure (Fig. 3.1)

Although it may not be always possible to ensure the recommended layouts and infrastructure within an existing facility Fig. 3.1 Maternal and Neonatal unit, it is still essential to make the existing facility as mother and baby friendly as possible. Planning therefore cannot be based on a one size that fits all, and will differ from facility to facility as per the local situation. Some of the critical steps to follow are to:

1) Perform a need assessment and identify the gaps by observing client flow and time taken for actual service delivery from the time clients report to the registration or emergency.

2) Plan to address gaps to improve service delivery and minimize the third delay.
3) Relocate/redesign/rearrange available area/rooms for optimal utilisation keeping in mind client safety, privacy and comfort.
4) Repair and refurbish facility with appropriate tiling, flooring, roofing and ventilation.
5) Ensure privacy, create anterooms before aseptic zones such as LR, OT, obstetric HDU, ICU, SNCU etc.
6) Ensure availability of 24×7 running water supply, uninterrupted power supply.
7) Attention should be given for improving the ambience of the premises, waiting area and other facilities for the clients.
8) If you are not posted at wellness centre or a Sub-centre then prepare an isolation labour room for eclampsia, sepsis, HIV, Hepatitis B & C and such cases which might need isolation.



Fig. 3.1: Maternity and Neonatal Unit

3.3.2 Creating New Infrastructure

While creating new infrastructure, the criteria given below must be used:

1) Functionality of the facility
2) Delivery point
3) Bed occupancy
4) Services being delivered

3.4 MATERNITY WING

This section deals with organisation of 'Maternity Wing' with minimum standards of care which should be observed on a facility. A Maternity Wing comprises (Fig. 3.2) following:



Fig. 3.2: Maternity Wing

Delivery Unit Includes the following

- Receiving Area
- Examination Room
- Pre-delivery room (1st stage area)
- Delivery (Labour) room both septic and aseptic with NBCC (2nd – 3rd stage)
- Post-Delivery observation room (4th stage area)

Receiving Area

This is the place where all pregnant women including those in emergency situation are received. The pregnant woman's BP, weight etc. are noted. On Admission, Fill the Safe Childbirth Checklist-1. Records and registers This is the first contact of the mother with us. We can pause and review whether we have assessed mother properly, briefed the mother and companions about the process, and are prepared for her delivery in the facility are filled case sheet is prepared after her examination in the examination room.

If the mother's condition cannot be managed in this facility, she can be referred

Relevant registers and records must be kept in the receiving area.

Any woman coming to the receiving area has to be quickly assessed for signs of acute emergencies, danger signs or a stage of full dilatation with imminent delivery. Initial/emergency management of such cases will be done in the examination room. Then the woman is sent to the appropriate area for further management.

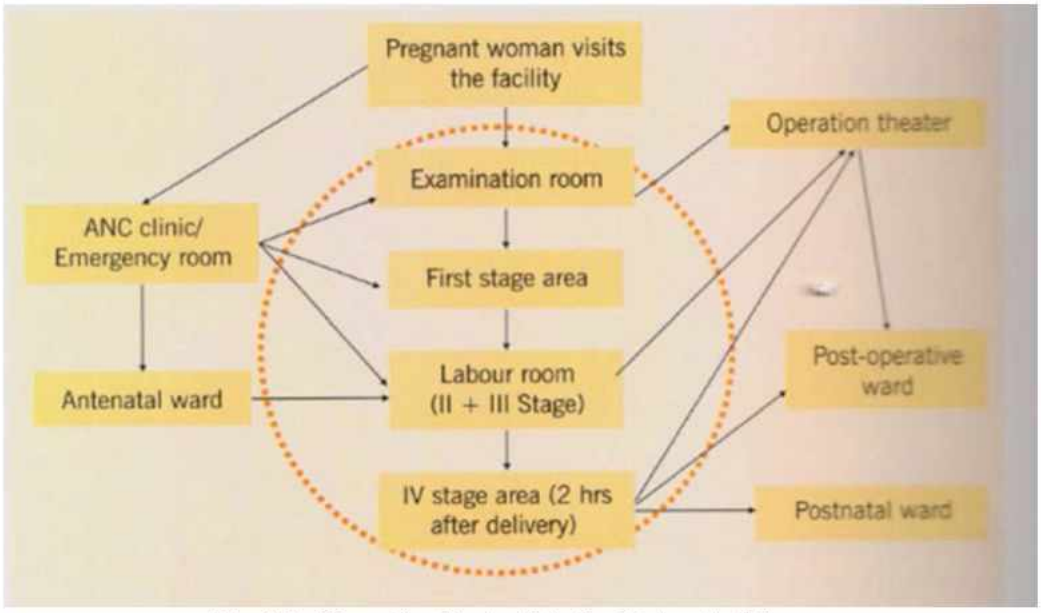


Fig. 3.3 : Flow of a client within the Maternity Wing

3.4.1 Examination Room

This is a place where adequate privacy with curtains between examination tables schedule be maintained. It is a well lit room with examination tables and enough space for movement of the pregnant woman/patient and also the examining doctor.

The room also has the following equipment and consumables for conducting general, abdominal and vaginal examination.

1) Equipment and Accessories (Add table of 6 trays rom Dakshata guidelineWheelchairs and/or stretcher
2) Examination table with foot step and curtain for privacy
3) Foetoscope/Doppler
4) Table and chair
5) BP apparatus with stethoscope
6) Thermometer
7) Digital wall clock
8) Adult weighing scale
9) Measuring tape
10) Emergency drug tray
11) Hub cutter
12) Puncture proof container
13) Colour coded bins
14) Partograph
15) Cetrimide swabs
16) Disposable gloves
17) Records/registers
18) Refrigerator
19) Utility gloves
20) MCP Card, safe motherhood booklet
21) IUCD Client Card
22) Sterilised swabs and instruments
23) Washbasin
24) 0.5% Chlorine solution and a tub
25) Examination tray
26) Delivery tray in case of emergency
27) Bucket with kellys pad
28) IV stand
29) Scissor
30) For communication - Telephone facility

3.4.2 Pre-Delivery Observation Room (1st Stage Area)

After initial examination, the pregnant woman with good uterine contractions but cervical dilatation still less than 4 cm that is not in active phase of labour will be sent to pre-delivery room area for close observation. The woman should change into a clean gown.

Equipment and accessories

1) Foetoscope /Doppler
2) BP Apparatus with stethoscope

3) Thermometer
4) Digital wall clock
5) Colour coded bins
6) Cetrimide swabs
7) Disposable gloves
8) Bed head tickets with attached partograph
9) Utility gloves
10) Washbasin
11) IV stand
12) Sterilised instruments

3.4.3 Delivery (Labour) Room (Fig. 3.4)

A pregnant woman will go to the Delivery/Labour room if she is in active phase of labour, i.e. cervical dilatation = or 4 cm. Essential services in Labour Room:

- Conducting Normal Delivery
- Plotting Partograph
- Identifying and managing complications
- AMTSL
- ENBC including newborn resuscitation



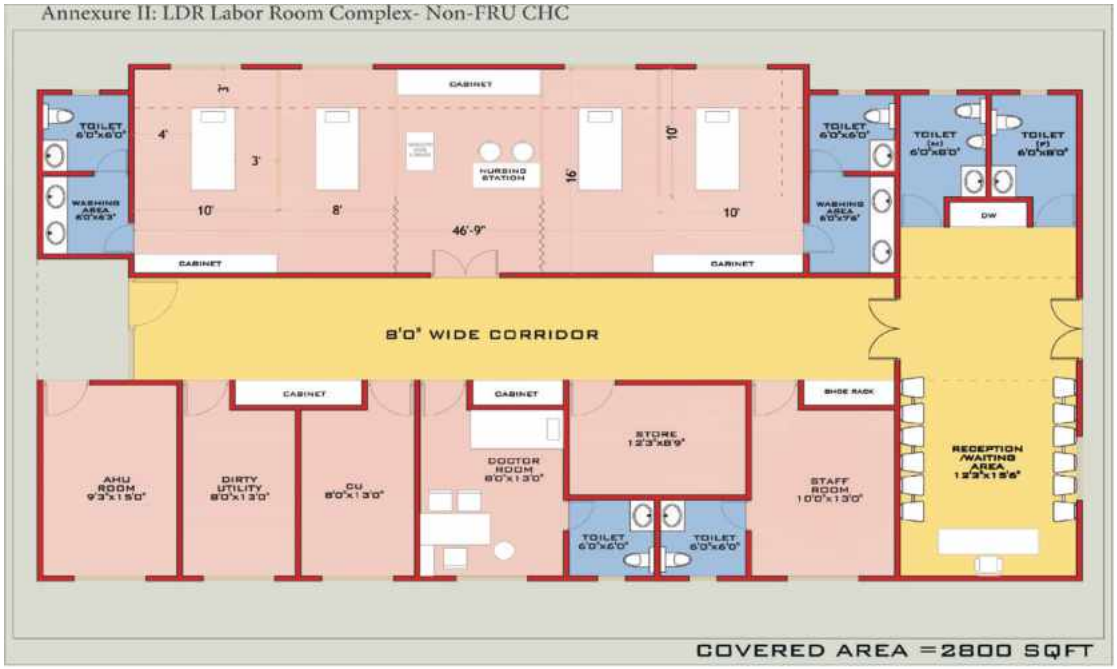
Fig. 3.4: Labour Room

Labour room equipment and accessories (Fig. 3.5)

Every labour room should have the following:

1) Labour room with mattress, sheet, pillow (numbers as per case load), macintosh, foot-rest.
2) Brass V Drape to collect blood and amniotic fluid
3) Digital wall clock with seconds hand
4) Wall mounted thermometer
5) Suction apparatus

6) Equipment for adult resuscitation
7) Equipment for neonatal resuscitation
8) Delivery tray
9) IV Drip stand
10) Screen/partition between two tables
11) Stool for birth companion
12) Lamp-wall mounted or side
13) Autoclave drums for instruments, linen, gloves, cotton, gauge, threads, sanitary pads.
    - Autoclaved delivery set for each delivery
14) Refrigerator
15) Sphygmomanometer, adult and newborn thermometer and newborn weighing machine.
16) Consumables like gloves, apron, cotton, thread. Gauze, sanitary napkins, catgut, IV drips sets, needle, cord clamp, medicines (injectable, oral and parenteral, leucplastetc.)
17) Pulse oxymeter
18) Steriliser
19) Oxygen cylinder
20) Oxygen concentrator
21) Partograph
22) Labelled plastic jars for drugs and injectables with date of expiry written on them against each drug.
23) Coloured bins for biomedical waste management
24) Hub cutter
25) Puncture proof container
26) Plastic tubs for 05% chlorine solution
27) Intranatal protocols (AMTSL, PPH etc.)
28) Wheel chair/patient's trolley
29) 7 trays: delivery tray, episiotomy tray, medicine tray, emergency drug tray, baby tray, MVA tray, PPIUCD tray
30) Hand washing area and toilet for the admitted clients
31) Foetoscope/ foetal Doppler
32) Stethoscope
33) Display of protocols
34) Mosquito repellent



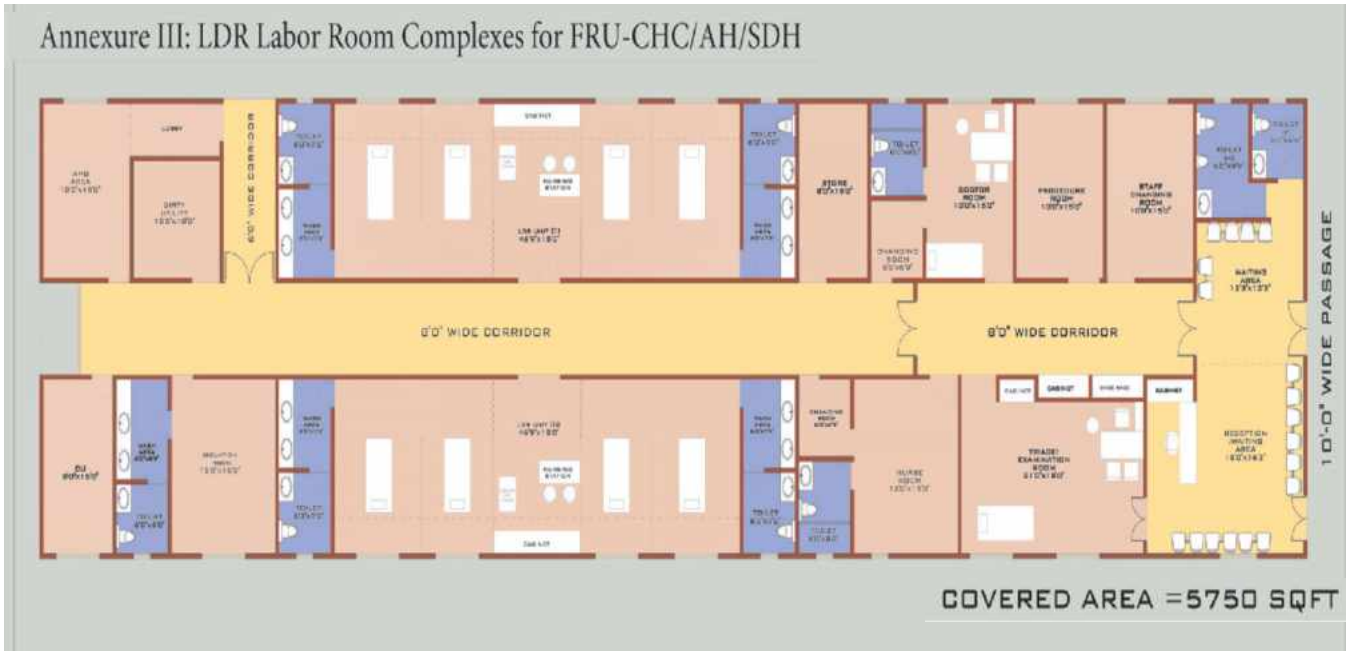
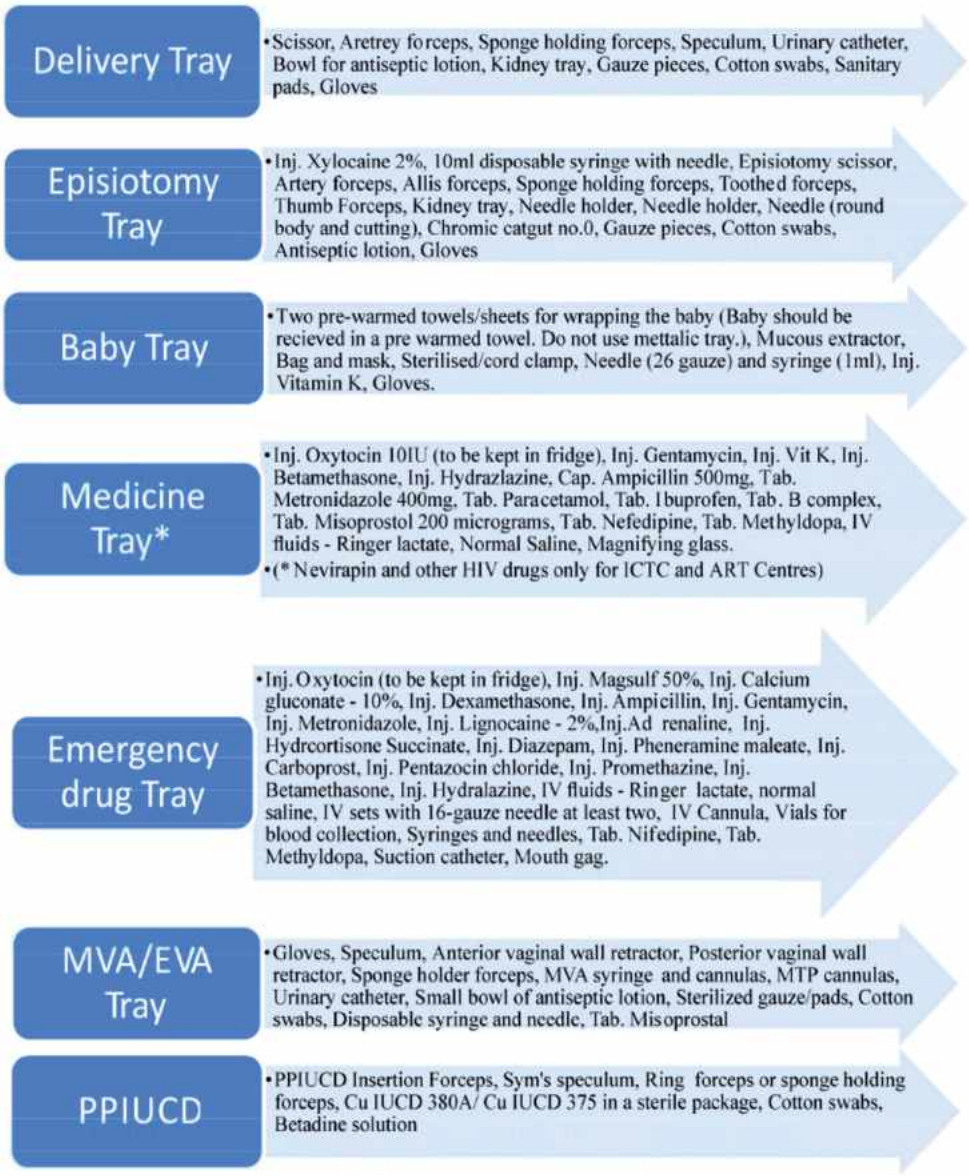




Fig. 3.5: Equipment and accessories in Labour Room

While working in the labour room ensure that all equipments are ready for use. The nursing staff should hand over and take over all equipment and supplies in working condition and in sufficient quantity.

7 TRAYS OF LABOUR ROOM



3.4.4 Service Area

- Every LR should have demarcated service area for the paper work (recording/ reporting) which should not be completely segregated from the patient areas, so that the staff on duty can quickly respond to any exigency or the requirements of the women in labour.
- This area should not be used as a store for drugs, consumables, equipment, etc. which can be kept in a separate store as replacement stock. List of consumables required for 100 deliveries.
- Although, oxytocin is the drug of choice for PPH prevention and treatment, it is not always feasible in low-resource settings because it requires refrigeration, sterile equipment for injection and a skilled provider. When oxytocin is unavailable, use of oral misoprostol (600 micrograms) is recommended.

- For smooth working of the Labour Room, one labour table will require 10×10 sq.ft of space; two tables will need 20×20 and so on. Every labour table should have a sleek vertical trolley with space for six trays.

3.4.5 Post-Delivery Observation Room (4th Stage Area)

Mother and baby must be observed for 2 hours after delivery before shifting to the ward. This area can be planned along side the pre-delivery observation side.

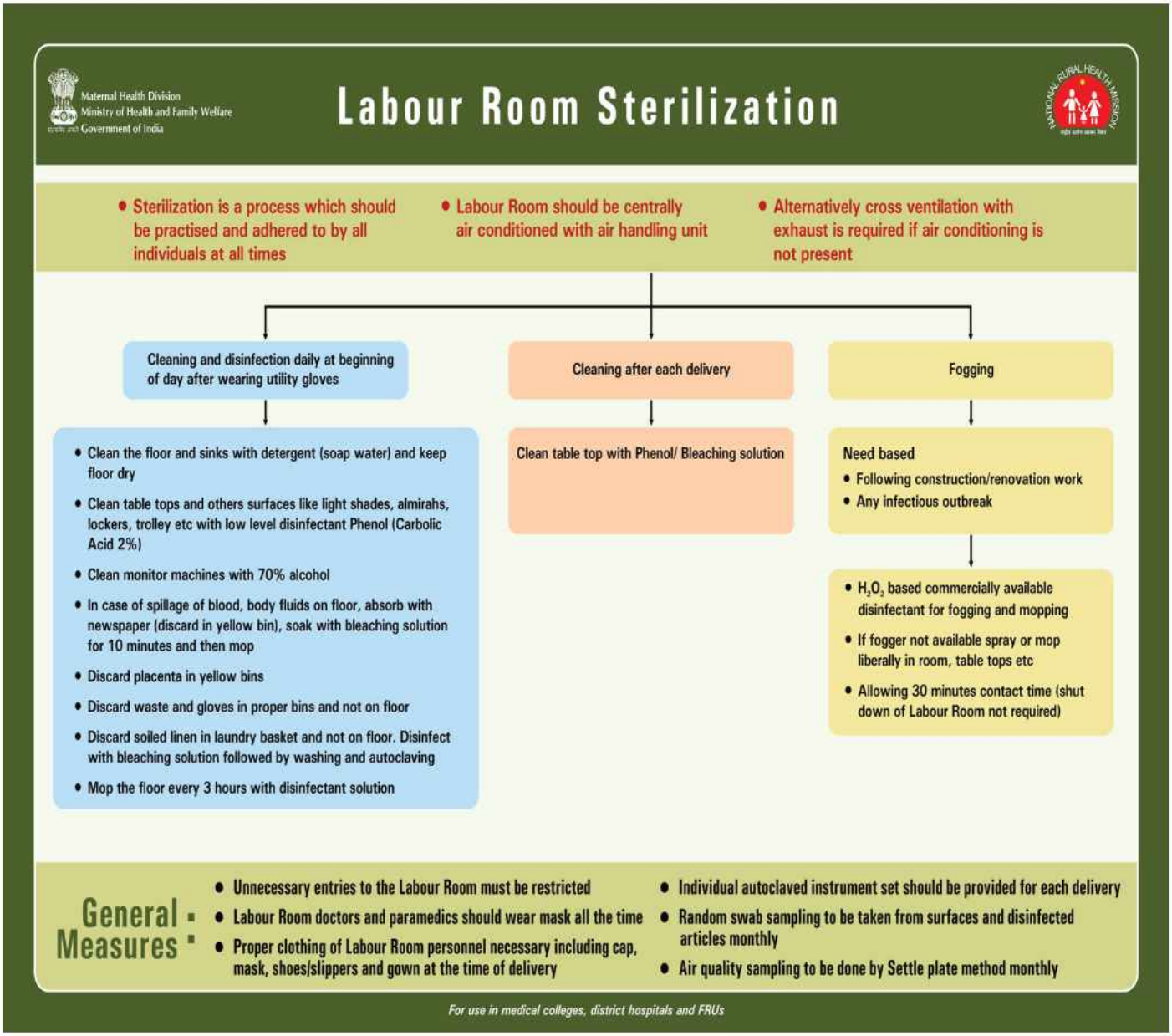
3.4.6 General Requirements for Labour Room

- Floor should be tiled, preferably anti-skid and white without any design on it.
- Walls should also be tiled up to a height of 6 ft.
- Remaining walls and ceiling should be painted white.
- There should be windows and ventilators with frosted glass panes.
- Windows to be covered with mesh to ward of flies, mosquitoes, insects.
- Provision of running water (24×7) in the labour room and adjoining toilets. In case of restricted supply.
- Washing area should be hands-free with elbow operated taps.
- Every labour room should have refrigerator for keeping drugs such as Inj. Oxytocin.
- Size of the labour room and number of beds and delivery tables would depend upon the delivery case load of the facility.
- Maternity wing must have a separate store where weekly/monthly stock of essential drugs and supplies are kept.
- Labour room should be centrally air conditioned.
- Alternatively, cross ventilation with exhaust is required if air conditioning is not present.

3.4.7 Infection Prevention in Labour Room

- Demarcated area for keeping slippers for the hospital staff and relatives and slippers to be used for entering the labour/pre-labour room.
- Sterile gown to be given to patient going for delivery.
- Floor should be cleaned
- Proper sterilisation has to be ensured for gloves, instruments, linen etc. needed for conducting a delivery. Standard procedures for disinfection and sterilisation need to be followed.
- Sodium hypochlorite solution/bleaching powder solution must be used to decontaminate the used gloves, instruments etc. After use the item should not be thrown on the floor or elsewhere.
- Disinfect the items in bleaching powder solution following by washing and autoclaving.
- Clean the floor and sinks with detergent (soapy water) and keep floor dry.
- Clean table top with phenol/bleaching solution.
- Clean other surfaces like light shades, almirahs, lockers, trolley, etc with low level disinfectant Phenol.
- In case of spillage of blood, body fluids on floor, absorb with newspaper (discard in yellow bin), soak with bleaching solution for 10 min and then mop.

- Discard placenta in yellow bins.
- Discard soiled linen in laundry basket and not on floor.
- Disinfect with bleaching solution followed by washing and autoclaving.
- Mop the floor every 3 hrs with disinfect solution.
- Clean the labour table after every delivery.



Labour Room Sterilisation

3.4.8 Do's and don'ts for Labour Room

Do's	Don'ts
• Equipment must be checked for its functionality during change in shifts of nursing staff • Privacy and dignity of the woman should be maintained. • Use sterilised instrument for every delivery	• Do not keep almirahs and metal cabinets in LR • Do not burn Coal in LR for lighting/ heating or any other purpose • Do not allow Doctors or Nurses and birth companions to enter LR

Do's	Don'ts
• Each Labour table must have light source • Use plastic curtains between adjacent tables to maintain privacy • LR should draught free • 20% buffer stock of LR drugs must be available all the time • Temperature must be between 25 to 28 degree Celsius must be maintained in LR. Hilly, cold areas will need warmers during winters • Injection Oxytocin should be kept in fridge (not freezer) • Practice infection prevention protocols • Initiation of breastfeeding within one hour of birth. • Collect Cord Blood in Rh Negative mother	without wearing gown, cap, slipper, mask • Do not put cloth curtains between LR tables as they gather dust. • Do Not allow people to enter LR unnecessarily • Do not put pressure on the abdomen for accelerating Labour or delivery • Do not Give routine Qxytocin IM or in drip for augmenting labour pains before delivery without indication • Do not conduct frequent PV Examination. • Do not allow Dai , Mamta, ASHA, Yashoda conduct delivery • Do not Slap the baby if not crying • Do not keep the baby unwrapped • Do not leave the baby Unattended, if in warmer • Do not keep unnessary store in the service area

3.5 NEWBORN CARE CORNER

This is Mandatory for all Labour rooms and obstetric OT's of delivery points: (Fig. 3.6)

Essential Care at Birth

- Resuscitation of Newborn
- Provision of Warmth
- Early initiation of breastfeeding
- Weighing the neonate
- Inspecting Newborn for gross congenital anomalies
- Every Labour room and obstetric OT should have an NBCC, with a radiant warmer and a functional bag and mask of appropriate size
- Room should be draught free

Please Note that every baby will not need care under a radiant warmer. Only when the following conditions are observed in the mother or baby, then the baby should be put under a radiant warmer for ENBC and, if required , given resuscitation:

- Meconium stained liquor and preterm labour
- Baby not crying and limp/ floppy baby
- Or as per doctor's advice



Fig. 3.6: Newborn Unit

3.5.1 Equipment and Accessories Needed at NBCC

1) Baby Tray
2) Paediatric Stethoscope (preferable to have a neonatal stethoscope)
3) Baby Scale
4) Radiant Warmer
5) Self-Inflating bag and Mask- neonatal size (0 and 1)
6) Oxygen hood (neonatal)
7) Laryngoscope and Endotracheal Intubation tubes
8) Two set of Pencil Batteries
9) Mucous Extractor with suction Tube and foot-operated suction machine NG tubes
10) Blankets
11) Two Clean and dry towels
12) Feeding Tubes
13) Empty Vials for collecting blood
14) Alcohol Handrub
15) HLD/ Sterile gloves
16) Syringe Hub Cutter

3.5.2 Services Provided at Newborn Care Facilities of DH/FRU/CHC

	Newborn Stablisation Unit (NBSU)	Special Newborn Care (SNBC)
SITE	**FRU/CHC**	**DH**
	Human Resources	**BEDS**
Human Resources (HR)	MO/paediatric trained in FIMCI/ paediatrician 1 dedicated nursing staff per shift. Total 4 dedicated staff	For a 12 bed - unit (plus 4 beds for step-down area), the recommended dedicated staffing: • Staff Nurse: 10-12 • Paediatrician / MO trained in SNCU: 3-4 (Paediatrician / MO and staff nurses trained in FNBC • Support Staff : 4, 1
Services	• Care at birth- followed time of birth and sex of the baby and show the baby to the mother, ensure details are recorded. • Deliver the baby on the mother's abdomen in a prone position with face to one side. • Resuscitation - Resuscitate as per GOI guideline if the baby is not crying or breathing • If the baby is crying delay cord clamping 1-3 minutes before cutting. • Dry baby with pre warmed towel while over mother's breast. • Monitoring of Vital Signs • Check cord for any oozing of blood • Place an identity wrist band on the baby	• Care at birth, including resuscitation of asphyxiated newborns • Managing sick newborns (except those requiring mechanical ventilation and major surgical interventions) • Postnatal care • Follow-up of high risk newborns • Referral Services • Immunisation Services

	• Give the baby an injection of vitamin K • Weigh the baby and record weight • Provision of Warmth • Initial Care and Stabilisation of sick new borns • Care of low Birth weight • Newborns not requiring intensive care • Breastfeeding and feeding support • Referral Services • Check for any congenital abnormalities	

3.5.3 Expected Services to be Provided at Newborn care Facilities

Newborn Care Corner (NBCC)	Newborn Stablisation Unit (NBSU)	Special Newborn Care (SNCU)
Care at birth	**Care at birth**	**Care at birth**
• Prevention of Infection • Provision of Warmth • Resuscitation • Early Initiation of breastfeeding • Weighing the Newborn	• Prevention of Infection • Provision of Warmth • Resuscitation • Early Initiation of breastfeeding • Weighing the Newborn	• Prevention of Infection • Provision of Warmth • Resuscitation • Early Initiation of breastfeeding • Weighing the Newborn
	Care of Sick Newborn	**Care of Sick Newborn**
Identification and promt referral of 'at risk' and 'sick' newborn	Management of Low birth weight infants ≥ 1800g with no other complications	Managing of low birth weight infants
Care of normal newborn	**Care of normal newborn**	**Care of normal newborn**
• Breastfeeding/ feeding support	• Phototherapy for newborns with hyperbilirubinemia	• Managing all sick newborns (except those requiring mecha-

• Care of Sick Newborn • Identification and prompt referral of 'at risk' and 'sick' newborn	• management of newborn sepsis • Stabilisation and referral of sick newborn and those with very low birth	nical ventilation and major surgical interventions) • Follow-up of all babies discharged from the unit and high risk newborns • Immunisation services • Referral Services

3.5.4 Newborn Care

We shall discuss Do's and Don'ts of new born care in following table.

Do's	Don'ts
• Always wash your hands before handling the baby • Rooming in of baby with the mother • Keep the baby warm • Take extra care to maintain baby's temperature in preterm and LBW baby • Keep the cord dry and clean • Breast fed the baby exclusively • Early initiation of breastfeeding is essential for a good reflex action. • Any signs/symptoms of complications must be referred and attended to by a doctor • The care provider should observe every 2 hours in the first 6 hours and every 6 hours from 6-24 hours after delivery • If the newborn is LBW then at least three additional visits should ensured	• Do not keep all babies as a routine under the radiant warmer • Do not delay breastfeeding beyond half an hour as that may lead to rapid decrease in suckling reflex of the baby • Do not use prelacteals even water • Do not apply anything on the cord • Do not bathe the newborn for 24 hrs after birth. • Do not forget to undertake routine checkup

3.6 SEPTIC ROOM AND ECLAMPSIA ROOM

The following inventory should be available in septic room and Eclampsia room respectively.

S.No	Septic Room Inventory (Essential)	Quantity (Minimum)
1.	Labour Beds	2 Beds
2.	Oxygen Supply/ Cylinder	2
3.	Foetal Doppler	1
4.	Suction Machine (Electric)	1
5.	Foot Operated Suction Machine	1
6.	Stethoscope + BP instrument	1
7.	Adult Resuscitation kit	1 set
8.	Neonatal Resuscitation kit	1 set
9.	Digital weighing machine	1 adult and 1 newborn
10.	Air Conditioners (to be calculated as per the volume specifications for air conditioners)`	1-2
11.	Radiant Warmers	1
12.	Pulse Oxymeter- with 2 Adult Probe and 1 Neonatal Probe	1
13.	Delivery Trays	2
14.	Episiotomy Trays	2
15.	MVA Trays	1
16.	Adult Emergency Drug Tray	1
17.	Newborn Emergency Drug Tray	1
18.	Mackintosh	2
19.	Kelly's Pad	2
20.	Open Dustbin Buckets	2
21.	Colour Coded Bins	1 Set
22.	Needle Cutter	1
23.	Wheel Chair	1
24.	Wall Clock	1
25.	Movable Shadow Less Lamp	1`
26.	Dressing Drum- All Sizes	As Per Requirement
27.	Baby Tray	1
28.	Thermometer	2
29.	Drapes and Linen	As per Requirement
30.	Emergency Call Bell	1

ECLAMPSIA ROOM

S.No	Inventory (essential)	Quantity (minimum)
1.	Labour Cots with Side railing	2
2.	Oxygen Supply/ Cylinder	2
3.	Pulse Oxymeter- with 2 adult probe and 1 neonatal probe	1
4.	Foetal Doppler	1
5.	Suction Machine (Electric)	1
6.	Foot Operated Suction Machine	1
7.	Stethoscope + BP instrument	2
8.	Adult Resuscitation kit	1 set
9.	Neonatal Resuscitation Kit	1 set
10.	Air Conditioners (to be calculated as per the volume specifications for air conditioners)	1-2
11.	Delivery Tray	2
12.	Episiotomy Trays	2
13	Adult Emergency Drug Tray (including Magnesium Sulphate)	1
14.	Newborn Emergency Drug Tray	1
15.	Makintosh	2
16.	Kelly's Pad	2
17.	Open Dustbin Buckets	2
18.	Colour Coded Bins	1 Sets
19.	Movable Shadow Less Lamp	1
20	Wall Clock	1
21.	Torch	1
22.	Nebulizer	1
23.	Emergency Call Bell	1
24.	Drapes and Linen	As per Requirement

3.7 LET US SUM UP

A mother and baby friendly environment to be ensured. Health staff should be polite, courteous and respectful in behaviour towards their client; equipment has to be accessible and functional and subject to checks during every shift of staff duty; drugs and consumables to be made available 24×7; assured referral linkages have to be established; and daily rounds conducted by facility managers to identify gaps and bottlenecks and address these on priority basis. In this unit we have discussed about the infrastructure requirement of labour room and how to organise labour room or new born care corner.

3.8 ACTIVITY

1) During your clinical experience at District hospital, prepare the labour room along with all equipments required for the following:
   a) For normal delivery
   b) For vaccumm/forceps delivery
   c) For pre eclamptic mothers who have been in labour.

3.9 REFERENCES

1) Maternal and Newborn Health Toolkit.
2) Daksh Skills Lab (RMNCAH+N) Training Manual for participants.

UNIT 4 CONDUCTING NORMAL DELIVERIES AND PARTOGRAPH

Structure

4.0 Introduction

4.1 Objectives

4.2 Preparation for Child Birth

- 4.2.1 Admission Procedure
- 4.2.2 Assessment at Admission
- 4.2.3 Physical Assessment

4.3 Plotting a Partograph

4.4 Vaginal Examination

4.5 Conducting Normal Delivery

- 4.5.1 Preparation of Normal Delivery
- 4.5.2 Steps in Management of Second Stage of Labour

4.6 Steps in Active Management of Third Stage of Labour

4.7 Episiotomy

4.8 Immediate Care of Newborn Baby

- 4.8.1 Neonatal Resuscitation
- 4.8.2 Neonatal Examination
- 4.8.3 Administration of Vitamin K
- 4.8.4 Initiation of Breastfeeding
- 4.8.5 Avoid Traditional Practices

4.9 Let Us Sum Up

4.10 Activity

4.11 References

4.0 INTRODUCTION

Adequate and appropriate care during the antenatal period reflects on the conduct and the outcome of the labour. In the previous units you have learnt about antenatal assessment and care, and organising or setting up of delivery room. Conducting safe delivery is one of your most important responsibility. In this unit, you will learn the skills and techniques for conducting normal vaginal delivery and how to use of partpograph. Before studying this unit, refer Course BNS 042, Block 3, Unit 3.

4.1 OBJECTIVES

After completing this unit, you should be able to:

- recognise true and false labour;
- recognise onset of labour;
- monitor progress of labour using partograph;
- provide care to the mother in labour; and
- conduct normal vaginal delivery.

4.2 PREPARATION FOR CHILD BIRTH

Any women coming in Labour Room/casualty must be quickly assessed for any danger signs and corrective actions for its recovery may be under taken on priority and depending upon the situation following measures should be undertaken.

4.2.1 Admission Procedure

- You will check her antenatal Card and prepare for admission of Pregnant mother in labour
- Preparing the room/bed.
  - Room should be welcoming without much equipment's.
  - Bed should be comfortable.

4.2.2 Assessment at Admission

Ask the following history as discussed in Unit 1 and 2.

- Present History
- Past History
- Obstetrical History
- Medical History
- LMP / EDD
- Previous Records like antenatal Care and investigation reports if any.

4.2.3 Physical Assessment

The physical assessment includes the following:

- Contraction – Check for frequency, duration and intensity.
- Spontaneous rupture of membranes – Ask time and date, if in case of rupture of membrane
- Assess liquor – Check if liquor is clear, muconium stained and blood stained.
- Observe presence of show
- Check Fetal movements –Assess whether normal, reduced, excess or absent.
- Vitals – Check temperature, pulse, blood pressure.
- Abdominal palpation – their fundal height, presentation, position, engagement and fifths.
- Auscultation of foetal heart – for one minute after a contraction.
- Vaginal examination – to diagnose labour.
- Record all the findings.

Labour: As already discussed in Block 2, Unit 3, vaginal delivery is the safest way of ending a pregnancy. So labour is the process of passage of foetus, placenta and membranes through the birth canal due to effective contractions leading to dilatation of cervix. The onset of labour is defined as regular, painful uterine contractions resulting in progressive cervical effacement and dilatation. Labour has four stages.

Stage 1: It begins with onset of true labour pains to fully dilatation of cervix (10 cm).

Stage 2: From fully dilatation to expulsion of foetus.

Stage 3: From expulsion of foetus to expulsion of placenta and membranes.

Stage 4: One hour after expulsion of placenta and membranes during which the mother's condition gets stabilised.

4.3 PLOTTING A PARTOGRAPH

This section will deal with how and when to assess the progress of labour by using Partograph. Once labour established all events during labour are recorded on Partogram. Refer BNS-042 Block 2 for details of Partograph. Let us review here.

Aims

Partograph is used for

- well-being of the mother
- well-being of the foetus
- maintaining progress of labour

Advantages

- Provide information on single sheet of paper at a glance
- No need to record labour events repeatedly
- Prediction of deviation from normal progress of labour
- Improves maternal, perinatal, morbidity and mortality

Components

There are five components: (Fig. 4.1)

1) Patient's information:
   a) Name
   b) Gravida
   c) Para
   d) Hospital registration number
   e) Date and time of admission
   f) Time of rupture of membranes
2) Foetal conditions:
   a) Foetal heart rate
   b) Liquor
   c) Moulding of foetal skull bones
3) Progress of labour:
   a) Cervical dilatation

b) Descend of foetal head

c) Uterine contraction

d) Foetal position

4) Maternal condition:

a) Medication:

i) Oxytocin

ii) Drugs

iii) I/V fluids

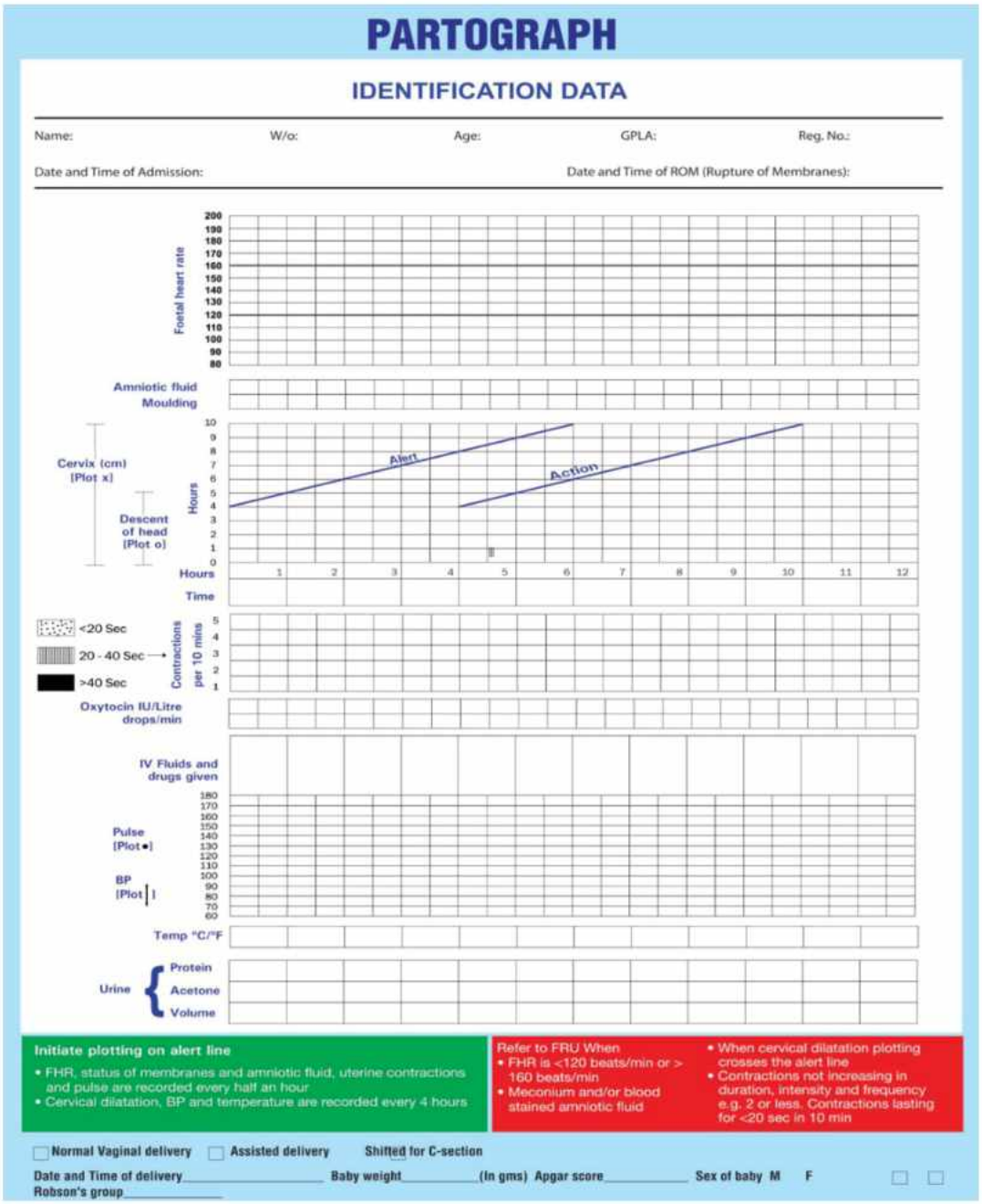
b) Vitals:

i) Pulse

ii) Blood pressure

iii) Temperature

iv) Urine



Plotting a Partograph

First Plotting of Partograph is always on alert and action line.

- Initiate plotting when a women is in active phase of labour and is characterized by:
  - Cervical dilatation must be 4 cm or more.
  - Contractions must be one or more in 10 minutes each lasting for 20 sec or more.

Foetal Heart Rate (Fig. 4.2)

- Every 30 mts in active phase.
- Mark with a dot and join the lines.
- Basal heart rate is 120 to 160 beats per min.

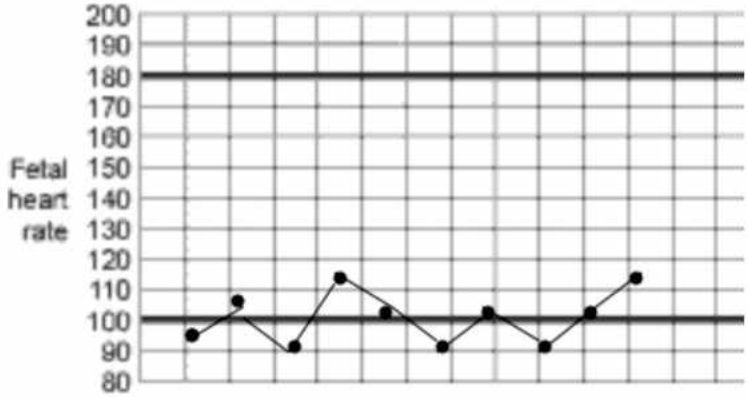


Fig. 4.2: Plotting foetal heart rate

Membranes and liquor (Fig. 4.3)

- Intact membranes – I
- Rupture membranes + clear liquor – c
- Rupture membranes + muconium stain – m
- Rupture membranes + blood – b
- Rupture membranes + absent liquor – a

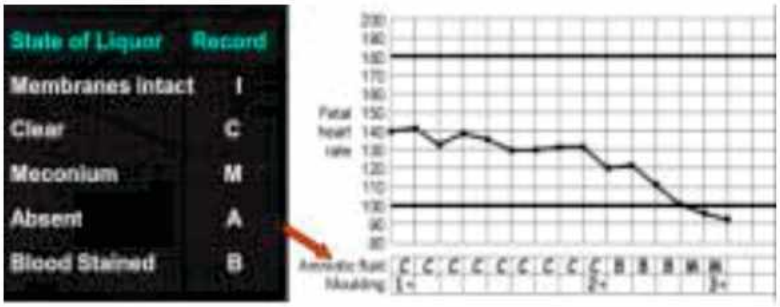


Fig. 4.3: Plotting membranes and liquor

Moulding of the fetal skull bones - Moulding is an important indication of how adequately the pelvis can accommodate the foetal skull.

- Separate bones (sutures felt easily) – 0

- Bones just touching each other – +
- Overlapping bones (reducible) – ++
- Severely overlapping (non reducible) – + + +

Progress of labour

- Cervical dilatation (Fig. 4.4)
  - The vertical line on left is numbered in the ascending order from 0 to 10 (cervical dilatation in cm) denoted by (X)
  - Descend of fetal head as assessed by abdominal examination is denoted by DOT (.)
  - At the right in the descending order denotes the station of the foetal presenting part.
  - Each observation is joined to proceeding one by a straight line.
  - The **alert line** drawn from 4 cm dilatation
  - In a normal labour, cervical dilatation should be either on the alert line
  - Moving to the right of alert line indicates abnormal labour and needs critical assessment.
  - The **action line** is drawn four hours to the right of alert line and parallel to it.

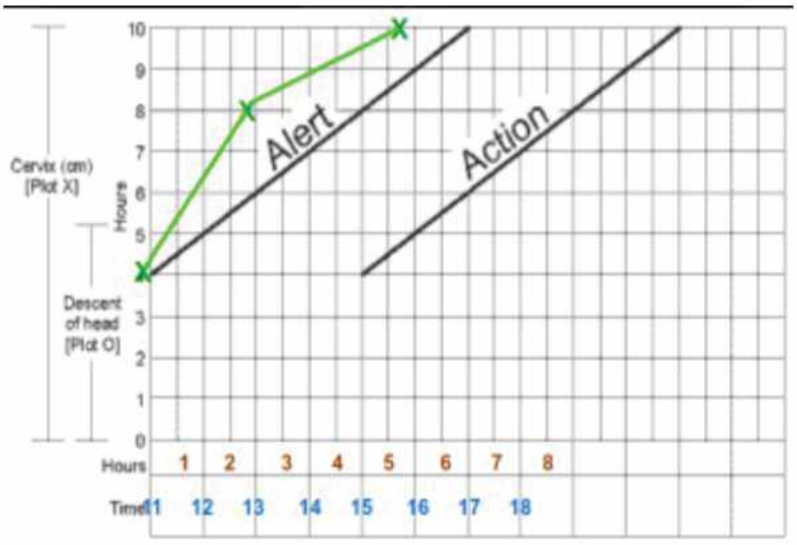


Fig. 4.4: Plotting Cervical Dilatation

Descent of Foetal Head

- Assessed per abdomen by **rule of fifth** which means palpable fifth of the foetal head is felt above the level of symphysis pubis. (Fig. 4.5 to 4.7)
- 2/5 or less of foetal head is felt above the level of symphysis pubis. This means head is engaged.

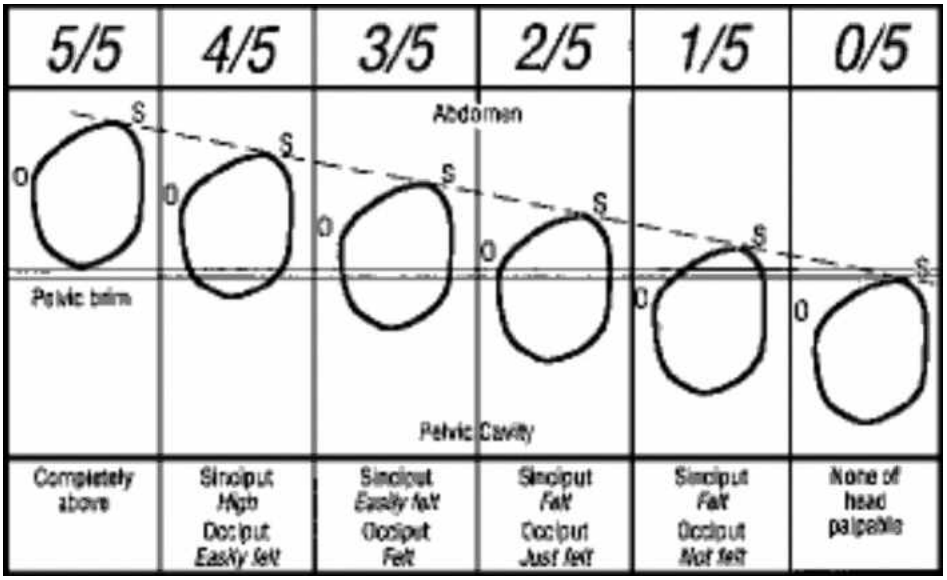


Fig. 4.5: Descent of foetal head by fifths

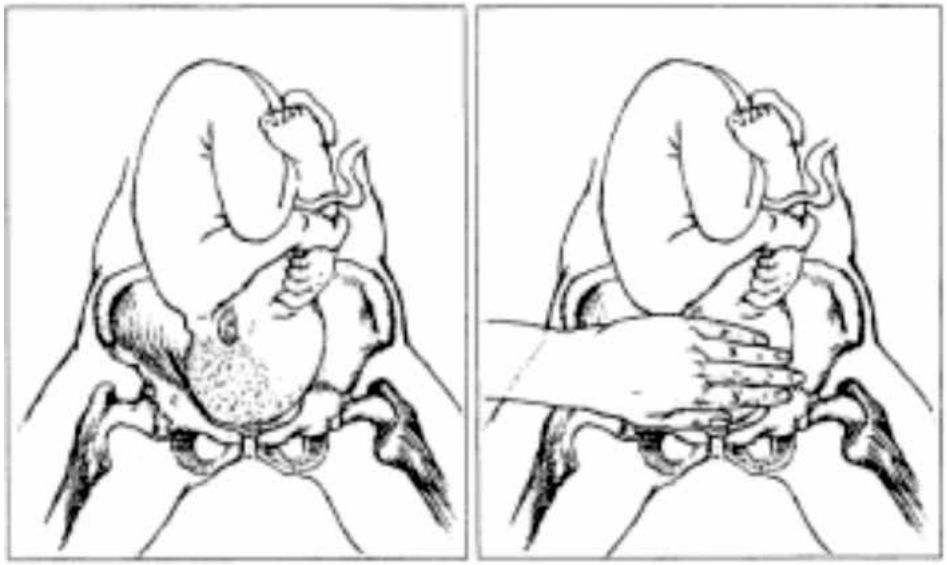


Fig. 4.6: Plotting descent of foetal head by fifths

- On the left hand side of the graph is the word descent with lines going from 5 to 0.

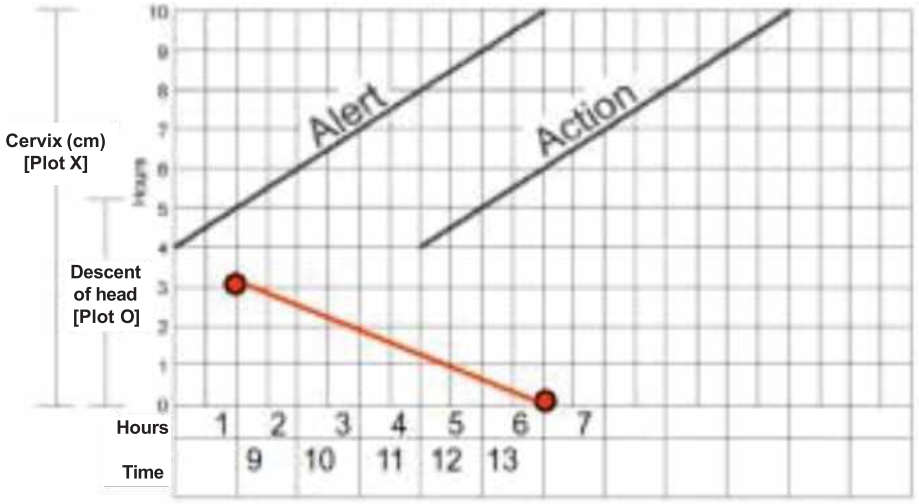


Fig. 4.7: Plotting descent of head

Uterine Contraction

- Palpate number of contraction in 10 minutes and duration of each contraction in seconds. It is said to be (Fig. 4.8)
  - Mild – less than 20 sec.
  - Moderate – between 20 and 40 sec.
  - Severe – more than 40 sec.
  - Each square represents one contraction.

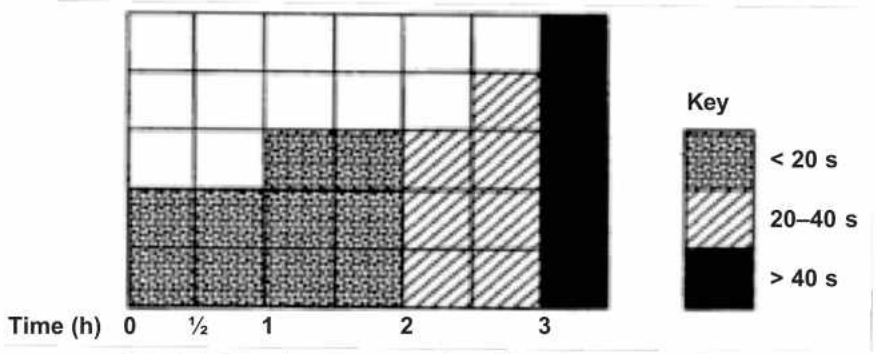


Fig. 4.8: Plotting the recording of uterine contractions

Maternal conditions (Fig. 4.9)

- Drugs – oxytocin - amount per volume, I/V fluids in drops per minute.
  - Any drug given.
  - I/V fluids used with time and date.
- Vitals
  - Pulse - every 30 mts and marked with a dot (.)
  - Blood pressure - recorded in vertical line every 4 hours and marked with arrows.
  - Temperature - every 4 hours recorded marked with (O)

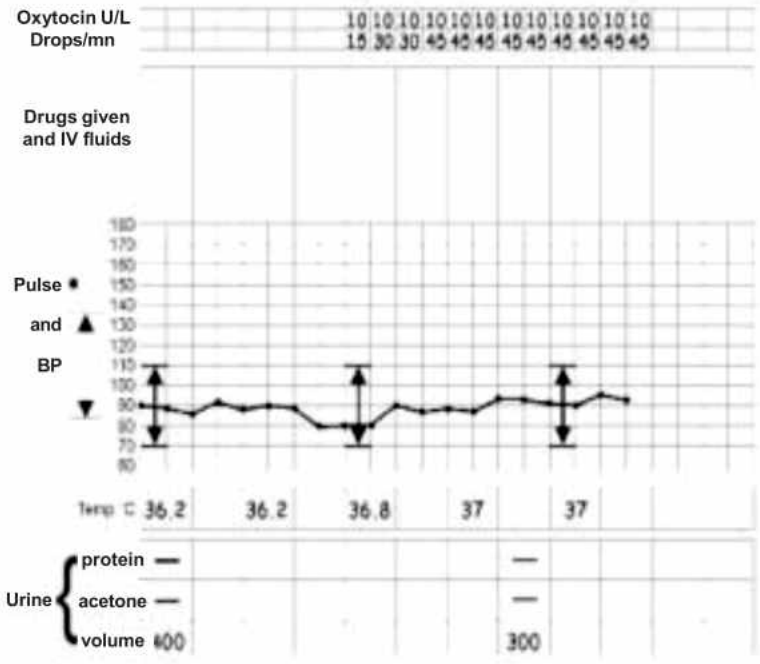


Fig. 4.9: Plotting maternal conditions

Points to remember:

- Latent phase less than 8 hours.
- Progress in active phase remains on or to the left of the alert line.

4.4 VAGINAL EXAMINATION

We shall discuss about the procedure of vaginal examination.

It includes vaginal examination (Pelvis Examination). A vaginal examination in labour is a systematic examination of pelvic organs especially vulva and cervix.

Indications

- To make positive diagnosis of labour.
- To assess progress of labour.
- To confirm dilatation of cervix.
- To determine presentation, engagement, position and status of membranes.

Articles Required - Vaginal examination is a sterile procedure and needs a tray containing the following:

- Swabs in aseptic solutions.
- Sterile gloves.
- Toothed forceps to rupture membranes (if not ruptured).
- Lubricant or vaginal cream.
- Kidney tray.

Procedure

It includes the pre procedure, procedure and Post procedure skills.

- **Pre-procedure**
  - Explain the procedure and answer questions.
  - Take consent.
  - Prepare the mother by emptying bladder, provide privacy and attend hand hygiene.
  - Help women to lie on her back with legs flexed and knee apart.
  - Don't expose the women until you are ready to examine.
  - Palpate the abdomen.
  - Scrubb and wearing sterile gloves and eye protect if there is risk of splash of blood.
- **Procedure (Fig. 4.10 a-c)**
  - Perform examination between contractions.
  - Inspect external genitalia, labia, perineum, scars and any discharge.
  - Lubricate the fingers.

- Gently insert lubricated fingers into vagina, avoid contact with clitoris.
- Assess the following:
  - Vagina – muscle tone / dryness / excess heat.
  - Cervix – Length, effacement, dilatation, position, consistency, membranes intact / bulging / smooth.
  - Membranes – rupture of membranes.
    - Liquor drain – presence of fore water.
    - Colour of liquor – like meconium / blood stain if membranes are ruptured.
  - Foetus – presentation, position, station, caput, moulding, fontanels, sutures.
  - Any abnormal features – vasa Previa, pulsating umbilical cord.
  - Pelvis – ischial, spines, angel of suprapubicarch, adequacy.
- Withdraw the fingers.

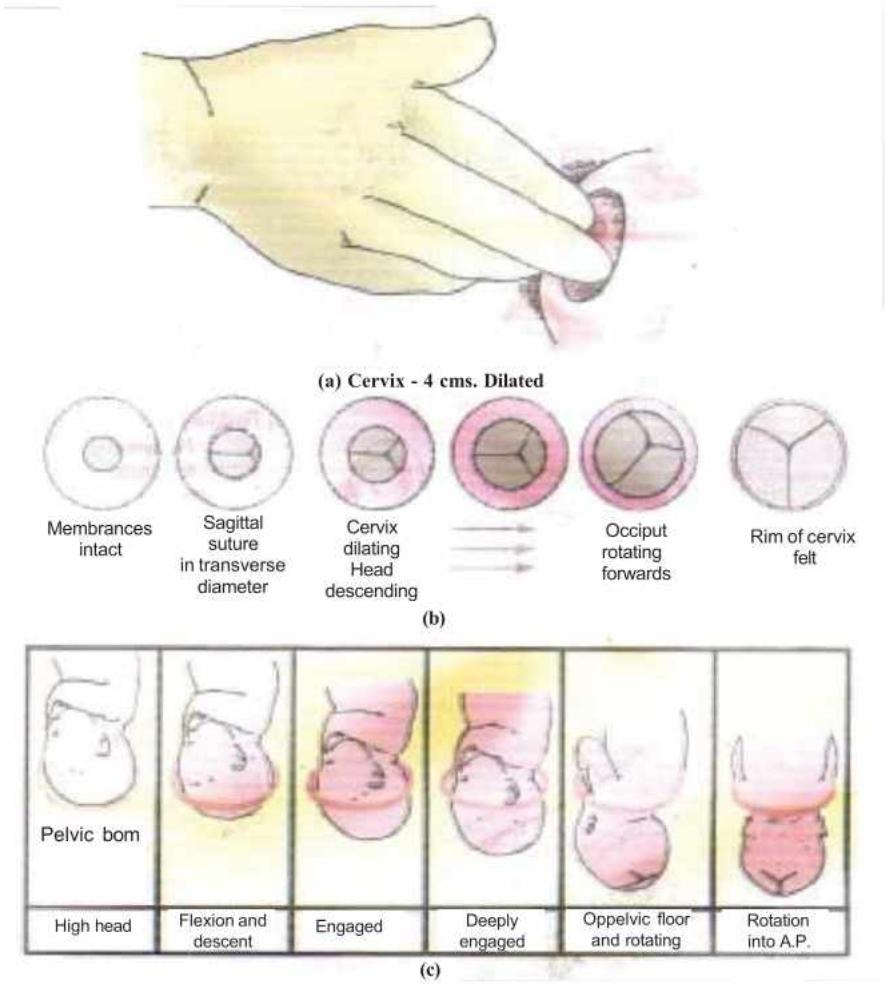


Fig. 4.10 a-c: Digital Examination

Post-procedure

- Remove gloves and attend hand hygiene.
- Provide privacy for redressing.
- Apply sanitary pad if required.
- Remove soiled linen.

- Make mother comfortable.
- Auscultate foetal heart rate.
- Discuss findings with the women and plan.

Progress of labour is assessed by cervical ripening / effacement and Partogram.

Cervical Ripening (Cervical Effacement / Dilatation) – (Fig. 4.11 a-e) Refers to the softening of cervix that begins prior to onset of labour contractions and is necessary for cervical dilatation and passage of foetus. Cervical effacement is the disappearance or taking up of the cervix. The cervix which is initially about 2-3 cm in length and about 1 cm thick is finally reduced to a very thin edge only. When the length of the cervix is reduced by one-half, it is called 50 per cent effaced. It progresses to a state in which the canal no longer exists at all, expect for a circular orifice with thin edges. This is 100 per cent effaced cervix. In latent phase the cervical effacement is from 0 to 3 cm or also known as early dilatation. In active phase there is more rapid cervical dilatation that is after 4 cm. Duration of first stage in primi is 6 to 18 hours and in multi 2 to 10 hours and the rate of dilatation is 1 cm per hour in primi and in multi 1.2 cm per hour. The cervical dilatation is measured as:

- One finger fits tightly inside – 1 cm.
- 2 finger fit loosely inside – 4 cm.
- Only 2 cm remaining on each side around the presenting part – 8 cm.
- No cervix is palpable around presenting part – 10 cm.

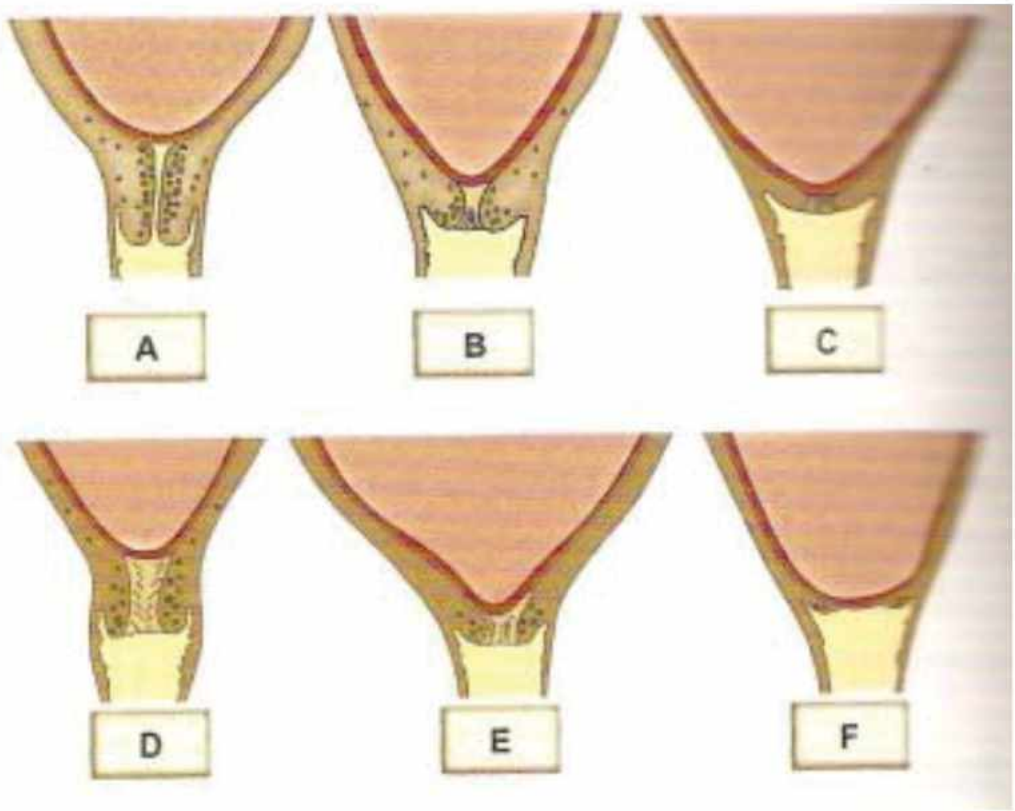


Fig. 4.11: Cervical Effacement/dilatation (A) – Cervic before labour in a primigravida. (B) Beginning of effacement in a primigravida (c) complete effeced cervix in a primigravida (D) Cervix before labour in multigravida (E) Beginning of effacement in a multigravida (F) Complete effacement in a multigravida

4.5 CONDUCTING NORMAL DELIVERY

Conducting or managing normal vaginal delivery involves hand manoeuvers used to assist the baby's birth, immediate care of the newborn and delivery of placenta and membranes.

4.5.1 Preparation for Normal Delivery

Check list items for delivery tray, preparation, intravenous solutions and drugs is given below:

1) Delivery tray preparation.
   - Bowl with sterile swabs
   - Sponge holder
   - Urinary catheter
   - Arteries forceps (curves/straight)
   - Episiotomy scissors
   - Kocher forceps (curved/straight)
   - Dissecting forceps (toothed/plain)
   - Needle holder
   - Cord cutting
   - Kidney tray
   - Surgical suture
   - Sterile draping sheet
   - Sterile gloves
   - Sterile swabs, gauze, gynae pads
   - Disposable syringes (10 cc)
2) Additional Items:
   - Lubricating jelly
   - Antiseptic solution (betadine)
   - Disposable syringes (5 / 10 cc)
   - I/V cannula (18 G)
   - Gown, caps, mask, plastic apron
3) I/V Solutions:
   - Normal saline
   - Ringer lactate
   - Dextrose (5 / 10 cc)
4) Essential Drugs:
   - Injection oxytocin (10 IU)
   - Tablet misoprostol (600 µg)
   - Methylergometrin (Injection)

5) Delivery table:
   - Carbolized
   - Mattress, sheets, draw sheets
   - Straps on both sides of table
   - Foot block
   - Room temperature by heater or warmer (25°C to 28°C).

6) Delivery room preparation:
   - Room temperature by heater or warmer (25°C to 28°C)
   - Biomedical waste buckets with lids and proper colour coding
   - Movable spot light in working condition
   - Weighing machine
   - Baby scale
   - Wall clock
   - Screen
   - Sterile drum with lids

4.5.2 Steps in Management of Second Stage of Labour

Follow the steps for management for second stage of labour are given below in Table 4.1.

Table 4.1: Steps in management of second stage of labour

	Steps in management of second stage of labour
1.	Ensure privacy and dignity of the woman. Make her feel comfortable. A male doctor needs a female assistant while performing the examination. Ask if she has understood what is going to be done and ask her permission before undertaking the examination.
2.	Put on personal protective attire (wear goggles, mask, cap, shoe covers, plastic apron). Place the plastic sheet or kelly's pad under the women's buttocks and two clean towels on mother's abdomen. Place the perineal sheet/leggings, if available.
3.	Palpate the supra pubic region to ensure that the woman's bladder is not full. If it is full, encourage her to empty the bladder or catheterize.
4.	Wash hands and put on sterile gloves.
5.	Clean the woman's perineum with sterile swabs.
6.	Talk to the woman and encourage her to take breaths through her mouth after every contraction.
7.	When the head is visible, encourage her to bear down during contractions.
8.	Support the perineum with one hand using a clean pad and control the birth of the head with the fingers of the other hand to maintain flexion, allowing natural stretching of the perineal tissue to prevent tears.

9.	Feel around the baby's neck for the cord and respond appropriately if the cord is present.
10.	Allow the baby's head to turn spontaneously, then, with the hands on either side of the baby's head, deliver anterior shoulder by gently moving head a little downward which allows shoulder to drop down the symphysis pubis.
11.	When the axillary crease of anterior shoulder is seen, deliver the posterior shoulder, lifting the baby upwards towards the mother's abdomen.
12.	Support the rest of the baby's body with one hand as it slides out and note the time of birth and sex of the baby and show the mother Place the baby on the mother's abdomen over a clean, dry, pre-warmed towel in a prone position with the head turned to one side.
13.	Quickly dry the baby with a pre-warmed towel, discard the wet towel. Wrap the baby loosely in the second pre warmed dry towel. Delay cord clamping for 1-3 mins if the baby is crying or breathing well.
14.	Palpate the mother's abdomen to rule out the presence of an additional baby/babies and proceed with active management of the third stage (AMTSL) and ENBC.
15.	Look for any vaginal or perineal tears; if present, assess the degree of tear and manage accordingly*.

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

Key points to remember:

- All equipment, medicine, and disposables should be made ready before the pregnant women is brought into the delivery room.
- The woman is to be moved to the labour table in the active stage of labour.
- Unnecessary pushing in between contractions should be avoided.
- Ensure the woman is hydrated and the bladder is empty before encouraging the woman to push.
- Avoid routine augmentation of labour before delivery without indication.
- If indicated, augment only if facilities for caesarean section are available.
- All neonatal equipment for ENBC and resuscitation should be pre-checked and kept ready until the pregnant woman is brought in.
- The room temperature should be maintained in the range 26–28°C in the Labour Room and chilly areas will need heaters during winter.
- Provide emotional support and reassurance, as feasible.
- Encourage presence of a birth companion.
- Maintain aseptic technique throughout the procedure.
- Cleaning of the labour table should be done immediately after the transfer of mother to the postnatal/observation ward.

Key points to remember:

- Ensure complete aseptic precaution and gentleness throughout the procedure.
- If in active stage of labour (when cervical dilatation is 4 cm and regular contractions), start using the partograph.
- Ensure proper disposal of swabs and used material.
- If a woman comes with a complain of preterm labour - differentiate between true and false labour pains by history and per abdomen examination. True Labour pains increase in frequency, intensity and duration of contractions and the pain does not subside even after rest. They are associated with show, dilatation and effacement of cervix and formation of bag of membranes.
- If period of gestation is more than 28 weeks and woman is complaining of labour pains then give Injection Dexamethasone 6 mg, intra-muscularly, 4 doses, 12 hourly to enhance foetal lung maturity and transfer the women to higher centre with facility of SNCU.

Steps to be observed during Delivery Process:

Control the head by flexing it as it is delivered to prevent pereneal laceration.

Cord: Check that the cord is not around the neck, if so and it is loose, it can be slipped over the head, and if it is tight it should be clamped and cut.

Suck out: Suck out the baby's mouth and nose gently as soon as head is delivered.

Rotation: Wait for the natural rotation of the head.

Shoulders: Deliver the anterior shoulder first and then the posterior shoulder slowly.

Time: Note the time of birth.

As soon as the baby is born take following action:

1) Check for cry, if present, Clean the nose and mouth and put the baby on mother's abdomen where a warm towel should be there before delivery.
2) Wipe the baby with the warm towel and discard the wet towel.
3) Wrap the baby in another warm towel and put the baby on mother's abdomen
4) Make mother and baby comfortable.
5) Give pre-loaded Inj. Oxytocin 10 units Intramuscularly after ruling out twins.
6) Re-check the baby and mother for comfort.
7) Feel the cord pulsation.
8) Tie and cut the cord once the pulsation stops within one to three minutes.
9) Check the signs of placental separation.
10) Remove placenta by compressed Cord Traction (CCT)
11) If the baby or newborn does not cry tie and cut the cord
12) Put the baby on radiant warmer (Newborn Care Corner)
13) Shout for help and do resuscitation.

Once you have conducted the delivery you perform all the management of third stage of labour as given below.

4.6 STEPS IN ACTIVE MANAGEMENT OF THIRD STAGE OF LABOUR

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

The summary of the steps of active management of third stage of labour is given below in Table 4.2.**Table 4.2: Steps of Active Management of Third Stage of Labour (AMTSL)**

Steps
1) Palpate the mother's abdomen to rule out the presence of an additional baby
2) Administer inj. oxytocin, 10 IU, I/M* OR tab. misoprostol 600 micrograms orally
3) Clamp the cord with artery clamps at 2 places when cord pulsation stops. Put one clamp on the cord atleast 3 cm away from the baby's umbilicus and the other clamp 5 cm from the baby's umbilicus
4) Cut the cord between the artery clamps with sterile scissors by placing a sterile gauze over the cord and scissors to prevent splashing of blood
5) Apply the disposable sterile plastic cord clamp tightly to the cord 2 cm away from the umbilicus just before the artery clamp (instrument) and remove the artery clamp
6) Place the baby between the mother's breasts for warmth and skin-to-skin care
7) Perform routine steps of ENBC
8) Re-clamp the cord close to the perineum. Perform controlled cord traction during a contraction by placing one hand on the lower abdomen to support the uterus and gently pulling the clamped cord with the other hand close to the perineum until the placenta and membranes have been delivered appropriately i.e technique of contraction as given in Fig. 4.12
9) Perform uterine massage with a cupped palm until uterus is contracted
10) Examine the placenta, membranes and umbilical cord: a) Maternal surface of placenta b) Foetal surface c) Membranes d) Umbilical cord as shown in Fig. 4.13
11) Examine vagina, labia and perineum for tears. If found, refer the woman for appropriate care
12) Discard the placenta in the yellow bin for contaminated waste and place instruments in 0.5% chlorine solution for 10 mins for decontamination
13) Dispose of the syringe, needle and oxytocin ampoule in a puncture-proof container. The needle should be cut by a hub cutter before disposal
14) Immerse both gloved hands in 0.5% chlorine solution and remove the gloves inside out; leave them for decontamination for 10 mins
15) Wash both hands thoroughly with soap and water and dry them with a clean, dry cloth or air-dry them
16) Perform post procedural task as follows: Advise mother on immediate post-partum care for her and baby Record delivery notes in case file

Technique for applying controlled cord traction (Fig. 4.12)

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



Fig. 4.12: Controlled cord traction (Brandt-Andrew's method)

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

Examination of placenta and membranes (Fig. 4.13)

- Hold the placenta in the palm of your hands, with the maternal side facing upwards.
- Check all the lobules or present one fit together.
- Hold the cord with one hand, allow the placenta and membranes to hang down.
- Place the other hand inside the membranes, spreading the fingers out, to make sure membranes are complete.

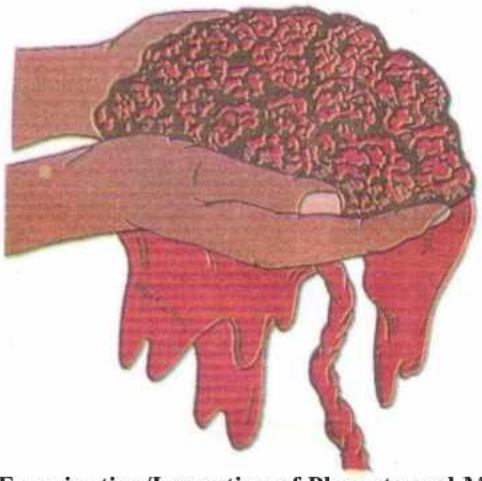


Fig. 4.13: Examination/Inspection of Placenta and Membranes

- Ensure position of cord attachment to placenta is normal.
- Safely dispose placenta either burying or incineration.

Key points to remember:

- Check for uterine contraction and vaginal bleeding every 15 mins for 2 hours after delivery
- Never apply CCT without contraction and without applying counter traction (push) above the symphysis pubis with the other hand
- If placenta is not delivered after 30 mins refer to higher facility for treatment if not available at this facility.

4.7 EPISIOTOMY

Episiotomy (Perineotomy) is a surgically planned insigne on the pereium and posterior vaginal wall during second stage of labour. The theoretical details are given BNS-042, Block 2, Unit 3. We shall begin with review of types of episiotomy.

Types of episiotomy - There are four types these are **Median, Lateral, Mediolateral, J shaped. (Fig. 4.14)**

- **Median Episiotomy**
  a) A midline incision is given from centre of the fourchette and extends on posterior side along midline for 2.5 cm
  b) **Merits**
    - Muscle fibres are not cut.
    - Blood loss is least.
    - Repair is easy.
    - Postoperative comfort is maximum.
    - Healing is superior.
    - Wound disruption is rear.
    - Dyspareunia is rear.

c) **Demerits**

- Extension may involve rectum.
- Not suitable for manipulative delivery or malpresentation.

d) **Lateral Episiotomy -** Incision starts from about 1 cm away from center of the fourchette and extends laterally. There is a chance of injury to barotholin duct therefore is strongly discouraged.

e) **Mediolateral Episiotomy -** Incision is made downwards and outwards from midpoint of fourchette wither to right or left. It is directed diagonally in straight line which runs about 2.5 cm away from anus.

- **Merits**
  - Safer from rectal involvement from extension.
  - If necessary incision can be extended.
- **Demerits**
  - Apposition of the tissue is not so good.
  - More blood loss.
  - Post-operative discomfort is more.
  - Increase incidence of wound disruption.
  - More dyspareunia.

f) **J Shaped -** incision begins in the center of the fourchette and is directed posteriorly along middle for about 1.5 cm and then direct downwards and outwards along 5 or 7 O'clock position. To avoid anal sphincter. This is also not widely practiced.

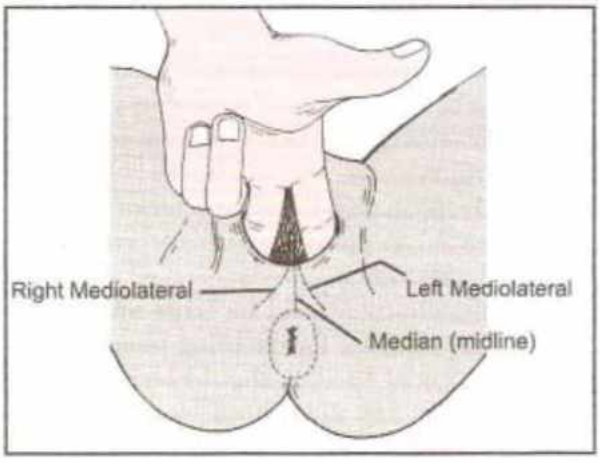


Fig. 4.14: Types of Episiotomy

- **Timing of episiotomy**
  - Buldging, thinned perineum.
  - During contraction just prior to crowning is the ideal time.

Procedure / Steps or techniques for giving episiotomy (Fig. 4.15)

- Provide emotional support and encouragement.
- Use local infiltration with lignocaine.
- Make sure there are no known allergies to lignocaine or related drugs.

- Infiltrate beneath the vaginal mucosa, beneath the skin of perineum and deeply into the perenial muscle.
- Pull back the plunger to be sure that no vessel has been penetrated.
- Weight 2 mts and then pinch the fourchette.
- Wait to perform episiotomy until the.
  a) Perenium is thinned out.
  b) 3–4 cm of the baby's head is visible during a contraction.
- Wearing high level disinfected gloves, place two fingers between the baby's head and the perenium.
- Use scissors to cut perenium about 3–4 cm in the Mediolateral direction.
- Use scissors to cut 2–3 cm up the middle of the posterior vagina.
- Control the baby's head and shoulders as they deliver.
- Carefully examine or extension and other tears and repair the episiotomy.

Repair of episiotomy

- This is an uncomfortable procedure for the mother so explain what is to be done.
- Apply antiseptic solution to the area around the episiotomy.
- Put mother in lithotomy position.
- It is essential to have good light.
- Keep 20 ml of 1% lignocaine ready for infiltration,
- 5 to 10 ml in sensitive area If episiotomy is extended.
- Close the vaginal mucosa using continuous 1 to 0 suture.
- Start the repair about 1 cm above the apex (Top) of the episiotomy. Continue the suture to the level of vaginal opening.
- At the opening of vagina, bring together, cut edges of the vaginal opening.
- Bring the needle under the vaginal opening and out through the insigne and tie.
- Close the perenial muscle using interrupted 1 to 0 sutures.
- Close the skin using interrupted 1 to 0 sutures.

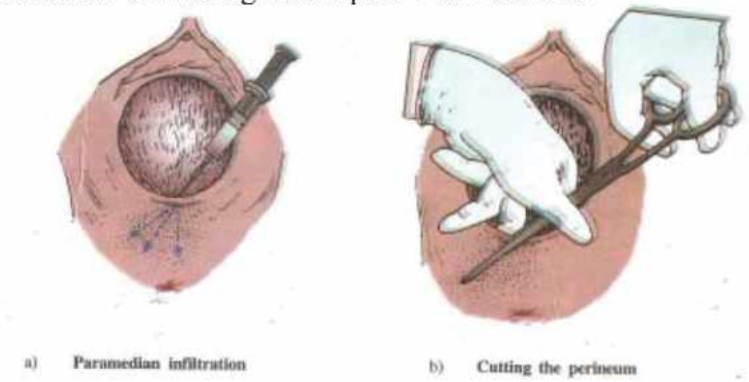


Fig. 4.15: Steps of mediolateral episiotomy

Tips to relieve pain and discomfort

- Cold therapy – using ice packs on the stitches usually on first 24 hours for 20 min and for 10 min several times a day.
- Ring cushions – inflated with air made of foam can make sitting comfortable.
- Perenial wash – incision sight should be cleaned with warm water.
- Sitz bath – a warm bath or siting in a tub of warm water for 20 min after bath. The incision sight should be dry.
- Expose stitches to air at least twice a day for 10 min.
- Squeeze buttocks together while sitting or getting up from a seated position to help ease discomfort.
- Proper hygiene to avoid infection.

Complications of episiotomy

- Perenial tear.
- Painful intercourse following child birth.
- Bleeding.
- Wound infection.
- Local pain and swelling.
- Delay in wound healing.
- Opening of stitches.
- Improper closing of wound.
- Scar endometriosis.

Recording and reporting

- Record the procedure in mothers chart.
- Record lochia for amount, colour and odour.
- Note involution of uterus / descend.
- Record condition of sutures.
- Report any abnormalities.

4.8 IMMEDIATE CARE OF NEWBORN BABY

Many newborn lives can be saved by the use of simple intervention. Various interventions needed immediately in first minute after birth, includes air way, breathing, temperature, identification of problems and early initiation of breast-feeding. If baby does not breathe or cry, he/she may need neonatal resuscitation.

Care at birth

Receive the baby in pre warmed dry towel and check for baby's cry and Meconium stain, cut the cord and resuscitate as per guidelines.

If the baby cries put on abdomen where another pre warmed towel is placed. Wrap the baby and make mother and baby comfortable.

4.8.1 Neonatal Resuscitation

The steps are given below (Fig. 4.16). Details of resuscitation has been discussed in BNSL-043, Block 6, Unit 1.

1) If baby is not breathing, clamp and cut the cord immediately and call for help.
2) Shift the baby under the radiant warmer.
3) Follow PSSR technique
4) P- Position the baby in slight neck extension using a shoulder roll.
5) S- Suction If there is thick meconium and the baby is unresponsive, suction should be carried out first mouth then nose before drying the baby. If there is no meconium, no need to suction.
6) S- Dry the baby, Stimulates by gently rub the back 2-3 times.
7) R- Reposition the head
8) Assess the breathing and heart rate for six seconds.
9) Apply appropriately sized mask (0 for preterm and 1 for term baby) correctly covering the mouth and nose up to chin.
10) Start providing positive pressure ventilation (IIV) or bagging. Start with five prolonged inflation breaths (lasting 2–3 seconds).
11) When chest rises seen, this indicates good ventilation technique.
12) If chest does not rise, check for correct position, look for leaks from the face mask/seal and give a further 5 inflation breathe.
13) Assess breathing and heart rate for 6 seconds. If available apply pulse oximeter probe and connect it to the machine.
14) If baby is not breathing well and/or HR<100: continue PPV (bagging) for 30 seconds at a rate of 40–60 breaths/min (calling out '1, 2, squeeze')
15) Provide oxygen if available. For newborns, give the amount of oxygen which is needed to reach an oxygen saturation of between 90 to 95%. To administer too much oxygen to a newborn, particularly a preterm, can cause serious damage to the retina and blindness.
16) If baby breathing well and HR>100 : refer for observational care, asking for help to fill in the details of resuscitation.
17) If no improvement, continue bag and mask ventilation and prepare to refer to appropriate centre. Continue bagging.

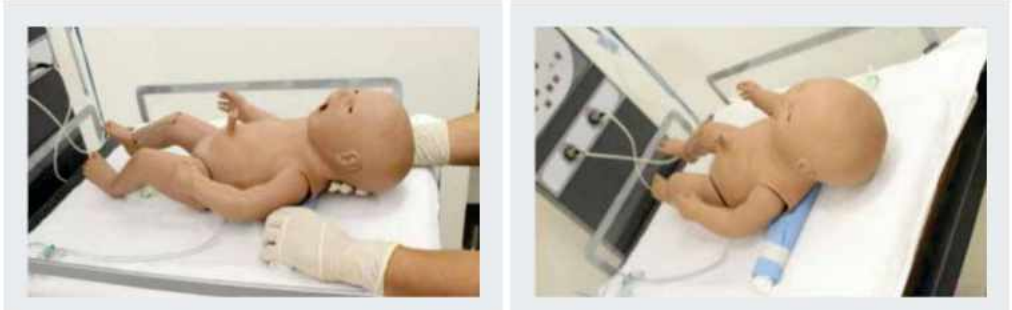


Fig. 4.16: Neonatal Resuscitation

Key Points to Remember:

- Suction of the mouth and nose in newborn babies can be harmful and should only be carried out if there is thick meconium and the baby is unresponsive.
- Routine suction is not recommended if the newborn is crying even if the liquor is meconium stained.
- If the baby is not breathing, call for help
- Ensure that the bag and mask if functional and ready for use.
- The masks are available in sizes 0 and 1 for preterm and term babies.
- Normal newborn respiration is 40–60 breaths/min.
- For newborn oxygen should be given to reach an oxygen saturation of between 90–95%. To administer a fixed flow of oxygen without ensuring this is checked can cause serious damage to the retina and blindness.

4.8.2 Neonatal Examination

Assessment of vital signs and measurements (Anthropometric Measurements)

- Head circumference – 34 to 35 cm.
- Chest circumference – 32 to 33 cm.
- Weight – 2.5 to 3.4 kgs.
- Length – 46 to 54 cm.
- Temperature – 97.6°F to 98.6°F (36 to 36.5°C) auxiliary.
- Heart rate 120 to 140 BPM (beats per minute).
- Respiration 30 to 60 BPM.



Fig. 4.17: Weight measurement



Fig. 4.18: Head circumference

- Head to toe examination is done as follows (Fig. 4.17 & Fig. 4.18)
  - **General Appearance**
    - Body symmetry
    - Physical activity
    - Tone
    - Posture
    - Color

- Size
- Response to examination
- State of alertness

- **Head**
  - Observe and palpate head for bruising, Moulding, scalp oedema, cephalic hematoma.
  - Suture's, overlapping, fontanels for size, fullness or depression
- **Neck and clavicles -** Symmetry, length, webbing, mobility, masses. Examine clavicles for fracture.
- **Eyes -** Symmetry, shape, discharge, position, oedema.
- **Ears -** Symmetry, shape, position, stiffness of ear tissue.
- **Nose -** Symmetry, septum, patency, flaring of nostrils and congestion of nostrils.
- **Mouth** - Cleft lip, cleft palate, tongue tie, presence of teeth, jaw size.
- **Skin** - Colour, texture, rash, smooth, peeling, sticky, presence of lanugo, vernix, meconium stain, pigmentation.
- **Chest** - Size, shape, symmetry, movement, breast tissue, nipples, engorgement, heart sounds, breath sounds, respiratory rate.
- **Abdomen** - Size, shape, symmetry, palpate liver, spleen, kidney, umbilicus,
- **Genitourinary**
  - Male – penis, foreskin, testis.
  - Female – clitoris, labia, hymen, discharge.
  - Anal position, patency
  - Passage of meconium and urine: (Meconium is the first stool of the infant).
  - Hips/legs/feet: leg length, proportions, symmetry, digits, hip, range movement, planter creases.
  - Back: spinal column, skin, symmetry of scapula.
- **Neurological Assessment (Fig. 4.19)**
  - **Rooting and sucking reflex -** When the corner of baby's mouth is touched the baby will open the mouth looking for nipple and when roof of baby's mouth is touched the baby will begin to suck.
  - **Grasp reflex – (palmer or planter grasp) -** The infant's fingers or toes will curl around a finger placed in the area.
  - **Moro reflex – (startle reflex) -** Hold the baby with head supported, allow the head to drop back, this will cause the infant to throw the arms outward, open the hands and through back the head.
  - **Stepping -** When the baby is held upright with his/her feet touching a solid surface, the baby makes stepping moments.
  - **Tonic neck reflex** - When baby's head is turned to one side, the arm on that side stretches out and opposite arm bends up at the elbow.



Fig. 4.19: Neurological assessment

4.8.3 Administration of Vitamin K (Fig. 2.20)

The newborn has a sterile intestines at birth. The newborn does not possess the intestinal bacteria that manufacture vitamin k which is necessary for the formation of clotting factors. This makes the newborn prone to bleeding. As a preventive measure 1 mg (for Birth weight 1000 grams and more) and 0.5 mg (for Birth weight is less than 1000 grams) of vitamin k injected I/M in the lateral anterior of thigh (vastus lateralis).



Fig. 2.20: Vitamin K injection

4.8.4 Initiation of Breastfeeding

- Breastfeeding is started as soon as possible when the air way is cleaned, and breathing is normal.
- In first or two hours after birth most babies are alert, wide awake.
- This time is best to begin Breastfeeding.

4.8.5 Avoid Traditional Practices

- Immediate bathing.
- Use of unclean substances like cow dung, mud on umbilical cord.

- Use of prolactin feeds.
- Application of kajal in the eyes.
- Installation of oil drops in to the ears / nostrils.
- Use of pacifiers.
- Interruption of artificial feedings / use of formula feeding.

4.9 LET US SUM UP

In this unit you have learnt skills about conduction of labour giving and suturing episiotomy, maintenance of Partograph, positions, and progress of labour and initial care of newborn baby. You have also learnt about care during stages of labour, bearing down and examination of placenta and membranes. In this unit we have learnt how the knowledge and skills regarding conduct of labour is important in order to recognise risk to the mother or baby or both.

The skills and techniques increase the confidence to conduct delivery, observe progress of labour, help in bearing down process, management of labour and care of episiotomy and care of newborn baby.

4.10 ACTIVITY

1) Conduct minimum 10 normal deliveries at your place of work .
   a) Give 5 episiotomies and suture them independently.
   b) Examine 10 placenta and write a detail report.
   c) Conduct complete examination of 10 new born babies.

4.11 REFERENCES

1) www.fitpreg.com/postitionstatement
2) www.slideshare.com/kamlen-episiotomy
3) www.slideshare.com by Arviegrace – New born care.
4) www.Amogsobgy.com> Subject > Partograph By Dr. Sheela Mane.
5) Nursing Management during child birth "Maternal Health Nursing" BNSL-103 IGNOU.
6) Elizabeth Marie "Midwifery for nurses," 1st edition 2010, CBS publishers, New Delhi.
7) Kumari Neelam, Sharma Shivani and Dr Gupta Preeti "A text book of midwifery and gynecological nursing," 2010 edition, PV Books, Jalandhar, India.
8) Bashir Rafiqa, "Manual on pregnancy, labour and puerperium," Daya publishing house, New Delhi.
9) D'Souza, Juliania, "Normal Labour and Nursing Management" Maternal Health Nursing, IGNOU School of Health Sciences, New Delhi.
10) Dakshata Manual

UNIT 5 IDENTIFICATION, CARE AND REFERRAL OF COMPLICATIONS DURING LABOUR

Structure

5.0 Introduction

5.1 Objectives

5.2 Safe Child Birth Checklist

5.3 Abnormal Labour/Dystocia

5.4 Obstetrical Emergencies

- 5.4.1 Antepartum Haemorrhage
- 5.4.2 Eclampsia
- 5.4.3 Obstructed Labour
- 5.4.4 Cord Prolapse
- 5.4.5 Postpartum Haemorrhage
- 5.4.6 Shock

5.5 Referral

5.6 Let Us Sum Up

5.7 Activities

5.8 References

5.0 INTRODUCTION

The major cause of maternal death in pregnancy has been identified as haemorrhage, sepsis, obstructed labour, toxemia and unsafe abortions. Most of these can be prevented if complications during pregnancy and childbirth can be identified and managed early.

In this unit you will be introduced to various types of obstetrical emergencies and their management. Before studying this unit refer theory course BNS-042 Block 2, Unit 4.

5.1 OBJECTIVES

After completing this unit, you should be able to :

- identify obstetrical emergencies;
- manage emergencies occurring during labour; and
- identify cases for early referral to higher medical facility.

5.2 SAFE CHILD BIRTH CHECKLIST

Safe child birth checklist was designed and developed by Government of India (GOI) as a tool to improve the quality of care provided to women giving birth. It is an organised list of evidence based essential birth practices which targets the

major causes of maternal death. Each checklist item is a critical action that if missed can lead to severe harm to the mother and new born or both.

Registration No……..

SAFE CHILDBIRTH CHECKLIST - BEFORE BIRTH	
Check 1 on Admission	Record temperature of mother…… Record BP of mother……. Record the Foetal Heart Rate……..
Does mother need referral? • Yes, organised • No	Refer to FRU or higher centre if any of the following danger signs are present and state reason on transfer note: Vaginal bleeding/ high fever/ severe headache and blurred vision/ convulsion/ severe abdominal pain/ history of heart disease or other major illness/ difficulty in breathing
Partograph started? • Yes • No, will start at ≥ 4cm	Start plotting when cervix > 4 cm, then cervix should dilate ≥ 1 cm/hr • Every 30 min: plot HR, contractions, fetal HR and maternal pulse, colour of amniotic fluid • Every 4 hrs: plot temperature, BP and cervical dilatation in cm.
Does mother need: **Antibiotics?** • Yes, given • No **Magnesium sulphate and anti hyper-tensive treatment?** • No • Yes given	Give antibiotics to mother if any of: • Mother's temperature > 38°C(or > 100.5°F • Foul-smelling vaginal discharge • Rupture of membranes >12 hrs without labour or 18 hours with labour • Labour > 24 hrs on obstructed labour • Rupture of membranes < 37 weeks gestation • If mother has systolic BP > 140 or diastolic > 90 along with proteinurea

	upto 2+ and has any one of the following, give magnesium sulphate/ manage as per lavel of facility • Convulsions • Increase in BP with proteinuria with systolic >= 160 or diastolic >=110 along with proteinuria 3+ or more • Presence of any symptom like: • Severe headache • Pain in upper abdomen • Blurring of vision • Oliguria (passing <400 ml urine in 24 hrs
Corticosteroid: • No • Yes, given	If there is premature onset on labor (between 23 to 34 weeks), ensure corticosteroids are given to mother for foetal lung maturity
HIV status of Mother: • Positive • Negative • Not known	If HIV + and in labour: • Give Nevirapine • If not available, refer the patient immediately after birth • Advise testing
• Encourage birth companion to be present at birth Are soap, water and gloves available? • No • Yes, I will wash hands and wear gloves for each vaginal exam	
• **Confirm that mother or companion will call for help during labour if needed.**	Call for help if any of: • Bleeding • Severe abdominal pain • Difficulty in breathing • Severe headache and blurred vision • Urge to push • Cannot empty bladder frequently

Registration No……..

SAFE CHILDBIRTH CHECKLIST – BEFORE BIRTH	
Check 2 JUST BEFORE PUSHING (OR BEFORE CAESAREAN)	
Does mother need to start: **Antibiotics?** • Yes, given • No **Magnesium sulphate?** • No • Yes, given	Give antibiotics to mother if any of: • Mother's temperature >38°C (>100.5°F) • Foul-smelling vaginal discharge • Rupture of membranes >18 hrs with labour • Labour > 24 hrs on obstructed labour now • Caesarean section If mother has systolic BP >= 140 or diastolic >= 90 along with proteinuria upto 2+ AND has any one of the following, give first dose of magnesium sulfate and refer immediately to FRU/higher centre: • Convulsions • Increase in BP with proteinuria with systolic >=160 or diastolic 110 along with proteinuria 3+ or more • Presence of any symptom like: • Severe headache • Blurring of vision • Pain in upper abdomen • Oligouria (passing <400 ml urine in 24 hrs)
Confirm essential supplies are at bedside: **For mother** • Gloves • Soap and clean water • Oxytocin 10 units in syringe • Pads for Mother **For baby** • Clean towel • Sterile scissors/blade to cut cord • Cord ligature • Mucus extractor • Bag-and-mask	Prepare to care for mother immediately after birth: • Confirm single baby only (not multiple birth) • Give oxytocin IM within 1 minute • Controlled cord traction to deliver placenta • Massage uterus after placenta is delivered Prepare to care for baby immediately after birth: • Dry baby, keep warm, give vit K • If not breathing, stimulate and clear airway • If still not breathing: • cut cord • ventilate with bag-and-mask • shout for help (paediatrician/F - IMCI doctor if available)
• Skilled assistant identified and ready to help at birth if needed	

SAFE CHILDBIRTH CHECKLIST AFTER BIRTH	
Check 3 SOON AFTER BIRTH (WITHIN 1 HOUR)	Record temperature of mother..... Record BP of mother..... Record temperature of baby..... Record respiratory rate of baby.....
Is mother bleeding too much? • No • Yes, shout for help	If bleeding is >500 ml or 1 pad soaked in < 5 mins: • Massage uterus • Start IV fluids • Treat cause • If placenta not delivered or completely retained: give IM or IV Oxytocin, stabilise and refer to FRU/higher centre • If placenta is incomplete: REMOVE If any visible pieces, and refer immediately to FRU/higher centre
Does mother need: **Antibiotics?** • No • Yes, given **Magnesium sulphate?** • No • Yes, given	Give antibiotics to mother if manual removal of placenta performed, or if mother's temperature >38°C and any of: • Chills • Foul-smelling vaginal discharge • Lower abdominal tenderness • Rupture of membranes > 18 hrs. now • Labour > 24 hours now If mother has systolic BP>= 140 or diastolic >=90 along with proteinuria upto 2+ AND has any one of the following, give first dose of magnesium sulphate and refer immediately to FRU/higher centre. • Convulsions • Increase in BP with proteinuria with systolic 160 or diastolic >=110 along with proteinuria 3+ or more • Presence of any symptom like: • severe headache • blurring of vision • pain in upper abdomen • Oligouria (passing <400 ml urine in 24 hrs)

Does baby need: **Antibiotics?** • No • Yes, given **Referral?** • No • Yes, organised **Special care and monitoring?** • No • Yes, organised **Zidovudine?** • No • Yes, given	Give baby antibiotics if antibiotics given to mother or if baby has any of: • Breathing too fast (>60/min) or stow (<30 min) • Chest in-drawing, grunting, or convulsions • Poor movement on stimulation • Too cold (Baby's temperature <36°C (and not rising after warming) or too hot (baby's temperature >38°C) Refer baby to FRU/higher centre if: • Any of the above (antibiotics indications) • Baby looks yellow, pale or blush Arrange special care/monitoring for baby if any: • Preterm baby • Birth weight <2500 grams • Needs antibiotics • Required resuscitation Give if mother is HIV+
• Started breastfeeding and skin-to-skin contact (if mother and baby are well). Explain that colostrums feeding is important for baby • Explain the danger signs and confirm mother/companion will call for help if danger signs present	

SAFE CHILDBIRTH CHECKLIST AFTER BIRTH

Check 4 Before Discharge	Record temperature of mother..... Record BP of mother..... Record temperature of baby..... Record respiratory rate of baby.....
Is Mothers bleeding controlled? • No, treat, observ and refer to FRU/higher centre if needed • Yes :.....	
Does mother need Antibiotics? • No • Yes, give and delay discharge	Give antibiotics to mother if mother has any of: • Mother's temperature >38°C or 100.5°F • Chills • Foul-smelling vaginal discharge • Lower abdomen tenderness

<table>
<tr><td>Does baby need antibiotics?
• No,
• Yes, give, delay discharge and refer to FRU/higher centre</td><td>Give Baby antibiotics if baby has any of
• Breathing too fast (>60/mins) or too slow (<30/min)
• Chest in-drawing, grunting, or convulsions
• Looks sick (lethargic or irritable)
• Too cold (baby's temp <36°C and not rising after warming) or too hot (baby's temp >38°C
• Stopped breastfeeding
• Umbilicus redness extending to skin or draining pus/any other discharge</td></tr>
<tr><td colspan="2">Is baby feeding well?
• No, help, delay discharge, refer to FRU/higher centre if needed
• Yes, teach mother exclusive breastfeeding</td></tr>
<tr><td colspan="2">• Discuss and offer family planning options to mother</td></tr>
<tr><td colspan="2">• Arrange transport home and follow-up for mother and baby</td></tr>
<tr><td colspan="2">• Explain the danger signs and confirm mother/companion will seek help if danger signs are present after discharge</td></tr>
<tr><td colspan="2">DANGER SIGNS</td></tr>
<tr><td>Mother has any of:
• Bleeding
• Severe abdominal pain
• Severe headache or visual disturbance
• Breathing difficulty
• Fever or chills
• Difficulty emptying bladder</td><td>Baby has any of:
• Fast/difficult breathing
• Fever
• Unusually cold
• Stops feeding well
• Less activity than normal
• Whole body becomes yellow</td></tr>
</table>

5.3 ABNORMAL LABOUR/DYSTOCIA

Abnormal Labour / Dystocia is any deviation from normal progress of labour either in cervical dilatation or descent of presenting part despite of presence of uterine contractions or it is a difficult labour or child birth while shows abnormal slow progress of labour.

Causes

The main causes are 3 P's i.e. Abnormalities of **power**, Abnormalities of **passage**, Abnormalities of **passenger** as discussed below:

Abnormalities of power:

- Hypotonic uterine contractions
- Hypertonic uterine contractions
- Uncoordinated uterine contractions

Abnormalities of passage:

- Deformed pelvis
- Small pelvis
- Contracted pelvis
- Congenital deformities of pelvis

Abnormalities of passenger:

- Malposition
- Malpresentation
- Big baby
- Shoulder dystocia
- Foetal malformations

Prolonged Active Phase (Fig. 5.1)

- In the active phase, plotting of cervical dilatation will remain on the left of or on the alert line
- If it moves to the right of the alert line labour may be prolonged
- Transfer if facility for emergency is not available
- Transfer allows adequate time for assessment for intervention when the mother reaches the action line

Prolonged latent phase

When latent phase is more than 8 hours transfer to appropriate health facility.

At the action line

- It is four hours to the right of alert line
- Assess the cause of slow progress and take action

Action should be taken in a place with facility for dealing with obstetric emergency is available.

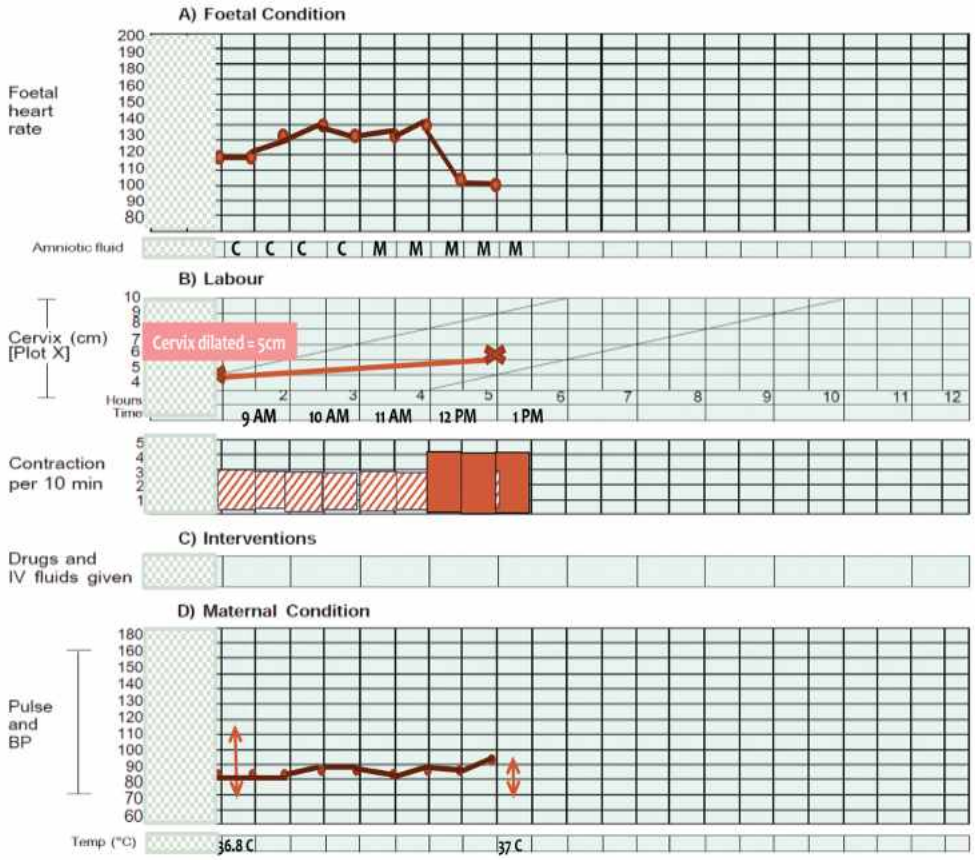


Fig. 5.1: Prolonged active phase of labour

Abnormal Partograph (Fig. 5.2) occurs when

- Latent phase is > 8 hours
- Cervical dilatation is to the right of alert line
- Cervical dilatation at or beyond action line
- Refer the woman in appropriate health facility

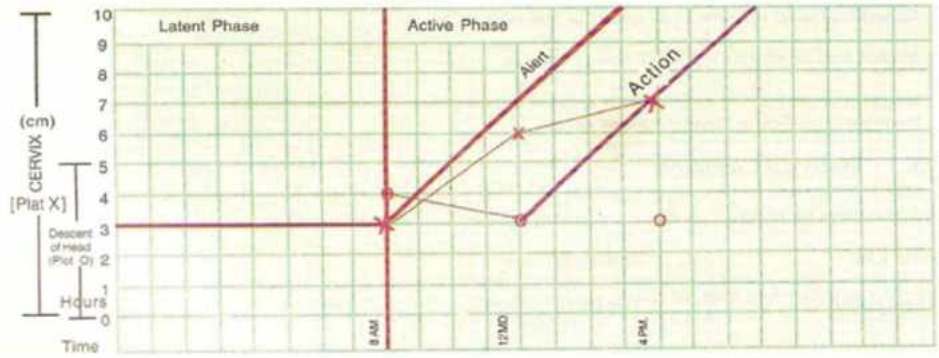


Fig. 5.2: Abnormal progress of labour

Referral - Woman is referred when the following are observed in Partograph

- Cervical dilatation mark crosses the alert line
- Identification of +3 Moulding of the fetal skull with poor progress of labour
- Fetal heart rate below 120 per mt or above 160 per mt for more than 10 min
- If liquor is lightly meconium stained in latent first stage of labour
- moderately stained in early active first stage of labour
- Thick amniotic fluid in all stages of labour

5.4 OBSTETRICAL EMERGENCIES

Common obstetrical emergencies include the following:

- Antepartum haemorrhage
- Eclampsia
- Obstructed labour
- Cord prolapse
- Postpartum haemorrhage
- Shock

5.4.1 Antepartum Haemorrhage

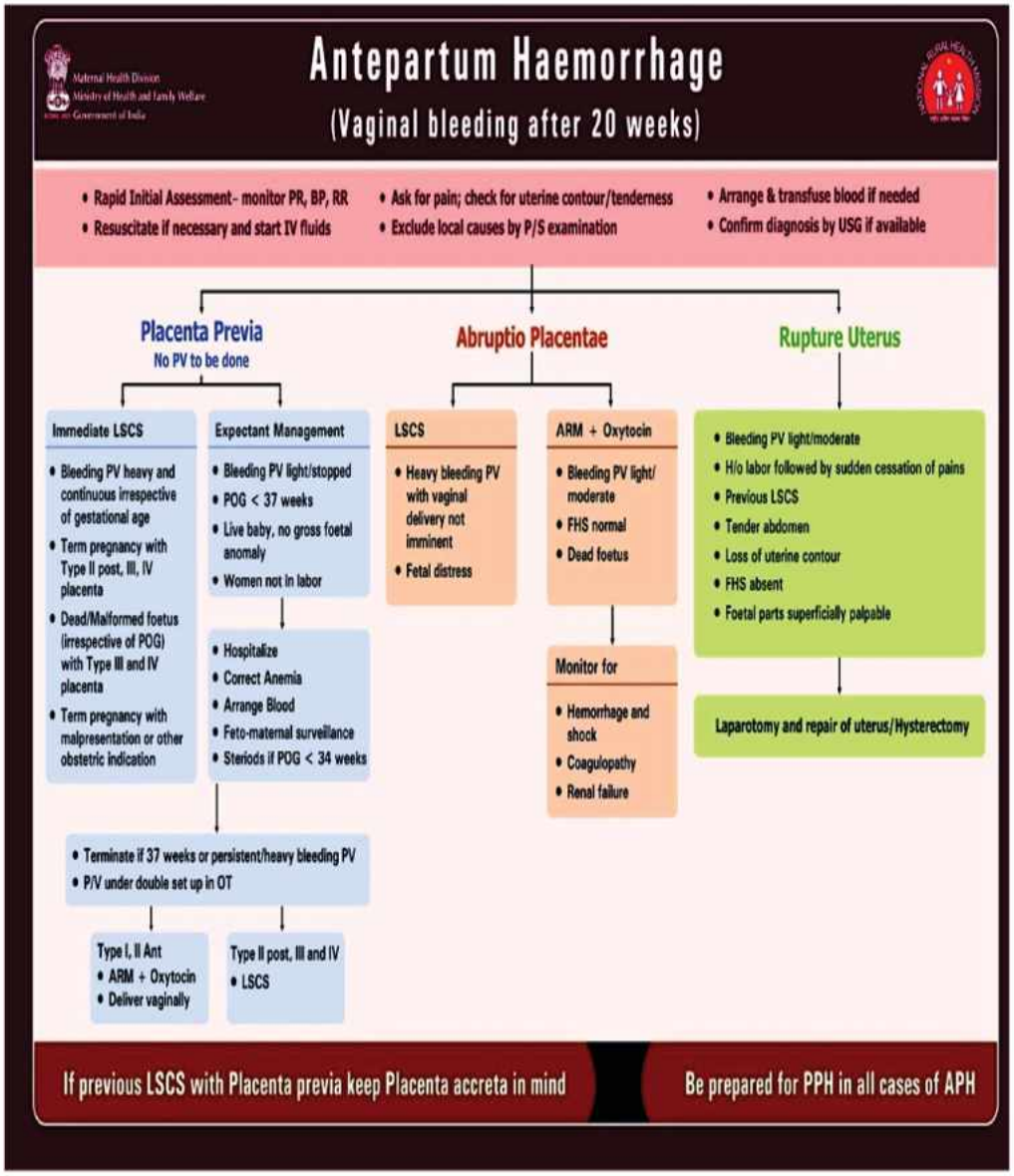
Antepartum haemorrhage is the bleeding from the vagina after 28 weeks of pregnancy and before the birth of the baby. It is a life threatening condition in pregnancy which if not handled with promptness can lead to death of mother and baby. Refer unit BNS-042, Block 2, Unit 4.

It is caused by placenta previa, abruptio placenta and rupture of uterus as given in Fig. 5.3.

Management

If the woman has bleeding P/V (light or heavy), even if she is not in shock. Initial quick assessment of the mother should be done as per SBA guidelines

- I/V fluid should be started slowly @ 30 drops/mt, if in shock, rapid fluids @ 60 drops/mt to be given **FRU**.
- Gentle abdominal examination and locating FHS should be done.
- No P/V examination to be done.
- Vital signs also should be monitored.
- Explain the woman/her relation that condition is serious and she must be taken to higher centre for further management.
- She must be shifted to the FRU which has facilities for blood transfusion.
- During transportation -
    - Keep the woman warm
    - Keep the rate of fluids 30 drops/mt carry additional bottle
    - If possible you or some other health worker must accompany woman



Flow chart 5.1: Flow Chart of APH

Case Study 1

Vaginal Bleeding in later Pregnancy

Gunjan is a healthy 24 years old primigravida. Her pregnancy has been uncomplicated. At 38 weeks of gestation, Ginjan comes to the health centre accompanied by her husband. She appears to be confused and is sweating profusely. She reports that since two hours, she has been having painless vaginal bleeding, the bleeding is bright red in colour.

1) What should be your initial assessment of Gunjan consist of and what is the probable diagnosis?
2) How should you manage Gunjan?
3) What advice would you give Gunjan's husband?

Discuss with your supervisor and record.

5.4.2 Eclampsia

Convulsions that occur during pregnancy, delivery or in the postpartum period should be assumed to be due to eclampsia, unless proved otherwise. It is the condition in which Blood Pressure is more than 140/90 mmHg and protein urea 2+ after 20 weeks of pregnancy and is accompanied with convulsion.

Eclampsia is characterised by

- Convulsions
- High blood pressure (a systolic blood pressure of 140 mmHg or more and/or a diastolic blood pressure of 90 mmHg or more)
- Proteinuria +2 or more.
- Keep in touch with the woman or her family and undertake appropriate follow up of the cases.

Management

- Check circulation and airway and check breathing
- Place women in left lateral position.
- Any visible obstruction or foreign body should be removed and clear nose and mouth. If needed do suctioning.
- Place mouth gag to prevent tongue bite, this should be done when there are no convulsions.
- Put on railing bed to protect from injury.
- Cathetrized so that urine output can be measured.
- An I/V access should be established. I/V fluids ringer lactate started slowly @ 30 drops/minute
- Her duration of pregnancy is assessed and if she is in labour, Administer Magnesium sulphate 50% w/v 5 g (10 ml) and l/m stat in each buttock.
- Record the dose of drugs given vital signs specially BP and urine protein must be checked and recorded.
- **Check total heart sound and record referred to FRU** with a referral slip and one attendant
- You must ensure that she reaches the higher facility atleast within 2 hrs if administration of first dose of magnesium sulphate is given
- If the delivery is imminent, you may not have time to transport her to a FRU, in that case deliver her immediately
    - Delivery may be at home/sub-center and
    - ***Refer her to FRU*** after delivery

Checklist of Management of Convulsion in Eclampsia

A woman with eclampsia has hypertension with proteinuria and convulsion.

Provide supportive care immediately as follows:

- Ensure that the airway and breathing are clear. If the woman is unconscious, position her on her left lateral side
- Empty her bladder using a catheter in and attach to a urine collection bag
- Clean her mouth and nostrils and apply gentle suction to remove secretions
- Remove any visible obstruction or foreign body from her mouth

- Place the padded mouth gaga between the upper and lower jaw so prevent tongue bite. Do not attempt during convulsion
- Protect her from fall or injury
- Do not leave the woman alone
- Measure the Pulse, BP, urine output and temperature of the woman
- Magnesium Sulphate injection

Give the first dose (only one dose) of magnesium sulphate injection

Take a sterile 10 cc syringe and 22 gauge needle

Break 5 ampoules and fill the syringe with the magnesium sulphate solution ampoule by (10 ml in all). Take care not to suck in air bubbles while filling the syringe. (Each ampoule has 2 ml of magnesium sulphate 50% w/v, 1g in 2 ml)

Identify the upper outer quadrant of the hip. Clan it with a spirit swab and let the area dry.

Administer the 10 ml (5 g) injection (deep intramascular) in the upper outer quadrant in one buttock, slowly

Tell the woman she will feel warm while injection is being given

Repeat the procedure with the same dose (i.e. 5 ampoules–10 ml/5 g) in the other buttock

Dispose of syringe in a puncture proof container (if disposable) or discontinue (if reusable)

- Start an intravenous infusion and give the intravenous fluid slowly at the rate of 30 drops/minutes
- Refer the woman immediately to an FRU with a referral slip. Ensure that she reaches the referral centre within 2 hours of receiving the first dose of Magnesium Suphate
- If the woman is in early labour, give her the first dose of Magnesium Suphate and refer her to an FRU for delivery
- If the woman is about to deliver, then

  Administer the first dose of Magnesium Suphate injection

  Deliver the baby in a domicillary setting/SC

  Refer her to an FRU after the delivery

Steps in administration of Magnesium Sulphate

Keep the following items ready

- Syringe and 22 guage needle
- Magnesium Sulphate ampoules
- Spirit and swabs
- Punture proof box

Wash hands with soap and water

- Tell the woman (if she is conscious) or her companion what is about to be done
- Make the woman lie down comfortably

- Check the expiry date on the Magnesium Sulphate ampoules
- Expose the area where the injection is to be given. Magnesium Sulphate injection is given in the upper and outer quadrant of buttock
- Clean the site with cotton and spirit
- Fill the syringe with the required dose using a 22 guage needle
- Pierce the skin with the needle at a right angle to the buttock (It is important to ensure that the injection is given deep, otherwise an abscess can develop at the site of the injection). Aspirate to ensure that the needle has not entered a blood vessel
- Tell the woman that after receiving the magnesium sulphate injection, she may feel hot and thirsty, may have flushing or get headache or may vomit
- Dispose of the syringe in a puncture proof box or decontaminate
- Wash your hand and record the treatment given in the Mother and Child Protection Card.

Case Study 2

Eclampsia

Sunita is 25 years old. She is 36 weeks pregnant. For the last two months. She was being treated at the PHC for PIH. Sunita has been counselled regarding the dangers signs in PIH and what to do about them. Her mother and husband have brought her to the health centre because she developed a severe headache and blurred vision this morning and had convulsions on the way to the health centre.

1) What should be your initial assessment of Sunita and what is the probable diagnosis?
2) How should you manage Sunita?
3) What advice would you give Sunita's husband/mother?

Discuss with your supervisor and record.

5.4.3 Obstructed Labour

Labour is said to be obstructed labour when inspite of good uterine contraction, the progressive descent of the presenting part is arrested due to mechanical obstruction.

Labour is said to be "obstructed" When the foetus cannot be delivered through the natural passage due to mechanical obstruction, it is on major obstetrical emergency, leads to high maternal and neonatal deaths.

- The partograph shows mother's finding cross the alert line, strong uterine contractions both in number and duration, foetal distress and tachycardia in mother.
- Transverse lie and abnormal presentation are commonly associated with obstructed labour.

Management

You as a health worker need to do prompt interventions and refer all cases immediatly to **FRU**.

- The following interventions are carried out before referring the mother:
  - Put I/V line give Ringer's lactate @ 30 drops/mt, if I/V line cannot be established give ORS or sips of sweet fluids.
  - There is no scope of using oxytocin to stimulate the uterine contraction.
  - 1st dose I/V antibiotic ceftriaxone 1 gm and metrogy1 400 mg to be given.
  - Ensure that you or any other health worker who is senior or experienced with skills of delivery should accompany the woman to FRU.
  - Inform the referral centre if possible by radio or telephonic.
  - **Refer her to FRU** immediately with referral note.

5.4.4 Cord Prolapse

The cord lies inside or outside the vulva following rupture of membrane.

Management

First aid management can be very well done by nurses which is as follows:

- Do a P/V examination to ascertain
  - Degree of Cx dilatation
  - The presenting part
  - Cord pulsation
- Establish an I/V line, keep the woman nil orally.
- Make the woman lie in knee chest or exaggerated sim's position or trendelenburg position or put pillows under the buttocks so that they are higher than shoulder. (Fig. 5.3)
- Identify foetal heart rate with stethoscope/foetoscope.
- Efforts should be made to minimise pressure on the cord.
- If she is in labour delivering has to be done immediately.
- Cord pulsation is felt, if not present vaginal delivering is conducted.
- If FHS present and cord pulsation present urgently shift her to FRU or higher centre.
- Prepare the woman for cesearean delivery and take the informed written consent also.
- Explain the relatives that the chances of survival of foetus is very less if cord pulsation not felt.

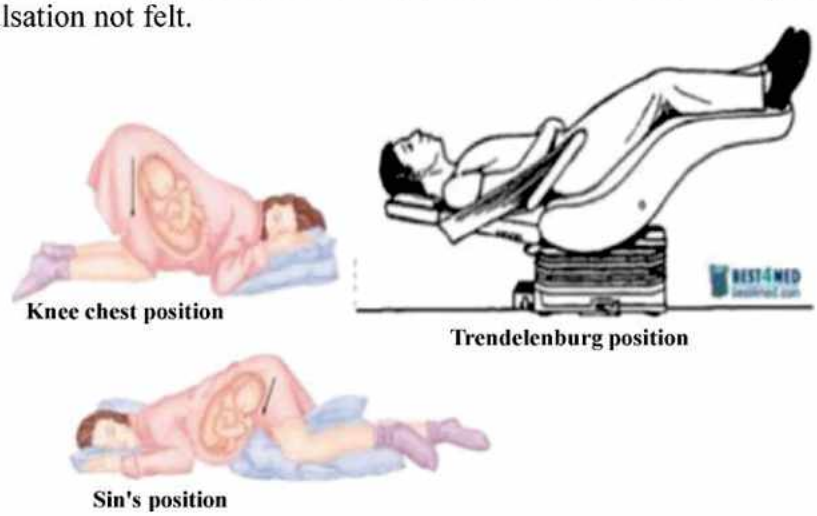


Fig. 5.3: Positions used in Cord Prolapse

5.4.5 Postpartum Haemorrhage

Postpartum Haemorrhage is loss of 500 ml of more blood during delivery or on the pastpartum period (up to six weeks of the delivery) (

The PPH may be Primary or Secondary. In Primary Postpartum Haemorrhage bleeding within 24 hours of delivery and in secondary PPH bleeding occurs after 24 hours.

Management

If a woman visits to a sub-centre with history of bleed you need to follow the steps given below.

- Check if the woman complains of heavy bleeding.
- Ask and check whether the placenta was delivered or not.
- Check if she is soaking 1 pad in less than 5 minutes or 3 pads in 10 minutes.
- Check her vital signs, amount of bleeding, trauma/retained placenta, hardening of the uterus.

The woman can be considered in shock if

- Pulse is more than 120/mt
- BP less than 60 mmHg
- She is cold and clammy in addition bleeding heavily
- She is anxious, confused/unconscious

- Label the mother as having primary PPH, if she is bleeding within 24 hr of delivery.
- If uterus is soft, start I/V 1000 ml Ringer's lactate with 20 units of oxytocin @ 40–60 drops/mts
- In case I/V cannot be establish, give I/M oxytocin 10 units stat and refer the woman to FRU.
- Make attempt to contract the uterus by messaging and expel the blood clots.
- If placenta is not expelled, try to remove it.
- If uterus still soft and woman bleeding despite uterine massage, oxytocin treatment and removal of placenta then perform bimanual uterine compression.
- Catheterize the bladder to note the amount of output.
- Quickly make arrangements to transport the woman to FRU by filling referral slip.
- I/V line and catheter should be left in place while transporting the mother.
- The referring facility doctor should be informed in advance along with patient's blood group and general condition.
- Refer flow Chart 5.2 and 5.3 for management (adapted from MOHFW)

If the bleeding is under control take pulse rate every 30 minutes, more than 30 ml per hour take blood pressure every 4 hours, access urine output every 4 hours until

Secondary PPH Bleeding after 24 hours

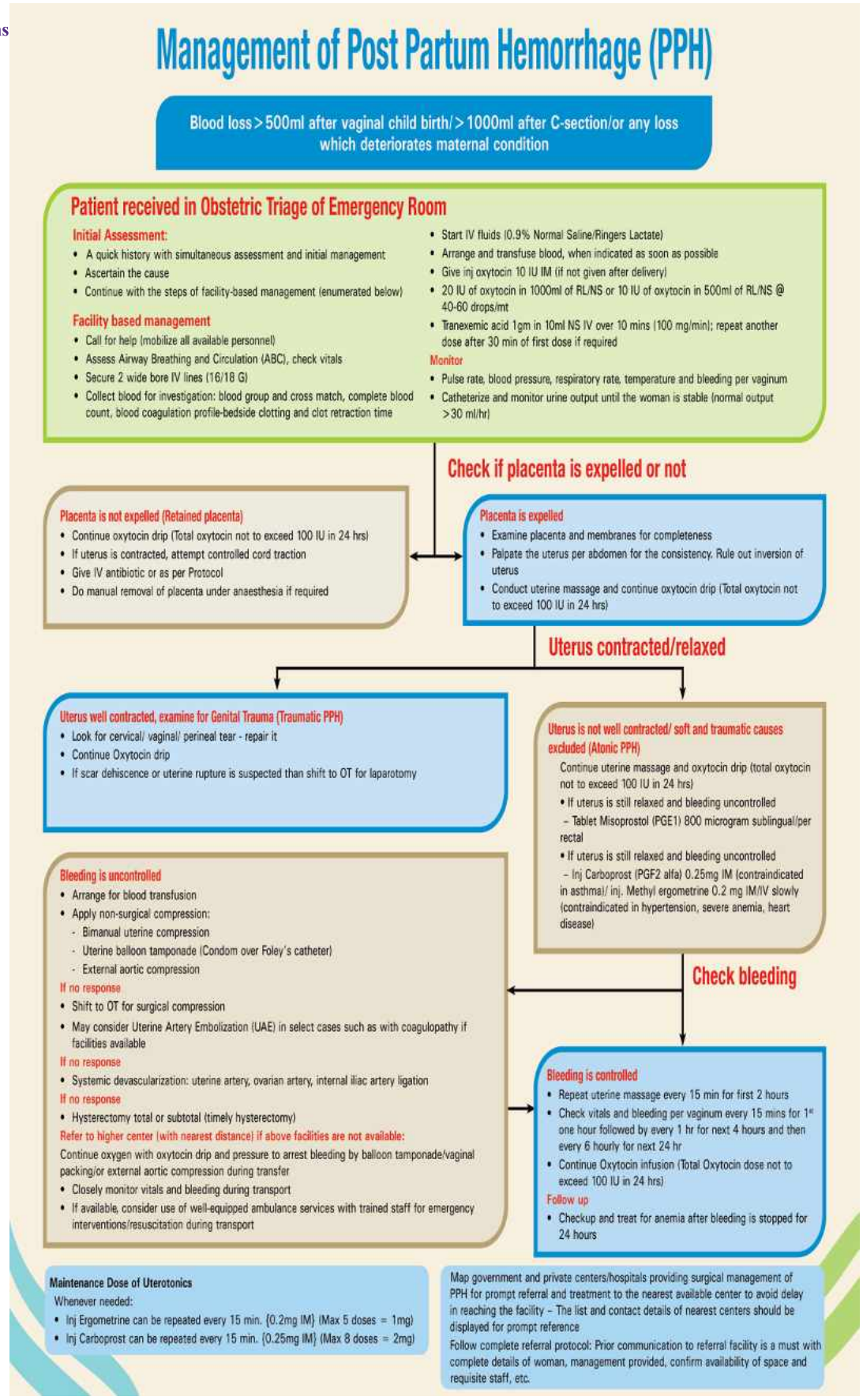
Cause of secondary PPH can be as follows:

- It can be due to Retained products of conception, Uterine infections
- Oxytocin 10 IU l/m should be immediately given
- I/V line to established and give 20 units IV oxytocin in 1000 ml of Ringer lactate at @ 40–60 drops/mt
- If bleeding doses not stop **refer her to FRU**
- If fever and foul swelling vaginal discharge, give her first dose of antibiotic cap Ampicillin 1 gm, metronidazole 400 mg and Inj gentamycin 80 mg lm and **refer to FRU/higher facility** with the referral card.

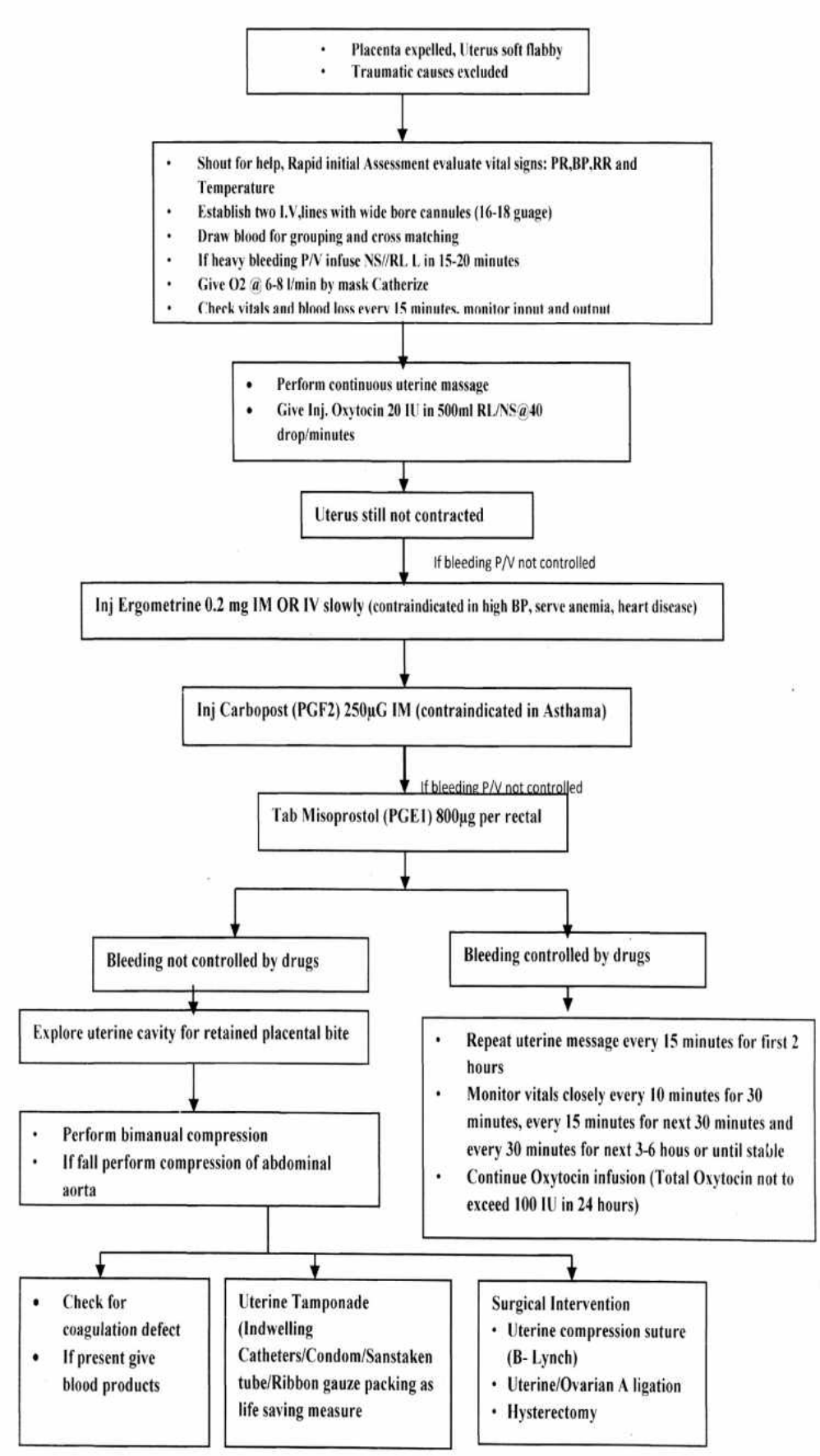
Steps for setting up an intravenous line

1) Identify and collect the necessary equipment for IV cannula insertion. Sterile cotton swabs, IV cannula sizes 18 & 20 gauge, povidone lodine, alcohol/ spirit swabs, adhesive tape, 2 ml normal saline flush ina 2/5 ml syringe splint sterile gloves, tourniquet
2) Identify the site of insertion
3) Apply tourniquet proximal to the identified vein
4) Wash hands and wear gloves
5) Clean the site with alcohol and wait for 30 seconds
6) Apply povidone iodine solution
7) Remove the povidone iodine using alcohol and allow to air-dry for 30 seconds
8) Hold the IV cannula and prick the skin at an angle of 15 degrees
9) Advance the stylet with cannula till a gush of blood is seen in the hub of the stylet
10) Progress the IV cannula slowly while withdrawing the stylet till the cannula is fully inserted
11) Keep the stylet in a sterile container
12) Flush with 2 ml of normal saline to check for smooth flow of the fluid
13) Close the hub end with the stopper
14) Fox the IV cannula with adhesive tape
15) Splint the part if required
16) Stylet is destroyed using needle destroyer/discarded in puncture-proof container

Refer flow Chart 5.2 and 5.3 for management of PPH to have better understanding (Adopted from MOHFW)



Flow chart 5.2: Management of PPH



Flow chart 5.3: Management of Atonic PPH

Case Study 3

Vaginal Bleeding after Delivery

Veena is 24 years old. She gave birth to full term baby one and a half hours ago at home. Her birth attendant was her grandmother, who has brought Veena to the health centre because she has been bleeding since delivery. The duration of labour was 12 hours, the birth was normal and the placenta was delivered 20 minutes after the birth of baby.

1) What should be initial assessment of Veena and what is the probable diagnosis?
2) How should you manage Veena?
3) What advice would you give Veena's grandmother?

Discuss with supervisor and record.

5.4.6 Shock

Shock is defined as a failure of circulatory system to maintain adequate perfusing vital organs.

Management

- The woman is considered to be in shock if -
  - She is anxious, confused or unconscious
  - Her skin is cold and clammy
  - B.P. is less than 90/60 mm of Hg and pulse rate of 115 (tachycardia), respiration more than 30/mt
  - Bleeding heavily (1 pad soaked in less than 5 mts)
- If the woman is conscious with bleeding PV, Ask LMP to make sure that she is pregnant - early or late pregnancy.
- Check if she has any abdominal pain.
- Check her general condition, vital signs, bleeding PV

  a) Initiate treatment immediately -

  Stat I/V Ringer's lactate or normal saline at a referral rate

  Raise her foot end

  Check out access airway. If airway is not

  Make the woman warm with lot of woolen or blankets

  Put her in side lying position

  Refer her to FRU with referral slip

  b) Explain the woman /her companion that her condition is serious and she is in danger. Hence she needs to be referred to FRU.

  c) Make arrangements for transport, during transportation follow these -

- Keep her warm as much as possible
- Must carry another bottle I/V fluids
- If possible accompany the woman to FRU and also inform them in advance

5.5 REFERRAL

A referral can be defined as a process in which a health worker at one level of health system having insufficient resources (Drugs, Equipment's, skills) to manage a clinical condition and seeks assistance of a better or differently resourced facility at the same or higher level to assist in or take over the management of a client case.

Reasons for Referral

- For expert opinion
- Use additional or different services
- Admission and management of client
- Use of diagnostic and therapeutic tools

Principles of referral

- The women her baby and family are the center of all discussions and processes
- The women should have continuity of maternity care
- Women has the right to receive full, accurate, unbiased information about her options / outcome
- Communicators between all practioners involved with the woman will include her and will open clear, timely and appropriately documented

Before transferring the client with complication ensure that she should be kept in the left lateral position. In case the women is unconscious put the soft mouth gag in between her teeth. This will prevent tongue bites in case she develops fits.

Medication

- Start I/V fluids as ringers lactate normal saline or 5% glucose.
- Sedate the patient before transportation.
- Give first dose of broad spectrum antibiotic.

Sample of reference letter

Sample reference letter	.....
Name of the woman	.....
Name of the Health Worker	.....
EDD	.....
Past Obstretic History	.....
Present Problem	.....

Labour Management carried out	.....
Reason for referral	.....
Date of referral	.....
Time of referral	.....
Emergency Management if any given	.....
Vaginal Examination	.....
Dialation of cervix	.....
Contraction, Duration, frequency	.....
VITALS:	.....
• **BP**	.....
• **Pulse**	.....
• **Temperature**	.....
Foetal Heart Rate	.....
Bleeding per vagina	.....
Blood group of woman if known	.....

Any evidence of bleeding (for assessural of the amount of blood loss) such as number of pads used or clothes soaked should be send along with patient.

5.6 LET US SUM UP

In this unit we have discussed about various obstetrical emergencies, most of these are preventable. Timely identification, intelligent action of nurses along with proper education of mothers all together can do a lot to reduce their incidence.

Death due to childbirth should not happen as it is physiological process and access to health care facilities these days available at many places.

5.7 ACTIVITIES

Activity 1

Visit a labour room of a PHC/CHC/district hospital and undertake the following:

- Prepare oxytoxin 20 IU in 500 ml of Ringer's lactate
- Administer $MgSO_4$ to an eclamptic patient

Activity 2

Prepare a health education session for group of staff nurses on the prevention of postpartum haemorrhage.

Activity 3

Demonstrate the important points to remember while transporting or referring a patient in case of any obstetrical emergency.

5.8 REFERENCES

1) RMNCAH+N 5× 5 Matrix, www.nrhm.gov.in
2) http://www.who.int/mediacentre/factsheets/fs348/en/
3) http://unicef.in/Whatwedo/1/Maternal-Health
4) http://data.unicef.org/maternal-health/maternal-mortality.html
5) http://pib.nic.in/newsite/PrintRelease.aspx?relid=123669
6) http://data.worldbank.org/
7) www.obgnursing.blogspot.com/2012/07july2012/midwifery and obstetric nursing
8) www.pregnancycorner.com/labourcontraction
9) www.glown.com/episiotomy
10) www.pdf-assessmentof4thstageoflabour
11) A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health RMNCAH+N in India, Ministry of Health & Family Welfare Government of India January, 2013
12) India's Reproductive, Maternal, Newborn, Child, and Adolescent Health RMNCAH+N Strategy, by USAID July 2014
13) Guidelines for Standardization of Labour Room at Delivery Points. Ministry of Health & Family Welfare Government of India. March 2016.
14) Protocol Posters from FRU to MC. Ministry of Health & Family Welfare Government of India.
15) Maternal and Newborn Health Toolkit. Ministry of Health & Family Welfare Government of India. November 2013.
16) Guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/ CHVs/SNs. Ministry of Health & Family Welfare Government of India. April 2010.
17) Skilled Birth Attendance (SBA). A Handbook for Auxiliary Nurse Midwives, Lady Health Visitor and Staff Nurses. Ministry of Health & Family Welfare Government of India. 2010.
18) Skilled Birth Attendance (SBA). Trainers Guide for Conducting Training of Auxiliary Nurse Midwives, Lady Health Visitor and Staff Nurses. Ministry of Health & Family Welfare Government of India. 2010.
19) Handbook for RMNCH Counsellors. Ministry of Health & Family Welfare Government of India.
20) Subcutaneous Injectable Contraceptives. Ministry of Health & Family Welfare Government of India.
21) My Safe Motherhood Booklet. Ministry of Health & Family Welfare Government of India.

22) Skill Lab Operational Guidelines. Ministry of Health & Family Welfare Government of India.

23) Daksh Skill Lab for RMNCAH+N Services Training Manual for Participants. Ministry of Health & Family Welfare Government of India.

24) IUCD Reference Manual for Ayush Doctors. Ministry of Health & Family Welfare Government of India. Jan 2014.

25) Reference Manual for Injectable Contraceptives (DMPA). Ministry of Health & Family Welfare Government of India. Mar 2016.

26) Reference Manual for Oral Contraceptive Pills. Ministry of Health & Family Welfare Government of India. Mar 2016.

27) Contraceptive Update Manual for Doctors (October 2005)

28) Elizabeth Marie "Midwifery for nurses," 1st edition 2010, CBS publishers, New Delhi.

29) Kumari Neelam, Sharma Shivani and Dr Gupta Preeti "A text book of midwifery and gynecological nursing," 2010 edition, PV Books, Jalandhar, India.

30) Bashir Rafiqa, "Manual on pregnancy, labour and puerperium," Daya publishing house, New Delhi.

31) Souza, D, Juliania, "Normal Labour and Nursing Management" Maternal Health Nursing, IGNOU School of Health Sciences, New Delhi.

UNIT 6 POSTNATAL EXAMINATION AND CARE

Structure

6.0 Introduction

6.1 Objectives

6.2 Postnatal Care and Postnatal Visits

6.3 Examination and Care during Postnatal Visits

- 6.3.1 First Postnatal Visits
- 6.3.2 Second and Third Postnatal Visits for Mother
- 6.3.3 Fourth Postnatal Visit for Mother

6.4 Breastfeeding

6.5 Referral

6.6 Let Us Sum Up

6.7 Activity

6.8 References

6.0 INTRODUCTION

The postnatal period as you have leant is a critical phase in the lives of mothers and newborn babies. Major changes occur during this period which determines the well-being of mothers and newborn. Yet, this is the most neglected time for the provision of quality of health services. Lack of appropriate care during this period could result in significant maternal and infant deaths during this period.

In this unit we will focus on Postnatal care and postnatal visits. We shall also discuss about examination and care of mother and baby including counselling during 1st ,2nd, 3rd and 4th Post natal visits You have also learnt Postpartum Care in theory Course 2, Block 2, Unit 5.

6.1 OBJECTIVES

After completing this unit, you should be able to:

- carry out detailed examination of Postnatal mother and newborn baby;
- identify danger signs in a postnatal women and in a newborn;
- identify and solve breastfeeding problems in mother and newborn; and
- counsel the mother for appropriate postnatal care and make appropriate referral.

6.2 POSTNATAL CARE AND POSTNATAL VISITS

Postnatal care (PNC) is the care given to the mother and her newborn baby immediately after the birth and during the first six weeks of life. Therefore as a mid-level health care provider you should be able to conduct post natal examination and provide appropriate care to mother and baby to prevent

mortality and mobility among mothers and babies. Let us learn about the number of visits.

During postnatal period woman should recuperate physically and emotionally and should be able to take care of her newborn baby.

Postnatal Visits- The number of visits are given in following Table 6.1.

Table 6.1: Postnatal visits

Visits	After Home Delivery / Delivery at SC	After Delivery at PHC/FRU
First visit	1st day (within 24 hours)	Not applicable
Second visit	3rd day after delivery	3rd day after delivery
Third visit	7th day after delivery	7th day after delivery
Fourth visit	6 weeks after delivery	6 weeks after delivery

Note: There should be three additional visits in the case of babies with low birth weight- on days 14, 21 and 28.

6.3 EXAMINATION AND CARE DURING POST-NATAL VISITS

The examination and care during post natal visits is discussed in following subsection:

6.3.1 First Postnatal Visit (1st day - within 24 hours)

The first 48 hours are the most critical in the entire postpartum period. Most of the major complications of the postpartum period such as PPH and eclampsia, which can lead to maternal death, occur during this period. Hence a woman who has just delivered needs to be closely monitored during the first 48 hours. It is your duty to inform the woman about the importance of staying at the health facility where she has delivered for atleast 48 hours so that proper care is provided to her. You must emphasise that monitoring is essential for her and the baby.

The next most critical period is the first week following the delivery. A considerable number of complications can occur during this period, both for the mother as well as the baby. Hence, visits have to be made to the mother and the baby on the 3rd and 7th day after delivery.

1) First postnatal visit for mother

Following need to be done during first postnatal visit of mother.

History Taking

Ask the following questions:

1) Where did the delivery take place?
2) Who conducted the delivery?
3) Is there a history of:
   a) Any complication during the delivery?

b) Bleeding P/V (how many pads or pieces of cloth are soaked with blood)
c) Convulsions or loss of consciousness
d) Pain in the legs
e) Abdominal pain
f) Fever
g) Dribbling or retention of urine
h) Any breast tenderness, etc.

4) Has the mother started breastfeeding the baby?
5) Has she started her regular diet?
6) Are there any other complaints?

Examination

1) Check the woman's pulse, blood pressure, temperature and respiratory rate.
2) Check for the presence of pallor.
3) Conduct an abdominal examination. Normally, the uterus will be well contracted, i.e. hard and round. It is soft and uterine tenderness is present and then do appropriate referral.
4) Examine the vulva and perineum for the presence of any tear, swelling or discharge of pus. If any of these is present do appropriate referral.
5) Examine the pad for bleeding to assess if the bleeding is heavy and also see if the lochia is healthy and does not smell foul (for puerperal sepsis). If these signs are present do appropriate referral.
6) Examine the breasts for any lump or tenderness, check the condition of the nipples and observe breastfeeding. If the woman has any complaints regarding the condition of her breasts, do appropriate referral.

Management and Counselling

Give the woman and her family members the following guidance:

I) **Postpartum care and hygiene**

- She should have someone near her for the first 24 hours to take care of her and the baby.
- She should wash the perineum daily.
- The sanitary pads must be changed every 4–6 hours or more frequently if required.
- If using cloth pads, it should be washed with soap and water and dried in the sun.
- She should bathe daily.
- She should take enough rest and sleep.
- She should wash her hands before and after handling the baby, especially after cleaning and before feeding the baby.
- Rooming in of the mother with the baby is advisable.
- Advise the mother on how to look after her newborn, e.g. how to maintain warmth and exclusive breastfeeding.

Nutrition

- She should increase her intake of food and fluids.
- Talk to the woman's family members such as her husband and mother-in-law, to encourage them to ensure that she eats enough and avoids heavy physical work.
- Advise her to eat greater amount and variety of healthy foods such as cereals, milk, cheese, meat, fish, green leafy vegetables, etc.

Contraception

- Advice the couple on birth spacing or limiting the size of the family
- Advice the couple to abstain from sexual intercourse for about 6 week's postpartum or till the perineal wound is healed.

1) **Exclusive Breastfeeding**
   - Ask the mother whether breastfeeding was initiated within one hour of the birth.
   - Observe breastfeeding and check if there is good attachment and effective suckling.
   - Advise her to feed colostrum.
   - Ask her to feed in a relaxed environment.
   - Explain the importance of exclusive breast feeding, that breast milk is sufficient and the best for the baby. Stress on exclusive breastfeeding.
   - She should breastfeed frequently i.e. at least 6–8 times during the day and 2–3 times during the night. She should not give water or any other liquid to the baby.
   - She should breastfeed from both breasts during a feed. The baby should finish emptying one breast to get the rich hind milk before starting on the second breast.

Registration of birth

Explain the importance of getting the birth of the baby registered with the local panchayat or Registrars office.

IFA supplementation

- She should take one IFA tablet daily for six months.
- If she was anaemic prior to the delivery, recheck her Hb level.
- If Hb<11 gm/dl, then advise her to take two IFA tablets daily for three months and if after one month her Hb level hasn't improved refer her to the PHC.
- If Hb is <7 gm/dl refer her to FRU.

Danger signs

- Counsel the mother to go to higher health facility if she notices the following danger signs:
  - Excessive bleeding, i.e. soaking more than 2–3 pads in 5 minutes after delivery
  - Convulsions

- Fever
- Severe abdominal pain
- Difficulty in breathing
- Foul-smelling lochia

II) **First visit for baby**

History-taking

Ask the mother/relative taking care of the mother and baby:

1) When did the child pass urine and stool?
2) Has the mother started breastfeeding the baby and are there any difficulties in breastfeeding?
3) Ask the following:
   - The baby has fever.
   - The baby is not suckling well (could have ulcers or white patches in the mouth-thrush)
   - The baby has difficulty in breathing.
   - The umbilical cord is red or swollen or is discharging pus.
   - The movements of the newborn are less than normal (normally, newborns move their arms or legs or turn their head several times in a minute).
   - There is skin infection (pustules) – red spots which contain pus or a big boil.
   - There are convulsions.
4) Are there any other complaints?
5) If any of the above problems is present, refer the newborn to the appropriate health facility. However, there is no need for referral in case of umbilical discharge or if the number of skin pustules is less than 10. Provide home treatment (as per IMNCI guidelines) for these problems and refer the baby only if there is no improvement after two days.

Examination

1) Count the respiratory rate for one minute. The normal respiratory rate is 30–60 breaths per minute. If it is less than 30 breaths per minute or more than 60 breaths per minute, refer the baby to the appropriate health facility as per the steps for referral.
2) Look for severe chest in-drawing:
   - Mild chest in-drawing is normal in an infant because the chest wall is very soft.
   - Severe chest in-drawing (lower chest wall goes in when the infant breathes in) is a sign of pneumonia and is serious in an infant.
   - Refer the baby to an appropriate health facility as per the steps of referral.
3) Check the baby's colour:
   - Check for pallor.

- Check for jaundice. If it is normal, if appears less than 24 hours after birth and the palms and soles are yellow. Refer the baby to an appropriate health facility as per the steps for referral.
- Check for central cyanosis (blue tongue and lips). Such babies are to be urgently referred.

4) Check the baby's body temperature. The temperature can be assessed by recording the axillary temperature or feeling the infant's abdomen or axilla.
   - If the temperature is less than 36.5°C or above 37.4°C, the newborn needs to be urgently referred to an appropriate health facility as per the steps for referral.
5) Examine the umbilicus for any bleeding, redness or pus. If there is any, provide treatment and refer the baby to an appropriate health facility if there is no improvement after two days.
6) Examine for skin infection:
   - Red rashes on the skin may be seen 2–3 days after birth. These are normal.
   - If there are 10 or more pustules (red spots or blisters which contain pus) or a big boil/abscess, refer the new-born to an appropriate health facility immediately.
7) Examine the newborn for cry and activity:
   - If the newborn is not alert and/or has a poor cry; is lethargic/ unconsciousness; or if the movements are less than normal, he/she needs to be referred to an appropriate health facility.
8) Examine the eyes for discharge. Check if they are red or if the eyelids are swollen. Provide treatment and refer the baby to an appropriate health facility if there is no improvement after two days.
9) Examine for congenital malformations and any birth injury. If there are any, refer the newborn to an appropriate health facility (preferably District Hospital). There are 30 identified health conditions for early detection and free treatment and management. The list of diseases is provided in the Table 6.2 below:

Table 6.2 : Identified health conditions for child health screening and early intervention services

Defects at Birth	Deficiencies
1. Neural Tube Defect	10. Anaemia especially severe anaemia
2. Down's Syndrome	11. Vitamin A Deficiency (Bitot spot)
3. Cleft Lip & Palate/Cleft Palate alone	12. Vitamin D Deficiency (Rickets)
4. Talipes (Club foot)	13. Severe Acute Malnutrition
5. Developmental Dysplasia of the Hip	14. Goiter
6. Congenital Cataract	
7. Congenital Deafness	
8. Congenital Heart Disease	
9. Retinopathy of Prematurity	

Childhood Diseases	Developmental Delays and Disabilities
15. Skin conditions (Scabies, Fungal Infection and Eczema)	21. Vision Impairment
16. Otitis Media	22. Hearing Impairment
17. Rheumatic Heart Disease	23. Neuro-Motor Impairment
18. Reactive Airway Disease	24. Motor Delay
19. Dental Caries	25. Cognitive Delay
20. Convulsion Disorders	26. Language Delay
	27. Behaviour Disorder (Autism)
	28. Learning Disorder
	29. Attention Disorder
30. Congenital hypothyroidism, Sickle Cell anaemia, Beta Thalassemia (Optional)	

Management/counselling

Give the mother the following advice:

1) She should maintain hygiene while handling the baby.
2) She should delay the baby's first bath to beyond 24 hours after birth.
3) In cool weather, the baby's head and feet should be covered and he/she should be dressed in extra clothing. The baby must be kept warm at all times.
4) She should not apply anything on the cord and must keep the umbilicus and cord dry.
5) She should observe the baby while breastfeeding and try to ensure proper/ good attachment.

Good attachment of the baby to the mother's breast: Ensure that the baby's mouth is attached correctly to the breast.

- If the baby is having the following problems, take him/her immediately to an appropriate health facility: (Danger signs)
  - The baby is not breastfeeding.
  - The baby looks sick (lethargic or irritable).
  - The baby has fever or feels cold to the touch.
  - Breathing is fast or difficult.
  - There is blood in the stools.
  - The baby looks yellow, pale or bluish.
  - The baby's body is arched forward.
  - The movements of the body, limbs or face are irregular.
  - The umbilicus is red, swollen or draining pus.
  - The baby has not passed meconium within 24 hours of birth.
- Counsel the mother on where and when to take the baby for immunisation. Follow the immunisation schedule for the child.

Table 6.3: Conditions requiring referral to FRU/PHC

Referral on	Referral to PHC	Referral to FRU
Maternal Condition	PPH (Soaks one pad in < one minute)	• Uterus not hard and contracted • Tear, swelling or pus discharge in vulva and perineum • Foul smelling discharge per vagina • Anaemia (if Hb doesnot improve after 1 month of IFA consumption) • Presenting with danger signs – heavy bleeding, fever, convulsions, severe abdominal pain, breathing difficulty, foul smelling lochia
Newborn's Conditions	Presenting with danger signs- difficulty in breathing, fits or convulsions, fever or cold to touch, refuses feed, blood in stools, has diarrhoea	• Did not pass urine or meconium • Temperature is < 36.5°C or > 37.4°C, • If respiration less than/more than 30 breaths/minute • Indrawing of the chest • Baby's colour for jaundice/ central cyanosis • Pus/bleeding/redness from Umbilicus • Pustules – if there are 10 or more or a big boil • Not alert and/or has a poor cry or movements less than normal • Discharge/redness from eyes • Any congenital malformation and birth injuries

6.3.2 Second and Third Postnatal Visits for Mother (3rd day and 7th day)

History Taking

A similar history needs to be taken as during the first visit. Apart from the questions asked during the first visit, also ask the mother the following:

- Is there continued bleeding P/V? this, i.e. postpartum bleeding occurring 24 hours or more after delivery, is known as 'delayed' PPH.
- Is there foul-smelling vaginal discharge? This could be indicative of puerperal sepsis
- Has there been any fever?

- Is there a history of swelling (engorgement) and/or tenderness of the breast?
- Is there any pain or problem while passing urine (dribbling or leaking)?
- Is there fatigue and is she 'not feeling well'?
- Does she feel unhappy or cry easily? This indicates postpartum depression and usually occurs 4–7 days after delivery.
- Are there any other complaints?

Examination

This is similar to the examination conducted during the first visit. It includes the following:

- Check the pulse, blood pressure and temperature
- Check for pallor
- Conduct an abdominal examination to see if the uterus is well contracted (hard and round) and to rule out the presence of any uterine tenderness. If there is a problem refer the woman to the appropriate health facility.
- Examine the vulva and perineum for the presence of any swelling or pus. If either of these is present, refer her to the appropriate health facility.
- Examine the pad for bleeding and lochia. Assess if it is profuse and whether it foul smells. If so, refer her to the appropriate health facility.
- Examine the breasts for the presence of lumps or tenderness. If either is present, then refer her to the appropriate health facility.
- Check the condition of the nipples. If they are cracked or sore, manage as described earlier.

Management/counselling

- **Diet and rest**
  - Inform the mother that during lactation, she needs to eat more than her normal pre-pregnancy diet. This is because she needs to regain her strength during the period of exclusive breastfeeding and also for her baby to derive its full nutritional requirements from breast milk.
  - She should be advised to take foods rich in calories, proteins, iron, vitamins and other micro-nutrients (milk and milk products such as curd and cottage cheese; green leafy vegetables and other seasonal vegetables; pulses; eggs; meat, including fish and poultry; groundnuts; ragi; jaggery; fruits, such as mango, guava, orange, sweet lime and watermelon).
  - The mother needs sufficient rest during the postpartum period; to be able to regain her strength. Advise her to refrain from doing any heavy work during the postpartum period.
- **Contraception**
  - Inform the mother that whenever her menstrual cycle begins again and/or she stops exclusive breastfeeding, she can conceive even after a single act of unprotected sex.
  - Inform the couple about the various choices of contraceptive methods available and help them choose the method most suitable to them.

- **Second and third visit for baby**

History Taking

- The same question should be asked during history-taking as during the first postpartum visit. If any of the problems inquired about is present, refer the baby to the appropriate health facility.

Examination

Observe the baby and record the following:

- Whether he/she is sucking well
- If there is difficulty in breathing (fast or slow breathing and chest in-drawing)
- If there is fever or the baby is cold to the touch
- If there is jaundice (yellow palms and soles)
- Whether the cord is swollen or there is discharge from it
- If the baby has diarrhoea with the blood in the stool
- If there are convulsions or arching of the baby's body

Refer the baby to the appropriate health facility if any of the problems are present.

Management/Counselling

Counsel the mother on the following:

- She should exclusively breastfed the baby for 6 months.
- She should feed the baby on demand.
- She should be encouraged to "room in".
- Supplementary foods should be introduced at 6 months of age. She can continue breastfeeding simultaneously.

Also talk to the mother about the following:

- Baby's weight loss: The baby loses a little weight in the first three days after birth. This is a normal process and the mother should not worry about it. After the third day, the baby starts gaining weight and regains its birth weight by the first week.
- Hygiene of the baby: While bathing the baby, special attention should be paid to the head, face, skin flexures, umbilical cord and napkin area. These should be dried properly with soft cloth.
- When and where to seek help in case of signs of illness: Inform the mother when to seek help and where to go in case the baby shows any signs of illness.
- Immunisation: The baby should be immunised as per the Universal Immunisation Programme.

6.3.3 Fourth Postnatal Visit for Mother (6 weeks after delivery)

History Taking

Ask the mother the following:

- Has the vaginal bleeding stopped?
- Has menstrual cycle resumed?

- Is there any foul-smelling vaginal discharge?
- Does she have any pain or problem while passing urine (dribbling or leaking)?
- Does she get easily fatigued and/or 'does not feel well'?
- Is she having any problems while breastfeeding?
- Is there any other complaints?

Examination

This examination includes the following:

- Check the woman's blood pressure.
- Check for pallor.
- Examine the vulva and perineum for the presence of any swelling or pus.
- Examine the breasts for the presence of lumps or tenderness. If either is present, refer her to the MO.

Management/Counselling

- **Diet and rest:**
  - As in the second and third visits, emphasise the importance of nutrition.
- **Contraception:**
  - Emphasise the importance of using contraceptive methods for spacing or limiting the size of the family.

Fourth visit for baby

History – taking

Ask the mother the following:

- Has the baby received all the vaccines recommended so far?
- Is the baby taking breastfeeds well?
- How much weight has the baby gained?
- Does the baby have any kind of problem?

Examination

- Check the weight of the baby.
- Check if the baby is active/lethargic.

Management/counselling

- Emphasise the importance of exclusive breastfeeding.
- Tell the mother that if the baby is having any of the following problems, he/she should be taken immediately to the appropriate health facility.
  - The baby is not accepting breastfeeds.
  - He/she looks sick (lethargic or irritable).
  - The baby has fever or feels cold to the touch.
  - The baby has convulsions.
  - Breathing is fast or difficult.

- There is blood in the stools.
- The baby has diarrhoea.

Counsel the mother on where and when to take the baby for further immunisation.

6.4 BREASTFEEDING

Breastfeeding problems:

- If the mother is having difficulty breastfeeding, teach her the correct position to ensure good attachment.
- If the nipples are cracked or sore, she should apply hind breast milk which has a soothing effect and ensure correct positioning and attachment of the baby.
- If she continues to experience discomfort, she should feed expressed breast milk with a clean spoon from a clean bowl.
- If the breasts are engorged, encourage the mother to let the baby continue to suck without causing too much discomfort to the mother. Putting a warm compress on the breast may help to relieve breast engorgement.
- If an abscess is suspected in one breast, advise the mother to continue feeding from the other breast and refer her to the appropriate health facility.
- Pre-lacteal feeds should not be given

Signs of good attachment of the baby to the mother's breast.

The four signs of good attachment are:

1) Chin touching the breast
2) Mouth wide open
3) Lower lip turned outward
4) More areola visible above than below the mouth

- Poor attachment results in the following:
  - It cause pain and/or damage to the nipples, leading to sore nipples.
  - The breast does not get completely emptied of milk, resulting in breast engorgement.
  - The milk supply becomes poor, so that the baby is not satisfied and is irritable after feeding.
  - The baby does not put on enough weight.

CHECK FOR BREASTFEEDING (IMNCI)

Ask:	**Look & Feel:**
Is there any difficulty feeding? Is the infant breastfed? If yes, how many times in 24 hours? Does the infant usually receive any other foods or drinks?	ASSESS BREASTFEEDING IF THERE IS NO INDICATION FOR URGENT REFERRAL: Ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.

If yes, how often? What do you use to feed the infant? Does the mother have pain while breastfeeding?	Is the infant able to attach well? TO CHECK ATTACHMENT, LOOK FOR: • Chin touching breast • Mouth wide open • Lower lip turned outward • More areola visible above than below the mouth (All of these signs should be present if the attachment is good) no attachment at all not well attached good attachment Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)? not suckling at all not suckling effectively suckling effectively Clear a blocked nose if it interferes with breastfeeding. Look for ulcers or white patches in the mouth (thrush). If yes, look and feel for:

ASK: Is there any difficulty feeding?

The mother may say that the infant is not able to breastfeed. The breastfeeding difficulties may include infrequent feeding of the young infant, not enough milk, sore nipples or the infant is not feeding well. If a mother says that the infant is **not able to feed**, watch her try to feed the infant to see what she means by this. An infant who is **not able to feed** may have a serious infection or other life-threatening problem and should be referred urgently to hospital.

ASK: Is the young infant breastfed? If yes, how many times in 24 hours?

The young infant should be breastfed as often and for as long as the infant wants, day and night. This should be 8 or more times in 24 hours.

ASK: Does the infant usually receive any other foods or drinks? If yes, how often?

A young infant should be exclusively breastfed. Find out if the young infant is receiving **any** other foods or drinks such as other milk, juice, tea, thin porridge, dilute cereal, or even water. Ask how often he/she receives it and the amount.

ASK: What do you use to feed the infant?

If a young infant takes other foods or drinks, find out if the mother uses a feeding bottle, cup or any other device.

ASK: Does the mother have pain while breastfeeding?

Pain while breastfeeding may indicate sore nipples, breast engorgement or breast abscess.

Assess breastfeeding

If the infant has a serious problem requiring urgent referral to a hospital, do not assess

Breastfeeding.

ASK: Has the infant been breastfed in the previous hour?

Ask the mother to put her infant to the breast. Observe a whole breastfeed if possible, or observe for atleast 4 minutes.

LOOK: Is the infant able to attach?

The four signs of good attachment are:

- chin touching breast (or very close)
- mouth wide open
- lower lip turned outward
- more areola visible above than below the mouth

If all of these four signs are present, the infant has **good attachment.**

If attachment is not good, you may see:

- chin not touching breast
- mouth not wide open, lips pushed forward
- lower lip turned in, or
- more areola (or equal amount) visible below infant's mouth than above it

If you see any of these signs of poor attachment, the infant is **not well attached**.

If a very sick infant cannot take the nipple into his mouth and keep it there to suck, he has **no attachment at all.** He is not able to breastfeed at all.

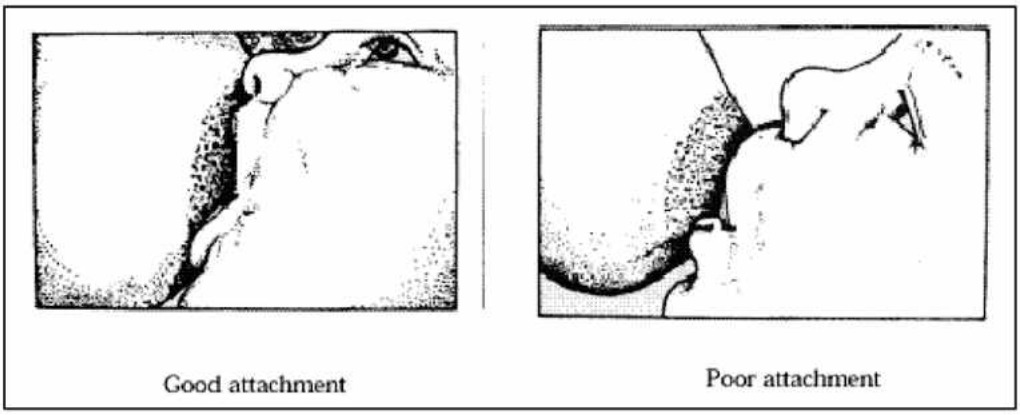


Fig. 6.1: Breastfeeding – Good attachment and Poor attachment

LOOK: Is the infant suckling effectively? (that is, slow deep sucks, sometimes pausing)

The infant is **suckling effectively** if he suckles with slow deep sucks and sometimes pauses. You may see or hear the infant swallowing. If you can observe how the breastfeed finishes, look for signs that the infant is satisfied. If satisfied, the infant releases the breast spontaneously (that is, the mother does not cause the infant to stop breastfeeding in any way). The infant appears relaxed, sleepy, and loses interest in the breast.

An infant is **not suckling effectively** if he is taking only rapid, shallow sucks. You may also see in drawing of the cheeks. You do not see or hear swallowing. The infant is not satisfied at the end of the feed, and may be restless. He may cry or try to suckle again, or continue to breastfeed for a long time.

An infant who is **not suckling at all** is not able to suck breast milk into his mouth and swallow. Therefore he is not able to breastfeed at all.

If a blocked nose seems to interfere with breastfeeding, clear the infant's nose. Then check whether the infant can suckle more effectively.

LOOK: For ulcers or white patches in the mouth (thrush).

Look inside the mouth at the tongue and inside of the cheek. Thrush looks like milk curds on the inside of the cheek, or a thick white coating of the tongue. Try to wipe the white off. The white patches of thrush will remain.

LOOK: For sore nipples? Engorged breasts or breast abscess?

The nipples may be sore and cracked. Engorged breasts are swollen, hard and tender.

Presence of a breast abscess is indicated additionally by localised redness and warmth.

CLASSIFY FOR FEEDING PROBLEM

Not able to feed or No attachment at all or	Not able to feed-possible Serious Bacterial Infection	Warm the young infant by Skin to Skin contact if feels cold to touch. **Refer URGENTLY** to hospital
Not suckling at all. Not well attached to breast or not suckling effectively or Less than 8 breastfeeds in 24 hours or Receives other foods or drinks or Thrush (ulcers or white patches in mouth). Breast or nipple problems	Feeding Problem	If not well attached or not suckling effectively, teach correct positioning and attachment. If breastfeeding less than 8 times in 24 hours, advise to increase frequency of feeding. If receiving other foods or drinks, counsel mother about breastfeeding more, reducing other foods or drinks, and using a cupand spoon. If not breastfeeding at all, advise mother about giving locally appropriate animal milk and teach the mother to feed with a cupand spoon. If thrush, teach the mother to apply 0.25% Gentian Violet paint twice daily. If breast or nipple problem, teach the mother to treat breast or nipple problems. **Advise mother to give home care** (Breastfeed infant exclusively, keep

		infant warm, apply nothing to cord, ask mother to wash hands and explain danger signs in the infant) **Follow-up in 2 days.**
No other signs of inadequate feeding	No Feeding Problem	Advise mother home care. Praise the mother for feeding the infant well.

Compare the signs that the young infant has to the signs listed in each row and choose the appropriate classification.

Remember:

- A young infant who is not able to feed, has no attachment at all or is not suckling at all has the classification POSSIBLE SERIOUS BACTERIAL INFECTION (red classification) and should be urgently referred to hospital.
- The mother of a young infant with the classification FEEDING PROBLEM (yellow classification) should be counselled for feeding.
- A young infant who has no feeding problem has the classification NO FEEDING PROBLEM (green classification). This young infant should be given home care.

Note :

1) Start Breastfeeding within one hour of delivery
2) Continue breastfeeding on demand
3) Feed completely on one breast, and shift to the other breast
4) Exclusive breastfeeding for six months and then continue breastfeeding for 2 years.

IMMUNISATION SCHEDULE FOR BABY

Take your baby to the nearest health centre for immunisation.

At birth	BCG, OPV - 0 dose, Hepatitis B - 0 dose*
6 weeks	BCG (if not given at birth) DPT - 1st dose OPV - 1st dose Hepatitis B - 1st dose*
10 weeks	DPT - 2nd dose OPV - 2nd dose Hepatitis - 2nd dose*
14 weeks	DPT - 3rd dose OPV - 3rd dose Hepatitis - 3rd dose*

9 months	Measles, Vit-A - 1st dose
16-24 months	DPT booster, MR OPV boosters Vit-A - 2nd dose
2 to 5 years	Vit-A - 3rd to 9th doses at the interval of 6 months. (total of 7 doses)
5 years	DPT booster
10 years	T.T. booster
16 years	T.T. booster

* If recommended under Routine Immunisation.

Follow immunisation schedules for protection of your babies from life threatening and crippling diseases

6.5 REFERRAL

If the baby needs to be transferred to a 24 hour PHC/FRU/District Hospital/ Medical College Hospital, ensure that the transfer is safe and timely. It is important to prepare the baby for the transfer, communicate with the receiving facility and provide care during the transfer.

Steps for transfer and referral of the baby

Preparation

- Explain to the family the reason for transferring the baby to a higher facility.
- If possible, transfer the mother with the baby so that she can continue to breastfeed or provide expressed breast milk.
- You or another health care worker should accompany the baby.
- Ensure that the baby is not exposed to heat or cold.
- Ask a relative to accompany the baby and mother, if possible.

Communication

- Fill up a referral form with the baby's essential information and send it with the baby.
- If possible, contact the health care facility in advance so that it can be prepared to receive the baby.

Care during transfer

- Keep the baby in skin-to-skin contact with the mother. If this is not possible, keep the baby dressed and covered and have the mother/relative accompany you.
- In hot weather, ensure that the baby does not become overheated.
- Ensure that the baby receives breastfeeds. If the baby cannot be breastfed, give expressed breast milk with a clean spoon or from a cup.
- Maintain and clear the airway, if required.

- If the baby is receiving oxygen, check the oxygen flow and tubing every 15 minutes.
- Assess the baby's respiratory rate every 15 minutes. If the baby is not breathing at all, is gasping or has a respiratory rate of less than 30 breaths per minute, resuscitate him/her using a bag and mask.

6.6 LET US SUM UP

In this unit, you have learnt about the postnatal care, breastfeeding and identification of danger signs in mother and newborn baby. Postnatal visits by health care worker will help the family to take proper care of the mother and baby.

6.7 ACTIVITY

1) Examine 5 postnatal mothers attending the clinic. Prepare a postnatal report after complete examination.
2) Conduct physical examination of five newborn and give health education to mothers on care of the newborn.

6.8 REFERENCES

1) Guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/ LHVs/SNs: Maternal Health Division, Ministry of Health and Family Welfare, GOI, April 2010.
2) Skilled Birth Attendance (SBA) - A Handbook for Auxiliary Nurse Midwives, Lady Health Visitors and Staff Nurses, National Health Mission, 2010.
3) Integrated Management of Neonatal and Childhood Illness: Training Module for Health Workers, WHO-UNICEF, Ministry of Health and Family Welfare, GOI, 2003.

UNIT 7 EMERGENCY AND INJECTABLE CONTRACEPTIVES AND FOLLOW-UP CARE

Structure

7.0 Introduction

7.1 Objectives

7.2 Emergency Contraceptives

- 7.2.1 Methods of Emergency Contraceptives
- 7.2.2 Use of Emergency Contraception

7.3 Injectable Hormonal Contraceptives

- 7.3.1 Methods of Injectible Hormonal Contraceptives
- 7.3.2 Screening for Injectable Contraceptives

7.4 Service Provision at Various Health Facilities and Care of Client after Provision of Service

- 7.4.1 Service Provision at Various Health Facilities
- 7.4.2 Care Required for Clients after Provision of Service

7.5 Let Us Sum Up

7.6 Key Words

7.7 Activity

7.8 References

7.0 INTRODUCTION

Contraceptives are the natural or artificial methods used to prevent unwanted pregnancy. These can be Spacing Methods or Limiting Methods. Details of all the contraceptives available under RMNCHA programme have been discussed in the unit on Family Planning Methods (Unit 2, Block 3). However most of these methods can be used for preventing or planning the pregnancies well in advance. However, in case of an accidental sexual exposure without contraception, or in case a women gets pregnant despite of using any approved method of contraception due to its failure, there is a need of emergency contraceptives. There are different types of emergency contraceptives that can be used. Injectable Hormonal Contraceptives have also been added to the basket of choice as spacing method to be used by women. These are available under the name of DMPA,NET EN and DMPA-SC 104 mg. In this unit we shall discussed about Emergency contraceptives, injectible hormonal contraceptives and Service Provision at various Health facilities.

7.1 OBJECTIVES

After completing this unit, you should be able to:

- enumerate and identify the emergency and injectable Contraceptive methods available for prevention of unwanted pregnancy;
- define the criteria for selecting the right candidate for injectable Contraceptives;

- describe the dose, route, method of use, indications, contraindications, adverse effects of each of the available emergency and injectable contraceptives;
- advise the clients about the facility where the emergency and injectable contraceptives can be obtained for use; and
- educate the health workers and clients regarding the care required to be given to the beneficiary after an emergency or an injectable contraceptive.

7.2 EMERGENCY CONTRACEPTIVES

These should only be used in case of a failure or incorrect use of a regular method of contraception (such as forgotten pills, or breakage or slippage of condoms), unprotected intercourse, or in cases of sexual assault and never as a routine method of family planning. **Thus Emergency Contraceptives are not the method of choice for the Family Planning** but are only to prevent unwanted unplanned pregnancy in case of an accidental exposure. There are 3 methods of emergency contraception: such as emergency contraceptive pills (ECPs), combined oral contraceptive pills (Yuzpe method), and copper-bearing intrauterine devices. (IUDs), however only E-Pills are available under the national programme. However, under the National Reproductive and Child Health Programme, the Drug Controller of India has only approved Levonorgestrel (LNG) 0.75 mg tablets for use as ECP. LNG is the 'dedicated product' for emergency contraception and is specially packaged at the correct dosage for use as ECP. Henceforth the ECPs mentioned in this unit would only refer to LNG. This product does not require prescription from a registered medical practitioner.

7.2.1 Method of Emergency Contraceptives

i) **E-Pills – This is also known as 'Morning after pills' or 'Post Coital Pills'**



Fig. 7.1: Emergency Contraception

Action

- They act by inhibiting ovulation, thickening cervical mucous and affecting transport of sperm or egg depending on the phase of the menstrual cycle.
- ECPs interfere with ovulation/ fertilisation/ implantation depending on the phase of the menstrual cycle of the woman.

- ECP is not effective once the process of implantation of fertilised ovum has begun. These are not abortifacients.

Regimen

The emergency contraceptive pill regimens that can be used are given below:

- 1 dose of levonorgestrel 1.5 mg (Progestin only Pill), or 1 dose of ulipristal 30 mg, taken within 5 days (120 hours) of unprotected intercourse; or
- 2 doses of combined oral contraceptive pills (also known as the Yuzpe regimen).

Dosage

- The Progestin only pill are available under the RMNCHA programme as 'E Pills' for consumption as single dose as soon as possible and not later than 72 hours after unprotected intercourse.
- Best if taken as soon as possible after the unprotected act and as a single dose of 1 tablet of 1.5 mg or 2 tablets of 0.75 mg each.
- There is an option of taking 2 doses of 1 tablet 0.75 mg each, 12 hours apart too.
- The calculation of 72 hours or 3 days should start from the first unprotected penetrative vaginal intercourse the woman has had during that particular menstrual cycle.
- If taken within 72 hours of unprotected vaginal intercourse, these are 85% effective however the efficacy is higher if used within 12–24 hours of unprotected intercourse.
- The delay in taking the pills decreases the efficacy of ECP.

Availability and administration

- These pills can be provided safely and effectively by any well informed health care providers (clinical, nursing and paraclinical) such as doctors, nurses, midwives, pharmacists, paramedics, family welfare assistants, health assistants and community based health workers.
- These are distributed through ASHAs under Home Delivery of Contraceptives (HDC) scheme to make it available within the community in the privacy of their homes at a nominal cost of Rs. 3 per pack.
- It is also available at the higher centres like PHCs and CHCs.
- E-Pills are also available over-the-counter without prescription besides available at all government health facilities free of cost.



Fig. 7.2: Emergency contraception

Though there are no contraindications for prescribing E pills, but should not be used in women with known pregnancy since Emergency Contraception will not interrupt a pregnancy.

Disadvantage

- It does not protect against STIs and HIV.
- Some women might experience side effects like nausea, vomiting, headache, dizziness, fatigue and breast tenderness.
- However these side effects generally do not last more than 24 hours.
- If vomiting occurs within two hours of taking the dose of ECPs. The women should be advised to repeat the full dose.
- Women with irregular bleeding and spotting after taking with ECPs should be counselled that this is normal and that it should not be confused with menses.
- Clients should be told that ECPs do not necessarily bring on menses immediately (a common misconception among users of ECPs); most women will have their menstrual bleeding on time or slightly early or 2–3 days later than the expected date. However if menstruation is delayed beyond one week from scheduled date, tests should be conducted to exclude the possibility of pregnancy.
- In about 10–15% of women, emergency contraceptive pills change the amount, duration, and timing of the next menstrual period. These effects are usually minor and do not need any treatment.

Side effects

- Such as breast tenderness, headache, dizziness, and fatigue are not common and do not generally last more than 24 hours.
- Paracetamol or Aspirin or Ibuprofen tablets can be safely recommended for breast tenderness and headache.

Counselling

- For use of emergency contraception should include options for using a regular contraception or additional information in case the women perceives failure of the regular method of contraception.
- The follow-up visits should be advised if there is delay in menses by more than one week of the expected date, to initiate regular use of a contraceptive immediately after menstruation and if there are uncontrolled side effects.

ii) **The Yuzpe method**

The Yuzpe method uses combined oral contraceptive pills. The pills are taken in 2 doses. Each dose must contain estrogen (100–120 mcg ethinyl estradiol) and progestin (0.50–0.60 mg levonorgestrel (LNG) or 1.0–1.2 mg norgestrel).

The first dose should be taken as soon as possible after unprotected intercourse (preferably within 72 hours but as late as 120 hours, or 5 days) and the second dose should be taken 12 hours later. If vomiting occurs within 2 hours of taking a dose, the dose should be repeated.

iii) Copper-bearing intrauterine devices (IUDs) (Fig. 7.3 & Fig. 7.4)

Copper-bearing IUD also act as an emergency contraceptive method when inserted within 5 days of unprotected intercourse and is almost 99% effective in preventing pregnancy. This method is particularly appropriate and is advised for women who opt for this method for long term protection. Once inserted with an IUD, the women can continue using it as a regular spacing method till doesn't want to get pregnant. CuT is a T shaped device made up of polyurethane which is an inert substance with a copper wire wrapped in the arms of 'T'. This copper wire releases copper at a slow rate which produces a chemical reaction that prevents pregnancy. CuT can be inserted by trained health care providers only at a subcentre or any public health facility like PHC, CHC, FRU. It is easy removed in case needed.

The CuT is inserted by a sterile plunger by withdrawal technique under all aseptic conditions by the trained health worker.

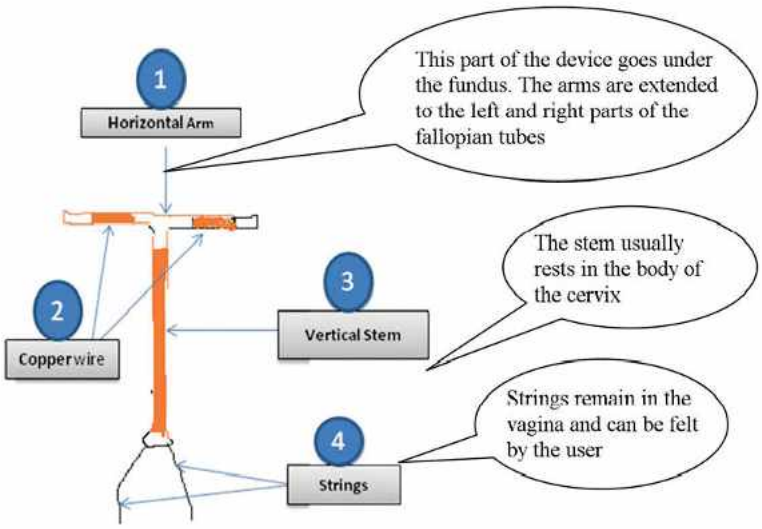


Fig. 7.3: Copper-bearing intrauterine devices (IUDs)

The horizontal arms of the device rests in the fundus of the uterus and the vertical stem in the body of the cervix. The strings remain freely hanging in the vagina.

The copper-bearing IUDs act by preventing fertilisation through a chemical change in sperm and egg before they can meet. A copper-bearing IUD is a safe form of emergency contraception. The risks of infection, expulsion or perforation are low. IUCD 380 A and IUCD 375 are available under the programme with efficacy of 10 and 5 years respectively.



Fig. 7.4: Copper-bearing intrauterine devices (IUDs

There are no contraindications for use of copper-bearing IUD as emergency contraception except when a woman is already pregnant. However other contraindications for prescribing IUDs like severe thrombo-cytopenia, unexplained vaginal bleeding, cervical cancer, endometrial cancer and current

Pelvic Inflammatory Disease (PID) should be ruled out before using it as emergency contraceptive.

7.2.2 Use of Emergency Contraception

All women and girls at risk of an unintended pregnancy have a right to access emergency contraception. Though this is not a regular method of contraception, emergency contraception has been included in the basket of choice of contraceptives under RMNCHA programme for prevention of unwanted pregnancy. These are available at all the public health facilities- Sub-centres, PHCs, CHCS and hospitals. These are also available for delivery in the community by ASHAs at a nominal cost of INR 3/- per pack. There is further need to integrate them into general health care services for populations at risk of exposure to unprotected sex, including post-rape care and services for women and girls living in emergency and humanitarian settings.

Few Conditions where emergency contraception can be used include:

i) When no contraceptive has been used during sexual intercourse.

ii) In cases of sexual assault, rape or coerced sex when the woman was not protected by an effective contraceptive method.

iii) When there is a chance of contraceptive failure or incorrect use like:

- Dislodgement, breakage, slipping, incorrect use, tearing, or early removal of a condom, diaphragm or cervical cap;
- Missed combined oral contraceptive pills for 3 or more times consecutively;
- Delay of more than 3 hours in taking progestogen-only pill (minipill)
- Delay of more than 12 hours in taking desogestrel-containing pill (0.75 mg).
- Delay of more than 2 weeks in taking norethisterone enanthate (NET-EN) progestogen-only injection
- Delay of depot-medroxyprogesterone acetate (DMPA) progestogen-only injection by more than four weeks
- Delay of more than seven days in taking the combined estrogen-plus-progestogen monthly injection
- Dislodgment, delay in placing, or early removal of a contraceptive hormonal ring or skin patch
- Failed withdrawal (e.g. ejaculation in the vagina or on external genitalia);
- Failure of a spermicide tablet or film to melt before intercourse;
- Miscalculation of the abstinence period, or failure to abstain or use a barrier method on the fertile days of the cycle when using fertility awareness based methods; and
- expulsion of an intrauterine contraceptive device (IUD) or hormonal contraceptive implant.

7.3 INJECTABLE HORMONAL CONTRACEPTIVES

The Injectable Contraceptives contain synthetic hormones resembling the natural female hormones. When administered (IM/SC) there is a slow release of hormone

into the blood stream and it provides protection from pregnancy for a long duration of time to the client.

7.3.1 Methods of Injectible Hormonal Contraceptives

There are two types of injectable contraceptives-Progesterone only injections (POI) and once a month combined injectables(CIC). These have an advantage of being highly effective, reversible, long acting. (Fig. 7.5 & Fig. 7.6)

i) **Progesterone only Injectables -** These are estrogen free preparations in which single administration suffices for several months or years. These are given during the first five days of the menstrual period via deep intramuscular route in the gluteus muscle. The most suitable ones are:

A) DMPA (Depot Medroxyprogesterone Acetate):It gives protection in 99% of women for atleast three months and is given by deep intramuscular route in the dose of 150 mg every three months. It acts through suppression of ovulation, effects the cervical mucous, endometrium and tubal motility. Some women have reported adverse effects like weight gain, prolonged infertility and irregular menstrual bleeding. Since these have no effect on lactation, can be safely used in women who are breastfeeding their babies.



Fig. 7.5: Injectable contraceptive

B) NET-EN (Norethisterone Enanthate): NET EN is given every 60 days in the dose of 200 mg and mechanism of action is similar to DMPA.

C) DMPA-SC 104 mg: is a low dose formulation given at three months interval. The injections are given in the upper thigh or abdomen subcutaneously.

ii) **Combined Injectables Contraceptive (CIC) -** Containing estrogen (usually ethinylestradiol) and progesterone - 1 monthly injection.

Under the National Family Planning program, only DMPA injectable contraceptive has been added to the basket of choice.



Fig. 7.6: Injectable Contraceptives DMPA (Antra) in the National Family Planning Programme

DMPA acts by steadily releasing the hormone progestogen into the bloodstream which

- stops a woman releasing an egg every month (ovulation)
- thickens the mucous from the cervix (neck of the womb), making it difficult for sperm to pass through to the womb and reach an unfertilised egg
- makes the lining of the womb thinner, so that it is unable to support a fertilised egg

The injection can be given at any time during your menstrual cycle but the women must be sure that she is not pregnant. If the injection is given on any day of cycle besides first 5 days, the women should be advised to use condoms or any other method of contraception for next 7–10 days. However, if given during the first five days of the cycle, the women will be immediately protected against becoming pregnant.

The contraceptive injection can be given any time after delivery only if the women is not breastfeeding. In case the women is breastfeeding, the injection should be given after six weeks. If the injections are started on or before day 21 after giving birth, the women will be immediately protected whereas in case the injection is given after day 21, an additional contraception should be advised for the following seven days.

Heavy and irregular bleeding is more likely to occur if you have the contraceptive injection during the first few weeks after giving birth.

The injectable contraceptives if used immediately after a miscarriage or abortion will immediately protect against pregnancy .Whereas an additional contraception will be required for 7–10 days in case the injection is given more than 5 days after a miscarriage or abortion.

The **advantages** of Injectable contraceptives is high effectiveness **to more than 99% if used correctly**. This means that less than one woman in 100 who use the injection will become pregnant in a year.

- The injection lasts for eight, 12 or 13 weeks (depending on the type), so the women doesn't have to think about contraception every day or every time she has sex.
- It can be useful for women who might forget to take the contraceptive pill every day.
- It can be useful for women who can't use contraception that contains oestrogen like smokers older than 35 years of age, postpartum breastfeeding women.
- One of the adverse effects of injectable contraceptives is amenorrhoea, which may be advantageous in women with menorrhagia, iron deficinecy anaemia, dysmenorrhoea, sickle cell anaemia, and may also decrease the risk of dysfunctional uterine bleeding in women who are overweight.
- Its use reduces the risk of PID and endometrial cancer by upto 80% with continuing protection after discontinuation.
- It's not affected by medication thus is beneficial in patients who are on anti epileptic drugs.
- The contraceptive injection may provide some protection against cancer of the womb and pelvic inflammatory disease.

- Women in the perimenopausal age group can safely continue use of DMPA upto 50 years of age, and then it can be discontinued. These women will not experience the bother some irregular bleeding that characteristically accompanies the perimenopausal transition and may not experience vasomotor symptoms.

The Injectable Contraceptives are suitable for most of the women except these should not be prescribed to women with cancer breast and genitals, undiagnosed abnormal uterine bleeding, suspected malignancy, high blood pressure (systolic≥160, diastolic≥100), history of disease of heart, liver and blood vessels, nursing mothers and deep vein thrombosis.

The contraceptive injections Depo-Provera and NET EN are usually given into the gluteal region, however ScDMPA is given under the skin (subcutaneously) in the abdomen or thigh.

The **adverse effects** of the injectable preparations are similar. These may cause disruption of normal menstrual cycle like episodes of unpredictable heavy or irregular bleeding and prolonged amenorrhoea. This may settle down after the first year, but may continue as long as the injected progestogen remains in your body.

Other common side effects include weight gain, headaches, mood swings and breast tenderness. Sometimes its use can prolong infertility for as long as one 8–12 weeks year after the injection wears off. Depo-Provera can cause thinning of bones which reverses after the injections are discontinued.

7.3.2 Screening for Injectable Contraceptives

The screening for Hormonal (Oral/ Injectable) Contraceptives include:

A) **Personal History** - Should include age, weight, Smoker/non smoker, number of children, menstrual history (duration, flow, regularity). Obstetric History should include:

1) Do you think you might be pregnant now? Yes____%, No____¡%
2) What was the first day of your last menstrual period? ___/___/____
3) Have you given birth within the past 6 weeks? Yes____%, No____%
4) Are you currently breastfeeding? Yes____%, No____%
5) Have you ever taken birth control pills, or used a birth control patch, ring, or shot/injection? Yes___%, No___%
6) Did you ever experience a bad reaction to using hormonal birth control? Yes___%, No___% - If yes, what kind of reaction occurred? _____
7) Are you currently using any method of birth control including pills, or a birth control patch, ring or shot/injection? Yes___% No___% -If yes, which one do you use? _____
8) Do you have a preferred method of birth control that you would like to use? __% A pill you take each day __% A patch that you change weekly % Other (ring, injectable, implant, or IUD)

B) **Medical History** - Date of last visit for a routine checkup, any allergies to medications,

- Have you ever been told by a medical professional not to take hormones? Yes___%, No___%

- Do you have diabetes? Yes____%, No____%
- Do you get migraine headaches? If so, have you ever had these kinds of headaches that start with warning signs or symptoms, such as flashes of light, blind spots, or tingling in your hand or face that comes and goes completely away before the headache starts? Yes____%, No____%
- Do you have high blood pressure, hypertension, or high cholesterol? Yes ____%, No____%
- Have you ever had a heartattack or stroke, or been told you had any heart disease? Yes____%, No____%
- Have you ever had a blood clot? Yes____%, No____%
- Have you ever been told by a medical professional that you are at risk of developing a blood clot? Yes____%, No____%
- Have you had recent major surgery or are you planning to have surgery in the next 4 weeks? Yes____%, No____%
- Have you had bariatric surgery or stomach reduction surgery? Yes_%, No____%
- Do you have or have you ever had breast cancer? Yes____%, No____%
- Do you have or have you ever had hepatitis, liver disease, liver cancer, or gall bladder disease, or do you have jaundice (yellow skin or eyes)? Yes____%, No____%
- Do you have lupus, rheumatoid arthritis, or any blood disorders? Yes____%, No____%
- Do you take medication for seizures, tuberculosis (TB), fungal infections, or human immunodeficiency virus (HIV)? Yes___%, No___% - If yes, list them here:
- Do you have any other medical problems or take any medications, including herbs or supplements? Yes____%, No____% - If yes, list them here

C) **Examination** - General physical examination should include Blood Pressure, Per abdomen examination for liver enlargement, breast examination, pallor for anaemia.

7.4 SERVICE PROVISION AT VARIOUS HEALTH FACILITIES AND CARE OF CLIENT AFTER PROVISION SERVICE

7.4.1 Service Provision at Various Health Facilities

All the spacing methods, viz. IUCDs, OCPs and condoms are available at the public health facilities beginning from the sub-centre level. Additionally, OCPs, condoms, and emergency contraceptive pills (since are not skill based services) are available at the village level also through trained ASHAs. The injectable contraceptives are available at the FRUs, district level hospitals where the screening facilities are available.

7.4.2 Care Required for Clients after Provision of Service

The Health care provider should take up a follow-up visit within 3 to 6 weeks after emergency contraception. A pregnancy test is required if there has been little or no bleeding within 3 weeks of emergency treatment. The visit should include provision of ongoing contraception and STD testing and treatment as appropriate.

There is no need for follow-up in case of ECP use. However, the client should come back to the service provider if her period is late by more than 7 days of the expected date, menstrual bleeding is too scanty in amount or too small in duration, to seek clarification/service for use of regular FP method. Clients who have been given emergency contraception in the forms of e-pills should be put on a regular contraceptive method within the same cycle with focus on the message that frequently repeated use of ECP may be harmful for women and predispose them to various health effects. The health worker should counsel the women for availability of contraceptive services at the public health facilities and motivate them to use one of the method of their choice. The couples who have completed their families should be motivated to use NSV or Tubectomy as a choice of method for planning their families. Whereas the couples desirous of having more children should be advised on regular use of any of the spacing methods.

Emergency contraception also has the potential to involve men in the contraception loop. Many men do not tell their partners when the condom breaks or slips for fear that there is nothing that can be done. Knowledge of emergency contraception and information about where and how to obtain it when it's needed will relieve this anxiety and help improve communication between men and women around birth control.

In Clients where CuT has been used as a method of emergency contraception, the same may be continued as per the period of efficacy of the device inserted. The clients who plan to continue IUD use should be counselled that they may have cramps or spotting following insertion for few hours that may last for few days but would settle down. She can be given pain killers to be used on as and when required basis. For routine follow-up care, the women should be asked to return to the health worker 3–6 weeks after insertion. The women should be trained to check for the presence of thread in the vagina after every menstrual period with clean hands sitting in squatting position. She should be instructed to report to the health facility anytime she has any of the following problems:

- Delayed period (suspected pregnancy).
- In case she has prolonged or excessive bleeding of abnormal spotting.
- Pain in back or lower abdomen or pain during intercourse.
- In case her partner is diagnosed to be suffering from any sexually transmitted disease or infection like gonorrhoea or has abnormal vaginal discharge with fever or pelvic pain.
- If she is unable to feel the IUD's thread in her vagina or if the thread seems shorter or longer.

During the first follow up visit after an IUD insertion, the health worker should take a detailed history about the problems, queries and any side effects experienced. Minor side effects like post insertion pain can be addressed by

reassurance and advising pain killers. This visit should also be taken as an opportunity to treat anaemia by providing iron folic acid to the client for treatment if Haemoglobin levels are less than 9 gm%. A speculum and bimanual examination should be done to see if the strings are in place and examine for any infection of genital tract by seeing for any discharge from vagina or cervix. The cervical os should be gently palpated to see if the IUD is in place in case the thread is not visible. The uterus and adnexa should be palpated for tenderness or other signs of infection. If the client is satisfied with the IUD and there are no precautions for continued use, then there is no need for further follow-up visits.

Immediately after DMPA injections, she should be advised not to massage or apply hot fomentation to the injection site which might hasten the absorption of DMPA, due to which its effect might go away before three months. She should be counselled for changes in bleeding pattern which might improve over a period of time. Since the injectable contraceptives decreases the bone density amongst women users, it is important to consider genetic and lifestyle factors that contribute to osteoporosis at the time of advising for the use of DMPA as a method of choice for family planning. Accordingly women should be advised to take care of bone health by regular exercises and dietary modifications like intake of Calcium and Vit D and avoidance of tobacco and alcohol. Though the protective efficacy of the injections appear within 24 hours, however, a back up contraceptive in the form of condoms may be advised for initial 7 days.

For the repeat dose of the contraceptive injection, the users should be encouraged to return every 3 months (13 weeks) for DMPA and 8 weeks for NET EN. The women reporting more than two weeks late than the scheduled period for their injection, a pregnancy test before giving the injection and a back-up contraception for seven days should be given. Whenever the women wishes to get pregnant she can stop taking these injections. However the women should be counselled that in some cases the return of fertility may take slightly longer upto 10–18 months after discontinuation of the injections.

For women who wish to change from DMPA to another form of contraception, the new method should be started not later than 15 (ideally no later than 14) weeks after the previous injection. This ensures that the woman is not pregnant at the time she initiates a new contraceptive method.

With long-term use of DMPA, most users become amenorrhoeic. Initiation of contraception should not be delayed until resumption of menses. Amenorrhoea after discontinuing injectable contraceptives does not mean the woman is protected against pregnancy if she has unprotected intercourse.

7.5 LET US SUM UP

Emergency Contraception is used to prevent unwanted pregnancy in case of an overprotected intercourse, incorrect use or suspected failure of a regular contraceptive method. This can be achieved by E pills, IUD insertion and use of combined pills (Yuzpe Method). The efficacy of emergency contraception decreases with increase in its duration from the unprotected intercourse. The clients opting for emergency contraceptives should be put on regular method of contraceptives preferably within the same cycle. The health workers should make a follow up visit within 3 weeks to ensure usage of a regular method of contraceptive for protection.

While hormonal contraceptives (Oral or Injectable) are being provided to the users, a detailed history must always be taken from the women including medical history to rule out any pre-existing conditions that might get aggravated by using hormonal contraceptives. Aproactive, candid counselling on the side effects IUDS and hormonal contraceptives is important because women who are well-informed when they choose this method of contraception are much more likely to become satisfied users with high continuation rates.

DMPA injection is an excellent method of contraception for women who desire a relatively long-term, reversible contraceptive method. It is highly effective for three months, private, and avoids the need for compliance daily or near the time of sexual intercourse. These can be initiated without a pelvic or breast examination and without any routine laboratory tests. The adverse effects like menstrual regularity and decrease in bone density are temporary and reverse on discontinuation of Injections.

7.6 KEY WORDS

RMNCAH+N : Reproductive Maternal Newborn Child, Adolescent Health Plus Nutrition

ASHA : Accredited Social Health Activist

PHC : Primary Health Centre

CHC : Community Health Centre

FRU : First Referral Unit.

7.7 ACTIVITY

1) Select two women who require injectable and emergency contraceptives
   a) Take history
   b) Observe the procedure.
   c) Follow up and record.

7.8 REFERENCES

1) RMNCAH+N 5 × 5 Matrix, www.nrhm.gov.in
2) http://www.who.int/mediacentre/factsheets/fs348/en/
3) http://unicef.in/Whatwedo/1/Maternal-Health
4) http://data.unicef.org/maternal-health/maternal-mortality.html
5) http://pib.nic.in/newsite/PrintRelease.aspx?relid=123669
6) http://data.worldbank.org/
7) www.obgnursing.blogspot.com/2012/07july2012/midwiferyand obstetricnursing
8) www.pregnancycorner.com/labourcontraction
9) www.glown.com/episiotomy

10) www.pdf-assessmentof4thstageoflabour

11) A strategic approach to reproductive, maternal, newborn, child and adolescent health (RMNCH+A) In India, Ministry of Health & Family Welfare Government of India January, 2013

12) Maternal and Newborn Health Toolkit. Ministry of Health & Family Welfare Government of India. November 2013.

13) Skilled Birth Attendance (SBA). A Handbook for Auxiliary Nurse Midwives, Lady Health Visitor and Staff Nurses. Ministry of Health & Family Welfare Government of India. 2010.

14) Skilled Birth Attendance (SBA). Trainers Guide for Conducting Training of Auxiliary Nurse Midwives, Lady Health Visitor and Staff Nurses. Ministry of Health & Family Welfare Government of India. 2010.

15) Handbook for RMNCH Counsellors. Ministry of Health & Family Welfare Government of India.

16) Subcutaneous Injectable Contraceptives. Ministry of Health & Family Welfare Government of India.

17) My Safe Motherhood Booklet. Ministry of Health & Family Welfare Government of India.

18) Skill Lab Operational Guidelines. Ministry of Health & Family Welfare Government of India.

19) Daksh Skill Lab for RMNCH + A Services Training Manual for Participants. Ministry of Health & Family Welfare Government of India.

20) IUCD Reference Manual for Ayush Doctors. Ministry of Health & Family Welfare Government of India. Jan 2014.

21) Reference Manual for Injectable Contraceptives (DMPA). Ministry of Health & Family Welfare Government of India. Mar 2016.

22) Reference Manual for Oral Contraceptive Pills. Ministry of Health & Family Welfare Government of India. Mar 2016.

23) Contraceptive Update Manual for Doctors (October 2005)

UNIT 8 Understanding Continuum of Care (CoC) and the Use of Digital Interventions in Rajasthan

Structure

8.1 Introduction

8.2 Objectives

8.3 Key aspects of CoC

8.4 Importance of CoC

8.5 CoC in Maternal and Child Health (RMNCH) Context

8.6 Rajasthan's approach to ensuring continuum-of-care through digital interventions:

8.7 INTRODUCTION

Understanding Continuum of Care (CoC) and the Use of Digital Interventions in Rajasthan

Definition: Continuum of Care (CoC) is a comprehensive, patient-centered approach in healthcare that ensures individuals receive coordinated, timely, and uninterrupted health services across all stages of life and levels of care. It spans prevention, treatment, and long-term management.

In the context of CHOs, CoC plays a vital role in strengthening primary healthcare services, especially in reproductive, maternal, newborn, and child health (RMNCH). Ensuring uninterrupted care at every stage from adolescence to childbirth and beyond is key to improving outcomes.

Key Aspects of CoC:

- Time-based care: Life-stage specific care from adolescence to the elderly, or in the RMNCH context, from pre-pregnancy through pregnancy, childbirth, and postnatal periods.
- Place-based integration: Linkages across health system levels – from community- based care to primary, secondary, and tertiary healthcare services.
- Comprehensive services: Covers prevention, health promotion, diagnosis, treatment, referral, rehabilitation, and follow-up.
- Continuity and coordination: Ensures no break in care, reducing delays, duplication, and dropouts.

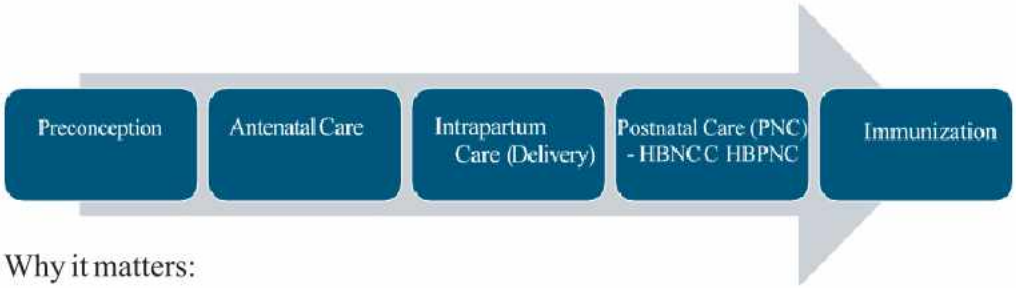
Importance of CoC:

- Supports early identification and management of health issues.
- Promotes seamless referrals and efficient health system navigation.
- Improves patient outcomes and satisfaction.

- Enables rational resource utilization and strengthens accountability.
- Enhances trust and engagement with the health system.

CoC in Maternal and Child Health (RMNCH) Context

Within RMNCH, Continuum of Care involves a well-orchestrated journey from:



Why it matters:

- Reduces maternal and neonatal mortality.
- Ensures timely, targeted interventions for high-risk pregnancies.
- Prevents service gaps by ensuring consistent monitoring and follow-up.
- Builds a longitudinal record of care and risk assessment.

CHOs, being at the forefront of community-level service delivery, are pivotal in making CoC a reality through digital tools and community engagement.

Rajasthan's approach to ensuring continuum-of-care through digital interventions:

Rajasthan was the first state to launch the Pregnancy Child Tracking System (PCTS) in 2009. It is an online system that helps track the health of pregnant women, mothers, and children. It covers over 17,000 health facilities and includes all field workers like ASHAs, ANMs, and medical officers.

PCTS helps health officials at the district and state levels monitor services like immunization, high-risk pregnancies, hospital deliveries, and government health schemes. It also generates reports, rankings of health centers, and work plans for ANMs.

The system is managed by NIC Rajasthan. A mobile app was launched for over 20,000 ANMs in 2018 and for 53,000 ASHAs in 2023 to help track services provided to women and children more easily.

Key Features:

- Integrated System for HMIS and Pregnant Women C Child Tracking
- Monitoring of Institutional Deliveries
- Online Tracking of Pregnant Women
- Monitoring of High-Risk Pregnancies
- Online Tracking of Infants C Children
- Identification of Cases for Sterilization
- Better Health Surveillance
- Online Directory of Health Institutions and Health Workers
- Monitoring of Immunization Program
- Evaluation Report Card of Individual Health Institution
- Monitoring of Desi Ghee Scheme

- Infrastructure and Human Resources Position of Health Institutions
- Indicator-wise Ranking of Health Institutions
- Demand Forecasting of Vaccines
- Periodic Work Plan for ANMs
- Online Monitoring for Beneficiaries of JSY and RSY
- Online Monitoring for Beneficiaries of Maa Voucher Yojana
- Online Monitoring for Beneficiaries of LPY

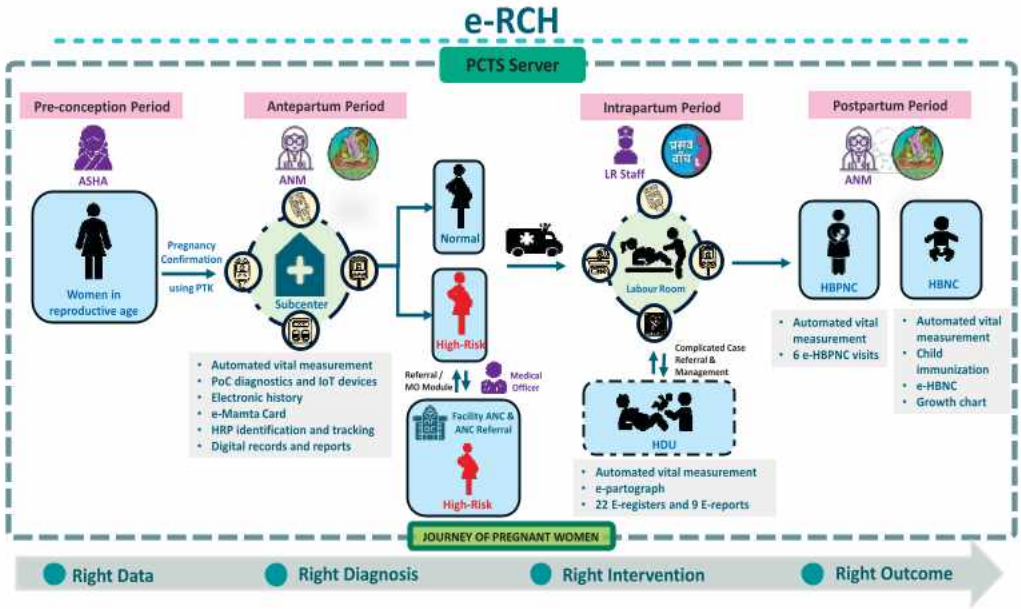
Expanded Modules Include:

- Social mobilization and screening (Malaria, TB, NCDs, etc.)
- Line listing for schemes like New-Pahal kits.
- Online integration with schemes like PMSBY, PMJJBY, and OJAS for USG vouchers.

Integration and Development of eRCH framework: Continuum-of-Care

The Government of Rajasthan has proposed a joint initiative for the development of an e- RCH ecosystem that encompasses pregnant women's journey from ANC to PNC and serves as a comprehensive and connected tool.

An integrated platform that connects ANMs, CHOs, Staff Nurses, Medical Officers, and facilities to digitize maternal and newborn health services from registration through delivery and postnatal care.



- **PCTS Application:**

A state-specific application to track pregnant women and children for the timely delivery of services. It captures and manages data related to ANC, PNC, immunization, high-risk follow-up and management.

- **Prasav Watch Application:**

An Android-based intrapartum monitoring and decision-support application designed to guide healthcare providers during labor. It ensures timely interventions and accurate documentation of labor room processes.



PCTS Application



Prasav Watch Application

Users of Digital Applications

Application	Users and Use Cases
PCTS	ANMs, ASHAs, CHOs, MOs, Program Managers: ANC/PNC tracking, immunization, high-risk follow-up, supervision dashboards
Prasav Watch	Staff Nurses, Obstetricians, Facility Managers: Intrapartum monitoring, alerts for complications, clinical decision support

Role of CHOs in Strengthening CoC through Digital Platforms

As frontline care providers at Ayushman Arogya Mandir (AAMs), CHOs play a critical role:

- Support tracking and follow-up: Identify due beneficiaries using PCTS.
- Monitor high-risk pregnancies: Act on flagged alerts, coordinate referrals.
- Validate service delivery: Ensure data accuracy and completeness.
- Coordinate field workers: Facilitate data entry, address service gaps.
- Use Prasav Watch insights: Support labor room staff and educate beneficiaries during ANC.

Conclusion

Strengthening the Continuum of Care is essential for improving maternal and newborn outcomes. Rajasthan's approach through PCTS and Prasav Watch enables CHOs to ensure integrated, timely, and accountable service delivery.

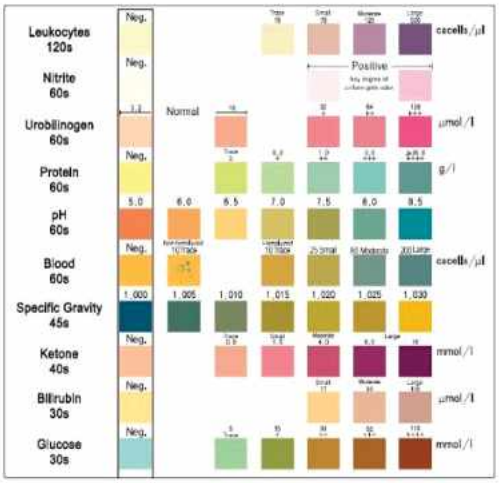
What CHOs should do next:

- Log in and actively use PCTS and Prasav watch platforms.
- Attend refresher training and updates on digital tools.
- Coordinate regularly with facility and community staff.
- Support data-driven decision-making to improve service outcomes.

CHOs are not just users of technology, they are key enablers of a connected care system. By using these platforms effectively, CHOs ensure that no woman or child is left behind.

Checklist 1.1 Urine Dipstick Test





Key Points:

- In a pregnant woman, urine testing for proteins, sugar and infection must be done during each visit.
- Testing the urine for the presence of protein (albumin) is an especially important test used for the detection of pre-eclampsia/eclampsia.

S. No.	Task	Cases			
		1	2	3	4
1	Keeps all the necessary items ready: urine specimen collection bottles/container and multireagent dipsticks, gloves.				
2	Checks the expiry date on the kit and reads the instructions provided by the manufacturer on the bottle to see the waiting time for reading each test result.				
3	Wears gloves on both the hands.				
4	Removes one strip from the bottle and replaces the cap.				
5	Completely immerses reagent area of the strip in the urine and removes it immediately.				
6	While removing the strip from urine, runs the edge against the rim of the container to wipe off the excess urine.				
7	Checks for presence of glucose, protein, nitrites and leukocyte esterase in urine as per the timing mentioned on the kit.				
8	After the recommended waiting time, compares the colored reagent areas for each against the corresponding color chart areas on the bottle.				
9	Discards the strip in red bin.				

S. No.	Task	Cases			
		1	2	3	4
10	Removes the gloves and discards in red bin.				
11	Records the findings in woman's MCP card and ANC register.				

- Testing urine for the presence of nitrites and leukocyte esterase is a test used to diagnose infection in the urine with or without symptoms (asymptomatic bacteriuria)

Checklist 1.2 Checklist for Hemoglobin Estimation using digital Haemoglobinometer

S. No	Steps	Score	Remarks
1	Confirms the consent of the woman for the Hemoglobin estimation.		
2	Ensures the availability of equipment and supplies: A. To perform the blood test for Hemoglobin Estimation - Digital Hemoglobinometer - Hemoglobin testing strip - Lancet with loading device (loading pen set@ No. 4 or 5 acc. to skin) - Lancet - Spirit swab - Color coded bins - Puncture proof Container / Hub cutter		
3	Washes hands and wears gloves.		
4	Prepare Hemoglobinometer – Check expiry date o hemoglobinometer. with entering correct code of strip and check batter Insert strip when Hemoglobinometer screen displa Wait for the screen to display a drop of blood on it. Green light on reagent would be seen.		
5	Pierces the tip of the clean finger with loading devic or 5 acc. To skin) and discard the 1st two drops of blood by using swab or can be used in other tests like Syphilis/ HIV/ B. Sugar.		
6	Place the 3rd blood drop over the reagent area of test strip in Hemoglobinometer.		

S. N	Steps	Score	Remarks
7	Press the punctured area with swab to stop bleeding.		
8	Disposes of the used items in biomedical waste bins as per the guidelines.		
9	Reads result on the screen of the Hemoglobinometer after timer of 60 second stops (or as per the directions of the Hemoglobinometer manufacturing Company).		
10	Washes hands with soap and water or alcohol-based hand rub.		
11	Records the reading from the Hemoglobinometer on the woman's MCP card and RCH register.		
12	Shares the result findings, its interpretation and inform the woman what is to be done next.		

Checklist 1.3: Checklist for Hemoglobin Estimation

Checklist for Hemoglobin Estimation



Sahli's' Hemoglobinometer



Hemocheck color scale



HemoCue

By Sahli's hemoglobinometer

S. No.	Task	Cases			
		1	2	3	4
1	Keeps all the necessary items ready: Sahli's hemoglobinometer, N/10 HCl, gloves, clean cotton swabs, lancet, distilled water, dropper, puncture-proof container and color-coded bins.				
2	Washes hands and wears gloves.				

S. No.	Task	Cases			
		1	2	3	4
3	Cleans the Hb tube and pipette.				
4	Fills the Hb tube with N/10 HCl up to 2 g with the dropper.				
5	Informs the woman about the procedure and its importance				
6	Cleans the tip of the woman's ring finger.				
7	Pricks the ring finger with the lancet and discards the first drop of blood.				
8	Allows a large blood drop to form on the fingertip.				
9	Sucks with the pipette up to the $20mm^3$ mark.				
10	Takes care that air does not enter while suctioning of the blood.				
11	Wipes the tip of the pipette and transfers the blood to the Hb tube containing N/10 HCl.				
12	Rinses the pipette 2-3 times with N/10 HCl.				
13	Leaves the solution in the test tube for 10 mins.				
14	After 10 mins, dilutes the acid by adding distilled water drop by drop and mixes it with a stirrer.				
15	Matches with the color of the comparators until it matches exactly.				
16	Notes down the reading of lower meniscus of the central tube.				
17	Disposes of the used lancet in a puncture-proof container.				
18	Discards gloves in red bin.				
19	Washes hands with soap and water or alcohol-based hand rub.				
20	Informs the woman of the findings and notes down the reading on her MCP card.				

By color scale method (Hemochek)

S. No.	Task	Cases			
		1	2	3	4
1	Keeps the necessary items ready: Hemochek card, lancets, clean cotton swabs, a pair of gloves, puncture proof container and color-coded bins.				
2	Washes hands and wears gloves.				
3	Informs the woman about the procedure and its importance				
4	Selects the finger for puncture, cleans with clean water swab and allows to air-dry.				
5	Punctures the finger with a sterile lancet.				
6	Adds a drop of blood to one end of a test strip just enough to completely cover an aperture in the color scale.				
7	Waits for about 30 seconds.				
8	Reads immediately by comparing the blood stain with the color scale to find the best color match.				
9	Keeps the test strip close to the back of the color scale avoiding direct sunlight, own shadow or any other shadow.				
10	If the blood stain matches one of the shades of red exactly, records the hemoglobin value. If the color lies in between two shades, records the mid value. If in doubt between two shades, records the lower value.				
11	Discards the test strip in red bin after use.				
12	Wipes the back surface of the scale at the end of each session or if it becomes soiled during use.				
13	Disposes of the used lancet in a puncture-proof container.				
14	Removes and discards gloves in red bin and washes hands and air dries.				
15	Informs the woman about the findings and notes down the reading on woman's MCP card.				

By Hemocue method

S. No	Task	Cases			
		1	2	3	4
1	Keep the necessary items ready: Hemocue instrument, lancets, clean cotton swabs, a pair of gloves, puncture proof container and color-coded bins.				
2	Washes hands and wears gloves.				
3	Pulls the cuvette holder out to the loading position.				
4	Removes the cuvette from the vial and recaps the vial immediately.				
5	Informs the woman about the procedure and its importance				
6	Selects the finger for puncture, cleans with clean cotton swab soaked in water and allows to air-dry.				
7	Punctures the finger using a lancet.				
8	Wipes off the first drop of blood and waits for formation of second big drop. Avoid milking of the finger.				
9	Holds the cuvette opposite the filling end and introduces the cuvette tip into the middle of blood drop.				
10	Fills the cuvette in one continuous process avoiding entry of air bubbles. Do not refill a partially filled cuvette.				
11	Wipes of excess blood from the outside of cuvette.				
12	Places the filled cuvette into the cuvette holders and gently slides the holder into the measuring position.				
13	Checks the display of result on the screen. The result is usually displayed within 15-60 seconds.				
14	Pulls the cuvette holder out into the loading position, removes the cuvette and discards it.				
15	Discards the used lancet, removes and discards gloves.				
16	Washes hands using soap and water or alcohol-based hand rub.				
17	Informs the woman about the reading and records it in her MCP card and in ANC register.				

Checklist 1.4 Checklist on Rapid Diagnostic Test (RDT) for Malaria

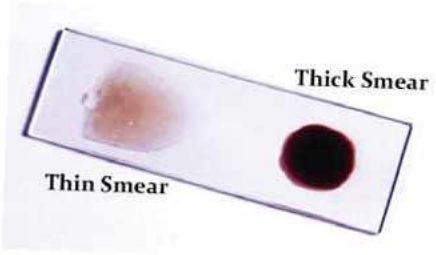


Note: If the test kit has one hole for blood and buffer, then skip steps 9-12 and put blood and buffer both in same hole and read the results after 15 minutes.

S. No.	Tasks	Cases				
		1	2	3	4	5
1	Keeps the following necessary items ready: new unopened test kit, spirit swabs, lancet, buffer, timer and gloves. Each test kit can be used only one time.					
2	Checks the expiry date on the test kit.					
3	Puts gloves on both hands.					
4	Opens the test kit and removes cassette and loop.					
5	Writes the woman's name on the test card.					
6	Informs the woman about the procedure and its importance					
7	Select a finger for pricking and cleans it with clean cotton swab. Allows the finger to dry before pricking.					
8	Opens a new lancet and pricks woman's finger to get a drop of blood.					
9	Discards the lancet in puncture proof box immediately after pricking finger.					
10	Uses the loop to collect the drop of blood.					
11	Drops the blood in loop into the square hole marked 'S.'					
12	Discards the loop in red bin.					
13	Puts buffer solution as per given instructions on kit in round hole marked 'B.'					
14	Reads the test results after 15 minutes (as per kit specifications)					
15	Negative test means- one red line in window 'C' and no line in window 'T'. This shows the patient does not have malaria.					
16	Positive result means - One red line in window 'T1' and one red line in window 'C'. This shows woman has falciparum malaria. - One red line in window 'T2' and one red line in window 'C'. this shows woman has vivax malaria. - One red line each in windows 'T1' and 'T2' a nd one red line in window 'C'. This shows woman has mixed malaria (falciparum and vivax). - The test is positive even if the red lines in window 'T1' and 'T2' are faint.					

S. No.	Tasks	Cases				
		1	2	3	4	5
17	Invalid result means- no line in window 'C' or in window 'T'. In this case repeat the test with a new test kit and new lancet.					
18	Disposes the cassette, gloves, cotton swab and test packet in color coded bins.					
19	Informs the woman about the test results and records them in MCP card and ANC register					

Checklist 1.5 Checklist for Preparation of Thick and Thin Blood Smear for Testing of Malaria



S. No.	Task	Cases			
		1	2	3	4
1	Keeps the necessary items ready: glass slides, lancets, cotton, a pair of gloves, puncture proof container and color-coded bins.				
2	Informs the woman about the procedure and its importance				
3	Selects the ring finger of the left hand.				
4	Cleans the finger with clean cotton swab.				
5	Disposes off the cotton swab in yellow bin.				
6	Allows the finger to air-dry.				
7	Punctures at sides of the flesh pad of the finger avoiding the center and the tip of the finger.				
8	Allows the blood to come up automatically. Does not squeeze the finger.				
9	Holds the slide by the edges.				
10	Touches the drop of blood with a clean slide.				
11	Collects 3 drops to prepare a thick smear and 1 drop for a thin smear. Places the thin and thick smear at either end of the slide.				
12	For thin smear, keeps the second slide in front of the single drop and allows the blood to spread by sliding the second slide forwards.				
13	Holds it at an angle of 45 degrees and spreads it with a rapid but not brisk movement.				
14	Writes the slide number on the side of the thin smear.				
15	For thick smear, spreads the 3 drops of blood with the corner of the slide to make a circle or a square of approximately 1 cm in diameter.				

S. No.	Task	Cases			
		1	2	3	4
16	Wraps and sends the slide to the laboratory for staining and to be examined under the microscope.				
17	Disposes off the used lancet in a puncture proof container.				
18	Removes and discards gloves in red bin.				
19	Washes hands with soap and water or alcohol-based hand rub.				
20	Informs the woman about relevant details regarding test results and their meaning and document in MCP card/RCH/ANC register.				

Checklist 1.6 Checklist for Rapid Diagnostic Test (RDT) for HIV/ Syphilis Dual Kit

S. No	Steps	Score	Remarks
1	Keeps the following necessary items ready: new unopened test kit, spirit swabs, lancet, buffer, timer and gloves. Each test kit can be used only one time. Contents of kit: desiccant pouch, assay buffer bottle, capillary tube, cassette, lancet, alcohol swab		
2	Checks the expiry date on the test kit, put gloves on both the hands		
3	Informs the woman about the procedure and its importance		
4	Select a finger for pricking and cleans it with clean cotton swab Uses the capillary tube to suck blood up to 20 micro litre mark by putting it in the centre of blood drop.		
5	Place the circular end of capillary tube in the sample well (marked 'S') and transfer the whole blood to the strip		
6	Put 3 drops of assay buffer to the sample well (marked 'S')		
7	Reads the test results after 20 minutes. DO NOT read the results after 30 minutes		
8	Negative test means- one band in window 'C' and no band in window 'T'. This shows the patient does not have HIV & Syphilis.		
9	Positive result means - One band in window '1' and one band in window 'C'. This shows woman has HIV 1 infection. - One band in window '2' and one band in window 'C'. This shows woman has HIV 2 infection. - One band in window 'Syphilis' and one band in window 'C'. This shows woman has Syphilis infection. - One band each in windows '1' and '2' and one band in window 'C'. This shows woman has mixed infection with HIV 1 and HIV 2		
10	Invalid result means- no band in window 'C' regardless of band on window 1 / 2 / Syphilis/ or in all window T. In this case repeat test with new test kit and new lancet.		

S. No	Steps	Score	Remarks
11	Disposes the cassette, gloves, spirit swab and test packet in color coded bins.		
12	Informs the woman about the test results and records them in MCP card and ANC register		

Checklist 1.7: Checklist to Perform Oral Glucose Tolerance Test (OGTT) in a Pregnant Woman

S. No.	Tasks		Cases			
			1	2	3	4
1	Confirms the willingness/consent of the woman for the oral glucose tolerance test (OGTT).					
2	Explains the woman what will be done, and what she will need to do.					
3	Ensures the availability of equipment and supplies: **To prepare glucose solution** - 75gm glucose sachet - 300ml drinking water - Measuring flask - Disposable glasses and stirrer/spoon **To perform the blood test** - Glucometer - Glucose testing strip - Lancet - Cotton swab - Color coded bins					
4	Empties a packet of 75gms glucose in a glass and adds 300ml drinking water (measured with measuring flask) in it, stirs to make a solution.					
5	Provides woman the above solution to drink and explains to finish the entire drink within 5 to 10 minutes.					
6	Tells the woman to report immediately if she vomits within 30 min of taking the drink.					
7	Asks her to wait for 2 hours for the blood test.					
8	If the woman vomits, within 30 minutes of drinking glucose water, aborts the test and counsels her to come next day for the test. Next day repeats the procedure from steps 1-8.	If the woman does not vomit or vomits after 30 mins, proceeds with the test.				
9	Washes hands and wears gloves.					
10	Takes out a lancet from the container.					
11	Turns on glucometer by inserting glucose test strip.					
12	Cleans the chosen puncture site (the medio-lateral side of the ring or middle finger) with clean water cotton swab. Allows it to air dry.					
13	Pierces the tip of the clean finger skin sharply with the lancetto allow a drop to form spontaneously. Do not squeeze the puncture site to make blood droplet appear as squeezing will dilute the sample with fluids from tissues.					
14	Positions the glucometer device at the side of the puncture site so that blood drop can be easily placed over the test strip. Gently touches the blood droplet on the indicator patch of the test strip.					
15	Places gauze over the punctured area and asks the woman to press it to stop bleeding.					
16	Disposes of the lancet and test strip into puncture proof and red bin, respectively. Disposes the swab in yellow bin.					

S. No.	Tasks	Cases			
		1	2	3	4
17	Reads result on the screen of the glucometer				
18	Removes and discards the gloves in red bin.				
19	Washes hands with soap and water or alcohol-based hand rub.				
20	Records the reading from the glucometer on the woman's MCP card and RCH register.				
21	Gathers and puts away all equipment in designated area.				
22	Shares the result findings, its interpretation and further management if required with the woman.				

Common Errors in OGTT:

- Dropping a small amount of blood.
- Squeezing the puncture site too hard allows tissue fluids to mix with the sample.
- Improper maintenance of glucometers (dust or blood accumulation on the digital display).
- Lack of testing calibration regularly.

Certificate in Community Health for Nurses (BPCCHN)
Practical Course

CHO - 0003 Public Health and Primary Health Care Skills (10 Credits)

Block – 1 : Public Health Skills

Unit 1 : Community Need Assessment and Identification of Common Health Problems
Unit 2 : Nutritional Assessment
Unit 3 : Investigation of an Outbreak
Unit 4 : Organizing and Conducting Special Clinics
Unit 5 : Social Mobilisation Skills
Unit 6 : Health Education and Counselling
Unit 7 : Report Writing and IT Skills including Interpretation and Use of Data

Block- 2 : General Skills and Laboratory Skills

Unit 1 : Universal Precautions and Bio Medical Waste Management
Unit 2 : Procedures for Basic Tests
Unit 3 : Common Blood Tests and Preparation of Peripheral Smear
Unit 4 : Examination of Swelling, Lump and Joint
Unit 5 : Eye and ENT Examination
Unit 6 : Screening and Management of Common Dental Conditions
Unit 7 : Suturing of Superficial Wounds
Unit 8 : Drugs Dispensing and Injections

Block – 3 : Skills for Management of Common Conditions and Emergencies

Unit 1 : Basic Life Support (BLS)
Unit 2 : Assessment and Management of Fevers
Unit 3 : Management of Common Aches and Pains
Unit 4 : First Aid Techniques and Stabilization Care in Common Emergencies – 1
Unit 5 : First Aid Techniques and Stabilization Care in Common Emergencies – 2
Unit 6 : Geriatric and Palliative Care

Block – 4 : Maternal Health Skills

Unit 1 : Assessment of Health Status of Women
Unit 2 : Antenatal, Intranatal, Postnatal Examination and Care
Unit 3 : Organising Labor Room
Unit 4 : Conducting Normal Deliveries and Partograph
Unit 5 : Identification, Care and Referral of Complications during Labour
Unit 6 : Postnatal Examinations and Care
Unit 7 : Emergency and Injectable Contraceptives and Follow - up Care
Unit 8 : Understanding Continuum of Care (CoC) and the Use of Digital Interventions in Rajasthan

Block 5 : Reproductive and Adolescent Health Skills

Unit 1 : Assessment and Management of STIs / RTIs
Unit 2 : Insertion and Removal of IUCDS
Unit 3 : Management of Abortion and Counselling
Unit 4 : Adolescent Counselling

Block 6 : Newborn and Child Health Skills

Unit 1 : Newborn Resuscitation
Unit 2 : Assessment of the Newborn
Unit 3 : Kangaroo Mother Care
Unit 4 : Infant and Young Child Feeding and Counselling
Unit 5 : Promoting and Monitoring Growth and Development and use of Growth Chart
Unit 6 : Immunisation and Safe Injection Practices
Unit 7 : Use of Equipments
Unit 8 : National Child Health programmes