# Skilled Birth Attendant Training Module

2024

उत्तर प्रदेश सरकार

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

# Skilled Birth Attendant Training Module

2024

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन

उत्तर प्रदेश सरकार

UP-TSU

**Shri Partha Sarthi Sen Sharma**
IAS
Principal Secretary

Department of Medical Health and Family Welfare
Government of Uttar Pradesh

# MESSAGE

Motherhood and childbirth should be a time of joy and celebration for every family. However, high maternal mortality during pregnancy and childbirth of mothers and neonates still remains a matter of great concern in Uttar Pradesh.

Low coverage of essential maternity care services including antenatal, intrapartum and postnatal care significantly impacts mother and newborn survival.

A skilled birth attendant providing essential and emergency healthcare services to women and their newborns during pregnancy, childbirth and the postpartum period is a proven intervention that is included in the WHO Global *reference list of 100 core health indicators*. Considering the fact that approximately 46% maternal deaths, over 40% still births and 40% newborn deaths take place on day of delivery SBA-assisted childbirth can significantly reduce the risk of maternal and neonatal deaths caused by prematurity, intrapartum or postpartum complications.

GoUP's strategy for maternal mortality reduction focuses on building a well functioning Primary Health Care System, which can provide essential obstetric care services with a backbone of skilled birth attendant for every birth, whether it takes place in the facility or at home, which is linked to a well developed referral system with an access to emergency obstetric care for all women who experience complications.

These SBA guidelines have been revised to include interventions that have been added in program since the last edition to enhance the quality of service provision and maternal and neonatal outcomes.Areas of focus like gestational diabetes and parenteral iron therapy as well as HRP tracking and use of hand held Doppler for improved monitoring of the fetalwell being in antenatal care and labour rooms are new interventions that need to be disseminated. Orientation to digital interventions like E-rupee voucher and the integration of MaNTrA with the Civil Registration System (CRS) for registration of births will enable these frontline service providers to facilitate access to USG services to all pregnant women and ensure timely registration of births in public health facilities.

I hope these guidelines will help in knowledge and skillacquisition of all the service providers involved in care of pregnant women and neonates and help in reduction of maternal and neonatal mortality.

,

**(Partha Sarthi Sen Sharma)**

**Dr Pinky Jowel** (IAS)
Mission Director

National Health Mission
Uttar Pradesh
Mandi Parishad Bhawan
16, A.P. Sen Road, Lucknow-226001
Ph. No. : 0522-2237496
E-mail : mdupnrhm@gmail.com

# MESSAGE

Uttar Pradesh has a population of 235 million with 6 million estimated pregnancies in a year. 83.4% deliveries in UP are institutional and 57.7% are public facility institutional deliveries (NFHS 5). UP has more than 12,000 nurses and ANMs posted at government delivery points who are providing antenatal, intrapartum and post-partum services at these centres.

Over the past few years, UP has made significant strides in maternal and new born health by improving the early registration and 4+ antenatal check-ups of pregnant women, detection of high -risk pregnancies, operationalising new First Referral Units at CHC level, bringing in specialist doctors, scaling up CemOC- LSAS trainings, scaling up PMSMA and ensuring quality certification of health facilities.

However, the Maternal Mortality Ratio in UP continues to be high at 167/1,00,00 live births while the Neonatal Mortality Rate is 35/1,000 live births. The GoUP is focussed on improving maternal and neonatal outcomes in terms of morbidity and mortality. Hence, in December 2021 it was decided to rapidly scale-up the Skill Birth Attendant training across government delivery points in UP so that all 12,000 + nurses and ANMs become equipped with the knowledge and skills to manage normal pregnancies, deliveries and post-partum care while at the same time are able to identify the maternal and new born complications early, are able to provide adequate pre-referral management with proper documentation and are able to refer them to FRUs in a timely manner.

Though SBA training has been happening since 2008 in UP, the GoUP took the initiative of revamping the SBA training after the COVID pandemic. All the presentations, OSCE check-lists and videos used in the training were revised by a technical working group as per the latest protocols in December 2021 and 1200+ master trainers have been trained across 265 training sites across UP on these new guidelines in 2022 at the 4 state level skills labs established in UP. More than 6,000 nurses and ANMs have been trained across UP since November 2022 at district level trainings by these trainers.

It is now a felt need that the SBA training manual should also be revised as per the current National guidelines on maternal, new born health, family planning and infection prevention protocols. This manual is an effort in that direction. The Technical Working Group under DG training with support from all government stakeholders, KGMU and partners have collaborated to produce this manual which is to be used by nurses and ANMs who are under-going SBA training during the course of the training and later for their day-to-day use.

I wish them all the success.

,

**(Dr. Pinky Jowel)**

**Dr. Brijesh Rathor**
Director General (Medical & Health Services)

Directorate of Medical & Health Services
Kaisar Bagh, Lucknow
Uttar Pradesh

# MESSAGE

UP is making great stride with public healthcare by strengthening of services being provided in the government health facilities. The role of nurses in building a robust health system cannot be undermined and GOUP through Mission Niramaya is focused on improving the nursing landscape in UP.

Nurses play a key role in delivering services in the labor rooms across UP. The Skilled Birth Attendant is designed to empower them with the necessary skills and knowledge required for delivering quality services in the labor room. With the mapping of all government health care personnel on Manav Sampada, the unique eHRMS ID, the directorate of medical health is keeping a track that all SBA trained staff are posted at delivery points and all delivery point staff are SBA trained. Also, the 1200+ doctors and nurses trained as SBA master trainers are mapped on Manav Sampada to utilize them as trainers where ever they are transferred in future.

The development of the SBA training module will come in handy for all trainers as well as nurses to serve as a ready reckoner as well as to update them of the latest developments in maternal, neonatal and infection prevention protocols.

We hope that this training will accelerate the decline in MMR and NMR in the state to help us achieve the SDG 30 targets.

(Dr. Brijesh Rathor)

**Dr. Narendra Agarwal**
Director General – Family Welfare and Training

**Directorate Family Welfare and Training**
Jagat Naraya Road, Lucknow

# MESSAGE

A trained human resource that well equipped with knowledge of the correct medical practices is the back bone of the health system to provide good quality care to the population. However, unlike previous decades where the focus of the trainings was mostly on providing knowledge to the service providers through classroom teaching, the shift in the recent decade has been on building their skills and competencies so that they are able to perform optimally.

UP has set a precedent by establishing 4 skills labs at the state levels in all 4 corners of the state as well as mini skill labs at all district women hospitals and CHCs. These are being extensively used for building the skills of the labor room service providers for improving their BEmONC skills.

The majority of the deliveries in public health facilities in UP are conducted nurses and ANMs. Hence, it is imperative that they are well trained and skilled to provide quality services to mothers and new born which is essential to reduce the MMR and NMR of the state.

The Skilled Birth Training of nurses and ANMs which was happening since 2008 in UP has undergone a major facelift in terms of the methodology, utilizing the cluster-based model since 2018. This model was first piloted in 2016 and then scaled up at the 25 high priority districts in 2018. In December 2021, it was decided to scale it up across the State.

The Technical Working Group established under DG training involving all technical experts from government and partners revised the training content in terms of presentations, OSCEs and videos in December 2021. It is now important to revise the original training module of 2008 as well to align it with the changes in clinical and quality protocols in last 15 years as well as include the newer concepts of behavioral and respectful care of the clients. This will go a long way in improving the quality of services provided at labor rooms as well as timely referral of complications to improve the maternal and neonatal outcomes. The module focusses on not just the knowledge but also the skill building of the nurses and ANMs through OSCEs on mannequins to build confidence and improve practices.

I thank all the group members involved in developing this module and wish that it is extensively used by service providers across the state to help UP achieve the SDG 2030 targets of MMR and NMR.

27/8/24

**(Dr. Narendra Agarwal)**

**Dr. Archana Verma**
GM Training

National Health Mission
Uttar Pradesh
Mandi Parishad Bhawan
16, A.P. Sen Road, Lucknow-226001
Ph. No. : 0522-2237496
E-mail : mdupnrhm@gmail.com

# ACKNOWLEDGEMENT

Every birth, whether in a medical facility or at home should be attended by a skilled birth attendant. Evidence shows that skilled care during pregnancy and childbirth can significantly reduce maternal and infant mortality and morbidity. To this end Government of India/ Uttar pradesh has been implementing the training of Auxiliary Nurse Midwives (ANMs), Lady Health Visitors (LHVs), and Staff Nurses (SNs) to enable them to manage basic obstetric care, common complications, and Essential Newborn Care and Resuscitation Services.

To keep pace with advancements in medical knowledge and training methods, the guidelines from 2010 have been updated. This revised edition of the guidelines is based on the resource package made by the faculty of 16 medical colleges in Uttar Pradesh. Valuable inputs from the Maternal, Child, Family planning and Community processes divisions of the NHM have been very helpful in aligning the guidelines in the situation of Uttar Pradesh.

The development of this edition of the guidelines would not have been possible without the active interest, and encouragement provided by Shri Partha Sarthi Sen Sharma, Principal Secretary (H&FW), Go UP and Dr. Pinky Jowel, IAS ,MD NHM, GoUP. I would also like to acknowledge the unconditional support of Shri Shiv Sahay Awasthi, IAS, Director SIHFW, Lucknow and his team to complete the task . Additionally, profound appreciation is due to Mr. John Anthony and his outstanding team from the Uttar Pradesh State Training Unit (UPTSU) for their extraordinary efforts and dedication to this task.

A Verma

**(Dr. Archana Verma)**

## Strategic Vision & Guidance

- Shri Partha Sarathi Sen Sharma, (IAS), Principal Secretary, Medical Health & Family Welfare, UP
- Dr. Pinky Jowel (IAS), Mission Director- UP NHM
- Shri. Shiv Sahay Awasthi (IAS), Director, SIHFW, Lucknow
- Dr. Brijesh Rathore, DG Medical & Health, UP
- Dr. Narendra Agarwal, DG Training and Family Welfare, UP

## Contributors

**A) National Health Mission, UP**

- Dr. Archana Verma, General Manager, Training
- Dr. Ravi Prakash Dixit, General Manager, Maternal Health
- Dr. Suryanshu Ojha, General Manager, Child Health and Family Planning
- Dr. Manoj Shukul, General Manager, Routine Immunization
- Dr. Laxman Singh, General Manager, National Program
- Mr. Mahendra Yadav, General Manage (MIS)
- Mr. Devesh Tripathi, (SIFPSA)
- Dr. Shamita Pradhan, DGM (MH)
- Ms. Sarita Mullick, Consultant, Training

**B) Directorate of Medical Health, Family Welfare & Training, UP**

- Dr. Dinesh Kumar, Director MCH
- Dr. Sharda Chaudhary, AD, RCH
- Dr. Kamlesh Yadav, JD Training

**C) Partner Contributors**

**(i) King Gorge Medical University & V.A.B. Mahila Hospital, Lucknow**

- Dr. Nisha Singh, Gynecologist, Queen Marry Hospital, KGMC
- Dr. Renu Pant, CMS, VAB Hospital
- Dr. Mohd. Salman Khan, Sr. Consultant (Pediatric)

**(ii) UPTSU**

- Mr. John Anthony, Sr. Project Director and Lead, UPTSU
- Dr. Uma Singh, Sr. Technical Director- Maternal Health
- Dr. Seema Tandon, Advisor and Nodal RRTC Program
- Dr. Renu Srivastava, Strategy Director- Newborn & Child health
- Dr. Vandana Singh, Senior Deputy Director-Maternal Health
- Dr. Brinda Frey, Senior Consultant

# Abbreviations

| | |
|---|---|
| AMTSL | Active Management of the Third Stage of Labour |
| ANC | Antenatal Care |
| ANM | Auxiliary Nurse Midwife |
| APH | Antepartum Haemorrhage |
| ASHA | Accredited Social Health Activist |
| AWW | Anganwadi Worker |
| CBCDR | Community Based Child Death Review |
| CBO | Community Based Organisation |
| CCT | Controlled Cord Traction |
| CDR | Child Death Review |
| CHC | Community Health Centre |
| CiVHND | Chhaya Integrated Village Health and Nutrition Day |
| COC | Combined Oral Contraceptive |
| CPD | Cephalopelvic Disproportion |
| CRS | Child Registration System |
| DDK | Disposable Delivery Kit |
| DMPA | Depot Medroxy progesterone Acetate |
| ECP | Emergency Contraception Pill |
| EDD | Expected Date of Delivery |
| FBCDR | Facility Based Child Death Review |
| FCM | Ferric Carboxymaltose |
| FHR | Foetal Heart Rate |
| FHS | Foetal Heart Sound |
| FRU | First Referral Unit |
| FS | Female Sterilisation |
| GoI | Government of India |
| HBsAg | Hepatitis B Surface Antigen |
| HCG | Human Chorionic Gonadotrophin |
| HIV | Human Immunodeficiency Virus |
| HMIS | Health Management Information System |
| HPS | High Performing States |
| HRP | High Risk Pregnancy |
| ICTC | Integrated Counselling and Testing Centre |
| IFA | Iron and Folic Acid |
| IMNCI | Integrated Management of Neonatal and Childhood Illness |
| IUCD | Intrauterine Contraceptive Device |
| IUD | Intrauterine Death |
| IUGR | Intrauterine Growth Restriction |
| JSY | Janani Suraksha Yojana |
| JSSK | Janani Shishu Suraksha Karyakram |
| KMC | Kangaroo Mother Care |
| LAM | Lactational Amenorrhea Method |
| LHV | Lady Health Visitor |
| LLIN | Long-Lasting Insecticidal Net |
| LMP | Last Menstrual Period |

| | |
|---|---|
| LPS | Low Performing States |
| MaNTrA | Maa Navjaat Tracking App |
| MMR | Maternal Mortality Ratio |
| MoHFW | Ministry of Health and Family Welfare |
| MoWCD | Ministry of Women and Child Development |
| MPHW | Multipurpose Health Worker |
| MTP | Medical Termination of Pregnancy |
| MVA | Manual Vacuum Aspiration |
| NFHS | National Family Health Survey |
| NGO | Non-Governmental Organisation |
| NHM | National Health Mission |
| NSV | No-Scalpel Vasectomy |
| NVBDCP | National Vector-Borne Disease Control Programme |
| ORS | Oral Rehydration Solution |
| P/V | PerVaginum |
| PHC | Primary Health Centre |
| PIH | Pregnancy-Induced Hypertension |
| PIP | Programme Implementation Plan |
| PMSMA | Pradhan Mantri Surakshit Matritva Abhiyan |
| PNC | Postnatal Check-Up |
| PNDT | Pre-Natal Diagnostic Technique |
| POC | Products of Conception |
| PPH | Post-partum Haemorrhage |
| PPIUCD | Post-Partum Intra Uterine Contraceptive Devices |
| PPTCT | Prevention of Parent-to-ChildTransmission |
| PRI | Panchayati Raj Institution |
| PROM | Premature Rupture of Membranes |
| RCH | Reproductive and Child Health |
| RDK | Rapid Diagnostic Kit |
| RPR | RapidPlasmaReagin |
| RR | Respiratory Rate |
| RTI | ReproductiveTractInfection |
| SBA | Skilled Birth Attendant |
| SC | Sub-Centre |
| SDM | Standard Days'Method |
| SHG | Self-Help Group |
| SN | Staff Nurse |
| STI | Sexually Transmitted Infection |
| TBA | Traditional Birth Attendant |
| TT | Tetanus Toxoid |
| USG | Ultrasonography |
| UT | UnionTerritory |
| UTI | UrinaryTractInfection |
| VDRL | Venereal Disease Research Laboratory |

# Introduction

Pregnancy and childbirth are critical events in a woman's life that require the utmost care and attention. While the majority of pregnancies progress without complications, approximately 15% may encounter unexpected challenges that can endanger both the mother and the newborn. The presence of skilled healthcare providers, such as Auxiliary Nurse Midwives (ANMs) and Staff Nurses, is vital in ensuring early detection and prompt management of these complications.

The Government of Uttar Pradesh is committed to ensuring that every birth is attended by a skilled healthcare professional, whether in a healthcare facility or within the community. This commitment extends to providing accessible emergency obstetric and neonatal care services to reduce maternal and neonatal mortality rates across the state.

Maternal mortality ratio of 167/1,00, 000 live births in UP remains a pressing concern, with the leading causes including hemorrhage, puerperal sepsis, hypertensive disorders, obstructed labor, and unsafe abortions—factors that contribute to the majority of maternal deaths in India. Additionally, maternal anemia significantly contributes to the risk of complications. Although predicting these issues is challenging, early detection and timely intervention can prevent many of these deaths, particularly around the time of birth when most complications occur.

The neonatal mortality rate of 35/1,000 live births remains an area of concern and is dependent on good quality intra-partum care as the most important causes of neonatal mortality are birth asphyxia, preterm birth, low birth weight and sepsis.

Women under 18 or over 40, as well as primigravidas and grand multiparas, are at increased risk for pregnancy-related complications. Furthermore, closely spaced pregnancies increase the likelihood of premature and low birth weight infants, thereby elevating the risk of infant mortality and maternal anemia.

A Skilled Birth Attendant (SBA) is defined as a healthcare professional capable of managing common obstetric and neonatal emergencies and recognizing when to escalate care to a higher-level facility, ensuring timely and appropriate referrals.

The three primary delays contributing to maternal mortality include:

1. Delay in recognizing complications and deciding to seek care, often due to lack of awareness or resources.
2. Delay in reaching a healthcare facility, frequently due to transportation challenges.
3. Delay in receiving adequate treatment at the facility, typically due to insufficient resources or trained personnel.

Addressing these delays requires comprehensive community engagement, efficient referral systems, and well-equipped and staffed healthcare facilities.

As ANMs and Staff Nurses, role is pivotal in reducing maternal mortality by providing comprehensive antenatal care (ANC) and postnatal care (PNC), recognizing and managing complications, and referring cases to higher centers when necessary.

This training module will equip you with the necessary skills and knowledge to:

- Provide quality antenatal care
- Adequately monitor labor for timely referral
- Actively manage the third stage of labor (AMTSL) including use uterotonic drugs to prevent Post-Partum Hemorrhage (PPH)
- Manage new born to enhance their survival
- Stabilize mothers and new born in emergency situations prior to referral
- Perform essential emergency procedures on mothers and new born
- practice effective infection control and bio-medical waste management
- Schemes of government of UP

The training includes pre- and post-course OSCEs to evaluate your knowledge and skill development. A minimum score of 70% on the post-test, along with demonstrated competency in practical skills, is required for successful completion. Feedback will be gathered to continually enhance the training experience.

This module incorporates evidence-based best practices and aims to empower ANM, LHV and Staff Nurse role as a frontline healthcare provider, ensuring that fully prepared to deliver high-quality maternal and neonatal care. It serves as a key resource for SBA training within the NHM framework.

# Contents

# Chapter 1
# Counselling

Antenatal care is the systemic supervision of women during pregnancy to monitor the progress of fetal growth and to ascertain the well-being of the mother and the fetus. A proper antenatal check-up provides necessary care to the mother and helps identify any complications of pregnancy such as anemia, pre-eclampsia and hypertension etc. in the mother and slow/inadequate growth of the fetus. Antenatal care allows for the timely management of complications through referral to an appropriate facility for further treatment. It also provides opportunity to prepare a birth plan and identify the facility for delivery and referral in case of complications.

### Importance of counselling in RMNCH+A:

In the era of continuum of care, counselling plays an indelible role under RMNCH+A in imparting knowledge and boosting confidence which leads to behavior change resulting in positive health outcome. The continuum of care demands continued counselling which meansthat at all ages from neonate to adolescent and women in reproductive age adequate and healthcare is accessed in a life cycle approach initially by the parents and family and later on duringadulthood develops self-understanding for health care.

### Key areas of counselling in Maternal Health

A. Preconceptional Counselling

B. Antenatal Counselling

C. Postnatal Counselling

### A. Preconception Counselling

Pointers for preconception counselling:

1. Help in decision making regarding conception.
2. Avoid stress and anxiety.
3. Say ‘No’ to dieting. Maintain a healthy weight.
4. Take regular folic acid tablets.
5. Quit smoking and alcohol.
6. If you are a strict vegetarian, you must make sure your intake of iron, folic acid, zincand vitamin B-12.
7. Stay active but do not over-exert.
8. Safe sex
9. Positive thinking
10. H/o any chronic illness-asthma, epilepsy etc and h/o any drug intake
11. H/o any congenital anomaly in previous pregnancy. If H/o neural tube defect in previous pregnancy is detected, 5 mg of folic acid should be taken daily for to 2-3 months pre-conception
12. Get tested for BG with RH, Hemoglobin, Sexually Transmitted Infections (STIs)/HIV, HbsAg, Thalassemia, Sickle cell disease.
13. NCD screening: any family history of NCD and patient history – DM, HTN, Breast cancer, Oral and Cervical cancer.
14. Get tested and treated for Reproductive tract infection (RTI) or Sexually transmitted infection (STI) alongwith VIA screening for cervical cancer
15. Teaching self-breast examination to all women (this can be done by them at home monthly).
16. Avoid exposure to harmful chemicals and radiation
17. Don’t take unnecessary drugs without consulting a doctor or health care provider
18. Explain when during the menstrual cycle is the fertile period and there is a higherchance of conception.

## B. Antenatal Counselling

During pregnancy, the body undergoes hormonal changes to sustain pregnancy. In this phase the woman requires psychological support, empathy, along with adequate healthy diet, exercise and regular antenatal checkups. The family plays a crucial role in providing a safe, healthy and stress free environment. While the ANC provider prepares and discusses the issues faced by the woman during the gestational period.

### Pointers for antenatal counselling

1. **Healthy food, avoid junk food**

   Diet must include one from each group -

   - **Cereals –** Rice, Wheat, Ragi, Bajra, Jowar in form of chapati, halua, idli, dosa,upma, poha etc.Avoid white bread, biscuits and other foods made with refinedflour (Maida).
   - **Fruits and vegetables –** Eat seasonal fruits and vegetables liberally. Diet must include 2 katoris green leafy vegetables, 1 katori of starchy vegetables like potato, beet, carrot and 1 katori of other vegetables, like lady's finger, brinjal, tomato, beans etc. The more colorful the fruit or vegetable, the more nutritiousit is.
   - **Protein –** If you are a non-vegetarian, choose fish, full boiled eggs, and cooked meat. If you are a vegetarian, choose any pulses like moong, masoor, tuvar, rajma, at least 2 katoris a day.
   - **Milk and milk products** – You can choose between 2 glasses of milk, or 2 katorisof curd or 60 gm paneer.
   - **Fat** – Try to get your fat intake from vegetable sources like mustard oil and ricebran oil. Use a mixture of mustard oil and rice bran oil or mustard oil and groundnut oil, to ensure adequate quantities of Omega 3 and Omega 6 fatty acids in your diet. You can also consume flax seeds (Alsi)to get enough Omega3 fatty acids in your diet.
   - **Water –** Drink at least 10 - 12 glasses of water every day.

2. Mild exercise
3. Maintain good hygiene
4. Regular 8 hr sleep with 2 hours of rest during the day.
5. Avoid any drugs apart from the ones prescribed
6. Take regular iron tablets and foods rich in Iron.
7. The pregnant woman should be counselled to come to a service provider at once if she develops one or more of the following danger symptoms:
   - Usually in the first half of pregnancy: persistent vomiting, weight loss, vaginal bleeding and no change in abdominal growth, avoid sexual activity or practice safe sex.
   - In the second half of pregnancy: headache, blurred vision, epigastric burning pain, vaginal bleeding, leakage of fluid from the vagina, no change in abdominal growth, decreased or absent fetal kick.
   - Any time during pregnancy: fever, vomiting, flank pain, yellowish discoloration of eyesor persistent cough.
8. Birth preparedness and complication readiness by identifying hospital for delivery, mode of transport, identifying accompanying person(husband, relatives, neighbors, friends), preparing bag with clothes and toiletries for the mother and newborn
9. Encourage healthy timing and spacing of pregnancy. Discuss return to fertility after delivery and family planning methods available post- delivery (PPIUCD, condoms, progesterone only pills, permanent sterilization if the couple feels family will be complete afterthe current childbirth)
10. Explain importance of breast feeding and breast care
11. Explain about the schemes incentives and entitlements that the woman and child can avail underSUMAN package.

Involving the husband or partner in the antenatal care visits makes care of the pregnant womana family concern and responsibility, and also helps them to be alert to danger symptoms that need urgent action. Explain to the husband and family the ill effects of domestic violence andimportance of stress free environment for foetal development.

*Ask the woman to lie down in the left lateral position for an hour, three times a day after meals.

**Count the number of foetal movements in each hour. If the total number of movements in all three periods is less than 10, the woman should be referred to the FRU.

### C. Post-natal counseling

Important issues to discuss with women and their families, immediately following birthThe importance of having someone nearby for the first 24 hours.

- Brief the couple/family about the postnatal visits by ASHA/ANM.
- The importance of the new mother eating more and healthier foods – discuss in the context of local practices and taboos which are harmful, to ensure women have accessto good health and nutrition. The new mother should also drink plenty of clean, safe water.
- The importance of rest and sleep and the need to avoid hard physical labour.
- Discuss the positive effects of exclusive and complementary breast feeding and breastcare, the importance of only taking prescribed medicines when breastfeeding. All efforts to be made for continuing breast feeding in first 6 months of life, avoid ghutti, honey etc.
- Orient about HBNC visits by the ASHA
- Discuss the danger signs for the woman and baby and the importance of seeking medical help quickly.
- Discussion of normal postpartum bleeding and lochia – discuss with women how muchblood loss they can expect, for how long. When bleeding is more than normal, they should seek care urgently.

Personal hygiene in the context of local practices and the environment. Discuss with women the type of pads they will use and their disposal, and care of episiotomy in thecontext of home conditions. Hand washing is particularly important to prevent infections. It is also important not to insert anything into the vagina.

- Talk to them about when they can resume sexual relations and the importance of condom use to prevent STI and HIV transmission. Sexual intercourse should be avoideduntil the perineal wound heals. Discuss the importance of birth spacing and counsel onthe use of a family planning method.
- Discuss the importance of the home environment for promoting the health of the babyand recovery of the mother. For example, discuss the need for warmth, good ventilationand hygiene for both mother and baby. Care of cord, avoid putting kajal in eyes of thebaby.
- Discuss the importance of immunization, explain the schedule for full and complete immunization and how immunization protects the infant/children from various morbidities.
- In an area with malaria, discuss the importance of mother and baby sleeping under an insecticide-treated bed net.
- Explain about the schemes incentives and entitlements that the woman and child can avail under SUMAN package.

# Chapter 2
# Care During Pregnancy—Quality Antenatal Care (ANC)

Antenatal care is the systemic supervision of women during pregnancy to monitor the progress of fetal growth and to ascertain the well-being of the mother and the fetus. A proper antenatal check-up provides necessary care to the mother and helps identify any complications of pregnancy such as anemia, pre-eclampsia and hypertension etc. in the mother and slow/inadequate growth of the fetus. Antenatal care allows for the timely management of complications through referral to an appropriate facility for further treatment. It also provides opportunity to prepare a birth plan and identify the facility for delivery and referral in case of complications.

However, one must realize that even with the most effective screening tools, one cannot predict which woman will develop pregnancy-related complications during and immediately after child birth.

We must therefore:

- Recognize that 'Every pregnancy' is special and every pregnant woman must receive special care.
- Complications being unpredictable may happen in any pregnancy/child birth and we should be ready to deal with them if and whenever they happen.
- Ensure that ANC is used as an opportunity to detect and treat existing problems, e.g. essential hypertension, hypothyroidism, diabetes mellitus etc.
- Prepare the woman and her family for the eventuality of an emergency.
- Make sure that services to manage obstetric emergencies are available on time

## A. Quality ANC

1. Ensure early registration and see to it that the first check-up is conducted within 12 weeks (first three months of pregnancy).
2. Track every pregnancy for conducting at least four antenatal check-ups (including the first visit for registration)

### Schedule for antenatal visits

1st visit: Within 12 weeks

2nd visit: Between 14 and 26 weeks

3rd visit: Between 28 and 34 weeks

4th visit: Between 36 weeks and term

3. Take the client's history. Enquire from the pregnant women and record the following information :
    a. Menstrual history to calculate the Estimated Date of Delivery (EDD)

       (Estimated Date of Delivery = Date of Last Menstrual Period (LMP) + 9 Months + 7 Days)
    b. Obstetric history/history of previous pregnancies including Gravida Parity Living Children & Abortions (GPLA).
    c. Any history of previous Caeserian Sections/ still birth/neonatal deaths/repeated abortions/infertility treatment, etc.
    d. History of any current systemic illness/past history of illness eg. Tuberculosis (TB), asthma, epilepsy, heart disease, jaundice, hypothyroidism.
    e. Family history of systemic illness
    f. History of drug intake or allergies
    g. History of intake of habit-forming or harmful substances eg tobacco, alcohol.
4. Provide IFA, calcium and folic acid supplement
5. Perform deworming with tablet Albendazole

6. Immunize with Inj. Td
7. Promotion of institutional delivery
8. Birth preparedness and complication readiness
9. Counselling for :
    - Danger signs and signs of labor
    - Diet, rest, family planning
    - Care of newborn
    - Early initiation and exclusive breast feeding
    - Information on Janani Suraksha Yojana and Janani Shishu Suraksha Karyakram

**Essential components at every antenatal check-up:**

- Verify history and ask for complaints and danger signs
- Conduct a physical examination
- Perform investigations

**Antenatal visit and activities to be performed**

| | Time of visit | BP | Weight | General Examination | Abdominal Examination | Investigations | Counselling/ services provided |
|---|---|---|---|---|---|---|---|
| I | <12 weeks | Y | Y | History, Height,<br>Pallor, Systemic Examination (CVS and Chest) | - | Hb, urine pregnancy test, protein and sugar, HIV<br>Syphilis, HBsAg<br>Oral GTT for GDM<br>Blood Group & Rh typing, Malaria/Dengue and sputum for AFB (if indicated) | 1st dose of Inj Td, Tab. Folic acid<br>Date of next visit, counselling and referral to FRU for MTP if needed, Danger signs.<br>Counselling and referral for Thyroid function test in high-risk cases.<br>Ask the women to keep her bank passbook and photo ID ready at all times.<br>Refer to nearest ICTC for further management for HIV in women found positive on screening |
| II | 14-26 weeks | Y | Y | Pallor, edema of legs, Systemic Examination<br>Oral Cavity, Thyroid & Breast examination | Fundal height, grips, FHR | Hb<br>Urine dipstick for protein & sugar<br>*repeat Oral GTT for GDM (24-28 weeks) | 2nd Dose of Td, tablets of IFA,<br>Calcium & Albendazole.<br>Danger signs<br>Counselling and referral from CHC for |

| | Time of visit | BP | Weight | General Examination | Abdominal Examination | Investigations | Counselling/ services provided |
|---|---|---|---|---|---|---|---|
| | | | | | | | USG between 18-20 weeks with e-RUPI voucher |
| III | 28-34 weeks | Y | Y | Pallor, edema of legs, Systemic Examination<br>Oral Cavity, Thyroid & Breast examination | Fundal height, grips, FHR | Hb<br>Urine dipstick for protein & sugar | Tab. IFA & Calcium, Danger signs, birth preparedness & complication readiness |
| IV | >36 weeks | Y | Y | Pallor, edema of legs, Systemic Examination<br>Oral Cavity, Thyroid & Breast examination | Fundal height, grips, FHR | Hb<br>Urine dipstick for protein & sugar<br>USG (if needed) | Tab. IFA & calcium Danger signs, birth preparedness & complication readiness |

- PLUS any time the women experiences any danger signs or complaints during pregnancy.
- All pregnant women should be brought to PMSMA on the 1st, 9th, 16th & 24th of every month to ensure at least 1 ANC by a doctor in 2nd/3rd trimester of pregnancy

## B. History taking

**At 1st visit, confirm the pregnancy with urine pregnancy kit, register the pregnant woman, ask and fill all the findings in the MCP card and explain the card to the pregnant woman.**

1. Ask for obstetric history
   - G: Gravida (No. of times a woman has conceived including current pregnancy)
   - P  Parity (No. of previous deliveries that have crossed the age of viability - 20 weeks).
   - L : No. of living children
   - A : No. of abortions (before 20 weeks)
2. Details about previous babies
   - Mode of delivery (Normal / LSCS/Assisted with vacuum or forceps)
   - Babies gender
   - Weight at delivery
   - Viability of babies (Live birth or still birth)
   - Any abnormality in the baby
   - Breast feeding, immunization status
   - Age of living children
3. Ask for complications in previous pregnancy
   - Recurrent early abortions
   - Hypertension, preeclampsia or eclampsia
   - Antepartum hemorrhage
   - Postpartum hemorrhage
   - Malpresentations (Breech/transverse etc.)

- Blood transfusion
- Obstructed labor
- Perineal injuries
- Puerperal sepsis

4. Any obstetrical operations (cesarean sections/instrumental delivery/vaginal or breech delivery/ manual removal of the placenta)
5. Ask for medical history
    - Tuberculosis
    - Heart disease
    - Hypertension
    - Diabetes mellitus
    - Malaria
    - Jaundice/Hepatitis B
    - STDs/HIV,
    - Renal disease
    - Epilepsy
    - Asthma,
    - Repeated blood transfusions or chronic medications
    - Any other illness and any drug allergies.
6. Ask for surgical history
    - Ask for history of LSCS/ myomectomy for fibroids / ectopic pregnancy or any other abdominal surgery

**7.** Family History: Ask for the following**:**

- Congenital anomalies
- Hypertension
- Diabetes mellitus
- Thalassemia
- Tuberculosis
- Multiple pregnancies on the mother's side

8. History of addictions : Intake of alcohol or gutka/surti/khaini or smoking
9. Drug allergies
10. Domestic violence
11. Occupational History: Manual Laborer/ agricultural worker etc

### C. General examination

The examination room should have provision for a toilet for the mother to empty her bladder before examination and for collection of urine sample for testing.

### Preparation for General Examination :

Keep following equipment in functional status at the point of use:

- Examination Table with Curtains
- Adult Weighing machine
- Stadiometer

- Blood pressure apparatus with functional batteries
- Thermometer
- Fetal Doppler with functional batteries
- Stethoscope
- Watch with a second hand
- Measuring tape

**Monitoring vitals of mother**

| S. No. | Vitals | Normal Range | Screening of conditions |
|---|---|---|---|
| 1. | Temperature | 36.5 to 37.5 degree C | • Hypothermia - shock<br>• Hyperthermia - fever, infection/ sepsis/Malaria/dengue |
| 2. | Pulse | 60 to 100 beats per minute | Tachycardia >100/minute - Shock, fever, maternal exhaustion, infection/ sepsis, anemia, heart or respiratory disease |
| 3. | Respiratory rate | 16 to 20 breaths per minute | Tachypnea - Shock, fever, maternal exhaustion, infection/ sepsis, anemia, heart or respiratory disease |
| 4. | BP | 100/60 mmHg to 140/90 mm Hg | • Hypertension (=>140/90 mmHg) - Hypertensive disorders of pregnancy<br>• Hypotension (Systolic <90 mmHg) - Shock |
| 5 | Weight | 9-11 kg during pregnancy<br>Weight gain after 12 weeks –<br>@2kg every month or 0.5 kg per week | Check for weight gain:<br>• <2 kg in a month signifies intra-uterine fetal growth restriction (IUGR)<br>• >3 kg in a month signifies pre-eclampsia, multiple pregnancy, hypothyroidism, gestational diabetes |
| 6 | Pallor | Pallor should be absent (Check for pallor on the inner side of lower eyelid, nail, tongue and palm) | Check for Hb :<br>• Mild anemia: 10-10.9 g/dl<br>• Moderate anemia: 8-10.9 g/dl<br>• Severe anemia: <7 g/dl |
| 7 | Jaundice | Should be absent (Check for yellow discoloration of sclera and skin) | Refer for Liver function test to CHC FRU. |
| 8 | Oedema | There should be no pitting oedema (Check for puffiness of face, hand, abdomen, ankle and feet) | Check for Hb%, BP and Protein in urine |
| 9 | Oral Cavity | There should be no evidence of caries, chewing of tobacco, gutkha, etc. | Dental caries<br>Ask for history of addiction to tobacco |

| | | | |
|---|---|---|---|
| 10. | Thyroid examination | Ask the mother to swallow her saliva. (If there is visible movement of a mass in the neck, it indicates goiter) | Refer to district hospital for thyroid function test |
| 11 | Breast | Look for size and shape of nipple | Retracted/inverted nipples to be corrected |

## Abdominal examination

### Abdominal examination is important to

- Monitor progress of pregnancy and fetal growth
- Check for fetal lie and presentation
- Auscultate fetal heart sounds
- Presence of scars, if any

Ask the pregnant woman to pass urine and ensure privacy of the pregnant woman during examination.

- Wash hands and warm them before touching the client.
- Inform the pregnant woman about the examination and take her verbal consent.
- Stand to the right of the pregnant woman. Ask the pregnant woman to loosen her clothes and to expose her abdomen from xiphisternum to pubic symphysis.

### A. Inspection

- Note the abdominal size and shape. Look whether size of abdomen is corresponding with the estimated gestational age.
- Abdominal shape which is longer than it is wide indicates longitudinal lie while a shape that is low and broad may indicate transverse lie.
- Check the abdomen for any scars. If there is a scar, find out if it is of a cesarean section or any other abdominal surgery or uterine surgery.
- Stretching of abdomen and hormonal influences in pregnancy may cause striae gravidarum and hyperpigmentation.
- Observe for fetal movements.
- Check for any rashes or itch marks.

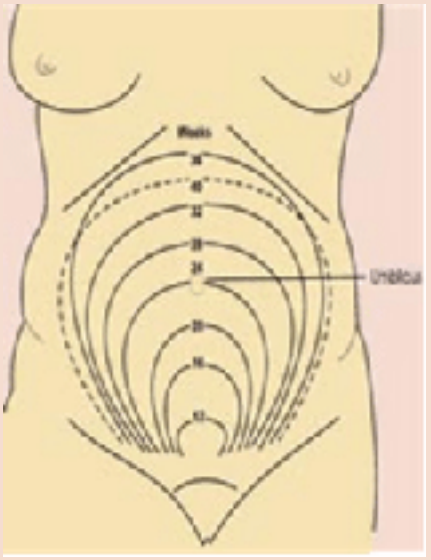
### B. Palpation

**1. Measurement of Fundal Height**

- Ask the mother to keep her legs straight.
- Keep the ulnar border of curved left hand on woman's abdomen parallel to symphysis pubis
- Start from xiphisternum and gradually proceed towards symphysis pubis lifting the hand between each step till a bulge / resistance of uterine fundus is felt
- Measure the distance from the upper border of symphysis pubis along the uterine curvature to the top of the fundus with a tape.
- Gestational age in weeks corresponds to the fundal height in cms from 24 weeks to 36 weeks

## Gestational age and corresponding fundal height

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



**Refer to CHC if**

There is disparity between the fundal height and gestational age of > 3 cm

or

No increase in fundal height on subsequent visit

If the height of the uterus is more or less than that indicated by the period of amenorrhea, the possible reasons could be as follows:

| If the height of the uterus is more than that indicated by the period of amenorrhea, the possible reasons could be: | If the height of the uterus is less than that indicated by the period of amenorrhea, the possible reasons could be: |
|---|---|
| • Wrong date of LMP<br>• Full bladder<br>• Multiple pregnancy<br>• Polyhydramnios<br>• Hydatidiform mole<br>• Pregnancy with a pelvic tumor<br>• Large sized foetus | • Wrong date of LMP<br>• Fetal growth restriction<br>• Intrauterine death (IUD)<br>• Transverse lie<br>• Oligohydramnios |

2. **Fetal lie and presentation**

- Examine after 32 weeks pregnancy
- Normal lie is longitudinal with cephalic presentation
- Abnormal lie and presentation should be referred to FRU

It is detected by Abdominal palpation by 4 grips

- Fundal grip
- Lateral grip
- Superficial pelvic grip
- Deep pelvic grip

## Fundal Palpation

Helps to determine lie and presentation of fetus whether cephalic, breech or transverse lie. The legs of the pregnant woman should be slightly flexed and abducted.

| A. Fundal palpation/fundal grip | B. Lateral palpation/lateral grip |
|---|---|
|  |  |
| This maneuver helps determine the lie and presentation of the fetus. It is done facing the mother. | This maneuver is used to locate the fetal back to detect fetal heart sound and position of fetus in labor. It is done facing the mother. |

| C. First pelvic grip/superficial pelvic grip | D. Second pelvic grip/deep pelvic grip |
|---|---|
|  |  |
| The third maneuver is done beyond 28 weeks facing the mother. It helps to determine whether the head or the breech is present at the pelvic brim. If the head cannot be moved, it indicates that the head is engaged. In the case of a transverse lie, the third grip will be empty. | This maneuver, in experienced hands, will be able to tell us about the degree of flexion of the head in late pregnancy and at the time of labor. It is done facing the mother's feet. |

## C. Auscultation

**Fetal heart sound and fetal heart rate (Should be counted for full 1 minute and in case of labor immediately after contraction)**

The fetal heart sound in cephalic presentation is best heard at the midpoint of the spino-umbilical line on the side of the foetal back determined by the lateral grip.

In breech presentation, foetal heart sound is heard above the umbilicus

The normal fetal heart rate is 120-160 beats per minute.

The foetal heart may be auscultated with a stethoscope or a hand-held foetal doppler.


(Note: ROA right occipitoanterior LOA left occipitoanterior position)

## Suspicion of multiple pregnancy on abdominal examination

- An unexpectedly large uterus for the estimated gestational age
- Multiple fetal parts felt on abdominal palpation.
- Multiple fetal sounds heard
- Refer the woman to FRU

## Investigations

**1. For all pregnant women at all levels of ANC platforms (CiVHSND, AAM, CHC, CHC-FRU and DWH). These are done as Point of Care tests**

Carry out investigations, such as

- Hemoglobin estimation using Digital Hemoglobinometer
- Urine tests for sugar and proteins using urine dipstick
- Oral glucose tolerance test (at first visit and repeat at 24 to 28 weeks in pregnant woman who tests negative at the first test)
- HIV and Syphilis

**2. For all pregnant women (can be only at AAM, CHC, CHC-FRU and DWH)**

Get the woman tested for blood group and Rh factor and Hepatitis B Surface Antigen (HBsAg).

3. **For special/high risk cases**

a. Women with high risk factors suggestive of deranged thyroid function should be referred to District Hospital to be tested for TSH, T3 and T4 in the lab.

High Risk Factors for hypothyroidism are residing in an area of known iodine insufficiency, obesity (BMI $\geq$ 30 kg/m$^2$), prior history of hypothyroidism, history of infertility, history of recurrent miscarriages, preterm delivery, intrauterine demise, pre-eclampsia/eclampsia, history of mental retardation in family/previous birth.

b. Refer suspected TB cases for sputum examination to CHC.

c. Test for Malaria/Dengue, in case of fever using Rapid Diagnostic Kit.

d. VIA (Refer to CHO for )

**Importance of Hb Estimation (Preferably with digital HB Meter)**

- To detect presence of anemia and assess its severity
- Detection of anaemia early in pregnancy helps in its timely management
- Test to be done at every antenatal visit
- Initial Hb level serves as the baseline to compare with Hb levels at subsequent antenatal visits

***paper based method is not reliable***

**Urine Test for Proteins and Sugar**

- Done at every antenatal visit
- Check for protein and sugar in urine
- Presence of protein in urine, accompanied by high BP indicates pre-eclampsia
- Presence of sugar in urine helps in detection of Gestational Diabetes Mellitus (GDM) but needs to be confirmed by Oral Glucose Tolerance Test (GTT)

**RDK Test for Malaria**

- Tests both P. vivax and P. falciparum in blood
- Read the instructions before doing the test
- Never read the result beyond 30 minutes (ideally 5-20 minutes)

*For all cases of fever take a peripheral smear(thick and thin smear)

## Blood group determination

- Essential for all Primigravida and for women with undocumented blood group
- Required to arrange blood for transfusion in emergency
- Blood group and Rh typing of husband needs to be done for those women who are Rh negative.
- Cord blood of baby should be taken at the time of delivery of babies whose mothers are Rh negative for their blood group.
- Inj. Anti D (300 mcg) needs to be given to Rh negative mothers with Rh positive husbands at 28 weeks, 36 weeks and within 72 hours of delivery of Rh -positive baby.
- Inj. Anti D (150 mcg) needs to be given to Rh negative mothers with Rh positive husbands if pregnancy is terminated in < 20 weeks.

## Oral glucose tolerance test (OGTT)

- To be done for all pregnant women at the time of 1st ANC.
- To be repeated at 24-28 weeks for all pregnant women who tested negative in the 1st Oral GTT.
- For women coming for the 1st time after 28 weeks, oral GTT should be done immediately if not done earlier.

## Procedure

- 75 g glucose available in government supply as packets is dissolved in 300 ml of water.
- It is to be taken by the pregnant woman over 10 minutes irrespective of the timing of the last meal ( fasting NOT needed).
- If vomiting occurs within 30 minutes of oral glucose intake, the test has to be repeated the next day.
- If vomiting occurs after 30 minutes, the test is continued.
- Blood sugar is measured with calibrated glucometer at 2 hours and should be <140 mg%.
- **Women with blood sugar >or = 140mg % is a high- risk pregnancy and should be referred to FRU for further management.**

**Advise for ultrasound (to be referred to District Hospital or Accredited Centre)**

Every pregnant woman should ideally undergo 3 USGs for fetal well-being

- At 8-10 weeks or at least in 1st trimester. It helps in confirmation of EDD, location of pregnancy (intra-uterine or ectopic), viability, number of fetuses etc.
- At 18-20 weeks, to rule out any gross congenital anomaly.
- At 32-34 weeks for fetal growth, placental position, fetal position and amount of amniotic fluid.

However, if 3 USGs are not possible, efforts should be made to get at least 1 ultrasound done at 18-20 weeks to rule out anomalies while it also tells about number of fetuses, location of placenta and estimates EDD +/- 10 days.

Govt. of UP is providing e-₹UPI voucher for free ultrasound for pregnant woman at Accredited private centers.(refer to Chapter 8)

## Interventions

1. Tab Folic acid 400mcg (available tablet is 5 mg) to be given in 1st trimester to all pregnant woman till 14-16 weeks to prevent neural tube defects in the fetus.
2. Tab Iron and Folic Acid containing 60 mg of elemental iron and 500 mcg of folic acid is started from 14-16 weeks onwards in non-anemic pregnant women to be given for 180 days before delivery and 180 days after delivery.

## Counselling of the pregnant woman for IFA consumption

- Inform of minor side effects and advise her not to discontinue the tablets
- IFA should not be taken empty stomach.
- In case of nausea/vomiting, the tablet should be taken after meals or at night.
- In case of constipation advise her to increase water intake and include cereals in her diet.
- Include vitamin C rich diet like lemon, Amla, citrus fruits etc. which increase absorption of iron.
- Do not take IFA with tea/coffee/soda etc. as it inhibits absorption of iron.
- Iron and calcium tablets should be taken at a difference of at least 2 hours and should never be taken together.

3. Deworming is to be done with Tab Albendazole 400 mg (chewable) once during the pregnancy at 14-16 weeks. However, it may be done any time in 2nd or 3rd trimester, if not given at 14-16 weeks. The tablet should be administered in front of service provider and the pregnant woman should be asked to wait for 30 minutes before leaving.
4. Tab Calcium containing 500 mg elemental calcium with 250 IU Vit D3 is given twice daily 14-16 weeks onwards (360 tablets before delivery and 360 tablets after delivery). The calcium tablets should be taken with meals.
5. Administration of Td injection.
   - 1st dose to be given at the time of registration
   - 2nd dose after a gap of minimum 28 days
   - In case the pregnancy is within 3 years of last pregnancy and the pregnant woman was given 2 doses in the previous pregnancy, she should be a given a single booster dose in this pregnancy.

## High Risk Pregnancies (HRP)

### Classification of HRP

**1. History of (H/O) complications in Previous Pregnancy-**

- Previous H/O of intrauterine death (IUD), Stillbirth, Neonatal Death
- Previous H/O of Preterm delivery
- Repeated abortions
- Blood group, Rh related disorder and Haemolytic disease
- Previous H/O of Low birth weight (< 2.5 Kgs)
- Previous H/O of Eclampsia/Pre-eclampsia (Hypertension and Seizures/Convulsions)
- Previous H/O of Caesarean section
- H/O of past foetuses/babies with congenital anomalies
- Previous H/O of PPH

**2. HRP in Present Pregnancy**

- Foetus with congenital anomalies
- Placental malformation or abnormal location
- Pre-eclampsia (Hypertension / Presence of Albumin in urine/Swelling)
- Polyhydramnios (Increased amniotic fluid) /Oligohydramnios (Decreased amniotic fluid)
- Diabetes/Kidney disease
- Severe Anemia
- Ectopic pregnancy
- Vaginal bleeding
- Excessive Tobacco and Alcohol consumption

3. **Physical Risk Factor-**
   - Age <15 yrs or >35 yrs
   - Short Height (< 145 cms)
   - Cervix/Uterus deformities
   - Low weight of mother (< 35 kgs)
4. **Medical High- Risk Factor**
   - Severe Anemia
   - Hypertension
   - Heart disease/ Kidney disease
   - Epilepsy
   - Tuberculosis
   - Thyroid disfunction
   - TORCH (+ve)

**Physiological symptoms during present pregnancy**

| Symptoms | Investigations/signs | Probable diagnosis | Actions to be taken |
|---|---|---|---|
| Heartburn and nausea | | Reflux esophagitis | • Advise the woman to avoid spicy and oily foods.<br>• Ask her to take cold milk during attacks.<br>• If severe, antacids may be prescribed |
| Vomiting during the first trimester | | May be physiological | • Advise the woman to eat small frequent meals.<br>• Avoid oily food<br>• Eat lots of green vegetables anddrink plenty of fluids<br>• If vomiting is excessive in the morning, ask her to eat dry food items such as roti/paratha/toast/biscuit afterwaking up in the morning. |
| Excessive vomiting, especially after thefirst trimester | The woman may be dehydrated-dry tongue, loss of skin turgor, decreased urine output in severe cases, tachy cardia may be present | Hyperemesis gravidarum | Start IV RL 500ml and refer to CHC |
| Increased frequency of urination up to 10-12 weeks of pregnancy | | May be physiological due to pressure of the gravid uterus on the bladder | • Reassure her that it will be relieved on its own.<br>• Perform urine dipstick for sugar<br>• Send to CHC for urine routine investigation |
| Constipation | | Physiological | • Advise the woman to take more fluids, leafy vegetables and a fiber- rich diet.<br>• Do not prescribe strong laxatives as they may start uterine contractions. |

**Other symptoms in pregnancy**

| Symptoms | Investigations/ signs | Probable diagnosis | Actions to be taken |
|---|---|---|---|
| Palpitation, easy fatigability, breathlessness at rest | • Pallor of the palm and lower palpebral conjunctiva<br>• Hemoglobin less than7gm/dl | Severe anemia<br>Cardiac Disease<br>Asthma | Refer her to higher centre/FRU Advise for institutional delivery |
| Puffiness of the face, generalized bodyoedema | Check protein in urineCheck BP.<br>If >140/90 mm Hg with or without proteinuria | Hypertensiv edisorder of pregnancy | Refer to FRU |
| Severe headache<br>Blurred vision<br>Severe Epigastric pain Reduced urine output | Diastolic BP≥ 110mmHgProteinuria-3+ | Severe Pre-eclampsia | Give Inj Magnesium Sulphate 5 gm (10ml deep IM in each buttock)<br>Refer to FRU |
| Increased frequency ofurination after 12 weeks or persistent symptoms, or burning on urination | Tenderness may be present at the sides of the abdomen & back<br>Body temperature may beraised. | UTI | Refer to FRU |
| Pain in the abdomen | Fainting<br>Retropubic/ suprapubic pain | Ectopic Pregnancy<br>UTI | Refer to FRU |
| Bleeding PV (<20 weeks of gestation) | Check the pulse and BP to assess for shock.<br>Ask for history ofviolence. | Threatened abortion/ spontaneou sabortion/ hydatidifor m mole/ectopi cpregnancy<br>Spontaneous abortion due toviolence | If the woman is bleeding and the retained products of conception can be seen coming out from the vagina, remove them with gloved fingers.<br>Start IV fluids.<br>Put her in touch with local support groups.<br>Do NOT carry out a vaginal examination under any circumstances. |
| Fever | Body temperature israised<br>Peripheral smear formalaria | Site of Infection (possible sepsis)Malaria | Refer to FRU |

## OSCE Checklist 1: Haemoglobin Estimation Using digital hemoglobinometer

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Keep necessary items ready, digital hemoglobinometer, strips, lancing device loaded with fresh lancet, alcohol swabs. | 1 | | | | | |
| 2. | Wash hands and turn on the Hb meter.<br>Check for date, time and strip batch code after a second. | 1 | | | | | |
| 3. | Match batch code strip & the Hb meter.<br>If not matched then match by adjusting left and right side mark followed by power button. | 1 | | | | | |
| 4. | Wait for green light in Hb meter lens. Then insert a fresh test strip into meter with arrow facing towards display without touching sample drop point of strip. Observe blood drop symbol on display | 1 | | | | | |
| 5. | Massage the tip of left hand third/ fourth finger. | 1 | | | | | |
| 6. | Clean same tip of finger with alcohol swab and puncture it with new lancet. | 1 | | | | | |
| 7. | Discard the first drop of blood. Ensure sufficient blood/ hanging blood drop and put it gently by covering completely over white coloured test area of strip.<br>(Don't press the punctured finger). | 1 | | | | | |
| 8. | Wait for one minute then record the reading. | 1 | | | | | |
| 9. | Remove the used test strip. Discard the used strip and used lancet by disposing it in proper bin. | 1 | | | | | |
| 10. | Clean the meter and remove residual blood if any with moist cotton. | 1 | | | | | |
| | **Total** | **10** | | | | | |

## OSCE Checklist 2: Urine Test for Albumin and Sugar

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Explain to the pregnant woman what the test is for | 1 | | | | | |
| 2. | Ask for a urine sample | 1 | | | | | |
| 3. | Check expiry date on dipsticks and read instructions carefully | 1 | | | | | |
| 4. | Remove one strip and close the container tightly | 1 | | | | | |
| 5. | Dip indicator side of the strip in the urine sample, remove it and tap at the edge of container to remove excess urine | 1 | | | | | |
| 6. | Follow manufacturer's recommendations for when it is time to read the results | 1 | | | | | |
| 7. | Compare the sugar reagent part with the sugar chart on the container | 1 | | | | | |
| 8. | Compare the albumin reagent part with the albumin results chart on side of bottle | 1 | | | | | |
| 9. | Discard used test stick in red bin | 1 | | | | | |
| 10. | Explain results to the patient and record on MCP card/case sheet | 1 | | | | | |
| 11. | Probe: what does presence of albumin in urine indicate?<br>Answer: pre-eclampsia | 2 | | | | | |
| 12. | Probe: what does presence of sugar in urine indicate?<br>Answer: gestational diabetes | 2 | | | | | |
| 13. | Refer to higher facility if any of the above is positive | 1 | | | | | |
| | **Total score:** | **15** | | | | | |

## OSCE Checklist 3: Abdominal Examination

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| A | **Please elaborate the steps before you carry out an abdominal examination/ palpation** | | | | | | |
| 1. | Ensure privacy of woman | 1 | | | | | |
| 2. | Obtain verbal consent from woman | 1 | | | | | |
| 3. | Check that she has emptied her bladder and instruct her to keep her legs and thighs in straight position. | 1 | | | | | |
| 4. | Examine from the right-hand side | 1 | | | | | |
| 5. | Centralize the uterus with one hand if it is tilted to one side | 1 | | | | | |
| B | **Please demonstrate how to do an abdominal examination/ palpation**<br>Here instructor would prompt: What do you look for on the abdomen? Visually assess: | | | | | | |
| 6. | Scars | 1 | | | | | |
| 7. | Shape | 1 | | | | | |
| 8. | Size | 1 | | | | | |
| 9. | Identify symphysis pubis | 1 | | | | | |
| 10. | Measure the distance between symphysis pubis and fundus in cm with the tape face down | 1 | | | | | |
| 11. | cm = approx. gestational age in weeks after 24 weeks | 1 | | | | | |
| 12. | Measure fundal height : Using ulnar border of left hand, start palpating gently from xiphi-sternum downwards till you meet the first resistance (fundus of the uterus) | 1 | | | | | |
| | **Here the facilitator would prompt: What is the importance of this?** | | | | | | |
| | **Palpation:** Ask woman to semi-flexed legs with thighs kept slightly apart. | | | | | | |
| 13. | **Fundal grip: (facing the face of the mother)** Keep both hands over the fundus and try to palpate the part of the fetus at the upper pole of the uterus to identify head or breech | 1 | | | | | |
| 14. | **Lateral grip: (facing the face of the mother)** Keep hand on one side of the abdomen and palpate other side of the abdomen with other hand and repeat the maneuver to identify which side is the back of the fetus and determine the lie | 1 | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Pelvic pole to confirm presenting part and determine engagement:** | | | | | | |
| 15. | **First pelvic grip: (facing the face of the mother)** With the fingers and thumb of the right hand try to hold the part of the fetus at the lower pole of the uterus just above the symphysis pubis and identify it and move it to see if it is movable or fixed | 1 | | | | | |
| 16. | **Second pelvic grip: (facing the legs of the mother)** Turn towards the feet of the woman, slightly extend the woman's legs. Keep both hands on either side of the presenting part with fingers towards the pelvis | 1 | | | | | |
| | **Auscultate foetal heart sound (FHS) on the spino-umbilical line at the side identified as back (in cephalic presentation)** | | | | | | |
| 17. | For 60 seconds | 1 | | | | | |
| 18. | Record findings | 1 | | | | | |
| 19. | Explain to mother | 1 | | | | | |
| | **What is the normal Foetal heart rate range?** | | | | | | |
| 20. | 120-160 beats/min, regular | 1 | | | | | |
| | **Total score:** | **20** | | | | | |

# Chapter 3
# Care During Labour and Delivery – Intra-partum Care

## Normal Labor

Normal labor is a spontaneous process of expulsion of the fetus and placenta.

Physical as well as emotional support during labor helps in maternal and fetal wellbeing and also promotes normal labor.

### Assessment of woman in Labor

**a. History**

- Inquire about the woman's history of labour, asking the following questions:
  - When did the contractions begin?
  - How frequent are the contractions? How strong are they?
  - Has there been any watery discharge? If so, what colour was it?
  - Has there been any bleeding? If so, how much?
  - Is the baby moving?
  - Are there any other complaints?

**b. Check the woman's record** for history of the present pregnancy, e.g. the haemoglobin status, Td immunization, Rh status, HIV status, any complications and any other significant history. If there is no record, then take detailed history with emphasis on the following:

- When was the LMP / what was is the period of amenorrhea? On this basis, determine the period of gestation
- Ask for any significant history of any past pregnancy.
- Any other significant history.

**c. Distinguish between True labor pain versus false labor pain**: True labor pain has the following features and can be clearly differentiated from false labor pain.

**True Vs False labour pain**

| True Labour Pain | False Labour Pain |
|---|---|
| • May begin irregularly but becomes regular and predictable<br>• Felt first in the lower back and sweeps around to the abdomen in a wave pattern.<br>• Continues no matter what is the woman's level of activity.<br>• Increases in duration, frequency and intensity withthe passage of time Accompanied by 'show' (blood-stained mucus discharge)<br>• Achieves cervical effacement and cervical dilatation | • Begins irregularly and remains irregular<br>• Felt first abdominally and remains confined to theabdomen and groin<br>• Often disappears with ambulation or sleep<br>• Does not increase in duration, frequency or intensity with the passage of time<br>• Show is absent<br>• Does not achieve cervical effacement and cervicaldilatation |

**d. General Examination**

- Conduct general physical examinations, record the temperature, pulse, blood pressure, height and weight, and check for pallor, pedal edema & edema at any other site, etc.

### e. Abdominal Examination

- Always examine the abdomen before examining the vagina.
- Conduct an abdominal examination to assess the foetal lie, presentation, FHR, frequency and duration of contractions.

### f. Vaginal Examination

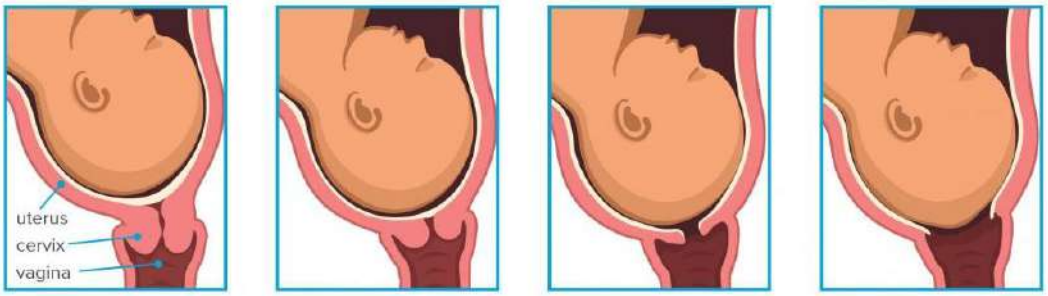
- Near term or at the onset of labor, a vaginal examination helps to assess the following:
- Validate the abdominal findings and confirms the presenting part, engagement of fetal head
- Stage of Labor

**Remember**

- During labor, vaginal examination should not be attempted more than once every four hours (to avoid infection).
- Do not carry out a vaginal examination if the woman is bleeding at the time of labor or at any time during pregnancy.
- Do not start a vaginal examination during a contraction.
- **Always examine the abdomen before examining the vagina**

**Steps for doing a P/V examination**

- Do not shave the perineal area.
- Explain to the woman what is being done and always ask for her verbal consent before doing a vaginal examination.
- Ask the woman to pass urine.
- Wash your hands with soap and water before and after each examination. Carry out the vaginal examination under strict aseptic conditions.
- Place the woman in the supine position with her legs flexed and apart.
- Perform the vaginal examination very gently, wearing clean/sterile gloves in both hands.
- Clean the vulva and perineal area with a mild antiseptic solution. Wipe the vulva first, then labia majora and lastly labia minora with cotton swabs from the anterior to the posterior direction. Use a swab only once. Use separate swabs for each side.
- Separate the labia with the thumb and forefinger of the left hand and clean the area once again.
- Use two fingers of the right hand (index and middle fingers) and insert them gently into the vaginal orifice without hurting the woman.




Cervix is not effaced or dilated | Cervix is 50% effaced and not dilated | Cervix is 100% effaced and dilated to 3 cm | Cervix is fully dilated to 10 cm

## Stages of labor

Assessment of cervical dilatation & effacement helps to decide the stage of labour.

| | |
|---|---|
| First stage* | This is the period from the onset of labor pain to the full dilatation of the cervix, i.e. to 10 cm. This stage takes about 12 hours in primigravidas and6–8 hours for multigravidas. Itis divided into the latent and active stages.<br>• Latent phase (not in active labour):Cervix is dilated <4 cm<br>Contractions weak (less than 2 contractions in 10 minutes)<br>• Active phase:<br>Cervix is dilated >4 cm<br>• Contractions > 3 per 10 min<br>• Rate of dilatation 1cm / hour or more<br>• Descent of presenting part present |
| Second stage** | • This is the period from full dilatation of the cervix to the delivery of the baby. This stage takes about two hours for primigravidas and about half an hour for multigravidas.<br>• Full cervical dilatation<br>• Bulging thinned out perineum<br>• Gaping anus and vagina<br>• Head visible at the perineum |
| Third stage | This is the period from after delivery of the baby to delivery of the placenta. This stage takes about 15 minutes to half an hour, irrespective of whether the woman is a primigravida or multigravida |
| Fourth stage | This is the first two hours after the delivery of the placenta. This is a critical period as PPH,a potentially fatal complication, is likely to occur during 3$^{rd}$ as well as 4$^{th}$ stage. |

## Assessment of Progress of Labor

- Assessing the progress in foetal descent (by conducting an abdominal &/or a P/V examination
- Assessing the changes in cervical effacement and dilatation (by conducting a P/V examination)
- Abdominal examination to assess the descent of the presenting part

Abdominal palpation should be conducted to assess the descent of the presenting part. If the head is above the symphysis pubis it is fully palpable & mobile. If the head is entirely below the symphysis pubis it is not palpable abdominally.

- Vaginal examination to assess the stage and progress of labor, determine the following:
- Cervical effacement: This is progressive shortening & thinning of the cervix during labor.
- Cervical dilatation: Dilatation of cervical Os is measured in cm. This is an increase in the diameter of the cervical opening in centimeters. A fully dilated cervix has an opening of 10 cms- at this stage, the cervix is no longer felt on vaginal examination.
- The presenting part. Try and judge if it is hard, round and smooth (the head). If not, try and identify the presenting part. In case the vertex is not the presenting part, manage the case as a malpresentation.
- The position or the station of the presenting part.
- Feel for the membranes. Are they intact?
- If the membranes have ruptured, check whether the colour of the amniotic fluid is clear or meconium-stained.

- Feel for the umbilical cord. If it is felt, it is a case of prolapsed cord. If the cord pulsations are felt, explain to the woman and her family that a caesarean section may be required.

The progress of labour can be decided as follows

- If the cervix is dilated < 4 cm, the woman is said to be in the latent phase of the first stage of labour.
- If the cervix is dilated > 4 cm, the woman is said to be in the active phase of first stage of labour till full dilatation of cervix.
- Full cervical dilatation (10 cm), cervix no longer felt on vaginal examination, a bulging thin perineum, a gaping vagina and anus, and the head visible through the introitus, even in between contraction mark the second stage of labour, and indicate that the delivery is imminent.

## Positions during Labor

Traditionally during labour women were kept in bed in supine and in 2nd stage of labour in lithotomy position. With time it was realized that these positions are neither comfortable for the woman nor conducive to fetal/maternal wellbeing & occurrence of vaginal delivery.

Women should be allowed to remain ambulatory during labour, especially the first stage, as this helps inhaving a shorter and less painful labour.

- The woman should be free to choose any position she desires and feels comfortable in during labour and delivery. She may choose from the left lateral, squatting, kneeling, or even standing(supported by the birth companion) positions. Remember, given a choice, the woman will oftenchange positions as no position is comfortable for very long.
- To relieve the woman of pain and discomfort, a change in position and mobility is helpful. Encourage the birth companion to massage the woman's back if she finds this helpful, to hold thewoman's hand and sponge the woman's face between contractions.

## Pharmacological Methods for Relieving Pain during Labor (only for staff nurses)

- All injectible medication to be given after advice of doctor
- Inj. Tramadol 50 mg IM is drug of choice for pain relief in early labour & for painful diagnostic & surgical procedures.
- If woman complains of nausea, Inj. Promethazine 25 mg IM may be added but with caution as it causes respiratory depression in neonate. It should not be given if delivery is anticipated in 2 hrs.
- Watch vitals carefully. Extra vigilance is needed in patients having chronic respiratory problems with pregnancy.
- If still pain is not relieved, epidural analgesia is recommended (in active phase of labour).
- Women are encouraged to have light, easily digestible, low fat food and drink plenty of fluids during labour

## Birth Companion

## Pre-requisite for a birth companion

- The birth companion has to be a female relative and preferably one who has undergone the processof labour.
- In facilities where privacy protocols are followed in the labour room, the husband of the pregnantwoman can be allowed as a birth companion.
- Should maintain good personal hygiene,
- Should have been informed or made aware of danger signs for mother and newborns.

## Role and Responsibility of birth companion

- The companion can also carry out simple tasks such as helping her to breathe and relax or rubbing her back, providing sips of water as allowed, wiping her brow with a wet cloth, or doing other supportive actions.
- Informs about progress of labour
- Helps initiating breast feeding immediately after birth
- Supports the mother in providing newborn care.
- Keeps the baby warm, well covered and close to the mother.
- The birth companion should be told about the danger signs in labor, and in neonate after delivery and counseled to inform heath care provider if she observes any of the danger signs.

## What the birth companion should not do

1. Don't give any medicine without doctor's advice
2. Don't encourage the woman to push.
3. Don't give any advice to the expectant woman, other than that given by the health worker.
4. Don't keep the woman in bed if she wants to move around.
5. Don't administer any local herbs or medicines.

## Management of First Stage of Labor

The first stage of labour starts with onset of labour pains to full dilatation of the cervix. It consists of two phases:

- Latent phase: Cervix dilated < 4 cm
- Active phase: Cervix dilated ≥ 4 cm

**In Latent Phase of Labour- The <u>cervix is dilated < 4 cm</u>**

- Never leave the woman alone.
- Record the time of rupture of the membranes and the colour of the amniotic fluid. always do P/V at rupture of membrane to rule out cord prolapse.
- Prolonged Latent Phase: If latent phase of labour lasts for more than 8 hrs it is said to be prolonged.
- If after 8 hours, the contractions are regular, stronger and more frequent, but there is no progressin cervical dilatation with or without rupture of the membranes, this is a case of non-progress oflabour.
- If after 8 hours, there is no increase in the intensity/frequency/ duration of contractions, and the membranes have not ruptured and there is no progress in cervical dilatation, but maternal & fetal condition is reassuring, ask the woman to relax. This is probably false labour. Examine her whenther pain/discomfort increases, and/or there is vaginal bleeding, and/or the membranes rupture

  **Monitor the following every one hour:**

  a. Contractions:

  Frequency—how many contractions in 10minutes

  Duration—for how many seconds eachcontraction lasts.

  **b. FHR**: Normal FHR is between 110 and 160 beats/ minute

  **c. Danger sign of an emergency** (difficulty in breathing, shock, vaginal bleeding, convulsions or unconsciousness)

  **Monitor the following every 4 hours**

  - Cervical dilatation (in cm)
  - Temperature, Pulse, BP
  - Descent of head on per abdominal examination

## Partograph

- Is a monitoring and decision making tool for service providers to monitor active labour
- Graphic recording of the progress of labor and assessment of maternal and fetal well being
- All labor record is on a single sheet of paper and gives a picture of the progress of labour maternal and foetal condition at a glance
- Tool to monitor labour and identify complications early, decide to manage them or make timely referrals

**Partograph tells us three things:-**

1. How well is the labour progressing
2. How is mother coping with labour stress
3. How is baby coping with labour stress

## Filling the Partograph

### Identification data

- Name
- Age
- Parity
- Registration number
- Date and time of admission
- Time of rupture of membranes

### Foetal condition

The FHR should be counted and recorded every half-an-hour. Count the FHR for one full minute. The rate should preferably be counted immediately following a uterine contraction.A FHR of >160 beats/minute or <110 beats/minute indicates foetal distress. Manage as given under "Foetal distress". Each of the small boxes in the vertical column of a partograph represents half-hour intervals.

- Simultaneously record the condition of the membranes and colour of the amniotic fluid as visible at the vulva every 30 minutes as:
    - Intact membranes (mark 'I')
    - Clear liquor (mark 'C')
    - Meconium stained (mark 'M')
    - No liquor (mark 'A')

### Labor

### Cervical Dilatation

- ‘x’ axis is time in hours
- ‘y’ axis is dilatation of cervix in cms
- Two important lines in the cervical dilatation section
- Alert line from 4 cms at ‘0’ hours to 10 cms after 6 hours or earlier
- Action line from 4 cms at 4 hours to 10 cm at 10 hours or end of labour and delivery
- Long vertical lines indicate for hour and each small square indicates half an hour
- Begin plotting when active labour starts at 4 cms cervical dilatation or more
- Plot the initial findings on the alert line
- Note the time
- Repeat P/V after 4 hours and plot the cervical dilatation

**Normal Progress**

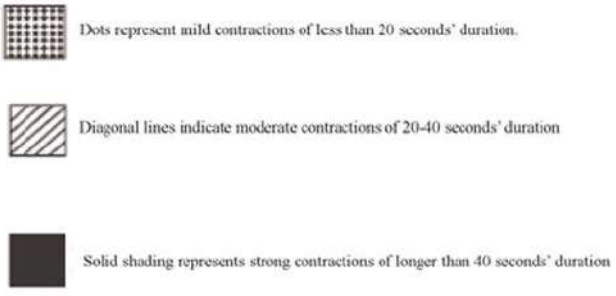
- Put 'X' on the alert line at the level of meeting point with the line of cervical dilatation
- When cervical dilatation is at the rate of 1 cm per hour or more, it is normal progress of labour and the plotting will be on the alert line or to its left if rapid dilatation.
- Alert line runs at the rate 1 cm per hour
- If the 'X' goes to the left of alert line = progress is faster than 1cm/hour
- If the 'X' goes to the right of the alert line = progress is slower than 1 cm per hour-refer to FRU/DWH.
- The woman should reach the FRU within 2 hours before her cervical dilatation reaches the action line
- If the 'X' reaches the action line which is 4 hours to the right of alert line i.e. crossing of the Action line (the plotting moves to the right of the Action line) indicates the need for urgent intervention. There is a difference of four hours between the Alert line and the Action line. By the time the Action line is crossed, the woman should ideally have reached the FRU for the appropriate intervention.

**Refer to FRU/DWH as soon as Alert line is crossed and do not wait for referral till the Action line is crossed.**

- Record cervical dilatation in cm (X) every four hours. The initial recording is at the alert line (cervical dilatation must be 4 cm and above, i.e. the woman must be in active labour before you start plottingthe graph). Normally the line should continue to remain at or to the left of the alert line. Write the time accordingly in the row for time.
- Record descent of head abdominally every 4 hrs.Other Indications for Vigilant Monitoring & Management

**Contraction per 10 minutes**

- Monitor contraction every 30 minutes & chart on the partograph as per protocol.
- Frequency (fill the appropriate no. of boxes as number of contractions in 10 minutes)
- Duration
  - less than 20 sec
  - between 20 & 40 sec
  - more than 40 sec




**Intervention**

- Mention here any drug that you have administered during labour, including the dose and route of administration, and when. Also include the food items and liquids consumed by the woman during that period.

**Maternal conditions**

- Record the maternal pulse every half-an-hour and plot them on the graph with a dot (□). Record both the systolic and the diastolic BP using a vertical arrow, with the upper end ofthe arrow representing the systolic BP and the lower end indicating the diastolic BP

Record temperature & BP every 4 hrs

- Record presence of any emergency signs.
- Record whenever mother passes urine – volume & presence and absence of sugar and ketones.

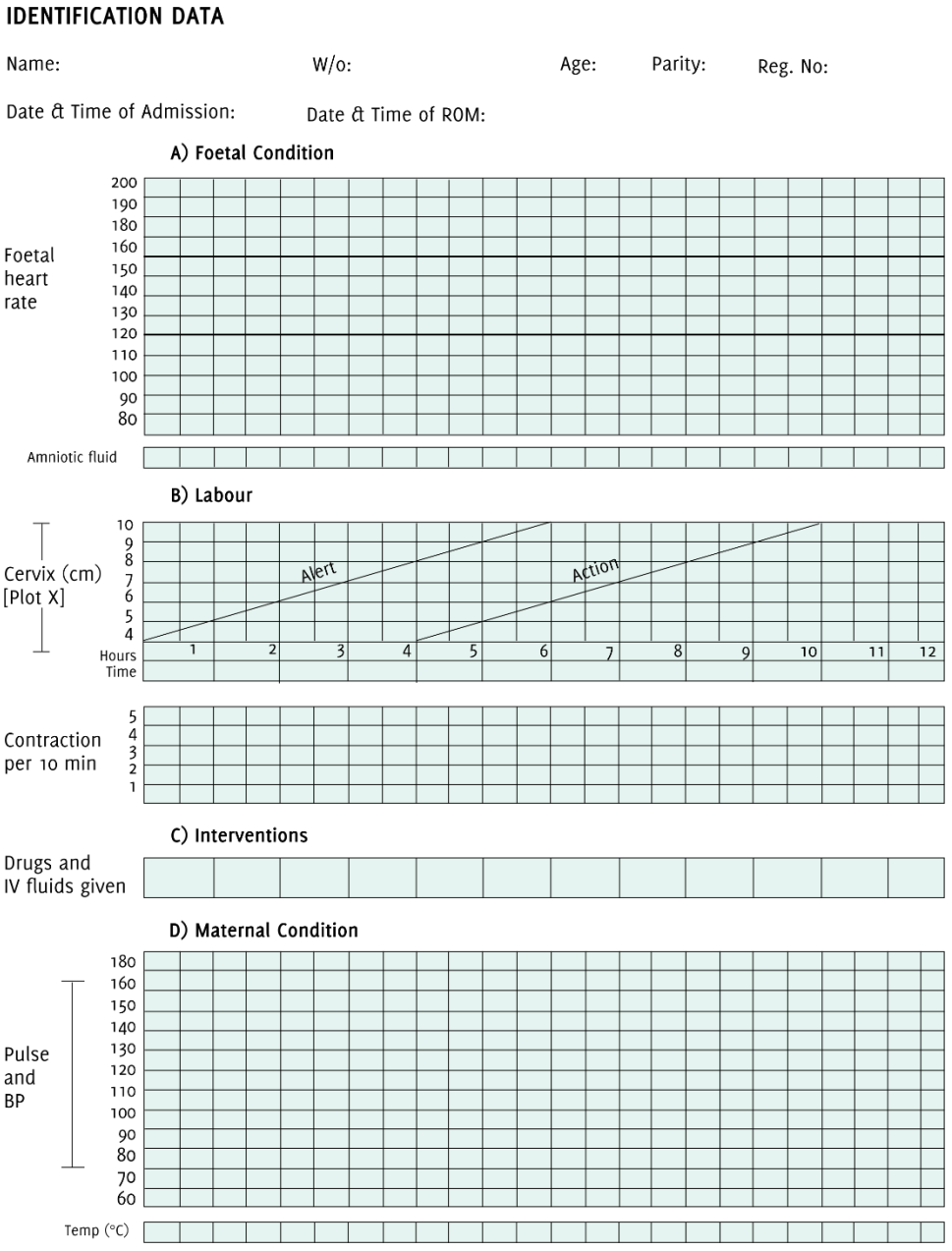
**Indications for referral to the FRU on the basis of the partograph**

- If the FHR is <120 beats/minute or >160 beats/minute
- If there is meconium- and/or blood-stained amniotic fluid
- When the cervical dilatation plotting crosses the Alert line (moves towards the right side ofthe Alert line)
- If the contractions do not increase in duration, intensity and frequency.
- If the maternal vital signs, i.e. the pulse (more than 100/min), BP (>140/90 mmHg) and temperature (>38$^{o}$ C), cross the normal limits

**Prolonged Active Phase**

If the alert line is crossed (the graph moves to the right of the alert line), it indicates prolonged labour, and you should be alert that labour is not progressing as it should. In such cases refer the woman to higher centre with proper communication & partograph.

## THE SIMPLIFIED PARTOGRAPH



## Second stage of labour

The second stage of labour starts from full dilatation of cervix to delivery of the fetus

- Watch for any emergency signs : excessive bleeding, convulsions
- Encourage the woman to push during contractions when she has an urge to do so while taking deep breaths

## Management of the Second Stage of Labour

**Monitor**

1. The uterine contractions every 30 min by noting number of contractions in 10 min, duration andintensity of contractions
2. FHR every 5 min
3. Perineal thinning and bulging
4. Visible descent of the foetal head during contractions
5. Presence of any signs indicating an emergency- excessive bleeding,convulsions etc.

- The upright positions such as standing, sitting or squatting makespushing easier. Therefore, if the woman finds it difficult to push inlying position, or there is slow descent of the presenting part, you should change the position of the woman.
- During the second stage of labour the woman should be allowed to push down when she has contractions or if she has the urge todo so.
- Bearing down efforts are required after the cervix is fully dilated, and even more so when the head is distending the perineum. Occasionally, the woman feels the urge to push before the cervix is fully dilated. This should be discouraged as it can result in oedema of the cervix which may delay the progress of labour.
- To prevent pushing at the end of the first stage of labour (before the cervix is fully dilated), teach the woman to pant, i.e. to breathe with an open mouth, take in two short breaths followed by a long breath out.

The following are the signs of imminent delivery:

- Vulval gaping
- Thinned-out and bulging perineum
- Anal pouting
- Visibility of the baby's headat the vulva

- Asking the woman to hold her breath and bear down in the second stage of labour should NOT be done. Holding the breath is potentially harmful. It may reduce the quantity of blood reaching the uterus and placenta. It may also reduce the supply of oxygen to the foetus.
- Giving oxytocin to shorten the second stage of labour is NOT advisable.
- Avoid ironing the perineum (or using the "Sweep and stretch" technique) to hasten delivery.
- Fundal pressure should NOT be given.

## Delivery of head

- Ensure a controlled delivery of the head by taking the following precautions:
  - Encourage the woman to push only during pains (a contraction).
  - Keep one hand gently on the head as it advances with the contractions.
  - Support the perineum with the other hand during delivery and cover the anus with a pad held inposition by the side of the hand.
  - Leave the perineum visible (between the thumb and the index finger).
  - Ask the mother to breathe steadily and to not push during delivery of the head.
  - Encourage rapid breathing with the mouth open.
  - Do NOT apply fundal pressure to hasten delivery of the head.

- Feel gently around the baby's neck for the presence of the umbilical cord around the neck. If the cord ispresent around the neck:
- And if it is loose, deliver the baby through the loop of the cord, or slip the cord over the baby's head.
- If the cord is tight, doubly clamp and cut in between, and then unwind it from around the neck.

### Delivery of the shoulders and the rest of the baby

- Wait for spontaneous rotation and delivery of the shoulders. This usually happens within 1-2 minutes.
- Perineal tears can be prevented by delivering one shoulder at a time. If there is difficulty in deliveringthe shoulder, suspect shoulder dystocia. Ask the woman to take a position with extreme flexion at theknees and hips with the knees wide apart. The shoulder may be released from behind the symphysispubis and may deliver. (Refer section on shoulder dystocia) Fortunately, shoulder dystocia is rare inIndia.
- Apply gentle pressure downwards to deliver the anterior shoulder.
- Then lift the baby up, towards the mother's abdomen, to deliver the lower (posterior) shoulder.
- The rest of the baby's body smoothly follows out
- Maintain perineal support during delivery of shoulders also
- Note the time of birth
- Put an identification tag on baby & mother

### Care of baby after delivery

- Place the baby on the mother's abdomen. Do not hang the babyupside down or slap the baby.
- Look for meconium. If there is none, proceed to dry the baby with a warm towel or piece of clean cloth. (Do not wipe off the white greasy substance covering the baby’s body. This substance, called vernix, helps to protect the baby’s skin.)
- After drying, the wet towels or clothes should be replaced and the baby is loosely wrapped in a clean, dry and warm towel. If the baby remains wet, it leads to heat loss.
- Wipe both the eyes (separately) with sterile gauze.
- If meconium is present and the baby is not crying, apply suction to the mouth and then the nose.
- Assess the baby’s breathing:
    - If the baby is breathing well and the chest is rising regularly, between 30–60 times aminute, provide routine care.

### Cutting the cord

- Put two clamps at the cord 2 cm and 5 cm away from the baby’s abdomen & cut in between with a scissior,1-3 mins after delivery as it takes about 1-3 min for the cord pulsation to stop.
- Put the disposable cord clips on the baby’s side of the cord after removing the clamp.
- Look for oozing of blood from the stump. If there is oozing, place a second tie between the baby's skin andthe first tie.

## Neonatal resuscitation

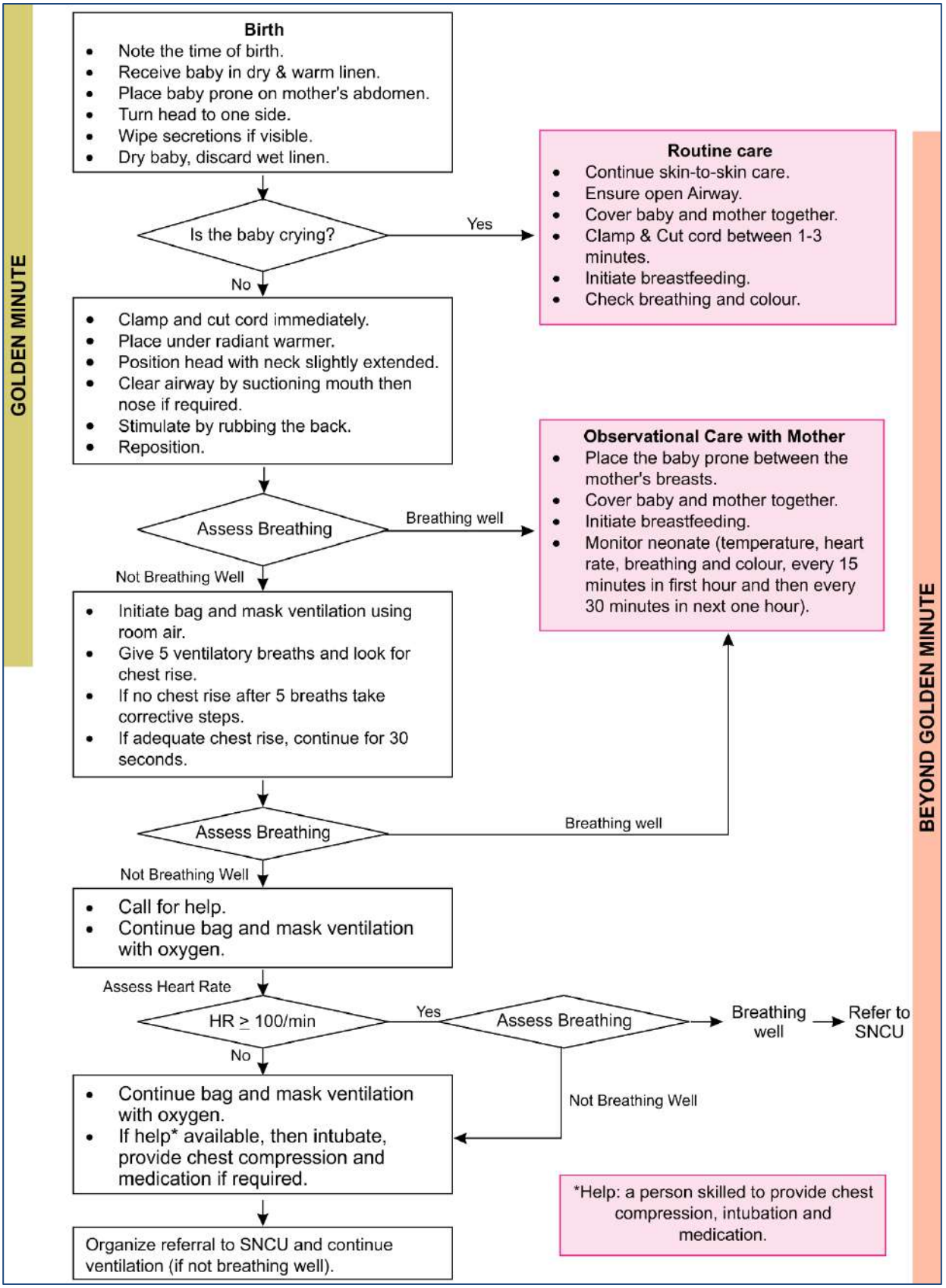
**Anticipate the need for resuscitation**, especially if the woman has a history of eclampsia, bleeding, prolonged/obstructed labour or pre-term birth.

| Antepartum Risk Factors | |
|---|---|
| **Maternal Risk Factors**<br>• Mother's age <16/ >32 years<br>• Inadequate antenatal care<br>• Significant ante-partum hemorrhage (Abruptio placentae, placenta previa)<br>• Maternal Hypertension, Preeclampsia/ eclampsia<br>• Maternal medical problems (cardiac, pulmonary, renal, thyroid, anaemia, etc)<br>• Maternal pyrexia, infection, chorioamniotis<br>• Poly and Oligo--hydramnios | **Foetal Risk Factors**<br>• Preterm/Post term<br>• Previous foetal or neonatal deaths<br>• Intra-uterine growth restriction<br>• Significant malformations or anomalies in foetus<br>• Intrauterine infection<br>• Reduced foetal movements before onset of labour |
| **Intrapartum Risk Factors** | |
| • Meconium stained amniotic fluid<br>• Reduced foetal movements<br>• Precipitate labour, Prolonged labour<br>• Breach or other non-vertex presentations, Forceps/vacuum deliveries<br>• Cord prolapse | • Chorioamnionitis<br>• Narcotics administered to mother within 4 hrs of delivery<br>• Maternal general anesthesia / sedation |

- If the baby is not breathing or is gasping, call for help.
- The steps of resuscitation need to be carried out immediately.

**Golden Minute is the first minute after birth within which a baby who does not breathe is supported so that the baby starts breathing well or is receiving effective ventilation.**

## ALGORITHM FOR NEONATAL RESUSCITATION



**Communication with the parents** It is important that the team caring for the newborn baby informs the parents of the baby's progress if and why resuscitation was required. Record carefully all discussions and decisions in the mother's notes prior to delivery and in the baby's records after birth.

**Post resuscitation care:** Babies who require positive pressure ventilation for more than one minute or need further resuscitation with chest compressions and/or drugs are at risk of deterioration and at high risk for developing subsequent complications. These babies should be referred to a higher centre for supervised medical care.

**When to stop ventilation?** If there are no signs of life to begin with (no breathing, no heart sounds and no movement) and remain so even after 10 minutes of birth, ventilation may be stopped (NRP 2015). If there are any signs of life during resuscitation, then the resuscitative efforts must continue for 30 minutes before terminating the same. When withdrawing or withholding resuscitation, care should be focused on the comfort and dignity of the baby and family.

## Third Stage of Labour

### Active Management of the Third Stage of Labour (AMTSL)

Must be performed in all cases.

**Aim:**

- To decrease the blood loss during IIIrd stage of labour & delivery
- For prophylaxis of Post-partum Hemorrhage (PPH)

The AMTSL consists of following three steps:

- Inj Oxytocin (uterotonic) 10 U I/M after the birth of the baby after excluding an other fetus in utero
- Controlled cord traction & delivery of placenta
- Put hand over suprapubic area and if uterus is relaxed perform Uterine massage

**Uterotonic drug**

An uterotonic drug enhances contraction of the uterine muscles, thereby facilitating expulsion of the placenta and diminishing bleeding. This helps to prevent PPH. An uterotonic drug should be given after the delivery. Rule out the presence of another baby before giving the uterotonic drug.

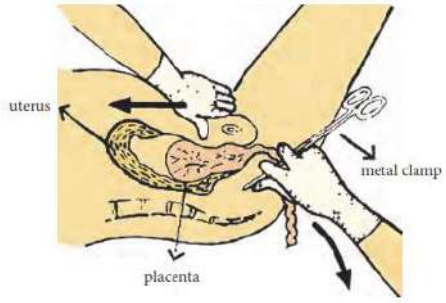
- Oxytocin is the drug of choice for AMTSL at the SC/PHC/FRU/health facility. It should be kept at a temperature 4-8°C but should not be frozen. It should ideally be stored in a refrigerator.
- Administer 10 units of oxytocin injection (intramuscular) to the mother if the delivery has taken place at the SC/PHC/FRU/health facility or give her a Tablet Misoprostol tablet (600 mcg) orally if the mother has been delivered at home and Injection Oxytocin is not available due to the problems of high ambient temperatures and unavailability of a refrigerator.
- You can also use it at the SC/PHC in case an Oxytocin injection is not available or if there are problems related to refrigeration. Inform the woman that shivering and gastrointestinal disturbances are common side-effects of Misoprostol, and should not be a cause for worry.

**Controlled Cord Traction (CCT)**

CCT is a technique that assists in the expulsion of the placenta, and helps to reduce the chances of a retained placenta and subsequent bleeding, i.e. PPH.

- Clamp the maternal end of the umbilical cord close to the perineum with a pair of artery forceps.
- Hold the clamped end of the cord with one hand.
- Place the other hand on the mother's abdomen to feel the uterine contraction.
- Maintain slight tension on the cord.

- When the uterus contracts, as will be evidenced by the uterus becoming hard and globular, gently pull downwards on the cord to deliver the placenta. Simultaneously, place one hand just above the pubic symphysis to apply counter-traction (pressure in the opposite/upward direction towards the umbilicus) on the uterine fundus.
- If the placenta does not descend within 30–40 seconds of CCT, do not continue to pull on the cord.
- Wait for the uterus to contract strongly again and repeat CCT with counter-traction.
- Do not exert excessive traction on the cord while performing CCT. Do not repeat the manoeuvre more than once.
- As the placenta delivers, hold it with both hands to prevent tearing of the membranes. Normally, the placenta delivers within five minutes of the birth of the baby if the third stage of labour is managed actively.
- If the membranes do not slip out spontaneously, gently turn the placenta so that the membranes are twisted into a rope and move them up and down to assist separation. If pulled at, the thin membranes can tear off and get retained in the uterus.
- If the membranes tear, use your fingers or a pair of sponge forceps to remove any pieces of membrane that might be present.
- **Remember, you should never apply cord traction (pull) without a contraction and without applying counter traction (push) above the pubic symphysis with the other hand.**
- Ensure that the placenta is delivered completely with all the membranes. Retained placental fragments or pieces of membrane will cause PPH. This can be suspected if a portion of the maternal surface of the placenta is missing or the membranes with their vessels are torn.
- If the placenta is not delivered after 30 minutes of inj. Oxytocin or Tablet Misoprostol, refer the woman to an FRU. Information on the drugs given, the dosage and time of administration on the referral slip, should also be sent along with the woman.



Controlled cord traction

**Examination of the placenta, membranes and the umbilical cord**

Examine the placenta and the membranes for completeness as follows:


Examination of the placenta

- Maternal surface of the placenta:
  - Hold the placenta in the palms of the hands, keeping the palms flat and the maternal surface facing you. Look for the following:
    - All the lobules (15–20) must be present.
    - The lobules should fit together.
    - There should be no irregularities in the margins.
  - If any of the lobes are missing or the lobules do not fit together, suspect that some placental fragments may have been left behind in the uterus.
- Foetal surface
  - Hold the umbilical cord in one hand and let the placenta and membranes hang down like an inverted umbrella.

- The umbilical vessels will be seen passing from the cord and gradually fading into the edge of the placenta.
- Look for free-ending vessels and holes which may indicate that a lobule has been left behind in the uterus.
- Look for the insertion of the cord, particularly the velamentous insertion (the point where the cord is inserted into the membranes and from where it travels to the placenta).

- Membranes
  - Both the layers (chorion and amnion) can be seen at the edge of the hole where the membranes rupture and the foetus comes out.
  - If the membranes are ragged, place them together and make sure that they are complete.
- Umbilical cord
  - Normally, the umbilical cord has two arteries and one vein. If only one artery is found, look for congenital malformations in the baby.

**Uterine massage**

This technique helps in contraction of the uterus and thus prevents PPH.

- Immediately after delivery of the placenta, massage the fundus of the uterus through the woman's abdomen until it is well contracted. Repeat the uterine massage every 15 minutes for the first two hours.
- Ensure that the uterus does not become relaxed (soft) after you stop the uterine massage. If the uterus remains soft and flabby, the woman may be suffering from Atonic PPH. Manage as per the steps given for management of Atonic PPH in Module 2.

## Fourth Stage of Labour

**Immediate Postpartum Care of Mother**

- **The first two hours after delivery of the placenta is sometimes referred to as the fourth stage of labour.**
- After delivery of the placenta, check that the uterus is well contracted, i.e. it is hard and globular, and there is no heavy bleeding. Repeat the checking every 5 minutes. If the uterus is not well contracted, massage the uterus and expel the clots. If bleeding continues even after 10 minutes, manage as "Postpartum haemorrhage"
- Examine the cervix, vagina, vulva & perineum for tears. If present, manage as "Vaginal, cervical and perineal tears"
- Estimate and record the amount of blood lost throughout the third stage and immediately afterwards. If the loss is around 250 ml, but the bleeding has stopped, observe the woman for the next 24 hours.
- Ideally all delivered women should be observed in LDR for 4 hours post delivery. If LDR not available then monitor for at least 2 hours after delivery
- Monitor following every 15 minutes for the first 2 hours
  - BP, pulse, temperature
  - Vaginal bleeding
  - Uterus, to make sure that it is well contracted.
- Clean the woman and the area beneath her. Put a sanitary pad or a folded cloth under her buttocks to collect blood. This will also help in estimating the amount of blood lost, by counting the number of pads/cloths soaked. Help her change her clothes, if necessary.
- Ensure that the mother has enough sanitary napkins or clean clothes to collect the vaginal blood.
- Keep the mother and the baby together; do not separate them. Encourage early breastfeeding.

- Encourage the woman to eat and drink, and rest.
- Encourage the woman to pass urine. If the woman has difficulty in passing urine, or the bladder is full (as evidenced by a swelling over the lower abdomen) and she is uncomfortable, help her pass urine by gently pouring water over her vulva.
- Instruct the birth companion to stay with the mother & newborn. Ask the companion to call for help if any of the following occurs:
    - The bleeding increases.
    - The woman feels dizzy.
    - The woman has severe headache.
    - The woman has visual disturbance.
    - The woman has epigastric distress.
    - The woman complains of breathlessness.
    - The woman complains of increased abdominal or perineal pain.
    - Enter information in the labour register and Mantra App
- Do not discharge the woman for 48 hours after delivery. This is a crucial period for the occurrence and management of PPH. The woman must be kept under observation during this time.

### Immediate Postpartum Care of Baby

Weighing the baby and administration of vitamin K should be performed only after one hour of birth during which the baby has already received skin to skin care and breast feeding has been initiated.

**Initial weight recording** (preferably digital). All infants should be weighed after stabilization. Adopt the following procedure for weighing:

- ensure that the room is warm
- Wipe and clean the weighing pan
- Check for and adjust zero error
- Calibrate using a known weight
- Place baby with sheet-A single- use paper towel or a sterile cloth towel should be placed on the weighing scale beneath the infant
- Note weight

  (a) Remove baby and weigh the sheet above

  (b) Subtract b from a (a-b)
- Record weight
- Always place the weighing scale on a flat firm surface.
- The weighing scale should be cleaned with soap and water and wiped with spirit swab between patient use.
- Never use weighing scale for stacking linen or any other objects, when not in use.
- Record & account for **Zero error**, if any, if it cannot be corrected. The weighing scale must be periodically (at least weekly) calibrated using a known weight & record weight only when the display is steady.

**Injection Vitamin K1:**

| | |
|---|---|
| What | Injection Vitamin K1 (phytomenadione) |
| Where | administered intramuscularly on the anterolateral aspect of the thigh |
| When | 1 hour after birth and within 24hrs of birth |
| How | using a 26-gauge needle and one ml syringe |
| Dose | 0.5 mg for babies weighing less than 1000 g<br>1.0 mg for those weighing above 1000 g at birth |

Ensure zero dose OPV and BCG vaccination

**Care of umbilical cord**: The cord should be inspected frequently during the initial few hours after birth for early detection of any oozing. Nothing should be applied on the cord stump. Ensure that the cord stump remains dry at all times.

**Care of the eyes**: No regular eye care needed unless there are signs of infection. Some neonates may develop persistent epiphora (watering) due to blockage of nasolacrimal duct by epithelial debris. The mother should be advised to massage on either side of the nose adjacent to the medial canthus 5 to 8 times daily, each time before she feeds the baby. Avoid the use of kajal, as it may transmit infections, cause injury or even cause lead poisoning.

**Infection Prevention**: Clean delivery practices reduce the risk of infection for the mother and baby. Hand washing is the single most important step, to be emphasized, to both family members and health care workers.

**During the first two hours after delivery**, both baby and the mother should remain in the delivery room for the first hour to facilitate monitoring by health personnel every 30 minutes after birth of the baby, till first two hours of life.

| Parameter | What to look for? |
|---|---|
| Breathing | Look for fast breathing (>60/min) or No breathing<br>Check for breathing difficulty |
| Warmth | Normal temperature of a newborn is 36.5-37.5°C.<br>Check to see if baby's feet are cold to touch. Baby's temperature can be assessed, with reasonable precision by touching his/ her abdomen, hands and, feet with the dorsum of your hand. In newborns, abdominal temperature is representative of the core temperature. When an accurate temperature record is needed, one should always use a thermometer |

**Breathing:**

- Count the breathing rate in the same manner as you would in an older infant.
- Always count the breaths in one minute.
- Newborns usually breathe faster than older infants.
- The breathing rate of a neonate is 40-60 breaths per minute. Therefore, 60 breaths per minute is the cut-off used to identify fast breathing in a neonate.
- If the first count is 60 breaths or more, repeat the count. This is important because the breathing rate of a neonate is often irregular.
- The neonate will occasionally stop breathing for a few seconds, followed by a period of faster breathing.
- If the second count is also 60 breaths or more, the neonate has fast breathing. Similarly, look for chest in drawing in the same manner as you would in an older infant. However, mild chest in drawing is normal in a newborn because the chest wall is soft. Severe chest in drawing is very deep, easy to see and is a danger sign.

## Steps of axillary temperature recording:

**Precautions:**

- Wash your hands before recording a baby's temperature.
- Keep the baby warm throughout the procedure.

**Steps:**

1. Make sure that the thermometer is clean.
2. Ensure that the armpit of baby is clean and dry
3. Switch on the digital thermometer
4. Wait till the display shows "LO"
5. Place the bulb end of the thermometer under the baby's arm, in the centre of the arm pit. 6. Gently hold the baby's arm against the body.
7. Keep the thermometer in place, till the beep is heard.
8. Remove the thermometer and note the reading. DO NOT add to/subtract from this reading.
9. Keep thermometer in a sterile container after cleaning.

**Signs of sickness** in a newborn may often be subtle and therefore a high index of suspicion is required. Daily monitoring of the baby in the post-natal ward will not only help in prompt detection of the illness, but also in initiating appropriate action.

**Danger signs** in a baby suggest serious illness requiring immediate medical attention. Mother should be explained about these before discharge and she should be advised to bring the baby to the facility, if any of the following danger sign is observed. The signs are elaborated as under:

- Poor feeding: May be a sign of sickness, hypothermia, hypoglycemia or respiratory distress.
- Respiratory difficulty, apneic attacks/cyanosis: May be due to pneumonia, immature lungs, hypoglycemia, hypothermia or any other serious illness
- Undue lethargy: May be a sign of sepsis, hypothermia, hypoglycemia or respiratory distress.
- Sudden rise/fall in body temperature: Hypothermia needs to be diagnosed and managed according to the actual temperature, to prevent complications and eventual death. Fever may be due to high environmental temperature or at times due to serious infection.
- Appearance of jaundice within 24 hours of age or yellow staining of palms or soles, suggests pathological jaundice and needs immediate referral and treatment.
- Failure to pass meconium within 24 hours/urine within 48 hours /persistent vomiting / drooling of saliva or choking during feeding: May be due to surgical problem requiring urgent attention.
- Excessive crying/seizures (abnormal movements of the body): May be due to some sickness, hypothermia, hypoglycemia or respiratory distress. The baby needs to be seen by a doctor immediately to treat any serious illness, including meningitis.
- Bleeding from any site: May suggest serious illness or may be due to Vitamin K deficiency, both need attention at a facility. Evidence of superficial infections such as conjunctivitis, pustules, umbilical sepsis (redness at base of the stump and discharge), oral thrush, etc. need appropriate treatment to avoid serious bacterial infection.

## Appropriate care during transport of sick newborn

**Indications for referral**

- All babies who require PPV for more than 1 minute
- All sick babies
- All LBW babies <1800 grams
- All babies requiring orogastric feeds

**Components:**

I. Stabilize prior to transport
   a. Warm the baby till hands and feet are warm to touch
   b. Position and clear airway, if required/oxygenate if needed.
   c. Give/arrange medications as per attending doctor's advice

II. Communication
   a. Communicate with the family regarding condition of baby and reasons for transport.
   b. Communicate with referral unit regarding condition of baby, approximate time of arrival, working diagnosis, along with a referral note mentioning reasons for transfer, pre-referral stabilization-medications given, along with dose and timings.
   c. Explain the condition of the baby to the accompanying family members and provide specific instructions to be followed en-route, like-clearing secretions, gentle stimulation, KMC and feeding, as applicable.

III. Prevention of hypothermia: KMC is the best way to maintain the baby's temperature during transport. If KMC is not possible:
   a. Remove soiled nappy and linen
   b. Warm clothing (dress baby in cotton clothes), cover head with a cap,feet with socks and wrap the baby in a blanket. - Skin-to-skin contact with mother/accompanying person-
   c. DO NOT USE hot water bottles.

IV. Prevention of hypoglycemia
   a. Give orogastric feed if baby is not able to take breast/ katori spoon feed
   b. Instruct regarding feeding during transport.
   c. Ensure 'quick' transport.
   d. Prevent hypothermia.

V. Prevention of hypoxia
   - Monitor and maintain saturations between 91-95% using pulse oximeter.
   - Position & clear airway, if required.
   - Consider use of oxygen with nasal prongs, if required.
   - Instruct caregivers regarding gentle handling
   - Also regarding gentle stimulation, if the baby is apnoeic.

**Post-partum visit at time of discharge**

- At the time of discharge inform her regarding the danger signs and when to return.
- Advise the woman to visit the nearest health facility as soon as possible in case she suffers fromany of the following symptoms:
- Excessive vaginal bleeding, i.e. soaking more than 2 or 3 pads in 20-30 minutes after delivery,OR bleeding increases rather than decreases after the delivery
- Convulsions
- Fast or difficult breathing
- Fever and weakness; inability to get out of bed
- Severe abdominal pain
- Inform the woman about the next routine postpartum visit.
- The subsequent postpartum visit should be planned on 3rd day, 7th day & 6 weeks after delivery.Either ask the ANM or ASHA of that area to pay a visit to the woman and her baby, or ask the woman to return to the health facility for a postpartum check-up.
- The 6 weeks visit should be at the facility
- There should be three additional visits in case of babies with low birth weight on 14th day, 21st day& 28th day of delivery.

## OSCE Checklist 1: Approach to a client in Triage

| # | Observations | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | The client on arrival should be brought and examined in the Triage area | 1 | | | | | |
| 2. | Greet, ask her name, introduce yourself and ask her to lie down on examination table | 1 | | | | | |
| 3. | Ask for her presenting complaints and simultaneously check for vitals – BP, Temperature, Pulse, Respiratory rate, Fetal heart rate (if applicable) within 15 mins of arrival | 3 | | | | | |
| 4. | Ask for danger signs<br>--As per WHO Safe Childbirth Checklist 1 in labor room case sheet | 2 | | | | | |
| 5. | Ask for her menstrual & obstetrics history<br>Ask GPLA, LMP; Calculate – EDD, Gestational age in weeks. | 2 | | | | | |
| 6. | Ask for previous obstetrics history (Details of GPLA) and place of all deliveries; any complications in previous pregnancies | 1 | | | | | |
| 7. | Ask for previous history of Caesarean section | 1 | | | | | |
| 8. | Ask for medical history of heart disease/TB/Asthma /Epilepsy/Thyroid ds./Hypertension/Diabetes | 2 | | | | | |
| 9. | Ask for history of medication in current pregnancy (Td, IFA, Calcium, Albendazole, Anti-malarials, anti TB drugs) | 2 | | | | | |
| 9 | Perform general examination (Pallor/Icterus/Oedema) | 1 | | | | | |
| 10 | Perform Abdominal examination( Fundal height, Grips and FHS) (rule out multiple pregnancy) | 3 | | | | | |
| 11 | Perform Per vaginal examination if indicated | 1 | | | | | |
| 12 | Perform PoC – Point of Care Tests (Hb**/HIV/ urine protein and sugar/ Syphilis/Blood Sugar) | 2 | | | | | |
| 13 | Take decision of admission to LR/Shift to OT/ANC ward/ PNC ward / referral based on findings | 2 | | | | | |
| 14 | Start Partograph if client is in active phase of labour | 1 | | | | | |
| 15 | Note down findings on Case sheet | 1 | | | | | |
| | Total Marks | **25** | | | | | |

** Hb estimation is to be done for all pregnant women and post-natal women at the time of admission as point of care test, irrespective of the last Hb done.

## OSCE Checklist 2: Per Vaginum Examination

Ask the Participant to demonstrate the steps to assess the pelvis, cervical effacement and dilatation. The Participant should inform that the client has just passed urine and she has been informed about the procedure.

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Wash hands | 1 | | | | | |
| 2. | Wear sterilized gloves on both hands | 1 | | | | | |
| 3. | Take an antiseptic solution swab in a sponge holder and clean both labia from above downwards in single stroke. | 2 | | | | | |
| 4. | Repeat the step again using another swab | 1 | | | | | |
| 5. | Discard the swabs in yellow bucket | 1 | | | | | |
| 6. | Separate the labia, clean with a swab from above downwards | 1 | | | | | |
| 7. | Insert index and middle finger to perform the vaginal examination | 1 | | | | | |
| 8. | Rotate the hand 90 degrees and gently stretch the fingers till the rim of cervix is felt (usually at 3–9 o'clock position) | 2 | | | | | |
| 9. | Assess cervical dilatation and informs in cm | 1 | | | | | |
| 10. | Assess the cervical effacement by feeling the rim of the cervix with the index and middle finger | 1 | | | | | |
| 11. | Check for presenting part (vertex, face, brow, breech) | 2 | | | | | |
| 12. | **Check for membranes**<br>I – Intact, if ruptured, then C = Clear, M = Meconium and B = Blood | 2 | | | | | |
| 13. | **Check Pelvic Adequacy:**<br>• The sacral promontory is not reached by examining fingers<br>• The sacrum is well curved.<br>• The ischial spines are not prominent and both ischial spines cannot be felt by the 2 fingers at the same time<br>• Space between two ischial tuberosities admits 4 knuckles | 2 | | | | | |
| 14. | Remove the glove inside out and discard in red bin | 1 | | | | | |
| 15. | Record the findings in case sheet and inform the client | 1 | | | | | |
| | **Total score:** | **20** | | | | | |

**Note:** P/V should not be done by Staff nurses and ANMs in bleeding p/v, leaking p/v , false labor pains and cord prolapse

## OSCE Checklist 3: Plotting Partograph

Rani (wife of Rambhajan), 24 years of age, was admitted at 10:00 am on 11 June 2023 with complaints of labour pains since 7:00 am. This is her first pregnancy.

Plot the following findings on the partograph:

At 10:00am: The cervix is dilated 4 cm. She had 2 contractions in 10 minutes, each lasting less than 20 seconds. The FHR is 140 per minute. The membranes are intact. Her BP is 100/70 mmHg. Her temperature is 37°C. Her pulse is 80 per minute.

- 10:30 am: FHR 140, contractions 2/10 each 20 seconds, pulse 90/minute
- 11:00 am: FHR 136, contractions 2/10 each 20 seconds, pulse 88/minute
- 11:30 am: FHR 140, contractions 2/10 each 20 seconds, pulse 84/minute
- 12:00 noon: FHR 136, contractions 3/10 each 30 seconds, pulse 88/minute, membranes ruptured, amniotic fluid clear
- 12:30 pm: FHR 146, contractions 3/10 each 35 seconds, pulse 90/minute, amniotic fluid clear
- 1:00 pm: FHR 150, contractions 4/10 each 40 seconds, pulse 92/minute, amniotic fluid meconium-stained
- 1:30 pm: FHR 160, contractions 4/10 each 45 seconds, pulse 94/minute, amniotic fluid meconium-stained
- At 2:00 pm: Cervix dilated 6 cm. Amniotic fluid meconium-stained. Contractions 4/10 each 45 seconds. FHR 162/minute. Pulse100/minute. Temperature 37.6°C. BP 130/80 mmHg.

| # | Observations | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Record identification data | 1 | | | | | |
| 2. | Foetal heart rate, condition of amniotic fluid and membranes, cervical dilatation position of presenting part and frequency and duration of uterine contractions should be recorded on the Partograph. Maternal parameters shall be properly recorded with respect to time | 1 | | | | | |
| 3. | Plot cervical dilatation when it is 4 cm and above on the alert line along with the time<br>**Note:** The first plotting on the Partograph is always on the alert line. A Partograph is started once labour has commenced. | 1 | | | | | |
| 4. | Plot the following every half hour: frequency and duration of uterine contractions, foetal heart rate, condition of the membranes, colour of amniotic fluid and maternal pulse | 2 | | | | | |
| 5. | Plot the following every four hours: cervical dilatation, descent of head or presenting part, maternal temperature, blood pressure and urinalysis (should be performed every time the woman passes urine). | 2 | | | | | |
| 6. | Record any medications or interventions carried out on the Partograph in the relevant sections with time noted. | 1 | | | | | |
| 7. | Interpret the findings and make a decision on necessary action. If referral is required, refer the client further with a duly completed referral slip and copy of the Partograph. | 1 | | | | | |
| 8. | Record the date, time of birth, condition at birth, sex and weight of the baby and type of delivery on the Partograph. | 1 | | | | | |
| | **Total Score:** | **10** | | | | | |

## OSCE Checklist 4: Conducting Normal Delivery (Second stage of labour)

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Keep the equipment, supplies and drugs necessary for conducting a delivery ready: Ensures radiant warmer is switched on 20 minutes before delivery and ambu bag is functional | 2 | | | | | |
| 2. | Ensure preloaded Inj. Oxytocin 10 IU is available in the delivery tray at the time of delivery | 1 | | | | | |
| 3. | Maintain privacy | 1 | | | | | |
| 4. | Tell the woman and birth companion what is going to be done and encourage them to ask questions | 1 | | | | | |
| 5. | Listen to what the woman and birth companion have to say | 1 | | | | | |
| 6. | Provide emotional support and reassurance | 1 | | | | | |
| 7. | Put on PPE | 1 | | | | | |
| 8. | Wash hand with soap and wears gloves | 1 | | | | | |
| 9. | Clean the perineum with betadine solution using gauze pieces | 1 | | | | | |
| 10. | **Delivery of the head once crowning occurs:**<br>• Keep one hand gently on the head under the subpubic angle as it advances with the contractions to maintain flexion<br>• Support the perineum with pad in other hand and covering the anus.<br>• Tell the mother to take deep breaths and to bear down only during a contraction | 3 | | | | | |
| 11. | **After delivery of the head, feels gently around the baby's neck for the presence of the umbilical cord:**<br>• If the cord is present and is loose around the neck, deliver the baby through the loop of the cord, or gently slip the cord over the baby's head<br>• If the cord is tight around the neck, place two artery clamps on the cord and cut between the clamps, and then unwind it from around the neck | 2 | | | | | |
| 12. | **Delivery of the shoulders and the rest of the body:**<br>• Wait for spontaneous rotation of the head and shoulders and delivery of the shoulders. This usually happens within 1–2 minutes<br>• Apply gentle pressure downwards on the shoulder under the sub-pubic arch to deliver the top (anterior) shoulder<br>• Then lift the baby up, towards the mother's abdomen, to deliver the lower (posterior) shoulder | 3 | | | | | |
| 13. | Deliver rest of the baby's body follows smoothly by lateral flexion and places the baby on mother's abdomen | 1 | | | | | |
| 14. | Continues managing actively third stage of labour as per the checklist | 1 | | | | | |
| | **Total Score** | **20** | | | | | |

## OSCE Checklist 5: Active Management of Third Stage of Labour (AMTSL)

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Preliminary step--rule out the presence of another baby by abdominal examination | 1 | | | | | |
| 2. | Administer Uterotonic drug—10 IU oxytocin IM OR<br>Misoprostol 3 tablets (600 µgm) orally within one minute | 1 | | | | | |
| 3. | Perform Controlled Cord Traction* (CCT) during contractions and delivers the placenta and membranes. | 1 | | | | | |
| 4. | Perform uterine massage** | 1 | | | | | |
| 5. | Examine the lower vagina and perineum | 1 | | | | | |
| 6. | Examine placenta, membranes and umbilical cord<br>A. Maternal surface of placenta<br>B. Fetal surface<br>C. Membranes<br>D. Umbilical cord ( look for 3 vessels – 2 arteries and 1 vein) | 1 | | | | | |
| 7. | Dispose placenta in yellow bin | 1 | | | | | |
| 8. | Place the instruments in 0.5% chlorine solution for 10 mins for decontamination | 1 | | | | | |
| 9. | Remove gloves inside out and discard in red bin | 1 | | | | | |
| 10. | Wash hands thoroughly with soap and water and air dry & fill all details of delivery in the case sheet. | 1 | | | | | |
| | **Total Score** | **10** | | | | | |

***Controlled cord traction (CCT):** (attempt only when the uterus is contracted)

- Hold the clamped end of the placenta with one hand and places the other hand just above the symphysis pubis, for counter traction on the uterus to prevent inversion.
- Only during contractions, gently pull the cord downwards and then downwards and forwards to deliver the placenta
- With the other hand, push the uterus upwards by applying counter traction. (If the placenta does not descend within 30-40 seconds of CCT, do not continue to pull on the cord. Wait for about 5 more minutes for the uterus to contract strongly, then repeat CCT with counter traction)

****Uterine massage:**

- Place the cupped palm on the uterine fundus and feels for the state of contraction
- Massage the uterine fundus in a circular motion with the cupped palm until the uterus is well contracted. A well contracted uterus feels like a cricket ball.
- Estimate the amount of blood loss.

## OSCE Checklist 6: Essential Newborn Care

Essential Newborn Care (ENBC) should be done immediately after the baby is born.

| # | Observations | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Ensure radiant warmer is switched on 20-30 minutes before delivery & 2 pre-warmed clean towels are available on mother's abdomen | 2 | | | | | |
| 2. | Call the time of birth and gender of the new-born | 1 | | | | | |
| 3. | Receive the baby onto a clean, dry and warm towel or cloth. | 1 | | | | | |
| 4. | Place the baby prone on the mother's abdomen with face turned to one side. | 1 | | | | | |
| 5. | Assess 4 components* – term gestation, amniotic fluid is clear, breathing or crying and good muscle tone. | 2 | | | | | |
| 6. | If all above 4 components are "yes", immediately dry the baby on mother's abdomen and discard the first wet towel. | 1 | | | | | |
| 7. | Cover the baby with second clean, dry and warm towel or piece of cloth. | 1 | | | | | |
| 8. | Clamp and cut the umbilical cord in 1-3 minutes (delayed cord clamping). | 1 | | | | | |
| 9. | Leave the baby between the mother's breasts to start skin-to-skin care (STSC) for at least one hour. Cover the mother and baby with a warm cloth | 2 | | | | | |
| 10. | Cover the baby with cap, nappy and socks | 1 | | | | | |
| 11. | Tie identification tag | 1 | | | | | |
| 12. | Encourage the initiation of breastfeeding with support of Staff nurse and Birth companion as early as possible within one hour of birth | 1 | | | | | |
| 13. | Check for any congenital malformation | 1 | | | | | |
| 14. | Weigh the newborn after 1 hour of STSC and administer injection vitamin K1 intramuscular to baby according to birth weight. | 2 | | | | | |
| 15. | Record baby details such as time of birth, weight, gender, time of initiation of STSC & EIBF and any other relevant information as per case sheet. | 2 | | | | | |
| | **Total** | **20** | | | | | |

** If any of the 4 components is "No", cut cord immediately and shift the baby to radiant warmer & perform resuscitation as required*

**Injection Vitamin K1:** Injection Vitamin K1 should be administered intramuscularly on the anterolateral aspect of the mid-thigh of the newborn using a 26-gauge needle and 1ml syringe.

Dose: 0.5 mg for babies weighing less than 1000 gm and

1.0 mg for babies weighing equal to and more than 1000 gm at birth.

**Important considerations while performing ENBC**

| Do's | Don'ts |
|---|---|
| • All babies are to be delivered on mother's abdomen<br>• Cut cord between 1-3 min (i.e. delayed cord clamping).<br>• Always keep baby and mother together in skin-to-skin contact and initiate breastfeeding within one hour.<br>• Injection vitamin K1 is to be given to all the new-borns<br>• Delay first bath by at least 24 hours | • Don't perform routine suction unless the mouth or nose is blocked<br>• Don't cut the cord immediately after birth.<br>• Don't keep every baby in the warmer and don't hand it over to the birth companion.<br>• Don't feed the baby pre-lacteal feeds<br>• Don't wipe off the vernix |

## OSCE Checklist 7: Use of Radiant Warmer

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Connect to mains and switch on the warmer at least 20 – 30 minutes prior to the expected time of delivery. | 1 | | | | | |
| 2. | Identify servo and manual mode and select the servo mode. | 1 | | | | | |
| 3. | **Set the desired skin temperature to 36.5°C.** | 1 | | | | | |
| 4. | Set alarm for temperature variation of **0.5°C** above or below | 1 | | | | | |
| 5. | Place the baby (neonatalie) in the bassinet. Identify the correct site for positioning the skin probe (right hypochondrium in supine position). | 2 | | | | | |
| 6. | Connect skin probe after cleaning at the correct site | 1 | | | | | |
| 7. | Ensures that the baby's head is covered with a cap and feet with socks. Keeps the baby uncovered. | 1 | | | | | |
| 8. | Checks the sensor probe regularly so as to ensure that it is in place, else it might harm the baby. | 2 | | | | | |
| | **Total** | **10** | | | | | |

**Key points to remember**

1. Use only mild soap and water to wipe the warmer. Don't use spirit or other chemical to clean the plastic/ acrylic parts
2. At the New Born Care Area, the radiant warmer should be operated only in the Servo mode.
3. Check that the correct surface of the probe is facing the skin and the probe is attached at the correct site.

## OSCE Checklist 8: Newborn Resuscitation (NBR)

**Introduction:** The **basic resuscitation within golden minute** is a set of sequential activities performed to stimulate and assist breathing within the first minute of birth in babies who do NOT cry (breathe) spontaneously at birth which can reduce neonatal mortality.

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Get ready with:<br>• Bag and mask (2 sizes 0 & 1)<br>• Mucus extractor<br>• Shoulder roll<br>• Gloves<br>• 2 warm towels<br>• Oxygen source<br>• Clock with seconds hand<br>• Cord tie, Scissors<br>• Cap<br>• Identify helper to support in NBR process | 3 | | | | | |
| 2. | Ensure radiant warmer is switched on 20 – 30 minutes before delivery | 1 | | | | | |
| 3. | Assess 4 components – term gestation, amniotic fluid is clear, breathing or crying and good muscle tone. | 1 | | | | | |
| 4. | If any one of the above components is “NO”, cut the cord immediately and shift the new-born to the radiant warmer | 1 | | | | | |
| 5. | In the radiant warmer perform the initial steps of resuscitation (PSDSR) as required<br>▪ Position the baby in slight neck extension using a shoulder roll<br>▪ If required, clear the airway. First suction the mouth and then suction the nose using a mucus extractor.<br>▪ Dry the baby<br>▪ Provide tactile stimulation to the baby by rubbing the back<br>▪ Reposition and reassess breathing | 2 | | | | | |
| 6. | If not breathing, provide bag and mask ventilation for 30 seconds, make sure that the chest rises bilaterally with each ventilation | 1 | | | | | |
| 7. | Reassess the baby for breathing after 30 seconds of bag and mask ventilation by checking for heart rate with stethoscope/umbilical pulsations:<br>Total pulsations felt in 6 seconds x 10= heart rate. | 1 | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8. | a) If PR > 100/ minute continue bag and mask ventilation till the baby starts breathing spontaneously and bilateral chest rise is seen, Wean off bag and mask ventilation once spontaneous breathing is established<br>b) If PR 60 – 100/ minute, continue bag and mask ventilation and connect oxygen 1L/min<br>c) If PR < 60/ minute, continue bag and mask ventilation with oxygen and **initiate chest compression (only under doctor's supervision) | 3 | | | | | |
| 9. | At any point if baby starts breathing spontaneously and bilateral chest rise is seen, wean off bag and mask ventilation and give post-resuscitation care, stabilize the baby and transfer to NBSU/SNCU | 1 | | | | | |
| 10. | If baby is not breathing, continue bag and mask ventilation for maximum 20 minutes | 1 | | | | | |
| | **Total Score** | **15** | | | | | |

**Important considerations**

- Anticipate and prepare for resuscitation immediately in the labour room for all deliveries.
- In case more than one baby is expected, prepare accordingly.
- If possible, call for help whenever a baby doesn't cry spontaneously at birth.
- Ensure effective chest raise while ventilating with the bag and mask.

**After 5 cycles of Bag and mask, if bilateral chest rise does not occur, check for the following (MRSOPA):**

| Problem | | Remedial Step |
|---|---|---|
| **M** | Inadequate seal | **M**ask Adjusted to ensure airtight seal |
| **R** | Inappropriate Position | **R**eposition the head in sniffing position |
| **S** | Blocked Airway | **S**uction the Airway |
| **O** | | **O**pen baby's mouth and ventilate |
| **P** | Inadequate pressure | Increase **P**ressure by squeezing the bag with more pressure till a chest rise is visible |
| **A** | No improvement with above steps | Consider **A**lternate means of breathing such as endotracheal intubation |

**DO NOT:**

- Routinely suction the new-born at birth or later, unless copious secretions are seen.
- Stimulate the new-born by slapping; postural drainage or squeezing the chest to remove secretions from the airway.
- Give any drugs in the cord or elsewhere
- Babies requiring more than 1 min of bag and mask should be sent to SNCU

## OSCE Checklist 9: Monitoring of mother and new-born in fourth stage of labour and post-natal period

| # | Observations | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1 | Woman is kept in LR for observation for at least 2 hours | 1 | | | | | |
| 2 | Staff nurse explains duration, frequency and importance of 4th stage of labour monitoring | 1 | | | | | |
| 3 | Ask/ check and record all maternal signs every 30 mins as per case sheet for 2 hours | 1 | | | | | |
| 4 | Ask/ Check and record all new-born signs every 30 mins as per case sheet for 2 hours | 1 | | | | | |
| 5 | Staff explains duration of stay, frequency and importance of post-natal monitoring in PNC ward. | 1 | | | | | |
| 6 | Ask/ Check and record all maternal signs every 6 hours for next 24 hours as per the case sheet. | 1 | | | | | |
| 7 | Ask/ Check and record all new-born signs every 6 hours for next 24 hours as per the case sheet | 1 | | | | | |
| 8 | Ask/ Check and record all maternal and newborn signs morning and evening till discharge. | 1 | | | | | |
| 9 | Handover the discharge slip attached in the case sheet to mother<br>a) Explaining the danger signs and<br>b) Provide Iron and folic acid 100 tablets & Calcium 200 tablets at the time of discharge. | 2 | | | | | |
| | **Total** | **10** | | | | | |

**Importance of Post-Partum Examination**

- The **first 2 hours** after delivery (Stage 4 of Labor) is very critical for maternal complications such as – PPH, Episiotomy hematoma, bleeding from undiagnosed tears etc. Similarly, the newborn may develop breathing difficulties, feeding difficulties, hypoglycaemia, hypocalcaemia, convulsions etc. These conditions are life threatening and need immediate attention.
- **Beyond 2 hours** of delivery, it is important to monitor the mother and baby for above complications as well as other severe morbidities such as breast engorgement, urinary retention, fever, puerperal sepsis, sub-involutions etc. in mother and jaundice, failure to pass urine and stool, feeding/respiratory difficulties etc. in the newborns.
- The mother and newborn should be discharged only after ensuring that they are free of any morbidities

# Chapter 4
# Post-partum and Post-natal Care

**Introduction**

Research has shown that more than 50% of maternal deaths take place during the postpartum period. Conventionally, the first 42 days (6 weeks) after delivery are taken as the postpartum period.

Of this, it is the first 48 hours, followed by the first one week, which are the most crucial periods for the health and survival of both the mother and her newborn, as most of the fatal and near- fatal maternal and neonatal complications arise during this period.

**Evidence has shown that more than 60% of maternal deaths take place during the post-partum period yet postnatal care (PNC) is the most neglected components.**

## Facility Based Care

### A. First postpartum check-up: Mother

The first postpartum visit should take place within the first 24 hours after delivery. Proper history taking is especially important if you were not present for the delivery. Review the events of labour and birth to identify any risk factor or events during the birth that may be important in the management of the mother and the baby

**ASK**

1. Where did the delivery take place?
2. Who conducted the delivery?
3. Is there a history of:
   a. Any complications during the delivery?
   b. Excessive Bleeding PV following delivery (how many pads or pieces of cloth are getting soaked with blood)
   c. Convulsions or loss of consciousness
4. Has the mother started breastfeeding the baby?
5. Has she started her regular diet?
6. Are there any complaints like :
   a. Pain in the leg
   b. Abdominal pain
   c. Fever
   d. Foul smelling discharge PV
   e. Dribbling or retention of urine
   f. Any breast tenderness, etc.
   g. vomiting
7. Is she passing urine and stools normally?

**SEE**

**Look for**

- Pulse, BP, temperature & respiratory rate
- Pallor
- If uterus is well contracted (hard and round) and to rule out the presence of any uterinetenderness.
- Any foul-smelling lochia, tear, swelling at perineum or pus discharge.
- Excessive bleeding per vaginally
- Lump or tenderness in breasts
- Condition of nipples
- Observe breastfeeding

**SAY (Counsel)**
Counsel regarding :

1. General and Perineal Hygiene of Mother
2. Rooming in of the mother with the baby
3. Diet & rest
4. Resumption of sex
5. Contraception
6. Breast feeding
7. Registration of birth
8. IFA supplementation

- **Counseling for General and Perineal Hygiene of Mother**
  - She should wash the perineum (with or without episiotomy) from front to back daily and after passing urine or stools.
  - The perineal pads must be changed every 4-6 hours or more frequently if there is heavy lochia.
  - She should bathe daily.
  - She should wash her hands before and after handling the baby, especially after cleaning and before feeding the baby.
- **Diet & rest**
  - Inform the woman that during lactation she needs approximately 550 kcal (approx. 25% more) extra in a day during the first 6 months, and then 400 kcal extra during the next 6 months compared to her pre-pregnancy diet.
  - Foods rich in calories, proteins, iron, vitamins and other micronutrients should be advocated.
  - Whatever is cooked at home should be encouraged for lactating women.
  - Non vegetarian diet including eggs, well cooked meat should also be advised
  - Advise her to refrain from observing taboos that exist in the community against nutritionally healthy foods (e.g. the taboo against eating solid food for six days after delivery).
  - Encourage foods that promote lactation as shown in Figure.

Best foods to be included for lactation

- **Counseling for Caring for New born**
  - How to bathe the newborn.
  - Maintain warmth
  - Exclusive breastfeeding.
- **Resumption of sex**

  The couple should be advised to abstain from having sex during the first 6 weeks following delivery or till the perineal/episiotomy wound heals (if present). This is to allow the genitalia and the reproductive organs to involute to their original size. Women have relative hypo- oestrogenaemia during the postpartum period. This will result in lack of vaginal lubrication & a dry vagina will make the act of intercourse painful for the woman.
- **Registration of birth**

  Explain the importance of getting the birth registered with the local Panchayat/municipal body. This is a legal document. The child will require the birth certificate for many purposes in the future e.g. school

admission.

- **IFA supplementation**
  - She should take one IFA tablet daily for three months.
  - If she was anemic before delivery, recheck her Hb level.
  - If Hb< 11 g/dl, then advise her to take two IFA tablets daily for three months & if after one month her Hb level has not improved, refer her to higher center for investigation & management.
  - If Hb< 7g/dl transfuse blood or give parenteral iron sucrose
- **Contraception**
  - Advise the couple on birth spacing or limiting the size of the family.
  - The various choices of contraceptive methods available to the couple must be explained so that they can make an informed choice.
- **Counsel about danger signs of mother**
  - Counsel mother to come to the FRU in case of the following:
  - Excessive bleeding, i.e. soaking more than 1 pad every hour in postnatal period.
  - Convulsions
  - Fever
  - Severe abdominal pain
  - Difficulty in breathing
  - Foul-smelling lochia

### B. Second , Third and Fourth Postpartum Check-Ups: Mother

As mentioned earlier, the second, third and fourth partum check-up should take place on the 3rd, 7th and 14th day respectively, following delivery. This checkup is to be done at home by ASHA/ANM

During each visit, ASHA/ANM must ask same questions about how she is feeling and look forany danger signs. ASHA/ANM At the same time, exclusive breastfeeding, contraception and general counseling about perineal hygiene, diet, rest, supplements must be reinforced.

### C. Fifth Postpartum check-up: Mother

As mentioned earlier, the fifth postpartum check-up should take place at the 6th week of delivery. Special mention should be to know if her vaginal bleeding has stopped, if her menstrual cycle resumed. Rest of it remains same as earlier visits. Motivate for contraception.

## 2. POSTNATAL CHECK-UPS

The number and timing of PNC visits

| Home Visits | Home delivery | Institutional delivery * (woman discharged after 48 hrs) |
|---|---|---|
| 1st | 1st day (within 24 hrs of delivery) | 1st visit* |
| 2nd | 3rd day after delivery | 3rd day after delivery |
| 3rd | 7th day after delivery | 7th day after delivery |
| 4th | 14th day after delivery | 14th day after delivery |
| 5 th | 21st day after delivery | 21st day after delivery |
| 6 th | 28th day after delivery | 28th day after delivery |
| 7 th | 42nd day after delivery | 42nd day after delivery |
| First home visit is to be conducted within 24 hrs of mother and baby reaching home from institution irrespective of day of delivery. In case mother leaves hospital before 48 hrs of delivery, then only 1st visit would be conducted before 3rd day of delivery. | | |

The first 48 hours and the first week following delivery are the most critical in the entire postpartum period. Most of the important complications of the postpartum period 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 and in the 1st week.

If you have been involved in the delivery, make sure that the woman is not discharged before at least 48 hours have elapsed since delivery. Hence, the important complications, which are likely to occur during this period, can be taken care of. In case mandatory stay at facility for first 24 hrs is not possible , home visits to continue as scheduled and the mother to report immediately in case of any complications.

Plan and coordinate facility visit for both mother and newborn within 1st week of delivery, post-discharge to monitor them for any impending complications.

## 3. DISCHARGE OF THE MOTHER AND THE BABY

| Mother | Baby |
|---|---|
| Ensure that the uterus is hard and is not bleeding.<br>• Counsel the mother about:<br>• Diet and rest<br>• Exclusive breastfeeding<br>• Need to take IFA tablets<br>• Family planning<br>• Hygiene to prevent infection of mother and baby<br>• Avoiding sexual intercourse till perineal wound heals<br>• When to return for follow-up | Ensure that the baby is warm, breathing normally, accepting and retaining breast milk, and that the cord is clean.<br>• The baby should receive:<br>• BCG<br>• OPV-0<br>• Hepatitis B-0 vaccinations preferably before discharge from the health facility. A record of these vaccinations should be entered in the baby's card.<br>• Injection Vit K.<br>• Complete immunization of baby |
| Danger signs – return Immediately<br>• Increase in vaginal bleeding<br>• Convulsions<br>• Fast or difficult breathing<br>• If mother has fever and is too weak to get out of bed<br>• Severe abdominal pain<br>• Swollen red or tender breast<br>• Dribbling of urine or inability to pass urine<br>• Pain in the perineum or draining pus<br>• Foul smelling lochia | Danger signs - return immediately<br>• If baby is breastfeeding poorly<br>• If baby develops fever or feels cold to the touch<br>• Has difficulty in breathing<br>• Has blood in the stool<br>• If the palms and soles are yellow<br>• Has convulsions |

**Checklist at discharge (See Annexure ??)**

- Confirm stay at facility for 48 hours
- Does the mother need antibiotics- Yes/ No
  - If the mother has temperature ≥ $38^0$ C, or foul smelling vaginal discharge- give antibiotics and delay discharge
- Is the Blood pressure normal - Yes/ No
  - If the mother has BP ≥ 140/90 mm Hg, and/or feature of severe preeclampsia, start antihypertensive and magsulf if required and delay discharge
- Is the mother bleeding abnormally- Yes/ No
  - If the mother has pulse ≥ 110, or and blood pressure < 90 mm Hg- start IV fluids and delay discharge

- Does the baby need antibiotics- Yes/ No
  - If the baby has respiratory rate > 60/ min or < 30/min or chest indrawing or poor movement on stimulation or temperature < $35^0$ C or temperature ≥ $38^0$ C, or stopped breastfeeding or umbilicus draining pus- give antibiotics and delay discharge and give special care
- Is the baby feeding well- Yes /No
  - If no establish good breast feeding practices and delay discharge
- Discuss contraception
- Schedule next follow up visit

## 4. POSTPARTUM PSYCHOLOGICAL PROBLEMS

Postpartum emotional distress is fairly common after pregnancy and ranges from mild postpartum blues (affecting about 80% of women) to postpartum depression or psychosis. Postpartum psychosis can pose a threat to the life of the mother or baby.

| Symptoms and signs typically present | Symptoms and signs sometimes present | Probable diagnosis | Treatment |
|---|---|---|---|
| Exhaustion, irritability, weepiness, low energy and motivational levels, feelings of helplessness and hopelessness | Obsessional thinking, fear of harming the baby or self, suicidal thoughts | Postpartum depression | Psychological support<br>In severe cases anti depressants to be started |
| Delusions or hallucinations, insomnia, preoccupation with the baby,severe depression, anxiety, impulses | Despair and suicidal or infanticidal thoughts | Postpartum psychosis | Psychological support<br>In severe cases anti psychotics to be started |

### Postpartum Depression

Postpartum depression affects up to 34% women. It typically occurs in early postpartum weeks or months and may persist for a year or more. Depression is not necessarily one of the leading symptoms although it is usually evident. Other symptoms include exhaustion, irritability, weepiness, low energy and motivational levels, feelings of helplessness and hopelessness, loss of libido and appetite and sleep disturbances. Headache, asthma, backache, vaginal discharge and abdominal pain may be reported. Symptoms may include obsessional thinking, fear of harming the baby or self, suicidal thoughts and depersonalization.

The prognosis for postpartum depression is good with early diagnosis and treatment. More than two-thirds of women recover within a year. Providing a companion during labour may prevent postpartum depression.

Trigger Factors for postpartum depression

- Lack of social support
- Sleep deprivation
- Previous history of bipolar disorder or depression
- History of abusive domestic violence
- Fetal demise
- Neonatal complications
- Preeclampsia/eclampsia
- Substance abuse/ alcohol
- Unwanted pregnancy

- Support and management
  - Provide psychological support and practical help (with the baby & home care).

- Listen to woman and provide encouragement and support.
- Assure the woman that the experience is fairly common and that many other women experience the same thing.
- Assist mother to rethink the image of motherhood and assist the couple to think through their respective roles as new parents.
- If depression is severe, consider prescribing antidepressant drugs. Be aware that medication can be passed through breast milk and that breastfeeding should be reassessed.
- Care can be home-based or can be offered through day-care clinics. Local support groups of women who have had similar experiences are most valuable.

## Postpartum Psychosis

- Postpartum psychosis typically occurs around the time of delivery and affects less than 1% of women. The cause is unknown, although about half of the women experiencing psychosis also have a history of mental illness. Postpartum psychosis is characterized by abrupt onset of delusions or hallucinations, insomnia, preoccupation with the baby, severe depression, anxiety, despair and suicidal or infanticidal impulses. Care of the baby can sometimes continue as usual. Prognosis for recovery is excellent but about 50% of women will suffer a relapse with subsequent deliveries.
- Support and management
  - Provide psychological support and practical help (with the baby as well as with home care).
  - Listen to the woman and provide support and encouragement. This is important for avoiding tragic outcomes.
  - Lessen stress.
  - Avoid dealing with emotional issues when the mother is unstable.
  - If antipsychotic drugs are used, be aware that medication can be passed through breastmilk and that breastfeeding should be reassessed.

## Postnatal Care of Neonate

Conventionally, the first 42 days (six weeks) after delivery are considered the post-partum period. The first 48 hours of the post-partum period, followed by the first one week, are the most crucial period for the health and survival both of the mother and her newborn. Most of the fatal and near-fatal maternal and neonatal complications occur during this period.

## Facility based care

### A. FIRST POSTNATAL CHECK-UP: NEONATE

The first check-up is very important and should take place in the post natal ward as part of routine morning rounds and certainly within first 24 hours of delivery.

Postnatal Environment (in the facility) :

- A postnatal room should be kept warm with no draughts from open doors or windows.
- A temperature of 26-28ºC is required to help keep a baby warm. A mother and her baby should be kept together in the same bed right from birth. This helps the mother toget to know her baby and form an early close loving relationship (bonding), she can also respond quickly when her baby wants to feed, which helps establish breastfeeding and reduces breastfeeding difficulties.
- It is important to greet the mother appropriately before starting the examination of thebaby. An important reason for this is to open good communication with the mother. Using good communication helps to reassure the mother that she & her baby will receive good care.

**SEE**

Examine the newborn for

1. Cry and activity
2. Check the baby's colour
3. Check the baby's body temperature
4. Count the respiratory rate for one minute.
5. Look for respiratory distress. (severe chest indrawing, nasal flaring & grunting)
6. Look for jaundice
7. Examine the umbilicus for any bleeding, redness or pus
8. Examine the eyes for discharge
9. Examine for congenital malformations and any birth injury.
10. Weigh the baby if not weighed earlier

**History-taking**

The same questions should be asked during history-taking as during the first postpartum check-up. If any of the problems inquired about is present, refer the baby to the Pediatrician.

**Look for Normal Phenomena**

There are several phenomena after birth that are normal and mothers only need reassurance. These developmental variants may be present and be of concern to the mother.

Normal Phenomenon include:

- **Milia*, epstein pearls*, mongolian spots*,** enlarged breasts, capillary nevi etc. Reassure the mother.
- Transitional stools are the passage of frequent, loose stools, yellowish-green in color between day 3 and day 14 of life. It needs NO treatment.
- Vaginal white discharge/bleeding in female babies is normal
- Red rashes on the skin (erythema toxicum) may be seen on 2nd - 3rd day of life.
- Weight loss of 5-10% (10-15% in preterms) in the first few days of life is normal and most neonates regain their birth weight by 7 (term) -14 (preterm) days.

**Examination**

Observe the baby and record the following:

- Whether he/she is lethargic or not sucking well
- If there is difficulty in breathing (fast or slow breathing and chest indrawing).
- 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 diarrhea with blood in the stool
- If there are convulsions or arching of the baby's body. Refer the baby to the Pediatrician if any of the above is present.

***Milia**- these are small epidermal inclusion cysts rarely exceeding 1 mm frequently seen as sparsely scattered, slightly elevated, firm white papules. On the face they are most common on the forehead and cheeks. They tend to disappear spontaneously in the first week of life.

***Epstein pearls**-When milia are present in mouth, they are referred to as Epstein Pearls.

***Mongolian spots**- They are blue grey pigmentation present at birth mostly on the sacral areas in normal infants. Seen often in dark skinned races.

**Cry and Activity**

1. If the newborn is not alert and/or has a poor cry; is lethargic/unconscious; or if the movements are less than normal, he/she needs to be referred to the Pediatrician
2. A LETHARGIC YOUNG INFANT is not awake & alert, is difficult to waken by stimulation & has movements less than normal. An unconscious infant cannot be wakened at all.

**Respiratory rate**

- Count the respiratory rate for one minute.
- The normal respiratory rate is 40-60 breaths per minute.
- Breathing rate of 60 or more breaths per minute is taken as 'fast breathing' in a neonate.
- If the first count is 60 or more, repeat the count.
- If the second time also the breathing rate is 60 breaths or more, the neonate has 'fast breathing'. Check the Oxygen with Pulse Oximeter to rule out possibility of Pneumonia.

**Respiratory Distress** (**Chest indrawing, nasal flaring & grunting)**

- **Mild chest indrawing** -normal in a neonate because the chest wall is very soft.
- **Severe chest indrawing**- (lower chest wall goes *in* when the infant breathes *in*) is a sign of pneumonia and is serious in a neonate.
- **Nasal flaring** is widening of the nostrils when the neonate breathes in.
- **Grunting** is the soft, short sounds a young infant makes when breathing out, when an infant is having trouble breathing.
- Presence of severe chest indrawing &/or nasal flaring &/or grunt indicate severe respiratory distress. Management will be discussed later.

**Baby's body temperature**

- Temperature can be assessed by recording axillary temperature or feeling the baby. Always use a digital thermometer. Mercury thermometers are no longer used.
- Axillary temperature is recorded by placing the bulb of digital thermometer against the roof of dry axilla parallel to the body and free from moisture. Baby's arm is held close to the body to keep thermometer in place.

**Management of Hypothermia**

| **Grading of Hypothermia** | **Range of temperature** | **Clinical Signs and symptoms in a hypothermic baby** | **As per WHO classification, manage as under :** |
|---|---|---|---|
| Cold stress | 36.4 - 36.0 $^{o}$C (97.5 – 96.8 $^{o}$F) | May be subtle and nonspecific; high index of suspicion for hypothermia especially in LBW and pretermbabies.<br>Commonly hypothermic baby are lethargy, irritability, poor feeding and breathing difficulty (tachypnea/apnea). | • Mild hypothermia (35.5-36.4$^{o}$C)<br>• Provide supervised Kangaroo Mother Care (KMC), skin to skin contact is the best method to keep the baby warm<br>• KMC can be given by any healthy family member, if mother is not able to give. (rule out possibility of any respiratory infection e.g. COVID)<br>• If KMC is not practical, warm the room using radiant heater or other appropriate heating device. Cover adequately and ensure to replace the cold clothes of the baby with warm clothes. Keep the room warm (26 – 28$^{o}$C) and draught free.<br>• Continue breast feeding<br>• Monitor temperature & for danger signs<br>• Monitor axillary temperature every ½ hour till it reaches 36.5 °C, then hourly for next 4 hours,2 hourly for 12 hours thereafter and 3 hourly as a routine. |
| Moderate hypothermia | 35.9 - 32.0 $^{o}$C (96.2 - 89.6 $^{o}$F) | | |

| | | | |
|---|---|---|---|
| Severe hypothermia | < 32 °C (89.6 °F) | | • Significant hypothermia (<35.5 °C)<br>• Remove cold clothes from the baby and replace with warm cotton clothes.<br>• Place under radiant warmer if available with clothes including cap,socks and mitttens.<br>• Monitor temperature every 15-30 minutes.<br>• Stabilize the baby before being transported to higher centre |

The warm and pink feet of the baby indicate that the baby is in thermal comfort. Temperature in newborn can be assessed by following methods

1. Axillary temperature using Digital thermometer is as good as rectal and safer (less risk of injury or infection).
2. Skin temperature: In a baby being nursed under a radiant warmer, a thermistor probe records the baby's temperature.
3. Human touch: When feet are cold and abdomen is warm- the baby is in cold stress but in hypothermia both feet and abdomen are cold to touch.

Most of the babies will regain their temperature. However, if the baby remains hypothermic one hour after supervised KMC, or if danger signs appear at any stage of monitoring the baby, sepsis should be suspected and treated accordingly.

Remember fever or hypothermia can be signs of septicemia, consult the pediatrician. Management of septicemia will be discussed later.

**Examine the umbilicus**

- Umbilical stump should be inspected after 2 to 4 hours of birth. Bleeding may occur at this time due to shrinkage of cord and loosening of the ligature. If knot loose, tie again.
- The cord must be left open without any dressing.
- Do not apply any medication on the cord. The cord usually falls after 4 to 10 days. The stump should be inspected for any discharge or infection and kept clean and dry till complete healing takes place.
- As per-IMNCI if Umbilicus red or draining pus treat as local bacterial infection give :
    - Oral Amoxicillin 50mg/ kg twice a day for 5 days. The mother should dress twice daily after washing hands; Gently wash off pus and crusts with soap and water. Dry the area. Paint with gentian violet 0.5%. Wash hands.
    - Follow up in 2 days

**Examine for skin infection**:

- As per IMNCI If there are pustules manage as local bacterial infection.
- Give oral amoxicillin for 5 days every morning and every night for five days.
- Teach mother to treat local infections at home. Wash hands. Gently wash off pus and crusts with soap and water. Dry the area. Paint with gentian violet 0.5%.
- Follow up in 2 days.

**Check the baby's colour**

- Check for jaundice. It is not normal if appears less than 24 hours after birth.
    - Get Blood group report of mother and baby
    - Start phototherapy
    - Consult the pediatrician
- Check for central cyanosis (blue tongue and lips). This is an abnormality and such cases should be given oxygen. Urgently call the pediatrician

**Examine the eyes for discharge**

Clean eyes from medial to lateral side using separate sterile saline soaked cotton swabs,one for each eye, in case of eye discharge.

**Examine for congenital malformations**

Examine for congenital malformations and any birth injury. If there are any, refer the newborn to the pediatrician.

**Weight of the baby**

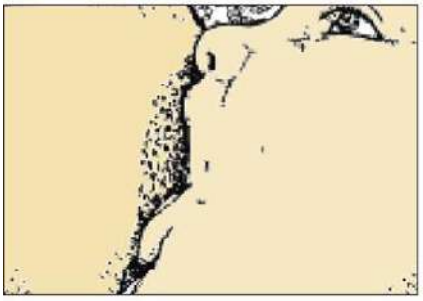
Weigh the baby if not weighed earlier.

## Assess Breastfeeding

Ask the mother if she has already put the infant to the breast. If the mother has already started breastfeeding, praise the mother for starting the breastfeeding in time. If the mother has not yet started breastfeeding, counsel her to put the infant to the breast. Talk to the mother to answer any questions about breastfeeding that she may have.

If infant has not been fed in the previous hour, ask the mother to put her infant to the breast. Observe a breastfeeding session

- Is the infant able to attach? To check attachment, look for:
  - Chin touching breast
  - Mouth wide open
  - Lower lip turned outward
  - More areola above than below the mouth



Good attachment

Poor attachment

- Poor attachment results in the following:
  - It causes 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.
- If not well attached, help the mother to position so that the baby attaches well to the breast. Proper position of the baby while breastfeeding involves:
  - Baby's body is well supported
  - The head, neck and the body of the baby are kept in the same plane
  - Entire body of the baby faces the mother
  - Baby's abdomen touches mother's abdomen
- Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)?
  - If not sucking well, then look for :
    - Ulcers or white patches in the mouth (thrush). If the baby has oral ulcers or thrush, teach the mother to apply 0.25% GV paint locally twice daily .
    - Follow up in 2 days- Review with the mother the changes that the mother has been able to bring about in the child's feeding. If there is still difficulty or pain while feeding, consult Pediatrician then look for white patches in the oral cavity, if present.
    - Other reasons can be - Engorged breasts or breast abscess, Flat or inverted, or sore nipples

**Points to remember about breast Feeding**

- Start breastfeeding as soon as possible after birth especially within ½ hour. Advise her to feed the baby colostrum
- **DO NOT GIVE** prelacteal feeds
- Ask her to breastfeed in a relaxed environment, free from any mental stress. Explain that breast milk is sufficient and the best for the baby. Stress upon exclusive breastfeeding and feeding on demand
- 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. Emphasize that breast milk is enough in quantity to satisfy the baby's hunger and that the baby does not even require water while on breastfeeds even during hot weather
- 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
- If she continues to experience discomfort, she should feed expressed breast milk with aclean 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.

**Breast Milk Expression**

It is useful for all mothers to know how to express and store their milk. Expression of breast milk is required in the following situations:

- To maintain milk production and for feeding the baby who is premature, low birthweight or sick and cannot breast feed for some time.
- Working mothers, who plan to return to work can express the milk in advance and store it for ensuring exclusive breast feeding for their babies.
- To relieve breast problem e.g. engorgement.

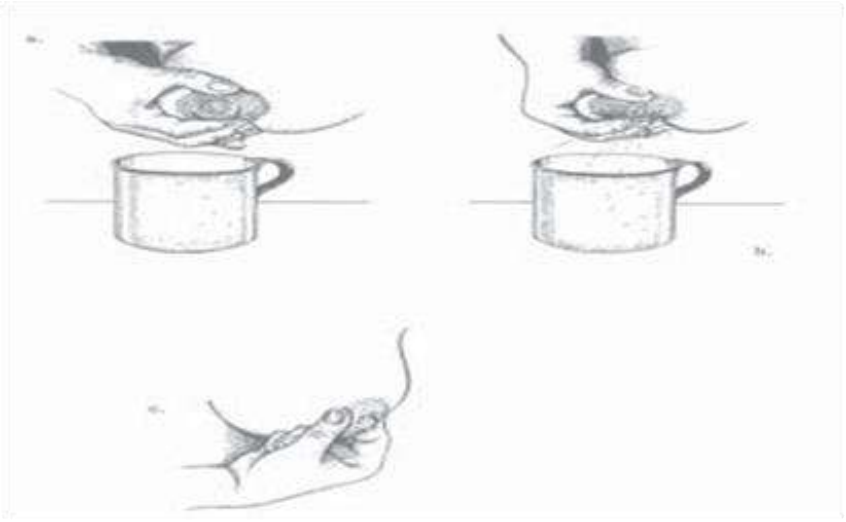
Expressing breast milk into cup:

The mother should:

- Wash her hands.
- Sit or stand comfortably and hold the clean container near her breast.
- Put the thumb on her breast above the nipple and areola and her first finger opposite the thumb below the nipple and areola. Support the breast with other fingers.
- Press the thumb and first finger slightly inwards towards the chest wall.
- Press the breast behind the nipple and areola between the forefingers and thumb. Press the areola in the same way from the sides, to make sure that milk is expressed from all segments of the breast.
- Express one breast for at least 3-5 minutes until the flow slows; then express the other side; and then repeat on both sides.

Technique to express breast milk by hand :

- Place finger & thumb each side of the areola & press inwards towards the chest wall
- Press behind the nipple & areola between your finger & thumb
- Press from the sides to empty all segments



- Wash the container thoroughly with soap and water before collecting milk in it.
- Cover the container of expressed breast milk (EBM) with a clean cloth or a lid.
- EBM can be kept at room temperature for 8 hours, in the refrigerator for 24 hours and in the deep freeze at -20°C for 3 months.
- EBM stays in good condition longer than animal milk because of the protective substances it contains. It is not advisable to boil the EBM. If it needs to be warmed, place the container in a bowl of warm water.
- Gently shake the container to recombine the separated fat globules with the rest of the milk before feeding.

**IMPORTANT : Feed with cup or spoon or paladai, never feed with bottle.**

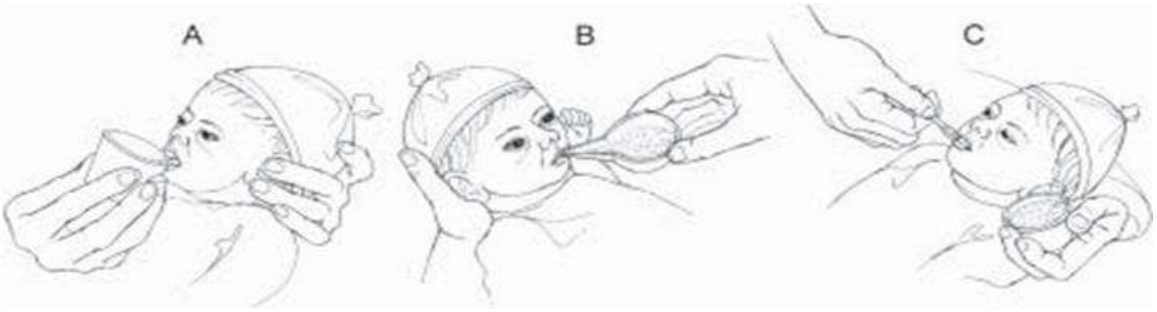
**NOTE :** All mothers who have enough milk production and their babies do not require more, these mothers can donate their milk in milk banks (Comprehensive lactational management center). This milk would be helpful for those babies who are either underweight or unable to suck or whose mother do not have enough milk production.

Cup/spoon feeding with expressed breast milk:

If the baby is not sucking effectively on the breast, the baby may be given expressed breast milk. Counsel mother to shift back to breast feeding as soon as possible. One can use a cup of glass or stainless steel which has rounded edge. One can also use a paladai or spoon.

Ask mother to:

- Measure a quantity of milk into cup/spoon
- Hold the baby in a semi-upright, sitting position on her lap
- Hold the cup of milk/spoon to the baby's lips
    - Touch the edge of cup/spoon to outer parts of upper lip
    - Tilt cup/spoon so that milk reaches the baby's lips
    - Wait for the baby to swallow the milk already in mouth, before giving more
    - Do not pour milk into baby's mouth. It can cause aspiration




Feeding by cup (A), paladai (B), or cup and spoon (C)

## Counselling

Advise the Mother and the Family on Home Care.

Home care advice includes the following:

- To breastfeed the infant frequently, as often and as long as the infant wants, day and night, during sickness and health.
- The best way to maintain temperature or warm a baby with low temperature is by placing the baby in skin to- skin contact with the mother (or any adult).

**When to seek care for Neonate**

Advise the mother to return immediately if the neonate has any of these danger signs:

- Weak/feeble cry
- Difficulty in breathing (severe chest indrawing or Nasal flaring or grunting)
- Fast Breathing ( RR ≥ 60 bpm)
- Not /Breastfeeding well or feeding poorly
- Develops a fever / feels cold to touch
- Convulsions/ Lethargic or unconscious
- Yellow palms and soles ( Jaundice)
- Inability to pass urine and stool/ Blood in stool

**Immunization**

The baby should receive

- BCG
- OPV-0
- Hepatitis B (HB-1).
- Inj Vit K (Give vitamin K1 (phytomenadione) 1 mg IM once for babies weighing more than 1000 gms; and 0.5 mg for those weighing less than 1000 gms.)

## Follow-up Care for Newborn

- Six visits in the case of institutional delivery (Days 3, 7, 14, 21, 28 and 42), and Seven visits in the case of home delivery (Day 1, 3, 7, 14, 21, 28, and 42).
- In cases of Caesarean section delivery, where the mother returns home after 5-6 ays, ASHAs are entitled to full incentive of Rs. 250 if she completes all five visits starting from Day 7 to Day 42.
- Extra home visits for preterm and low birth weight babies by the ASHA or ANM, and referred for appropriate care as defined in the protocols. (As per HBNC GoI Guidelines)
- In the follow up the baby should be assessed for growth, development and early diagnosis & management of illnesses. In addition, health education of parents should be done.

- The number and timing of PNC visits

| Home Visits | Home delivery | Institutional delivery * (woman discharge after 48 hrs) |
|---|---|---|
| 1st | 1st day (within 24 hrs) | 1st visit* |
| 2nd | 3rd day after delivery | 3rd day after delivery |
| 3rd | 7th day after delivery | 7th day after delivery |
| 4th | 14th day after delivery | 14th day after delivery |
| 5 th | 21st day after delivery | 21st day after delivery |
| 6 th | 28th day after delivery | 28th day after delivery |
| 7 th | 6 weeks after delivery | 6 weeks after delivery |
| *First home visit is to be conducted within 24 hrs of mother and baby reaching home from institution irrespective of day | | |

The first 48 hours and the first week following delivery are the most critical in the entire postnatal period. A substantial number of complications can occur during this period, both for the mother as well as for the baby.

## Discharge of the Baby (Anexure ???)

**Precautions to be taken :**

- Ensure that the baby is warm, breathing normally, accepting and retaining breast milk, andthat the cord is clean.
- The baby should receive (BCG, OPV-0, Hepatitis B-0) vaccinations preferably beforedischarge from the health facility.
- A record of these vaccinations should be entered in the baby's card.

**Danger signs - return immediately**

- If baby is breastfeeding poorly
- If baby develops fever or feels cold to the touch
- Has difficulty in breathing/ fast breathing
- Has blood in the stool
- If the palms and soles are yellow
- Has convulsions

**Checklist at discharge ( Postnatal advices for newborn – to mother or care giver)**

- Confirm stay at facility for 48 hours??
- Does the baby need antibiotics- Yes/ No
    - If the baby has respiratory rate >60/ min or <30/min or chest indrawing or has poor movements on stimulation or temperature < 35 $^{o}$C or temperature ≥ 38 $^{o}$C, or has stopped breastfeeding or give antibiotics, delay discharge and give special care
- Is the baby feeding well- Yes /No
    - If good breast feeding practices are not established, delay discharge
- Schedule next follow up visit.

## Postnatal advice

- Always keep the baby warm
- Well covered in 2 layers in summer and 3 layers in winter with cap and socks in a warm room
- Additional care for low birth weight babies – Provide skin-to-skin contact or close to mother with additional layers of cloth

- About danger signs
- BREAST FEEDING
  - Continue breast feeding for 6 months
  - Breast milk is all your baby needs
  - Breast feed as often as baby wants – at least 8 times in 24 hours
  - Recognize signs of hunger such as beginning to fuss, sucking fingers or moving lips. Frequent feeding produces more milk
  - Additional care for low birth weight babies - Breastfeed at least every 2 – 3 hours,during the day and night. Wake the baby after 3 hours, if the baby does not wake self
  - DO NOT discard Colostrum coming for initial few days
  - DO NOT give other fluids or food

HYGIENE AND CORD CARE

  - Always wash hands with soap and water - after defecation, after cleaning bottom of the baby and after coming home from outside
  - After bathing the baby, properly dry the head, face, skin flexures, cord and napkin area with a soft cloth
  - Additional care for low birth weight babies - Delay bathing the baby for initial few days after birth. If required, quickly wipe and dry the baby (in a pre-warmed room)
  - DO NOT apply anything on the cord, it must be kept dry
- IMMUNIZATION
  - First dose of BCG, OPV – 0 and Hepatitis B before discharge from hospital
  - Get it recorded in MCP card
  - Schedule next date for immunization

**LBW babies (also follow the guidelines of Home based neonatal care)**

- Definition - weight < 2500 gm
- Over 30 % neonate born are LBW
- Nearly 75% neonatal deaths and 50%infant deaths occur among LBW
- More prone to malnutrition, recurrent infections and neuro-development handicaps
- **Problems of LBW babies**
  - Perinatal Asphyxia
  - Hypothermia
  - Inability to Breast Feed
  - Respiratory Distress Syndrome
  - Apneic Spells
  - Intra-Ventricular Hemorrhage
  - Metabolic Problems like Hypoglycemia
  - Infection, Hyperbilirubinemia
  - Retinopathy of Prematurity
- **LBW babies can be discharged when:**
  - Gaining weight for 3 consecutive days on breast feeding
  - No signs of illness
  - Able to maintain normal body temperature when roomed-in with mother
  - Mother confident of taking care of baby
- **Nutritional supplements**

- All LBW 1500-2499 grams : Receive Vitamin D @ 400 IU/day and Iron supplements @ 2-3 mg/kg/day (started at 4 weeks of age) to be continued till 1 year of age
- All VLBW <1500 grams: Receive oral vitamins and mineral supplement as follows:
  - Vitamin D drops 400-800 IU per day till 12 months of age
  - Multivitamin preparation 0.3-0.6 ml /day (5-10 drops)- given till 40 weeks PMA
  - Calcium (@ 80-100 mg/kg/day) and Phosphorous (@ 40-50 mg/kg/day) given till 40 weeks PMA
  - Iron started at 2-3 mg/kg/day at 2-4 weeks of age and provided till 12 months

- **Counseling at Discharge**
  - Providing exclusive breast milk to baby
  - How to keep baby warm at home
  - Identifying 'Danger signs" for seeking medical help
  - Scheduled visits for assessing growth, monitoring illness and providing immunization. Visits should be at weekly intervals till infant reaches 2.5kg
  - Mother informed about her nutrition and health

## B. SECOND, THIRD AND FOURTH POSTPARTUM CHECK-UPS: NEONATE

If patients are not able to come to facility for visit, schedule home visit by ASHA or ANM (refer to Home based neonatal care)

**Counseling**

In addition to the lines along which counseling was provided during the first check-up,counsel the mother on the following:

- Hygiene of the baby: While bathing the baby, special attention should be paid to the head, face, skin flexures, cord and napkin area. These should be dried properly with a soft cloth.
- Inform the mother when to seek help and where to go in case the baby shows any signs of illness.
- Immunization: If baby has not received immunization at birth the baby should be immunized as per the first check-up schedule. Thereafter the schedule of Universal Immunization Programme should be followed.

**SKILL**

**A. MANAGEMENT OF SICK NEWBORN**

Monitoring the signs of sick newborn: Checklist for monitoring of sick newborn

| **(Mnemonic for monitoring: T,A,B,C,F,M,F,M,C,F** | | | | |
|---|---|---|---|---|
| **S. No** | **Checklist** | **Assessment** | **Action/ Management** | **When to refer** |
| 1 | Temperature | Cold Stress | Re-warm by KMC | |
| | | Hypothermia (Moderate/Severe) | Re-warming under radiant warmer | |
| | | Fever (temperature ≥ 37.5°C) | Removal of excessclothing, change environment, Sepsis screening | |
| 2 | Airway | Obstructed | Open the airway (position & suction) | |

| | | | | |
|---|---|---|---|---|
| 3 | Breathing | Apnea/ Gasping | PPV with Bag & Mask | |
| | | Respiratory Distress | Oxygen | |
| 4 | Circulation | Shock | • Give 10 ml/kg Normalsaline/ RL over 30 min<br>• Oxygen | |
| 5 | Fluids | No Shock | Maintenance Fluid | |
| 6 | Medication & Other Management | Suspected sepsis, Jaundice | Antibiotics, Phototherapy | |
| 7 | Feeding | As per weight & age guidelines | | |
| 8 | Monitor | Temperature, Respiration, Color, Heart Rate, CRT, Danger Signs | | |
| 9 | Communication | | For Home Care<br>• Exclusive Breastfeeding<br>• Maintain Temperature<br>• Cord & Eye Care<br>• Danger Signs<br>• Maternal Death<br>• For care during referral | |
| 10 | Follow-up | | • 2 weekly for initial 2- 3 visits, every month thereafter<br>• Check weight, feeding, problems<br>• Immunization | |

**1. SEPTICEMIA**

a. Diagnosis of septicemia

Bacterial sepsis in a young infant is usually suspected by the presence of one or more of the following signs:

- Unable to feed
- Convulsions
- Fast breathing (60 breaths per minute or more)
- Severe chest in drawing
- Nasal flaring
- Grunting
- Bulging fontanelle
- Axillary temperature 37.5ºC or above (or feels hot to touch) or temperature less than 35.5ºC (or feels cold to touch)
- Lethargic or unconsciousness,
- Less than normal movements

b. Treatment of Septicemia

- Admit in hospital. (Refer to SNCU/NICU at higher center.)
- Consult the Neonatologist/Pediatrician
- Where blood cultures are available, take blood for culture & start antibiotics.
- Provide supportive care for the sick neonate as described below.
- Start antibiotics. Give Injection Ampicillin and Gentamicin. Refer to Table for dose, duration and

frequency.

- Most bacterial infections in neonates should be treated with antibiotics for at least 7-10 days except meningitis, Arthritis, deep abscesses and staphylococcal infections, which would require 2-3 weeks of therapy.
- If not improving in 2–3 days of the antibiotic treatment, consult Pediatrician.

c. Antibiotic Therapy of Sepsis

| Antibiotic | Each Dose | Frequency | | Route | Duration |
|---|---|---|---|---|---|
| | (mg/kg/dose) | < 7 days age | ≥ 7 days age | | (Days) |
| Inj. Ampicillin or | 50 | 12 hrly | 8 hrly | IV/IM | 7-10 |
| Inj. Cloxacillin | 50 | 12 hrly | 8 hrly | IV | 7-10 |
| AND | | | | | |
| Inj. Gentamicin or | 5 | 24 hrly | 24 hrly | IV/IM | 7-10 |
| Inj. Amikacin | 15 | 24 hrly | 24 hrly | IV/IM | 7-10 |

d. Supportive care of neonate

- Provide warmth, ensure consistently normal temperature
- Provide bag and mask ventilation with oxygen if breathing is inadequate.
- Start oxygen by hood or mask, if cyanosed or grunting.
- Provide gentle physical stimulation, if apneic.
- Start intravenous line.
- Infuse glucose (10 percent) 2ml/kg stat if Blood sugar < 45mg/dl.
- If perfusion is poor as evidenced by capillary refill time (CRT) of more than 3 seconds, manage shock.
- Inject Vitamin K1 1mg intramuscularly.
- Avoid enteral feed if very sick, give maintenance fluids intravenously

## 2. NEONATAL JAUNDICE

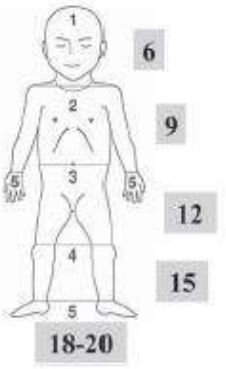
More than 50% of normal newborns and 80% of preterm infants have some jaundice. Jaundice can be physiological or pathological. If newborn is jaundiced, the progression of skin staining is from head to toe and the level of bilirubin can be clinically assessed by extent of skin staining (Fig). Kramer's criteria are used to clinically estimate severity of jaundice. Depending on the part of the body involved, bilirubin levels can be estimated, for example if forehead and face is involved bilirubin levels would be 5-6 mg%. The box below gives a clinical guide to severityof jaundice.

| **Jaundice Restricted to** | |
|---|---|
| Face & Trunk | S.bili < 12 mg% |
| On Hand & Feet | S.bili > 15 mg% |

a. Assessment of Jaundice Clinically

- Classical pattern of physiological jaundice: (All of the following)
  - Jaundice that first appears between 24-72 hours of age
  - Maximum intensity is seen on 4-5$^{th}$ day in term and 7$^{th}$ day in preterm neonates
  - Does not exceed 15 mg/dl
  - Clinically undetectable after 14 days
  - No treatment is required but baby should be observed closely for signs of worsening jaundice.
- Pattern of Pathological Jaundice
  - Onset of jaundice is within 24 hrs of life
  - Clinical assessment: Jaundice beyond abdomen
  - Exceed 15 mg/dl
  - Baby is more than 14 days of age

  If any one of the above is 'yes' then do the following investigations:
  - Serum bilirubin (total/direct)
  - Hemoglobin/hematocrit
  - Blood groups of baby and mother (other investigations that may be required in some babies with suggestive history and relevant examination findings include sepsis screen, thyroid function test, LFTs, Ultrasonography of abdomen etc.)




Categorization according to Kramer's criteria

b. Treatment of Jaundice

- Treatment of pathological jaundice is usually phototherapy or an exchange transfusion.
- Call or refer to pediatrician.

### 3. STEPS FOR TRANSFER AND REFERRAL OF THE BABY

If the baby needs to be transferred to Special Newborn Care Unit (SNCU) of your hospital or to a tertiary health facility, 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.

- Preparation :
  - Explain to the family the reason for transferring the baby.
  - Encourage 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.
- Communication
  - Fill up a referral slip 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 the baby.
  - 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.
- Assess the baby's breathing. In case baby develops apnea i.e. stops breathing, give gentle tactile stimulation by rubbing the back of the baby (twice).

**4. SKIN TO SKIN CONTACT (KANGAROO MOTHER CARE)**

- Provide privacy to the mother.
- Request the mother to sit or recline comfortably.
- Undress the baby gently, except for cap, nappy and socks.
- Place the baby prone on mother's chest in an upright and extended posture, between her breasts, in skin to skin contact; turn baby's head to one side to keep airways clear
- Cover the baby with mother's blouse, 'pallu' or gown; wrap the baby-mother duo with an added blanket or shawl.
- Breastfeed the baby frequently.
- If possible, warm the room with a heating device.
- If mother is not available, skin to skin contact may be provided by the father or any other adult.

▪ When skin to skin contact not possible:

- Keep the room warm with a home heating device
- Clothe the baby in 1-2 layers (Summer)
- Clothe the baby in 3-4 layers (Winter) and cover the head, hands and feet with cap, gloves and socks respectively
- Let the baby and mother lie together on soft, thick bedding
- Cover the baby and the mother with additional quilt, blanketor shawl in cold weather

▪ Hygiene and cord care:

- She should maintain hygiene while handling the baby. Advise mother to wash hands with soap and water, after defecation and after cleaning the bottom of the baby
- She should delay the baby's first bath to beyond 24 hours after birth.
- She should not apply anything on the cord, and must keep the umbilicus and cord dry.

▪ Danger Signs:

- Teach the mother when to return immediately. The signs mentioned below are particularly important signs to watch for. Teach the mother these signs. Use local terms that the mother can understand. Ask her checking questions to be sure she knows when to return immediately.

- If baby is breastfeeding poorly
- If baby develops fever or feels cold to the touch
- Has difficulty in breathing
- Has blood in the stool
- If the palms and soles are yellow
- Has convulsions

## CHECKLIST FOR POSTPARTUM ASSESSMENT

(To be used by the Participants/ Trainers)

Note: Participants should use this learning guide in conjunction with the Learning Guide for Basic Postpartum Care.

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

**LEARNING GUIDE FOR POSTPARTUM ASSESSMENT**
**(Many of the following steps/tasks should be performed simultaneously.)**

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| **GETTING READY** | | | | | |
| **1.** Prepare the client exam area and necessary equipment. | | | | | |
| **2.** Greet the woman respectfully and with kindness and introduce yourself. | | | | | |
| **3.** Offer the woman a seat. | | | | | |
| **4.** Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| **5.** Make sure that Quick Check has been performed to identify any danger signs (heavy vaginal bleeding, severe headache/blurred vision, convulsions/loss of consciousness, difficulty breathing, fever, severe abdominal pain, foul-smelling discharge, signs of depression/hallucinations).<br>If not done, perform immediately. If danger signs are present, stabilize and manage or refer as appropriate. | | | | | |
| **HISTORY** | | | | | |
| **1.** Check the woman's record or ask for the following information and record her responses:<br>• Name<br>• Age<br>• Reason for visit<br>• Contact information<br>• Financial and transportation situation<br>• Parity<br>• Number of living children | | | | | |
| **2.** Ask the woman about her daily habits and lifestyle:<br>• Workload<br>• Diet<br>• Harmful substances<br>• Household support/composition<br>• Potential gender violence | | | | | |

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| **3.** Check the woman's record or ask her about her childbirth and record her responses:<br>• Date of baby's birth<br>• Place of birth and birth attendant<br>• Mode of childbirth (SVD, cesarean section, instrumental assistance)<br>• Pregnancy complications (pre-eclampsia, convulsions, anemia, infection, syphilis, malaria)<br>• Complications during or after birth (fever, heavy bleeding, convulsions, lacerations)<br>• Condition of the baby at birth | | | | | |
| **4.** Ask the woman about current postpartum period:<br>• Pain, swelling or discharge from perineum<br>• Bleeding/lochia<br>• Breastfeeding (frequency, day-and-night, attachment and sucking, baby's satisfaction, problems)<br>• Problems with passing or holding urine or stool<br>• Neonatal complications<br>• Thoughts and feelings about the baby<br>• Other problems | | | | | |
| **5.** Ask the woman about her previous postpartum experiences:<br>• Previous breastfeeding experience<br>• Previous physical or mental problems | | | | | |
| **6.** Ask the woman about her medical history:<br>• HIV status<br>• Anemia<br>• Chronic conditions such as tuberculosis, hepatitis B, diabetes<br>• Drugs/medications she is using<br>• Tetanus toxoid immunization | | | | | |
| **7.** Check the woman's record or ask her about (according to local prevalence/protocols):<br>• Iron-folate<br>• Vitamin A<br>• Malaria prophylaxis<br>• Mebendazole | | | | | |
| **8.** Ask the woman aboutfamily planning and record her responses:<br>• Desire for more children<br>• Methods used<br>• Method preference | | | | | |
| **9.** Ask the woman aboutsocial support and record her responses:<br>• Main support persons (e.g., husband, mother, mother-in-law)<br>• Availability of money for food and baby supplies | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| PHYSICAL EXAMINATION | | | | | |
| **1.** Observe general appearance (gait, facial expression, hygiene, skin). | | | | | |
| **2.** Help the woman onto the examination table and place a pillow under her head and upper shoulders. | | | | | |
| **3.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean cloth or air dry. | | | | | |
| **4.** Explain each step of the physical examination as you proceed and encourage the woman to ask questions. | | | | | |
| **5.** Take the woman's temperature, pulse and blood pressure and record findings. | | | | | |
| **6.** Check the woman's conjunctiva for pallor. | | | | | |
| **7.** Examine breasts:<br>• Engorgement<br>• Cracked nipples<br>• Local tenderness, redness or swelling | | | | | |
| **8.** Examine abdomen:<br>• Fresh scars<br>• Firmness and size of uterus<br>• Tenderness (lower abdomen) | | | | | |
| **9.** Examine legs:<br>• Localized pain or tenderness<br>• Hot spots<br>• Pain in calf when foot is forcibly dorsiflexed (Homan's sign) | | | | | |
| **10.** Put new examination or high-level disinfected gloves on both hands. | | | | | |
| **11.** Examine perineum and genitalia:<br>• Tears/ lesions<br>• Swelling<br>• Pus | | | | | |
| **12.** Observe lochia:<br>• Color<br>• Odor<br>• Amount | | | | | |
| **13.** Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out.<br>• If disposing of gloves, place them in a leakproof container or plastic bag.<br>• If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **14.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry. | | | | | |
| MOTHER-NEWBORN OBSERVATIONS | | | | | |
| **1.** Observe interaction/bonding. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **2.** | Observe breastfeeding (position, attachment, finishing feed, satisfaction). | | | | | |
| POST PHYSICAL EXAMINATION TASKS | | | | | | |
| **1.** | Ask the woman if she has any additional questions. | | | | | |
| **2.** | Help the woman off the examination table and offer her a seat. | | | | | |
| **3.** | Record all relevant findings from the physical examination on the woman's record. | | | | | |
| SCREENING PROCEDURES | | | | | | |
| **1.** | Do a hemoglobin test, if clinical signs of anemia. | | | | | |
| **2.** | Do a RPR test (syphilis screening), if not done during pregnancy. | | | | | |
| **3.** | Do HIV screening, if the woman agrees. | | | | | |

Rating by Trainer
Satisfactory ☐
Unsatisfactory ☐
Not Observed ☐

## CHECKLIST FOR BASIC POSTPARTUM CARE

(To be used by the Participants/ Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR BASIC POSTPARTUM CARE

(Many of the following steps/tasks should be performed simultaneously.)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| GETTING READY | | | | | |
| **1.** Prepare the client care area and necessary equipment. | | | | | |
| **2.** Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| IDENTIFYING PROBLEMS/NEEDS | | | | | |
| Note: Problem identification should be based on the findings of the postpartum history, physical examination and screening procedures. Individual problems/needs will vary from client to client, however, the following interventions form the basic package of postpartum care that should be made available to all women. | | | | | |
| PROVIDING CARE/TAKING ACTION | | | | | |
| Care for Mother | | | | | |
| **1.** Provide HIV voluntary counseling and testing:<br>• Pre-test counseling<br>• Post-test counseling | | | | | |
| **2.** Provide breastfeeding and breast care counsel and support:<br>• Importance of breastfeeding<br>• Techniques for successful breastfeeding<br>• Caring for breasts | | | | | |
| **3.** Provide nutritional counsel and support:<br>• Dietary counsel<br>• Iron-folate<br>• Vitamin A | | | | | |
| **3.** Counsel on prevention of infection:<br>• Genital hygiene<br>• Hand hygiene<br>• Malaria and hookworm | | | | | |
| **4.** Counsel on rest and sleep. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **5.** Facilitate complication readiness planning:<br>• Recognition of danger signs: heavy vaginal bleeding, severe/persistent headache or blurred vision, convulsions, foul-smelling vaginal discharge, fever, severe abdominal pain, difficulty breathing, signs of depression/hallucinations.<br>• Planning response to danger signs. | | | | | |
| **6.** Counsel on mother-newborn and family relationships. | | | | | |
| **7.** Counsel on sexual relations and safer sex. | | | | | |
| **8.** Counsel on family planning. | | | | | |
| **9.** Counsel on newborn care. | | | | | |
| **10.** Provide immunizations and preventive therapy:<br>• Tetanus toxoid<br>• Iron-folate<br>• Malaria prophylaxis (use of ITNs for self and baby according to local prevalence)<br>• Mebendazole (according to local policy)<br>• Vitamin A (according to local policy) | | | | | |
| **11.** Treat syphilis if RPR positive and untreated during pregnancy. | | | | | |
| Care for Baby | | | | | |
| **12.** Provide breastfeeding counsel and support (can be provided while mother is breastfeeding baby during breastfeeding observation if possible).<br>• Provide guidance as needed about attachment, positioning, effective sucking, finishing the breastfeed.<br>• Encourage exclusive feeding on-demand.<br>• Answer questions and respond to concerns. | | | | | |
| **14.** Provide counseling about warmth:<br>• Dressing and wrapping the baby<br>• Keeping the room warm | | | | | |
| **15.** Provide counseling about hygiene:<br>• Handwashing<br>• Bathing<br>• Cord care | | | | | |
| **16.** Facilitate complication readiness planning:<br>• Provide counseling about recognition of danger signs (breathing difficulties, blue color, floppy, not feeding, convulsions, pus or blood from cord, pus from eyes, convulsions, spasms, loss of consciousness, hotness/fever, coldness, bleeding, yellowness/jaundice, diarrhea, continuous vomiting).<br>• Planning response to danger signs | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **17.** Counsel additionally concerning:<br>• Importance of immunizations<br>• Prevention of malaria (according to local prevalence/protocols)<br>• Sleep and other behaviors<br>• Feeding and elimination | | | | | |
| **18.** Provide newborn immunization, if not already immunized. | | | | | |
| **19.** Record the relevant details of care for mother and baby. | | | | | |
| **20.** Ask the mother if she has any further questions or concerns. | | | | | |
| **21.** Thank the mother for coming and tell her when she should come for her next postpartum visit, if necessary. | | | | | |

Rating by Trainer

Satisfactory ☐

Unsatisfactory ☐

Not Observed ☐

## CHECKLIST FOR POSTPARTUM FAMILY PLANNING

(To be used by the Participants/ Trainers)

Note: Participants should use this learning guide in conjunction with the Learning Guide for Basic Postpartum Care.

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

| LEARNING GUIDE FOR POSTPARTUM FAMILY PLANNING<br>(Many of the following steps/tasks should be performed simultaneously.) | | | | | | |
|---|---|---|---|---|---|---|
| STEP/TASK | CASES | | | | | |
| GETTING READY | | | | | | |
| **1.** Prepare the client care area and necessary equipment. | | | | | | |
| **2.** Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | | |
| PROVIDING CARE/TAKING ACTION - BREASTFEEDING WOMEN | | | | | | |
| **1.** Ask how long the woman plans to breastfeed. | | | | | | |
| **2.** Ask how frequently the baby feeds during the day and during the night. | | | | | | |
| **3.** Explain that women who are breastfeeding exclusively do not need contraception for at least 6 weeks postpartum, and if using lactational amenorrhea method (LAM) not for up to 6 months. | | | | | | |
| **4.** Explain how LAM works. | | | | | | |
| **5.** Explain the possible problems related to LAM. | | | | | | |
| **6.** If the woman is breastfeeding but wants to use a contraceptive method other than LAM, provide information about:<br>• The contraceptive choices available and the potential effect of some contraceptives on breastfeeding and the health of the baby<br>• The time for starting each method with respect to breastfeeding status | | | | | | |
| **7.** Make sure that the woman does not have a medical condition that would contraindicate use of a particular method | | | | | | |
| **8.** Help the woman choose an appropriate method if she does not want to use LAM. | | | | | | |
| **9.** Provide method of choice and instructions for use. (Assumes that the healthcare provider has the skills needed to do this.) | | | | | | |
| **10.** Ask the woman to repeat instructions. | | | | | | |
| **11.** Discuss what to do if the woman experiences side effects or problems with the method of choice. | | | | | | |
| **12.** Provide followup visit instructions, including assurance that the woman can return to the clinic at any time to receive advice and medical attention. | | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **13.** Answer any questions that the woman has. | | | | | |
| PROVIDING CARE/TAKING ACTION - NON-BREASTFEEDING WOMEN | | | | | |
| **1.** If the woman is not breastfeeding, explain that her menstrual cycles will probably resume within 4–6 weeks after the birth. | | | | | |
| **2.** Explain that to avoid all risk of pregnancy, contraception should be started at the time of (barriers, spermicides, withdrawal) or before (hormonals, IUD or voluntary sterilization) the first sexual intercourse. | | | | | |
| **3.** Explain the recommended time for the non-breastfeeding woman to start the various available methods. | | | | | |
| **4.** Explain the potential side effects of the available methods and make sure that each is understood. | | | | | |
| **5.** Make sure that the woman does not have a medical condition that would contraindicate use of a particular method. | | | | | |
| **6.** Help the woman to choose an appropriate method. | | | | | |
| **7.** Provide method of choice and instructions for use. (Assumes that the healthcare provider has the skills needed to do this.) | | | | | |
| **8.** Ask the woman to repeat instructions. | | | | | |
| **9.** Discuss what to do if the woman experiences side effects or problems with the method of choice. | | | | | |
| **10.** Provide followup visit instructions, including assurance that the woman can return to the clinic at any time to receive advice and medical attention. | | | | | |
| **11.** Answer any questions that the woman has. | | | | | |

Rating by Trainer

Satisfactory ☐

Unsatisfactory ☐

Not Observed ☐

## CHECKLIST AT DISCHARGE

(To be used by Participants / Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted (write 'N' if applicable)
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently (write 'C' if applicable)
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary) (write 'P' if applicable)

**LEARNING GUIDE AT DISCHAGRE**

(Many of the following steps/tasks should be performed simultaneously)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| 1. Cofirm stay at facility for 48 hours. | | | | | |
| 2. Does the mother need antibiotics- Yes/ No<br>○ If the mother has temperature≥38 C, or foul smelling vaginal discharge- give antibiotics and delay discharge. | | | | | |
| 3. Is the Blood pressure normal - Yes/ No<br>○ If the mother has BP≥140/90 mm Hg, and/or feature of severe preeclampsia, start antihypertensive and magsulf if required and delay discharge. | | | | | |
| 4. Is the mother bleeding abnormally- Yes/ No<br>○ If the mother has pulse≥110, or and blood pressure <90 mm Hg- start IV fluids and delay discharge. | | | | | |
| 5. Does the baby need antibiotics- Yes/ No<br>○ If the baby has respiratory rate >60/ min or <30/min or chest indrawingor poor movement on stimulation or temperature< 35C or temperature≥38 C, or stopped breastfeeding or umbilicus draining pus- give antibiotics and delay discharge and give special care. | | | | | |
| 6. Is the baby feeding well- Yes /No<br>○ If no establish good breast feeding practices and delay discharge. | | | | | |
| 7. Discuss contraception.<br>8. Schedule next follow up visit. | | | | | |

Rating by Trainer

Satisfactory ☐

Unsatisfactory ☐

Not Observed ☐

## CHECKLIST FOR BREAST FEEDING COUNSELING

(To be used by Participants / Trainers)

Rate the performance of each step or task observed using the following rating scale:

4. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted (write 'N' if applicable)
5. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently (write 'C' if applicable)
6. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary) (write 'P' if applicable)

**LEARNING GUIDE FOR BREAST FEEDING COUNSELING**

(Many of the following steps/tasks should be performed simultaneously)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| 1. Greets woman, introduces self & establishes rapport. | | | | | |
| 2. Asks woman what she knows about advantages of breastfeeding & what she feels about it. | | | | | |
| 3. Explains advantages of early & exclusive breastfeeding including perfect nutrition, protection of baby from infection, better mother baby bonding, better health & weight loss of mother. | | | | | |
| 4. Advises woman to start breastfeeding within 1 hour of delivery & not to give any prelacteal feeds. | | | | | |
| 5. Counsels her to give exclusive breastfeeding for 6 months | | | | | |
| 6. Counsels to start complementary feeding at 6 months but to continue breastfeeding for 2 years | | | | | |
| 7. Counsels woman that success of breastfeeding depends on her perception. So boosts confidence of woman. | | | | | |
| 8. Explains to woman about good attachment<br>– Mouth wide open<br>– Lower lip turned outwards<br>– Tongue cupped around breast<br>– Cheeks round<br>– More areola above baby's mouth<br>– Slow deep sucks, bursts with pauses<br>– Can see or hear swallowing | | | | | |
| 9. Tells her to face the baby during breastfeeding & not to do or think of anything other than the baby during breastfeeding<br>– The baby's head and body should be in a straight line.<br>– His face should face the breast, with his nose opposite the nipple.<br>– His mother should hold his body close to hers.<br>– If her baby is newborn, she should support his bottom, and not just his head and shoulders. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 10. Show her how to support her breast:<br>– With her fingers against her chest wall below her breast<br>– With her first finger supporting the breast<br>– With her thumb above.<br>– Her fingers should not be too near the nipple | | | | | |
| 11. Explain or show her how to help the baby to attach:<br>– touch her baby's lips with her nipple;<br>– wait until her baby's mouth is opening wide;<br>– move her baby quickly onto her breast, aiming his lower lip below the nipple.<br>– Notice how she responds and ask her how her baby's suckling feels.<br>– Look for signs of good attachment. | | | | | |
| 12. Advises her to breastfeed frequently and completely | | | | | |
| 13. Asks for any concerns & addresses them | | | | | |
| 14. Thanks the woman & encourages gher to return in case of any problem | | | | | |

Rating by Trainer

Satisfactory ☐

Unsatisfactory ☐

Not Observed ☐

## CHECKLIST : KANGAROO MOTHER CARE (KMC)

.

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| **A** | **Demonstrate how you would perform kangaroo mother care (give participant clothed baby)** | | | | | | |
| 1. | Explain the procedure to the mother | 1 | | | | | |
| 2. | Ensure privacy for the mother | 1 | | | | | |
| 3. | Ensure the mother is sitting or reclining comfortably | 1 | | | | | |
| 4. | Gently undress the baby except for cap, nappy and socks | 1 | | | | | |
| 5. | Place<br>a) baby prone on the mother's chest in an upright position<br>b) Between her breasts, skin to skin<br>c) In a frog-like position (arms and legs flexed)<br>d) Turn baby's head to one side so airway is open<br>e) Support baby's bottom using appropriate sling or binder<br>f) Cover mother and baby with blanket or shawl | 6 | | | | | |
| **6** | Ensure baby is breastfed once every two-hours | 2 | | | | | |
| **B** | **What should the ideal room temperature be?** | | | | | | |
| 6. | 26-28°C | 1 | | | | | |
| **C** | **What are the two key components of KMC?** | | | | | | |
| 7. | Skin-to-skin contact | 1 | | | | | |
| 8. | Exclusive breastfeeding | 1 | | | | | |
| **D** | **What are the benefits of KMC?** | | | | | | |
| 9. | Reduces risk of hypothermia | 1 | | | | | |
| 10. | Promotes lactation | 1 | | | | | |
| 11. | Promotes weight gain | 1 | | | | | |
| 12. | Reduces infections | 1 | | | | | |
| 13. | Improves bonding between mother and new-born | 1 | | | | | |
| | **Total Score** | **20** | | | | | |

# Chapter 5
# Management of Complications During Pregnancy, Labor, Delivery and Postpartum Period

It is important to identify and manage complications during pregnancy, labor, delivery and postpartum period before referral.

## Complications

| Pregnancy | Labor & Delivery | Postpartum period |
|---|---|---|
| ▪ Hyperemesis<br>▪ Fever<br>▪ HIV<br>▪ Anaemia<br>▪ Gestational Diabetes<br>▪ Vaginal bleeding (early pregnancy)<br>- Abortion<br>- Ectopic Pregnancy<br>- Molar Pregnancy<br>▪ Vaginal bleeding (late pregnancy)<br>- Placenta praevia<br>- Abruptio placentae<br>- Uterine rupture<br>▪ Hypertensive Disorders<br>▪ Eclampsia<br>▪ Preterm labor<br>▪ PROM<br>▪ Chorioamnionitis | ▪ Fetal distress<br>▪ Cord prolapse<br>▪ Prolonged / Obstructed labor<br>▪ Postpartum hemorrhage<br>- Atonic PPH<br>- Retained placenta<br>- Traumatic PPH<br>▪ Inversion of uterus | ▪ Puerperal pyrexia and puerperal sepsis<br>▪ Secondary Postpartum hemorrhage<br>▪ Breast conditions<br>- Breast engorgement<br>- Mastitis<br>- Breast Abscess |

## COMPLICATIONS IN PREGNANCY

### Hyperemesis Gravidarum

- It is excessive nausea and vomiting and inability of the woman to retain anything taken orally, resulting in metabolic acidosis.
- It is more commonly seen in primigravida, in women with multiple pregnancy and in the presence of a hydatidiform mole.
- History to exclude other causes: – abdominal pain – urinary symptoms – infection –drug history – chronic Helicobacter pylori infection.

**You may find the following signs:**

- Dehydration (dry tongue, loss of skin turgor, oliguria in severe cases)
- Tachycardia may be present
- Ketonuria may be present

### Diagnosis

- Hyperemesis gravidarum can be diagnosed when there is protracted nausea and vomiting withthe triad of > 5%weight loss, dehydration, and electrolyte imbalance.

- It can also be seen in patient with preexisting hepatobiliary disease, Jaundice, Meningitis, Diabetic coma, Uraemic coma, Peritonitis, Worm Infestation due to untreated septicabortion.

**Investigations:**

- By ANM- Urine Dipstick, Blood sugar, Haemoglobin
- At FRU/DH - Full blood counts, blood sugar, renal function test, electrolytes, USG to rule out multiple pregnancy & Hydatidiform mole.
- In refractory cases or history of previous admissions, check: – Thyroid function test (TFT): hypothyroid/hyperthyroid – LFTs: exclude other liver disease such as hepatitis or gallstones, Serum amylase: exclude pancreatitis.

**Management**

- Reassure the woman and her family.
- Advise oral rehydration therapy
- First-line antiemetics:
  - Antihistamines (e.g.cyclizine 50 mg PO,im or iv. 8 hrly,)
  - H1 receptor antagonists (e.g. doxylamine 10mg or a combination of doxylamine 10mg & pyridoxine 10mg given twice a day (both are classified as Pregnancy Category A).
  - If there is no relief, Metaclopramide is used, 5-10 mg 8 hrly IV/IM (Pregnancy category B)
  - Ondansetron 8 mg , 12 hrly IV (Pregnancy category B) is used in refractory cases.
- Histamine H2 receptor antagonists or proton pump inhibitors (eg.Ranitidine 150 mg twice a day pregnancy category ) if gastro-oesophageal reflux disease,oesophagitis or gastritis.
- Monitor vital signs & urine output (should be minimum~30ml/hour)
- Once the vomiting stops and dehydration is corrected, then start slowly on liquid diet followed by semisolids and then whole meal and then discharge after 24 hours. Advise the woman to take small, frequent, carbohydrate-rich meals
- **In Refractory cases, refer to FRU or higher center**
  - IV Normal saline / RL is the most appropriate intravenous hydration. Dextrose infusions are not appropriate unless the serum sodium levels are normal Dextrose infusions are not advised routinely but may have to be added if the woman is not able to accept orally at all.
- Repeat urine examination every four hours till it becomes negative for ketone bodies.
- Thiamine supplementation (either oral or intravenous) should be given to all women admitted with prolonged vomiting, especially before administration of dextrose or parenteral nutrition.

## Fever in pregnancy

The causes of fever (temperature ≥100 degree F) in pregnancy are varied and need evaluation and treatment. Common causes of fever in pregnancy include the following

a. Enteric fever
b. Malaria
c. Dengue
d. Urinary tract infection

**General Management**

- Encourage increased fluid intake by mouth.
- Use a fan or tepid sponge to help decrease the body temperature.
- Oral Paracetamol (500 mg to 1000mg, 6 to 8 hourly to control fever, DO NOT EXCEED 4 gram in 24 hours)
- Investigation and antibiotic treatment as per teleconsultation or advised by doctor.

## Malaria prophylaxis and treatment in pregnancy

- A woman presenting with chills and rigor should be tested for malaria if positive- start oral anti malarial as per doctor's advice on teleconsultation since malarial fever can cause more harm to the health of the mother & the baby than the drugs used for its treatment.
- Identify complicated/ severe malaria: Clinical: prostration, impaired consciousness, respiratory distress, pulmonary edema, convulsions, abnormal bleeding, DIC, Jaundice, hemoglobinuria. Laboratory: severe anemia, thrombocytopenia, hypoglycemia, acidosis, renal impairment, hyper parasitemia, meningitis, gram negative septicemia.
- In non-endemic areas, all clinically suspected cases as per National Vector Borne Disease Control Programme (NVBDCP) guidelines 2010 should preferably be investigated for malaria by Microscopy or Rapid Diagnostic Kit (RDK).
- In endemic areas no chemoprophylaxis is recommended but insecticide treated bed nets/Long Lasting Insecticidal Net (LLIN) should be given on priority basis to the all pregnant women.
- In high malaria endemic areas, pregnant woman should be routinely tested for malaria on the 1st ANC and subsequently screened for malarial infection at every ANC visit by conducting the RDK tests even if she does not manifest any symptoms of malaria.

## Urinary tract infection

A urinary tract infection (UTI) in a pregnant/postpartum woman may be in the form of an upper UTI (pyelonephritis) or a lower UTI (cystitis). This woman needs treatment with antibiotics.

- Signs and symptoms of UTI
  - Fever, may be high grade, i.e. >38 °C; may be accompanied with chills and rigors
  - Burning on urination
  - Increased frequency and urgency of urination
  - Abdominal pain
  - Dysuria
  - Supra pubic pain/ tenderness
  - Flank tenderness

**Asymptomatic bacteriuria**: persistent colonization of the urinary tract by significant numbers of bacteria in women without any urinary symptoms.

**Acute Cystitis**: presence of symptoms such as dysuria, urgency, frequency, nocturia, hematuria and suprapubicdiscomfort in afebrile women with no evidence of systemic illness.

**Acute pyelonephritis**: significant bacteriuria in the presence of systemic illness and symptoms such as flank or renal angle pain, pyrexia, rigor, nausea and vomiting.

## Investigations

At FRU/DWH- Urine microscopy, and urine culture tests can be used to determine if UTI is present,but it will not differentiate between cystitis and acute pyelonephritis.

NOTE: Urine examination requires a clean-catch mid-stream sample to minimize the possibility of contamination

## Treatment

- Encourage increased fluid intake by mouth.
- Use a fan or tepid sponge to help decrease the body temperature.
- Oral Paracetamol (500 mg to 1000 mg, 6 to 8 hourly to control fever, DO NOT EXCEED 4 gram in24 hours)
- Antibiotic treatment as per teleconsultation or advised by doctor

**Retention of urine**

During the late first trimester, dysuria or difficulty in passing urine may be present due to pressure of the retroverted gravid uterus on the bladder, though usually this does not present with any symptoms. After 12 weeks of gestation, spontaneous correction of the retroversion occurs, and the uterus rises above the pelvic brim and becomes palpable per abdomen.

- Diagnosis

  On abdominal examination, a cystic swelling (over distended bladder) is palpable in the lower abdomen arising from the pelvis. The swelling may be large enough to reach above the umbilicus.

- Management
  - Under all aseptic precautions, insert a self-retaining Foley catheter (G16 or G14) and attach an urobag. Drain the urine continuously for at least 48 hours
  - Encourage prone position to correct retroversion partially

## HIV infection in pregnancy & PPTCT

Parent-to-child transmission of HIV is a major route of new HIV infections in children. Children born to women with HIV, acquire HIV infection from their mother, either during pregnancy, labour/delivery or through breastfeeding. This is largely preventable with appropriate intervention, by providing Anti-retroviral (ARV) prophylaxis or Anti-retroviral therapy (ART).

### Process of Screening ANC Women

- Routinely offer HIV counselling (Group/Individual counselling) and testing to all pregnant women attending antenatal care, with 'opt out' option.
- ANM at the village/sub-centre level will do screening test for HIV and Syphilis using whole blood finger prick test.
- If the Syphilis test is reactive then the pregnant woman would be referred to designated STI/RTI clinics or PHC with RPR testing facility for Syphilis confirmation.
- If the HIV test is reactive then the pregnant woman will be referred to stand alone ICTC for confirmation of HIV by rapid tests. The patient then undergoes pre-test counselling at the ICTC by the ICTC counsellor. Preferable to involve spouse and test him also and move from an "ANC centric" to a "Family centric" approach.

### Antenatal care during pregnancy:

- All pregnant women with confirmed HIV infection regardless of WHO clinical stageor CD4 cell count should have ART initiated only at ART centre
- Provision of care for associated conditions (STI/RTI, TB & other Opportunistic Infections).
- Provide nutrition counselling and psychosocial support for HIV infected pregnant women
- Promote institutional delivery at FRU/ DWH for all HIV infected pregnant women (ANMs/ASHAs, Community workers toaccompany to institutions; reduction of stigma and discrimination by health care providers through sensitization and capacity building).

**If and when delivering HIV-infected women, observe:**

- Standard/Universal Work Precautions (UWP)
- Do NOT give enema
- Do NOT shave the pubic area
- Do NOT rupture membranes artificially (keep membranes intact for as long as possible).
- Minimize vaginal examination and use aseptic techniques.
- Vaginal Cleaning with 0.25% Chlorhexidine
- Avoid routine episiotomy as far as possible.

- Safe disposal of tissue/placenta

### Intervention for Newborn

- Cut cord under cover of light gauze
- Do not use suction unless absolutely necessary
- Determine mother's feeding choice before attaching to the breast. Exclusive breast-feeding or top feed (in case of non-availability of breast milk) within an hour of delivery. No MIXED FEEDING under any circumstances
- Refer to FRU/DWH to ensure initiation of Co-trimoxazole Prophylactic Therapy (CPT) and Early Infant Diagnosis (EID) using HIV DNA PCR at 6 weeks of age onwards as per the EID guidelines.

### Post- natal period

- Ensure regular ART/ARV prophylaxis to mother during breast feeding period as per national guidelines.
- Continue exclusive breast feeding up to 6 months.
- Breast feed is recommended up to 12 months in HIV negative baby & up to 24 months HIV positive babies along with complimentary feed.
- Integrate follow-up of HIV-exposed infants (HEIs) into routine healthcare services including immunization.
- Strengthen follow-up and outreach through ANMs, ASHAs

## Anaemia in Pregnancy

Anemia in pregnancy is defined as Hb level of <11 g/dl during pregnancy (and in the immediatepostpartum period). A pregnant woman with Hb level of <7 g/dl is said to have severe anemia.

Investigate the woman if the following signs are present:

- Conjunctival pallor
- Pallor of the tongue, palate and oral mucosa
- Severe palmar pallor
- Pedal oedema
- Respiratory rate (> 25 breaths per minute)

**Level of Hb should be tested during all ANC visits.**

### Management of Anemia in Pregnancy

**Treatment guidelines based on period of gestation and Hb levels**

| Hb (g/dl) | 10-10.9 g/dl (Mild Anemia) | 7-9.9 g/dl(Moderate Anemia) | <7 g/dl (Severe Anemia)* | <5g/dl (Very Severe Anemia)# |
|---|---|---|---|---|
| First trimester (0-12 weeks) | Folic acid400 µgm | Folic acid400 µgm | immediate attention for corrective actions like detecting the cause of anemia and its appropriate management such as blood transfusion etc. | immediate attention for corrective actions like detecting the cause of anemia and its appropriate management such as blood transfusion etc. |
| | Dietary advice: Iron rich fruits and | Dietary advice: Iron rich fruits and | Folic acid 400 µgm | Folic acid 400 µgm |

| | | | | |
|---|---|---|---|---|
| | vegetables eg Bengal gram, whole, horse gram whole, raisins, green leafy vegetables, jiggery, banana and apple | vegetables eg Bengal gram whole, horse gram hole, raisins, green leafy vegetables, jiggery, banana and apple | Dietary advice: Ironrich fruits and vegetables eg Bengal gram whole,horse gram whole,raisins, green leafy vegetables, jiggery, banana and apple | Dietary advice: Ironrich fruits and vegetables eg Bengal gram whole,horse gram,whole, raisins, green leafy vegetables, jiggery, banana and apple |
| Second trimester (13-28 weeks) | IFA (60 mg elemental iron and 0.5 mg folic acid) 2 tab OD | IFA (60 mg elemental iron and 0.5 mg folic acid) 2tab OD | Iv Iron Sucrose / FCM (after14 weeks) Consider BT if established heart failure | Blood Transfusion |
| Third trimester (29 weeks till term) | IFA (60 mg elemental iron and 0.5 mgfolic acid) 2 tab OD | IV Iron Sucroseand then prophylactic IFA | Iv Iron Sucrose / FCM • If ≥34weeks, andHb is ≤7g/dl, blood transfusion is advised • Immediate hospitalization is recommended at a health facility where round-the- clock specialist care and BT facilityis available • If woman with Hb <7gms % is in labour, deliver her and simultaneously arrange for BT. If the BT facility not available in house, then inform the referral center and keep transport ready for prompt transfer | Blood Transfusion |

Counseling of anaemic pregnant women is key to improving adherence to compliance to treatment. The following points need emphasis during every visit:

- Every mother should be informed about her Hb level and the management protocol.
- Every mother should be told about the common side effects of iron therapy like constipation, nausea, vomiting and diarrhea. It must be emphasized that these are self-limiting minor side effects.
- She should also be informed that during pregnancy there is a higher requirement of iron not only for her wellbeing but also for the foetus. Iron helps in improving intelligence of the baby.
- 13% of women among those with moderate and severe anemia have dimorphic anemia that requires treatment with Vitamin B12 or Folic acid along with IFA.

**During every visit, women should be asked about the side effects and they should be counseled to improvecompliance.**

**Do's**

- Consume green leafy vegetables, whole grain cereals and pulses, dry fruits and nuts,
- Non-vegetarians: egg, chicken, fish and meat are good sources of iron
- Vitamin C rich foods: amla, guava, orange, lemon juice and sprouted pulses should be consumed as these increase absorptions of iron.

- IFA tablet should be consumed 2 hours before meals to ensure an empty stomach. In case of any discomfort, consumption of IFA tablet should be taken 2 hours after meals or with meals or at night. This will help avoid nausea.
- Calcium tablets should not be taken along with IFA tablets since absorption of iron is inhibited. Also calcium tablets should not be taken in empty stomach since it causes gastritis. Therefore, calcium should be consumed post meals so one tablet should be taken with morning breakfastmeal and the second tablet with the lunch.
- Since FA deficiency is more common than B12 deficiency, in case of megaloblastic anemia picture, folic acid supplementation is given- around 1-5 mg/day.
- If the patient doesn't respond to Folic Acid, then investigate for B12 deficiency and give Vitamin B12 along with IFA tablet.One tablet of vitamin B12 (0.1 mg/tab) should be consumed daily for about 3 months for the stores to build up.The B12 tablets should be stored at room temperature, away from moisture and heat and to be taken with waterany time during the day. Its absorption has no relationship with intake of food.
- Deworming of all pregnant women should be done in secondtrimester of pregnancy in the areas endemic for hookworm and trichuria trichuris infestations, with prevalence of infestations more than 20%.
- Pregnant women with the recent history of passage of worms (round worm's/pin worms/whipworms/ threadworms) in stool should be treated with deworming (Albendazole 400mg) tablet on case to case basis.

**Don'ts**

- Milk and milk products along with iron rich food or iron tablets should be avoided as these can hamper the absorption of iron.
- Tea, coffee, caffeinated milk or milk-based products should not be consumed with oral IFA tablet since it interferes with its absorption.
- Very high fiber foods should not be consumed with iron rich foods as it hinders absorption of iron

**Recommendations**

- Management of severe anemia in pregnant women should be done under supervision of an MBBS doctor or an OBGY specialist.

**Follow Up**

Every pregnant anemic woman should be followed up every month as per the Anemia Mukt Bharat guidelines of GOI to check compliance to treatment and assess its impact by measuring Hb.

**Mild anemia (Hb 10–10.9g/dl):**

- If Hb levels have come up to normal level (11g/dl or more), discontinue the treatment and continue with the prophylactic IFA dose (1 tab/ day).
- If no improvement in haemoglobin (<1 g/dl increase) after one month of treatment (assuming full compliance), refer to higher centre/FRU

**Moderate anemia (Hb 7–9.9g/dl):**

- If Hb levels show an increasing trend with IFA or IV Sucrose// FCM therapy, continue treatment as advised by the doctor. If Hb levels have come up to normal level, discontinue the treatment and continue with the prophylacticIFA dose (1 tab/ day).
- If there is no improvement in haemoglobin (<1 g/dl increase) after one months of treatment with IFA or with IV Iron sucrose therapy in desired interval or if the Hb levels fall despite good compliance, refer the woman to higher centre/ District Hospital (DWH) for further investigations.

**Severe anemia (Hb <7g/dl):**

- **The woman receiving IV iron sucrose her Hb levels should be measured after 2 weeks.** If it shows an increasingtrend, and complete dose has been given, there is no need for any further treatment except prophylactic IFA. However, monthly follow up should be done to counsel her about nutrition and diet.

- If it shows an increasing trend, but complete dose replacement has not been done, she should be counseled for taking the remaining doses. In case of refusal, she may be given therapeutic IFA dose (2 tab/ day). Hb mustbe estimated every month to monitor and counsel on diet.
- In case there is no rise in Hb after a month on IFA or after IV Sucrose therapy, she should be referred to highercentre/FRU for further investigations and appropriate management.
- **All severely anemic women need to be tracked**. A separate list of such severely anemic women should be maintained at the sub centre and PHC level along with monthly follow up record of all such listed women. MedicalOfficer in-charge of the PHC must review this list every month and ensure management and follow up of thesecases. **Timely referral along with referral slip for non-responsive cases must be done and the same has to be reported.**

## Gestational Diabetes Mellitus

Gestational Diabetes Mellitus (GDM) is defined as Impaired Glucose Tolerance (IGT) detected firsttime during pregnancy.

**Risk factors:**

- Overweight and obesity.
- Lack of physical activity.
- Previous gestational diabetes or prediabetes.
- Polycystic ovary syndrome.
- Diabetes in an immediate family member.
- Previously delivering a baby weighing more than 9 pounds (4.1 kilograms)

**Protocol for investigation**

- All pregnant women must be screened for GDM using a plasma standardized glucometer to evaluate blood glucose 2 hours after the oral glucoseload.
- The first testing should be done during first antenatal contact as early as possible in pregnancy.
- **All pregnant women who test positive for GDM for the first time should be referred to FRU/DWH for management**
- The second testing should be done during 24-28 weeks of pregnancy if the first test is negative.
- There should be at least 4 weeks gap between the two tests.
- The test is to be conducted for all pregnant women even if she comes late in pregnancy for ANC at the time of first contact.
- If she presents beyond 28 weeks of pregnancy, only one test is to be done at the first point of contact.
- Single step testing using 75 g oral glucose & measuring plasma glucose 2 hour after ingestion
- 75 g glucose is to be given orally after dissolving in approximately 300 ml water over 10 minutes whether the pregnant woman comes in fasting or non-fasting state, irrespective of the last meal. The intake of the solution has to be completed within 5 min.
- If vomiting occurs within 30 min of oral glucose intake, the test has to be repeated the next day. If vomiting occurs after 30 minutes, the test continues.
- **Women with blood sugar >or = 140mg % should be referred to higher centre.**
- Initial management is Medical Nutrition Therapy (MNT) for 2 weeks. Metformin or Insulin therapy is the accepted Medical management of pregnant women with GDM not controlled on MNT.

| Maternal complications | Foetal complications |
|---|---|
| Polyhydramnios | Intra-Uterine Death |
| Spontaneous Abortion | Stillbirth |
| Pre-Eclampsia | Congenital Malformation |
| Prolonged Labour | Shoulder Dystocia |
| Obstructed Labour | Birth Injuries |
| Caesarean Section | Neonatal Hypoglycaemia |
| Postpartum Haemorrhage | Infant Respiratory Distress Syndrome. |

Refer to FRU/DWH if one or more of the following conditions are met:

- Nausea & vomiting and not able to take food orally
- Fasting blood glucose >200mg/dL with or without insulin
- Fasting blood glucose >150 mg/dL or post breakfast>250 mg/dL even after giving insulin
- Total dose of insulin (combined morning and evening dose) on each day exceeds 20 units
- If she develops low blood glucose (hypoglycaemia) more than once in a day.
- If she refuses to take insulin injection

**Special obstetric care for pregnant women with GDM (to be done at FRU under care of a specialist)**

- In cases diagnosed before 20 weeks of pregnancy, a fetal anomaly scan by USG should be performed at 18-20 weeks.
- For all pregnancies with GDM, a fetal growth scan should be performed at 28-30 weeks gestation & repeated at 34-36 weeks gestation. There should be at least 3 weeks gap between the two ultrasounds and it should include fetal biometry & amniotic fluid estimation.
- Pregnant women with GDM in whom blood glucose level is well controlled & there are no complications, should go for routine antenatal care as per GOI guidelines.
- In pregnant women with GDM having uncontrolled blood glucose level or any other complication of pregnancy, the frequency of antenatal visits should be increased to every 2 weeks in second trimester & every week in third trimester.
- Monitor for abnormal fetal growth (macrosomia/growth restriction) and polyhydramnios at each ANC visit
- Pregnant women with GDM to be diligently monitored for hypertension in pregnancy, proteinuria and other obstetric complications
- In pregnant women with GDM between 24-37 weeks of gestation and requiring early delivery, antenatal steroids should be given as per GoI guidelines i.e. Inj. Dexamethasone 6 mg IM 12 hourly for 2 days. More vigilant monitoring of blood glucose levels should be done for next 72 hours following injection. In case of raised blood glucose levels during this period, adjustment of insulin dose should be made accordingly

**Fetal surveillance in pregnant women with GDM:**

- Pregnant women with GDM are at an increased risk for fetal death in utero and this risk is increased in pregnant women requiring medical management. Hence fetal surveillance is required.
- Fetal heart should be monitored by auscultation on each antenatal visit.

**Labour & Delivery should be done at FRU/DWH**

- Vaginal delivery should be preferred and LSCS should be done for obstetric indications only.

Special precaution during labour

- Pregnant women with GDM on medical management (metformin or insulin) require blood sugar monitoring during labour by a glucometer.

- The morning dose of insulin/metformin is withheld on the day of induction/labour and the pregnant women should be started on 2 hourly monitoring of blood sugar.
- IV infusion with normal saline (NS) to be started & regular insulin to be added according to bloodsugar levels underthe instructions of specialist.

**Immediate neonatal care for baby of mother with GDM**

- All neonates should receive essential newborn care with emphasis on early breastfeeding to prevent hypoglycemia.
- Newborns should be monitored for hypoglycemia. Monitoring should be started at 1 hour of delivery and continued every 4 hours (prior to next feed) till four stable glucose values are obtained. The cut off capillary blood glucose for hypoglycemia in normal birth weight newborn is <45 mg/ dL and <54 mg/dL in case of Intra-uterine growth restriction (IUGR), to initiate treatment.
- Neonate should also be evaluated for other neonatal complications like respiratory distress, convulsions, hyperbilirubinemia.

**Post-delivery follow up of pregnant women with GDM**

- Women with GDM should be offered regular postpartum care after delivery
- 75 g OGTT should be performed after 6 weeks
- Test normal: Woman is counselled about lifestyle modifications, weight monitoring & exercise. Advise women to get annual screening for DM in NCD clinic as per protocol**.**
- Test positive: Woman should be linked with NCD program for further management.
- Pregnant women with GDM and their off springs are at increased risk of developing Type II Diabetes mellitus in later life. They should be counselled for healthy lifestyle and behavior, particularly role of diet & exercise.

## Vaginal bleeding in early pregnancy (before 20 weeks)

Bleeding in the first trimester happens to about15–25% of pregnant women. Vaginal bleeding during early pregnancy (up to 20 weeks of gestation) can be due to various types of abortions(95%), ectopic pregnancy, or the presence of a hydatidiform mole (molar pregnancy).

Patient will present with bleeding per vaginam with or without lower abdominal pain/backache, depending on the amount and duration for which the patient has been bleeding, vitals may be deranged.

### Abortion

Abortion is the expulsion or extraction from its mother of an embryo or foetus weighing 500 gm or less when it is not capable of independent survival (WHO).

**Types of abortions**

- Spontaneous abortion
- Induced abortion
- Unsafe abortion
- Septic abortion

1. Spontaneous abortion: is defined as the spontaneous loss of a pregnancy at a period of gestation before the stage of fetal viability (i.e. 20 weeks gestation).

   The stages of spontaneous abortion include:

   - Threatened abortion (the pregnancy may continue)
   - Inevitable abortion (the pregnancy will not continue and will proceed to incomplete/complete abortion)
   - Incomplete abortion (the products of conception are partially expelled)
   - Missed abortion (the products of conception are retained in uterus after fetal demise)
   - Complete abortion (the products of conception are completely expelled).

2. Induced abortion: defined as a process by which the pregnancy is deliberately terminated before fetal viability. This may be complete or incomplete.
3. Unsafe abortion: is defined by the WHO as a procedure for terminating a pregnancy that is performed by an individual lacking the necessary skills, or in an environment that does not conform to minimal medical standards, or both e.g. use of medical methods of abortion by unqualified/ uncertified persons e.g. use of medical methods of abortion by unqualified/ uncertified persons.
4. Septic abortion: defined as abortion complicated by infection.
    - Sepsis may result from infection if the organisms ascend from the lower genital tract following either a spontaneous or an unsafe abortion
    - Sepsis is more likely to occur if there are retained products of conception and evacuation has been delayed
    - Sepsis is a frequent complication of unsafe abortion involving instrumentation

## Ectopic Pregnancy

An ectopic pregnancy is one in which implantation occurs outside the uterine cavity. The fallopian tube is the most common site of ectopic implantation (greater than 90%).

Ectopic pregnancy is a life-threatening condition. It has a variable presentation ranging from mild pain in abdomen to maternal collapse.

| Unruptured Ectopic Pregnancy | Ruptured Ectopic Pregnancy |
|---|---|
| • Symptoms of early pregnancy (irregular spottingor bleeding, nausea, swelling of breasts, bluish discoloration of vagina and cervix, softening of cervix, slight uterine enlargement, increased urinary frequency)<br>• Abdominal and pelvic pain | • Collapse and weakness, pale, sweating.<br>• Fast, weak pulse (110 per minute or more)<br>• Low BP, drowsy, irritable.<br>• Hypotension<br>• Hypovolemia<br>• Acute abdominal and pelvic pain<br>• Abdominal distension with shifting dullness may indicate free blood.<br>• Rebound tenderness |

- Ectopic pregnancy should be suspected if pregnancy test is positive with pain in abdomen and/or fainting attacks with light vaginal bleeding with absent intrauterine gestational sac on TVS.
- **All cases of ectopic pregnancy must be referred to higher facility immediately for timely diagnosis and management.**
- **In case of a ruptured ectopic pregnancy, begin resuscitative measures and refer with communication and referral slip**

## Molar Pregnancy

It is an abnormal condition of the placenta where there are degenerative and partly proliferative changes in the young chorionic villi.

USG in early pregnancy is the best method to confirm diagnosis.

**Symptoms**

- Amenorrhea
- Exaggerated symptoms of pregnancy like nausea and vomiting, breathlessness, tachycardia etc.
- Varying degree of lower abdominal pain
- Vaginal bleeding
- Expulsion of grape like vesicles per vaginam

- H/o of quickening absent.

**Signs**

- Pallor

**Per abdomen**

- Size of the uterus more than expected for the period of amenorrhea.
- Absence of ballottement and doughy feel of the uterus
- Fetal parts not felt, nor any fetal movement.
- Absence of fetal heart sound.

**Management**

- Refer to FRU/DWH for diagnosis and treatment
- If the patient is bleeding and no facilities for evacuation, begin resuscitative measures and refer.

**Follow up with beta HCG is very important since both partial mole and complete mole carry risk of development of gestational trophoblastic neoplasia (10-20%)**

**Approach to a Case of Bleeding In Early Pregnancy**

| **Clinical assessment during Bleeding in Early Pregnancy** | |
|---|---|
| History (Ask about andrecord the information) | • Period of amenorrhea (ask her the date of her LMP)<br>• Bleeding (duration and amount)<br>• Abdominal cramping (duration and severity)<br>• Foul-smelling vaginal discharge<br>• Abdominal or shoulder pain<br>• Allergy to drugs<br>• H/o passage of the products of conception/fetus/blood clot<br>• H/o inserting something into the vagina (suggestive of an illegalabortion) |
| Routine physical examination | • Check the vital signs (temperature, pulse, respiratory rate, bloodpressure)<br>• Examine the general condition of the woman<br>• Look for pallor<br>• Examine the respiratory system, cardiac system, and extremities |
| Abdominal examination | • Assess for uterine size (rule out smaller or larger than gestational age). If gestational age is less than 12 weeks, uterus will not be palpable.<br>• Auscultate for bowel sounds (absent in peritonitis due to septic abortion)<br>• Check whether the abdomen is distended (hemoperitoneum due toruptured ectopic pregnancy)<br>• Assess the presence, location and severity of pain<br>• Palpate for abdominal rigidity (tense and hard) and guarding (peritonitis, ectopic pregnancy)<br>• Palpate for rebound tenderness |

| | |
|---|---|
| Pelvic examination (only for staff nurses) | • External pelvic and vaginal examination:<br>  • Look for lacerations outside the vagina, or over the external genitalia<br>  • Assess the amount of bleeding (light/heavy)<br>  • Look for protruding products of conception lying outside the vaginalcanal<br>• P/S examination:<br>  • Any visible product of conception protruding from the cervical os or visible in the vaginal canal<br>  • Foul-smelling vaginal/cervical discharge<br>  • Cervical lacerations (indicative of instrumentation; may be suggestive of illegal abortion)<br>  • Foreign bodies in the vagina<br>• P/V examination<br>  • Assess the amount of bleeding (light/heavy)<br>  • Check whether the cervical os is open or closed (to determine thestage of abortion)<br>  • Bimanual examination<br>  • Estimate the size of the uterus<br>  • Palpate for any pelvic masses<br>  • Examine for pelvic tenderness (note severity, location, |
| Investigation | Hb%, urine examination, blood group & Rh status |

**Note**:

- The uterine size is measured in weeks passed after the last menstrual period (LMP).
- **To check for rebound tenderness**, keep a hand over the abdomen & press gently. Then suddenly remove your hand to release the pressure rapidly. If removal of the hand causes pain or worsens it, there is rebound tenderness. Rebound tenderness is a sign of peritoneal inflammation.

## Differential diagnosis

Following table lists the symptoms and signs for differential diagnosis of vaginal bleeding during earlypregnancy.

| Symptoms and signs typically present | Symptoms and signs sometimes present | Probable diagnosis |
|---|---|---|
| • Light bleeding[a]<br>• Closed cervix<br>• The size of the uterus corresponds tothe gestational period | • Cramping/lower abdominal pain<br>• Uterus softer than normal | Threatened abortion |
| • Heavy bleeding<br>• Dilated cervix<br>• The size of the uterus correspondsto the gestational period | • Cramping/lower abdominal pain<br>• No expulsion of the products of conception | Inevitable abortion |
| • Heavy bleeding<br>• Dilated cervix<br>• The size of the uterus is smaller than that expected for the gestational period | • Cramping/lower abdominal pain<br>• History of partial expulsion of theproducts of conception | Incomplete abortion |

| | | |
|---|---|---|
| • Light bleeding or brownish discharge<br>• The size of the uterus may be smallerthan that expected for the gestational period | • Brownish discharge<br>• Uterus soft & larger than normal size | Missed abortion |
| • Light bleeding<br>• Closed cervix<br>• The size of the uterus is smaller than that expected for the gestational period<br>• Uterus softer than normal | • Light cramping/abdominal pain<br>• History of expulsion of the products ofconception | Complete abortion |
| • Light bleeding<br>• Abdominal pain, may be severe<br>• Closed cervix<br>• The size of the uterus is slightly larger than normal<br>• Uterus softer than normal<br>• Cervical motion tenderness present | • Amenorrhoea/irregular bleeding<br>• Fainting<br>• Presence of tender adnexal mass | Ectopic pregnancy |
| • Heavy bleeding<br>• Uterus softer than normal (doughy feel)<br>• The size of the uterus is larger than that expected for the gestational Period<br>• Fetal parts not felt, nor any fetal movement.<br>• Absence of fetal heart sound<br>• Dilated cervix<br>• Partial expulsion of the products of Conception | • Nausea/vomiting<br>• Bleeding<br>• Cramping/lower abdominal pain<br>• Presence of ovarian cysts(easily ruptured)<br>• Early onset of pre-eclampsia<br>• No evidence of a fetus | Molar pregnancy |

[a]Light bleeding: Takes 1-2 hours or more for a clean pad or cloth to be soaked

[b]Heavy bleeding: Soaking about 2 pads per hour for continuously 2 hours

## Management

**General Management to be Done by ANM and Staff Nurses**

- Pre-requisites
  - Monitor the woman's vital signs and general condition.
  - Take steps to stabilize her condition, before giving management for the specific condition.
  - If shock suspected or anticipated, immediately begin resuscitation
- Oxygen- If the woman is stable and there are no life-threatening complications (i.e. she is not in shockand vital signs are normal), oxygen is NOT required. If woman is in shock, manage accordingly.
- Fluids only after teleconsultation with doctor- If the woman is stable and there are no complications (i.e. she is not in shock and the vital signs are normal), IV fluids are NOT required. If woman is in shock manage, accordingly.
- Medicines only after teleconsultation with doctor..
  - Antibiotics should preferably be given intravenously. If an evacuation is needed, start antibiotics before carrying out the evacuation. In case of septic abortion, give the woman broad spectrum antibiotic & refer
  - Pain control - For pain, give Inj. Tramadol hydrochloride 50 mg IM. Monitor the Respiratory Rate. If woman is stable, give oral analgesic (tablet Ibuprofen 400 mg) 60 minutes before the procedure along

with paracervical block during the procedure for managing pain for uterine evacuation with MVA (only for staff nurses).

- Tetanus toxoid (Tt) / Tetanus toxoid and Adult Diptheria (Td).- If there is a possibility that the woman was exposed to tetanus (abortion not performed with sterile instruments, and/or contamination of instruments or wound with dirt) and her vaccination history is uncertain, give her Inj. TT / Td. (0.5 mg IM) in the deltoid muscle.
- If she is Rh negative, give a dose of anti-D globulin (100 µg if pregnancy <12 weeks and 300 µg if 100 µgnot available within 72 hours of uterine evacuation.

**Additional measures**

- The woman's Hb% & Rh status is routinely assessed.

**Specific Management (only for staff nurses)**

| Condition | Management |
|---|---|
| Threatened abortion | • Advise minimal physical activity complete bed rest is not necessary but avoid strenuous activity and sexual intercourse;<br>• Medication as advised by doctor<br>• If the bleeding stops, follow up in an antenatal clinic. Reassess if the bleeding recurs.<br>• If the bleeding persists, Such cases should be referred to higher facility. |
| Inevitable abortion | • Refer to higher centre/ FRU<br>• Assess the general condition of woman and resuscitate if in shock and |
| Incomplete abortion | • Refer to higher centre/ FRU<br>• Assess the general condition of woman<br>• Resuscitate if in shock<br>• If bleeding heavily start IV fluids before referral<br>• Carry out digital evacuation of the products of conception or clots present in vagina |
| Complete abortion | • Refer to higher centre/ FRU<br>• Assess the general condition of woman<br>• Resuscitate if in shock<br>• Observe for heavy bleeding & keep her hydration level maintained. In casethe bleeding continues, refer to higher facility after stabilizing patients & duly filling the referral form. |
| Missed abortion | • Refer to higher centre/ FRU |
| Septic abortion | • Refer to higher centre/ FRU<br>• Give Tab Paracetamol 500 mg stat if febrile<br>• Give the antibiotics as per advice of specialist |
| Ectopic pregnancy | • REFER TO DWH<br>• Assess the general condition of woman<br>• Resuscitate if woman in shock<br>• IV access (two lines; 16-18 G) with fluids<br>• Oxygen by mask<br>• Urinary catheter<br>• Pulse oximeter if available<br>• Accompanying person with referral slip duly filled<br>• Monitoring and follow up visit after 4 -6 weeks of management |
| Molar Pregnancy | • Assess the GC of woman<br>• Ensure that woman goes to the FRU/DWH for follow up |

**Management of complications of abortion**

| Complications | Symptoms and signs | | Management |
|---|---|---|---|
| Injuries<br>Uterine, vaginal, urinarybladder or bowel injury (if leftunattended, these injuries can get infectedand lead tosepsis) | Symptom<br><br><br><br><br><br>Signs | • Abdominal pain/cramping<br>• Shoulder pain<br>• Nausea/vomiting<br>• Vaginal bleeding<br>• Retention of urine or dysuriaor incontinence<br>• Fever (if associated withinfection/sepsis)<br>• Distended abdomen<br>• Rigid (tense and hard) abdomen | • Start an IV line; infuse RL asa maintenance drip.<br>• Start antibiotic as per the teleconsultation with doctor<br>• Refer to higher facility withduly filled referral form. |
| Infection/sepsis (it mightresult from aseptic techniques & interventions, or might occur as a complication of the injuries mentionedabove) | Symptoms<br><br><br><br>Signs | • Pain in the lower abdomen<br>• Malaise<br>• Prolonged bleeding<br>• Foul-smelling vaginaldischarge<br>• Fever<br>• Rebound tenderness<br>• The uterus is tender to thetouch<br>• Purulent cervical discharge<br>• Tenderness on moving thecervix | • Start an IV line; infuse RL.<br>• Give Paracetamol to control thefever.<br>• Begin antibiotics as soon aspossible & continue till the woman is fever free for 48 hours as per the teleconsultation with doctor<br>• Refer to higher centre/ FRU |

**Follow Up**

- Use disposable sanitary napkins
- Wash perineum daily with soap and water
- Avoid sexual intercourse until bleeding stops

Before discharge, counsel a woman who has had a complete abortion that:

- The chances of a subsequent successful pregnancy are generally good unless there has been sepsis or h/o recurrent abortions, which may have an adverse effect on future pregnancies (this is rare).
- It is better to delay the next pregnancy for 6 months till the woman has completely recovered, even though she may want to become pregnant soon after having an abortion.
- Fertility returns as early as 10 days following an abortion and hence contraceptive method should be chosen and started immediately after an abortion.

**Contraceptive counseling**

Depending on the reproductive decision of the couple, contraceptive counseling should be offered. This is especially important for women who have had an unsafe abortion. If pregnancy is not desired, certain methods of family planning can be started immediately (within 7 days), provided:

- There are no severe complications requiring further treatment and
- The woman receives adequate counseling to help her select the most appropriate family planning method Family planning methods advisable

| Type of contraceptive | Advise to start |
|---|---|
| Hormonal<br>(pills, injections, implants) | • Immediately after the surgical abortion or within preferably 7 days ofthe procedure<br>• After 7 days, any interim method is suggested till these contraceptives are started. Also, a fresh pregnancy needs to be ruledout then.<br>• In MMA, usually can be started immediately at the time of medical abortion. The exact timing can varywith the type of contraception. For example, COCs can be advised to start with the first medication (Mifepristone), or the last medication (Misoprostol), |
| Condoms | • Immediately as soon as sexual activity is resumed |
| Intrauterine device | • Immediately after surgical abortion or within preferably 12 days of theprocedure<br>• In Medical method of abortion, usually on follow up visit on 15th day<br>• If infection or trauma is present or suspected, delay insertion till it is cleared.Provide an interim method (e.g. condom)<br>• If the level of haemoglobin (Hb) is less than 7 g/dl, |
| Voluntary tubal ligation | • Immediately after the surgical abortion or within preferably 7 days ofthe procedure<br>• After 7 days, any interim method is suggested till this is done. Also, afresh pregnancy needs to be ruled out then.<br>• In MMA, after the next menstrual cycle. Give an interim method likecondoms/COCs till her next periods for protection.<br>• If infection or trauma is present or suspected, delay surgery until it is cleared.Provide an interim method (e.g. condom) |

### Follow up of women with Molar pregnancy

- Follow up as per the doctor's advice because the disease may persist or change to malignant form.
- Every case of molar pregnancy should be given contraceptive for one year preferably by oral contraceptive pill hormonal family planning method (Mala D, Mala N, Novelon) for at least 1 year to prevent pregnancy. CuT is contraindicated in the initial stage.Voluntary tubal ligation may be offered if the woman has completed her family

### Vaginal Bleeding in late pregnancy (after 20 Weeks)

Vaginal bleeding occurring after 20 weeks of pregnancy or during labour (but before delivery of the baby) is known as Antepartum hemorrhage (APH).

**Causes of APH**

- Placenta praevia: This is defined as implantation of the placenta in the lower uterine segment
- Abruptio placentae (Accidental haemorrhage): This is due to detachment of a normally located placenta from the uterus before the foetus is delivered.
- Ruptured uterus: Giving away of the uterine musculature with fetus inside the uterus or in the peritoneal cavity is a catastrophic event. Uterus may rupture during pregnancy or during labour. Most common cause of rupture in unscarred uterus is obstructed labour in multigravida rather than primigravidas. Bleeding from a ruptured uterus may occur vaginally unless the foetal head blocks the pelvis. Bleeding may also occur intra-abdominally. Rupture of the loweruterine segment into the broad ligament, however, will not release blood into the abdominal cavity, ratherit may form a haematoma in the broad ligament.

## Clinical features and diagnosis

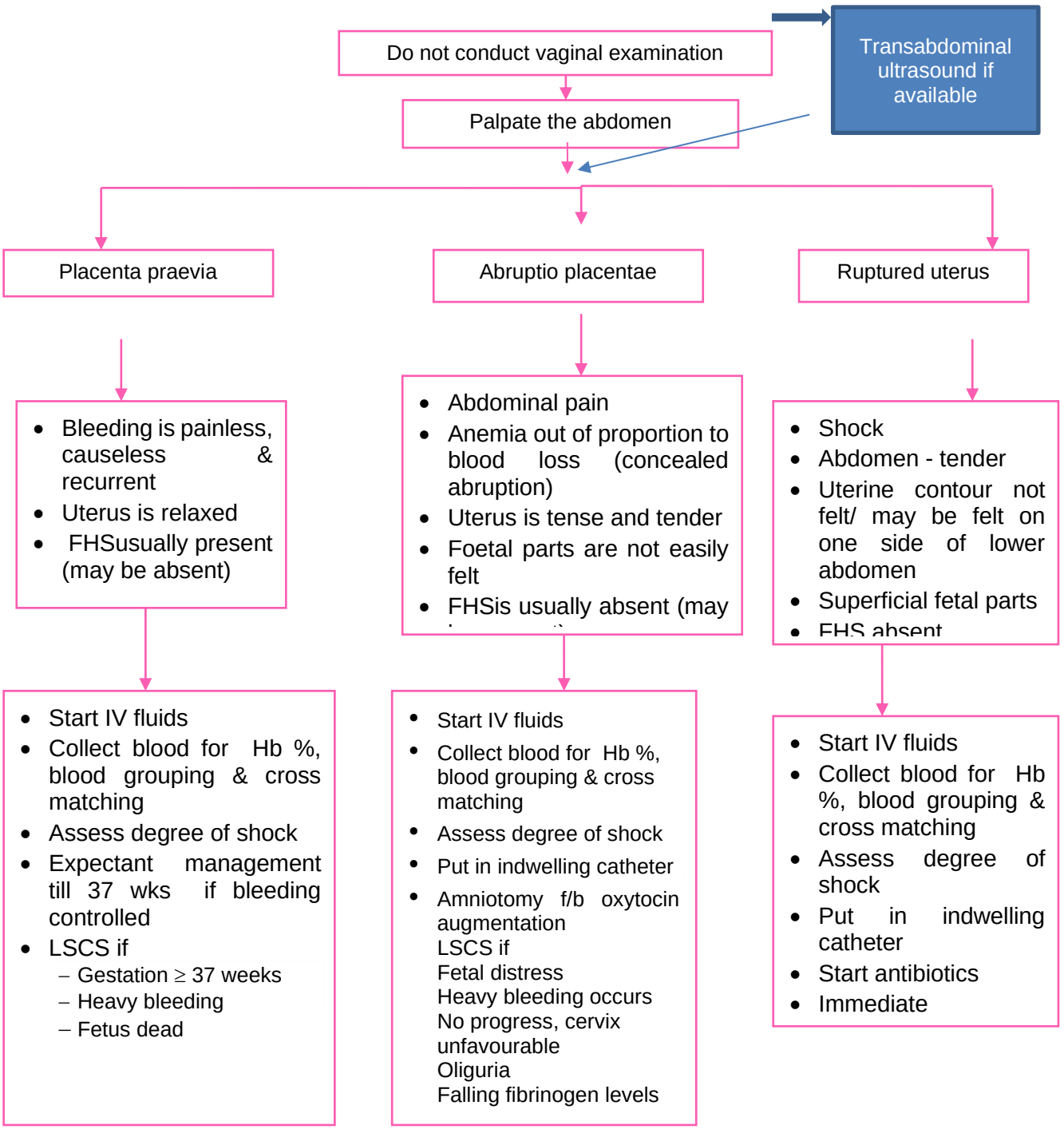
**Diagnosis of Antepartum Haemorrhage**

| Criteria | Placenta praevia | Abruptio placentae | Uterine rupture |
|---|---|---|---|
| Nature of the bleeding | • Painless, causeless recurrent<br>• The bleeding is always revealed<br>• Sudden onset | • Painful; pain is often localized to start with and later becomes generalized, and continuous<br>• Attributed to pre-eclampsia or trauma<br>• The bleeding is revealed, concealed,or usually mixed | • The bleeding<br>• often occurs after the woman has been in labour for a long time.<br>• The bleeding<br>• may be<br>• concealed or mixed<br>• Sudden onset<br>• Excruciating pain |
| General condition and anaemia | Proportional to the amountof blood loss | Out of proportion to the visible blood loss in the concealed variety | Out of proportion to the visible blood loss |
| Features of pre-eclampsia | Not relevant | Present in one-third of cases | Not relevant |
| Height & feel of theuterus | Proportional to the gestational age, soft andrelaxed | May be disproportionately enlarged in the concealedtype; may be tense, tenderand rigid | • Uterine contour not felt; occasionally the uterus is felt separately on one side<br>• Tense tenderabdomen<br>• Guarding , rigidity |
| Mal-presentation | Common; the head is highand floating | Unrelated;<br>head may be engaged | Foetal parts felt superficially; mal-presentation may be present |
| Fetal heart | Usually present | Present, may be irregular | Usually absent, occasionally present if incomplete |
| Localization ofplacenta | Placenta is in the lower segment of the uterus | Placenta is in the upper segment | The placenta may be attached to the uterus or may be lying free in the peritoneal cavity |
| Vaginal examination is absolutely contraindicated in all cases | | | |

**Management** :

- Make a rapid evaluation of the general condition of the woman including vital signs (pulse, BP, RR, temperature) and keep the possibility of shock in mind even if signs of shock are not present because her status may worsen rapidly.
- Call for help
- If shock is suspected, immediately begin treatment.
- If shock develops:
  - Start IV infusion.
  - Give oxygen by nasal catheter.
- Assess the clotting status using a bedside clotting test. A crude clotting test can be performed at the bedside by placing 5 mL of the patient's blood in a tube with no anticoagulant for 10 minutes. Failure to clot within this time or dissolution of an initial clot implies impairment of coagulation, prolonged oozing from needle puncture sites is also a danger sign of impaired coagulation.
- Do not sedate a woman with APH even if she is in pain, as sedation may mask the signs of hypoxia should it occur as a consequence of haemorrhage and shock.
- Collect blood for Hb gm %, blood grouping & cross matching
- Put in indwelling catheter
- Start antibiotics, as advised by doctor
- Timely refer the patient with initiating all stabilizing measures with one accompanying person (may be emergency medical technician of ambulance) to a higher centre.

## Management of Vaginal Bleeding in Late Pregnancy & Labor




**Whenever patient with APH in shock taken for caesarean section, consent for hvstrectomv should alwavs be obtained.**

**IIf not confident in performing the surgery in patients with shock, they should be resuscitated and transferred to nearby DH/tertiary care centre.**

**To be accomapnied by nurse / doctor**

## Hypertensive Disorders In Pregnancy

The hypertensive disorders of pregnancy are one of the common obstetric complications of pregnancy and contribute significantly to maternal and perinatal mortality. The pathophysiology of hypertensive disorders causes widespread spasm of the arterioles affecting multiple organs at the same time resulting in morbidity and mortality in both mother and fetus

**Risk factors**

The risk of preeclampsia/eclampsia is more common in the following groups:

- Primigravidae (especially young teenagers and women over the age of 35 years)
- Obesity
- Essential hypertension
- Multiple pregnancy
- Diabetes, hydatidiform mole, polyhydramnios
- History of pre-eclampsia or eclampsia in a previous pregnancy
- Family history of eclampsia.

**Symptoms and signs of Hypertensive disorders of pregnancy**

| Symptoms and signs | Hypertensive disorders |
|---|---|
| • Known hypertensive or<br>• BP >140/90 mmHg before 20 weeks of gestation | Chronic hypertension |
| • BP >140/90 mmHg before 20 weeks of gestation<br>• Occurrence of new onset of proteinuria after 20 wks of gestation | Chronic hypertensionwith superimposed pre-eclampsia |
| • Two readings of BP >140/90 mmHg taken at least 4 hours apart, after 20 weeks of gestation<br>• No Proteinuria | Gestational hypertension |
| • Two readings of BP >140/90 mmHg but <160/110 mmHg, taken 4 hours apart, after 20 weeks of gestation<br>• Proteinuria >1+ (>300 mg/L) | Pre-eclampsia without features of severity |
| • BP ≥160/110 mmHg after 20 weeks of gestation, at least 2 readings taken 10 mins apart.<br>• BP may be ≥140/90 mm Hg with presence of any of the features of severity<br>• Proteinuria may or may not be present with any of the features of severity<br>• Features of severity:<br>  • Headache, new onset cerebral/ visual disturbance, severe persistent right upper quadrant, or epigastric pain, vomiting<br>  • Oliguria (<400 ml/24hrs)<br>  • Thrombocytopenia (Platelet count < 100000/ µ L)<br>  • Impaired liver function (liver enzymes twice the normal limits)<br>  • S. Creatinine > 1.1 mg/dL or doubling of levels over previous levels in absence of renal disease | Pre-eclampsia with features of severity |

| | |
|---|---|
| • Pre-eclampsia with features of severity PLUS any two of the following:<br>• Headache (increasing frequency, unrelieved by regular analgesics)<br>• Vomiting<br>• Blurring of vision<br>• Pain in the upper abdomen (epigastric pain or pain in the right upper quadrant)<br>• Oliguria (passing less than 400 ml urine in 24 hours)<br>• Hyperreflexia (exaggerated knee jerk)<br>• BP ≥140/90 mmHg after 20 weeks gestation<br>• Proteinuria ≥ 1+ | Danger signs of impending Eclampsia |

*When proteinuria is present with a normal BP, it usually does not indicate pre-eclampsia but could indicate urinary tract infection (UTI), kidney disease or contamination of the sample and is also found after prolonged standing.

The pre-eclamptic features may appear even before the 20$^{th}$ week as in case of hydatidiform mole and acute polyhydramnios.

**Important checks at each antenatal visit, check the following:**

- BP
- Weight gain
- Abdominal examination to assess fetalwellbeing
- Look for danger signs
- Routine tests at every visit including Urine for thepresence of protein

**Danger signs and symptoms:**

- Decreased urinary output
- A sharp rise in the BP
- Severe headache
- Drowsiness
- Mental confusion
- Visual disturbances (e.g. blurred vision, flashes of light, double vision)
- Epigastric pain
- Nausea, vomiting

**Management of Non severe Pre- Eclampsia**

- Encourage every pregnant woman to come for the first ANC visit as early as possible in her pregnancy so that a baseline BP can be measured
    - At each prenatal visit, ensure to check BP,Weight gain, Urine for the presence of protein
    - Danger signs for severe pre-eclampsia
- If there is a rise in the BP, instruct the woman to visit the FRU bi-weekly
- BP should be taken by MO/ Staff nurse
- Woman should be counseled about diet. She is allowed to take normal salt in food but no extra salt should be added to the food. E.g. Avoid pickles, papad, chatni & bakery items.
- Few specialized investigations should also be advised like LFT (S. Bilirubin, SGOT,SGPT, Alkaline phosphatase), KFT (Urea & Creatinine) & Platelet count.

**Management of Pre-eclampsia:**

- Counselling the woman for risk to mother and baby

- Refer to FRU/DWH
- Start antihypertensive according to doctor's advice if systolic BP > 150 mm Hg or DiastolicBP > 100 mm Hg(
- Aim of treatment is to maintain diastolic BP between 90-100mm Hg)

**In case of severe pre eclampsia or impending eclampsia**

- All cases of Pre-eclampsia with features ofseverity should ideally be delivered within24 hours of onset of symptoms
- Refer to higher center for further management after giving one dose of anti-hypertensive and loading dosed of magnesium sulfate
- Pre referral management
- Start IV access @ a maximum rate of 75 ml/hr. and monitor forpulmonary oedema (identified by tachycardia and decreased SpO2).
- If IV access - Rapid acting antihypertensive as per doctor's advice
    - Immediate release oral Tab Nifedipine or
    - Inj Labetalol IV OR OR if none is available oral Tab Labetalol
    - Inj Hydralazine as per availability.
- Catheterize bladder
- Start SpO2 monitoring by attaching Pulse Oximeter.
- Prophylactic magnesium sulphate should be given

Prophylactic Magnesium Sulfate should be given in all cases of Severe Preeclampsia infull loading & maintenance dose to prevent eclampsia.

## Eclampsia

Preeclampsia when complicated with convulsions(generalized tonic-clonic convulsions) and/or coma is called eclampsia.

**Any Convulsions in pregnancy should be considered as eclampsia**

- It can occur regardless of severity of hypertension
- Occur after childbirth in 25% of cases (postpartum eclampsia)
- Tonic-clonic and resemble grand mal epileptic fits
- May be followed by coma that lasts for minutes or hours depending on the frequency of convulsions

**Effect of eclampsia on mother & foetus**

| Mother | Foetus |
|---|---|
| There is involvement of multiple systems/organs | Placental insufficiency leads to:IUGR |
| Respiratory (asphyxia, aspiration of vomitus, pulmonary edema, bronchopneumonia) | Hypoxia: This may lead to permanent brain damage, which may result in: |
| Cardiac (heart failure) | Physical handicap |
| Brain (hemorrhage, thrombosis, edema) | Cerebral palsy |
| Renal (acute kidney failure) | Mental retardation |
| Hepatic (liver necrosis) | Stillbirth |
| HELLP syndrome (hemolysis, elevated liver enzymes, low platelet count) | |

| | |
|---|---|
| Hemorrhage due to coagulation defect, i.e. disseminated intravascular coagulopathy (DIC), which is often associated with eclampsia | |
| Visual problems (temporary blindness due toedema of the retina and/ or occipital cortex in the brain) | |
| Injuries (fractures, tongue bite) | |

## Management of Eclampsia

- Eclamptic fits can begin before, during or after delivery. The management is the same in each casebut if the patient has not delivered, carry out the delivery as soon as possible.
- Women with eclampsia should not be allowed to go home and admitted for further management.
- After initial management, refer her to a higher center for further management and delivery.
- All cases of Eclampsia should ideally be delivered within 12 hours of onset of symptoms

The management of eclampsia involves six major steps:

1. Immediate management
2. Controlling the fits
3. Controlling the BP
4. Termination of Pregnancy
5. Maintaining fluid balance
6. Monitoring

The most common causes of maternal death in eclampsia are:

- Aspiration of vomitus
- Kidney failure
- Intracerebral hemorrhage
- Multi-organ failure (e.g. heart, liver & kidneys)

**Immediate management**

- Keep the patient in a bed with padded rails on sides (eclampsia bed)
- Place the woman on her left side (in the semi-prone position) so that mucus or saliva can drain out because there is a grave danger of aspirating vomitus and saliva.
- Clean the mouth and nostrils by applying gentle suction and remove the secretions.
- Give oxygen by mask / nasal cannulae @ 4–6 L/min and continue for five minutes after each fit or longer if cyanosis persists.
- Prevent tongue bite during convulsions by a tongue pad.
- Instruct the nursing staff to make sure that:
    - Patient's airway remains clear
    - Injury especially to the tongue (tongue bite) is prevented during the clonic stage of convulsions. This can be done by placing padded tongue blades or pads between her teeth.(Do NOT attempt this during a convulsion.)
- Start IV line with RL/NS @ maximum rate of 75 ml/hr after collecting blood sample for bedside clotting test. Keep a watch for pulmonary oedema.
- Catheterize patient
- Send investigations – Hb, LFT (Bilirubin, SGOT, SGPT, Alkaline phosphatase), KFT (Urea,Creatinine), LDH, platelet count, Coagulation profile (PT,PC,INR) and fundus examination but do not wait for reports before referring patient to higher center.

1. Controlling the fits

- Magnesium sulphate is the drug of choice for management of Eclampsia.

**Magnesium sulphate:**

Given as loading dose and maintenance dose

**(a). Loading Dose**

By ANM- pre referral loading dose - Inj Magnesium sulphate 5 gm deep IM (upper outer quadrant of buttock)

By Staff nurses only

- Give Inj. Magnesium sulphate 4 g (20 ml of 20% solution) slow IV in 5 min.
- Loading dose of Magnesium sulphate may be given without checking Urine Output on admissionThen administer Inj. Magnesium sulphate 10 gm deep IM, 5 g in each gluteus muscle (10 ml of 50%solution, in each buttock), with 1 ml of 2% Lignocaine in the same syringe.

Preparation of 20% Magnesium sulphate solution for loading dose

- Inj. Magnesium sulphate (MgSO4) is supplied as a 50% solution either in 2 ml (1 g) ampoule or 10 ml (5g) vial
- If 2 ml (1 g) ampoule is available: 1 amp contains 2 ml 50% solution = 1 g MgSO4
- 4 amp of 2 ml 50% solution = 4g MgSO4 in 8 ml solutionAdd
- 12 ml distilled water or saline

  To make
- 20 ml 20% MgSO4 solution
- Give slow IV in 5 min

  5 amp of 2 ml 50% solution = 5 g MgSO4

  Give 5 g MgSO4 deep IM in each buttock (total 10 amp = 10 g given)

**Note: Magnesium sulphate should not be given as a bolus rapidly as it causes respiratory depression inmother & fetus**

If convulsions recur after 15 minutes, give an additional 2 g of Magnesium sulphate (10 ml of 20% solution) IV over 5 minutes. If the convulsions continue, give Diazepam (10mg slow IV over 2 mins) and consult a physician OR refer to MC/DWH.

Ideally patient should be shifted to higher centre after administering the loading dose of Magsulf unless she isin advanced labour. In that case she should be delivered and then referred to FRU.

**(b). Maintenance Dose**

Give 5 g of 50% Magnesium sulphate solution IM with 1 ml of 2% Lignocaine every 4 hours alternately in each buttock. Magnesium sulphate to be continued till 24 hrs after delivery or the last convulsion whichever occurs later.

Preparation of 50 % Magnesium sulphate for maintenance dose

- 1 amp contains 2 ml 50% solution = 1 g MgSO4
- 5 amp of 2 ml 50% solution = 5 g MgSO4
- Give deep IM in alternate buttock every 4 hrly (total 5 g given)
- Before giving the next dose of Magnesium sulphate, check for signs of magnesium toxicity
- Ensure that:
  - The urine output is at least 100 ml per 4 hours
  - Knee jerk reflexes are present
  - The RR is at least 16 breaths/ minute
- Withhold the next dose if the above criteria are not met
- Serum creatinine must be done in all cases of Eclampsia & if it is > 1 mg%, then maintenance doseshould be withheld.

**Precautions:**

- Do NOT give 50% Magnesium sulphate solution IV without diluting it to 20%
- Do NOT give a rapid IV infusion of Magnesium sulphate as it can cause respiratory failure or death.
- If respiratory depression occurs (RR <16 breaths/min) after giving Magnesium sulphate, discontinue thedrug.
- Give antidote Calcium gluconate 1g IV (10ml of 10% solution) over a period of 10 minutes.

**2. Controlling the blood pressure**

Antihypertensive therapy: Management of hypertension is the same for eclampsia & severe pre-eclampsia.

**3. Termination of pregnancy**

- Refer the patient to the FRU or higher centre for delivery and further management
- If woman is in advanced labor: Monitor the progress of labor and deliver.
- Post-delivery, transfer woman to higher center.

**Care during transport-**

- Put woman on her left with a mouth gag in place to avoid aspiration
- Ensure woman is accompanied by medical/ paramedical person on stretcher with padded rails/pillows on side to avoid fall/ injury down during transport
- Pt should have indwelling catheter & secure IV line
- Oxygen & suction must be there in transport vehicle.
- If it is a case of Postpartum eclampsia, the baby should accompany the mother

DIURETICS SHOULD NOT BE USED

Utero-placental perfusion is reduced in pre-eclampsia, so diuretics are contraindicated.

4. Maintaining fluid balance
5. Monitoring:
    - B.P. charting,
    - Urinary output monitoring
    - Respiratory rate
    - Knee jerks
    - fetal surveillance

## Pre-Term Labour

**Definition**

- Preterm labour refers to the onset of labour before 37 weeks of gestation.

**Risk factors for preterm labour**

- Prior preterm birth – associated with 1.5 to 2 times increased risk
- Short cervical length < 25mm at less than 24 weeks
- Prior cervical surgery like conisation, loop electrosurgical excision procedure, dilatation & curettage
- Urinary tract infection during pregnancy
- Low pre-pregnancy BMI
- Periodontal disease

- Short inter pregnancy interval< 18 months
- Multiple pregnancy
- Smoking

**Diagnosis of preterm labour**

Women with regular uterine contractions & >4cm cervical dilatation are considered to be in establishedpreterm labor.

**Management during labour**

- Always calculate gestational age for mothers who present in labour or with rupture of membranes. Identifying preterm baby allows you to refer to higher facilities where special newborn care could be provided, if delivery is not imminent
- Management of preterm labour consists of tocolysis (trying to stop uterine contractions) or allowing the labourto progress.

Tocolysis under the guidance of doctor Refer to district hospital/medical college with proper documentation after giving loading dose

- Tocolysis is only to be given for 48 hours to allow steroid coverage. 20-30mg orally
- If the gestation period is > 24 weeks but < 37 weeks, corticosteroids should be given to the mother with the advice of doctor/ teleconsultation to improve foetallung maturity and the chances of survival of the newborn. (Dexamethasone 6 mg IM, four doses, 12 hours apart (recommended in India by GOI)
- Refer woman after 1st dose of steroid with proper documentation

If patient is in advanced labor, deliver vaginally & refer to higher centre/FRU after stabilizing newborn & documenting Baby notes in referral form.

- Check to see if the mother has increased body temperature with rupture of membranes
- Prophylactic antibiotic coverage should be given as per doctor's advice
- Magnesium sulphate for neuro protection between 24 weeks to 34 weeks gestational age may also be given as per doctor's advice

  Allowing labour to progress and deliver at BEmONC facility if-

  - Delivery is imminent.
  - The foetus is distressed, dead or has an anomaly incompatible with survival.
- Monitor the progress of labour using a partograph.
- Avoid delivery by ventouse as the risk of intracranial bleeding in a preterm baby is high.
- Prepare for management of preterm or LBW baby and anticipate the need for resuscitation.
- If needed, refer neonate to the nearest NICU/ SNCU after appropriately stabilizing newborn &documenting Baby notes in Referral form.

## Premature or Pre labour Rupture of Membranes (PROM)

Spontaneous rupture of membranes anytime beyond 28$^{th}$ week of pregnancy but before the onset of labour is called pre labour rupture of the membranes (PROM).

- When rupture of membranes occurs beyond 37th week but before onset of labour it is called term PROM and
- When it occurs before 37 completed weeks it is called PRETERM PROM.
- Rupture of membranes for more than24 hours before delivery is called prolonged rupture of membranes

The following signs and symptoms may be seen in PROM.

- A P/S examination done under aseptic conditions may reveal a pool of amniotic fluid lying in the vagina,or amniotic fluid coming out of the cervix, particularly when the woman is made to cough.
- A sterile pad placed over the vulva and examined after an hour may show the pad soaked with amniotic fluid.

NOTE:

- Do a P/S examination rather than a P/V which in no way helps to establish the diagnosis of PROM. Instead it may add to the complication by way of introducing infection.

**Risk factors for PROM in the following conditions**

- Chorioamnionitis
- Urinary tract infection
- Lower genital tract infections
- Polyhydramnios
- Multiple pregnancy
- H/o preterm labour in previous pregnancies
- Cervical Incompetence
- Cervical length less than 2.5 cm
- Low BMI (<19kg/m2)

**Differential diagnosis of vaginal discharge during pregnancy**

| Symptoms and signs typicallypresent | Symptoms and signssometimes present | Probable diagnosis |
|---|---|---|
| Watery vaginal discharge | • Sudden gush or intermittentleaking of fluid<br>• Fluid seen at the introitus<br>• No contractions within 1 hour | Pre labour rupture of themembranes (PROM) |
| In later months of pregnancy intermittent leaking of urine | | Urinary incontinence |
| • Foul-smelling watery vaginaldischarge after 20 weeks of gestation<br>• Fever/chills<br>• Abdominal pain | • Maternal tachycardia<br>• History of loss of fluid<br>• Tender uterus<br>• Rapid foetal heart rate<br>• Light vaginal bleeding | Chorio amnionitis |
| • Increased vaginal discharge<br>• No history of loss of fluid | • Itching<br>• Frothy/curdy discharge<br>• Dysuria<br>• Abdominal pain | Vaginitis |
| Bloody vaginal discharge | • Abdominal pain<br>• Loss of foetal movements<br>• Heavy, prolonged vaginal | Abruptio placentae |
| Blood-stained mucus discharge | • Cervical dilatation &effacement<br>• Contractions | Labour (May be term or preterm) |

**Management**

All cases of premature rupture of membranes whether term or preterm should be referred to a higher centerfor management unless they are in active labor.

- Give corticosteroids for fetal lung maturity as per advice of doctor
  - Inj. Dexamethasone 6 mg IM 4 doses 12 hrs. apart (preferred) OR
  - When patient is being shifted to a higher center, ensure she is stable, referral centre has been

intimatedregarding the patient & referral form is duly filled with details & time of treatment given. Give 1st dose of steroid before referral and document it.

- If there are signs of infection, always suspect chorio-amnionitis. Patient should be delivered irrespective of gestational age

### Chorioamnionitis

It is an acute inflammation of the membranes and chorion of the placenta, typically due toascending polymicrobial infection in the setting of membrane rupture.

**Symptoms & Signs of Chorio-amnionitis**

- Maternal:
  - Fever
  - Lower abdominal pain
  - Foul smelling vaginal discharge
  - Tachycardia
  - Uterine tenderness
  - Hot vagina
  - Leucocytosis
- Fetal: Tachycardia

**Management:**

In case of chorioamnionitis start following antibiotics as per doctor's advice before referral

- Inj. Ampicillin 2 g IV 6 hrly PLUS
- Inj. Gentamycin 5 mg/kg IV every 24 hrs PLUS
- Inj. Metronidazole 500 mg IV 8 hrly

- DO NOT use corticosteroids in the presence of frank infection
- DO NOT give Tocolytics in PPROM

## LABOR AND DELIVERY

### Fetal Distress

Fetal distress is a manifestation of fetal hypoxia. If prolonged, it can lead to serious fetal damage including fetal death. Fetal distress is an ill-defined term used to express intrauterine fetal jeopardy, hence the term non reassuring fetal status is being used.

**Non-reassuring foetal status** is characterized by tachycardia (≥160 beats/min) and bradycardia (<110beats/min) reduced FHR variability accelerations and absence of acceleration spontaneous or elicited.

**Etiology of non-reassuring foetal status**

| ACUTE | CHRONIC |
|---|---|
| DURING PREGNACY (LESS COMMON) | Chronic placentalinsufficiency |
| Placental separation in placenta previa or abruption placenta | IUGR |
| Following external cephalic version due to cord entanglement | |
| During oxytocin induction | |
| Diabetes | |
| Hypertension | |

| DURING LABOR (COMMON) | |
|---|---|
| Uterine hyperstimulation following oxytocin for augmentationof labor | |
| Placental abruption | |
| Uterine rupture or scar dehiscence | |
| Cord prolapse | |
| Injudicious administration of oxytocin, analgesic and anestheticAgents | |
| Maternal hypotension- as in epidural analgesia | |

## Diagnosis of fetal distress

### Abnormal FHR

- A normal FHR is between 110 and 160 beats/minute.
- A slow FHR <110 beats/min (foetal bradycardia) if present persistently in the absence of contractions is indicative of foetal distress.
- A normal FHR may slow down during a contraction but usually recovers to normal as soon as the uterus relaxes. If the abnormal FHR persists for a long time during a contraction (late deceleration) or persists beyond 3 contractions it indicates foetal distress.
- A rapid FHR >160 beats/minute (foetal tachycardia) may be a response to maternal tachycardia. This may be due to maternal fever, intake of drugs such as terbutaline, ritodrine, atropine or isosuxprine etc., hypertension or amnionitis & should be managed appropriately. In the absence of maternal tachycardia a rapid FHR should be taken as a sign of foetal distress.
    - A slow FHR <110 beats/minute (foetal bradycardia) may be due to fetal sepsis or anomalies. This may also be use of local anaesthetic drugs or epidural analgesia or Drugs to mother (pethidine, antihypertensives like methyldopa, propranolol, Magnesium sulfate
- Irregular foetal heart rate

### Meconium staining of the amniotic fluid

- Meconium staining of the amniotic fluid is seen frequently as the foetus matures and therefore by itself does not indicate foetal distress. A slight degree of meconium staining without heart rate abnormalities is an early warning sign & indicates the need for vigilance.
- Thick meconium staining along with FHR abnormalities suggests foetal distress.
- Thick meconium suggests the passage of meconium in a decreased volume of amniotic fluid, and may indicate the need for an expedited delivery and cleaning of neonatal upper airway at birth to prevent meconium aspiration.
- In a breech presentation, meconium is passed during labour due to compression of the fetal abdomen. This is not a sign of fetal distress unless it occurs in early labour.

## Management of fetal distress

### General management

This is aimed at improving the placental perfusion and foetal oxygenation.

- Prop up the woman or place her on her left side (left lateral position) to relieve aorto caval compressionby improving the cardiac output and placental perfusion.
- Stop Oxytocin if it is being administered.
- Give oxygen @ 6-8 L/min through a mask or cannula.
- Rapidly infuse about 1 L of Ringer Lactate or normal saline to expand the intravascular volume provided there are no contraindications for such an infusion
    - REFER to FRU/DWH for delivery under supervision of a specialist

## Specific management for staff nurses only

- If a maternal cause for FHR abnormality is identified (maternal fever, drugs) initiate appropriate management.
- **If no maternal cause is identified for abnormal FHR & it remains abnormal for at least three contractions,**perform a vaginal examination to check for any explanatory signs of distress and manage accordingly.
- If there is vaginal bleeding with intermittent or constant abdominal pain, suspect abruptio placentaeand manage accordingly and refer the patienturgently to higher facility where LSCS facility is available.
- If there are signs of infection (fever, foul-smelling vaginal discharge) suspect amnionitis, start thewoman on antibiotics on advice of doctor (Ampicillin, Gentamicin and Metronidazole) ; expedite delivery and refer the patienturgently to higher facility where LSCS facility is available.
    - If the cord is prolapsed below the presenting part, or in the vagina, manage appropriately
- If FHR abnormalities persist or there are additional signs of distress (thick, meconium- stained fluid) plan for delivery and refer the patienturgently to higher facility where LSCS facility is available.
- If the cervix is fully dilated and the foetal head is low down, expedite delivery by ventouse extraction or forceps application
- If the cervix is not fully dilated or delivery is not imminent (the foetal head is high) refer the patienturgently to higher facility where LSCS facility is available.

## Cord Prolapse

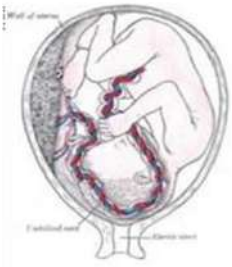
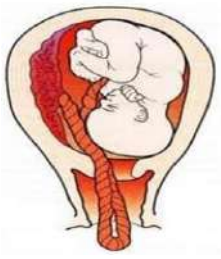
A prolapsed cord is a condition in which the umbilical cord lies in the birth canal below the presenting part, with the foetal membranes ruptured. The cord may be visible at the introitus or lying outside it.

The same condition, but with the membranes intact, is known as a cord presentation.

**Prolapsed cord is an obstetric emergency**

The immediate complication of cord prolapse is cord compression which can lead to foetal distress, and foetal death if immediate intervention is not carried out.

**Types of cord prolapse**

|  |  |  |
|---|---|---|
| **OCCULT PROLAPSE**<br>• Descent of the umbilical cord alongside the presenting fetal part, but has not advanced past the presenting fetal part.<br>• Can occur with both intact or ruptured membranes. | **CORD PRESENTATION**<br>• The cord has not passedthe opening of the cervix.<br>• The membranes are notyetruptured. | **CORD PROLAPSE**<br>• Descent of the umbilical cord past the presenting fetal part.<br>• Rupture of membraneshasoccured |

**Risk Factors:**

1. Malpresentation: breech, transverse lie
2. Contracted Pelvis or fetopelvic disproportion
3. Prematurity
4. Twins
5. Hydramnios
6. Iatrogenic: Low rupture of membranes, manual rotation of head

**Prevention of cord prolapse**

Upward pressure on the presenting part should be kept to a minimum in women during vaginal examination and other obstetric interventions in the context of ruptured membranes because of the risk of upward displacement of the presenting part and cord prolapse.

**How to avoid cord prolapse**

- Refer to FRU/ DWH for elective admission to hospital after 37+0 weeks of gestation in case of transverse, oblique or unstable lie and women should be advised to present urgently if there are signs of labour or suspicion of membrane rupture.
- Women with non-cephalic presentations and preterm prelabour rupture of membranes should be referred to FRU/DWH.
- Artificial membrane rupture should be avoided whenever possible if the presenting part is mobile and/or high.
- If it becomes necessary to rupture the membranes with a high presenting part, this should be performed by a specialist with arrangements in place for immediate Caesarean section.
- Upward pressure on the presenting part should be kept to a minimum in women during vaginal examination and other obstetric interventions in the context of ruptured membranes because thepresenting part and cord prolapse.

**Management:**

Cord presentation or prolapse should be excluded at every vaginal examination in labour and afterspontaneous rupture of membranes if risk factors are present.

**General measures**

- Call for help
- Give the woman 6-8 lit/min of Oxygen by mask OR 2-4 lit/min via nasal canula @ SpO2 >92% where available
- IV fluid to be started with R/L and patient urgently referred to facility where LSCS is possible

**Specific measures in various clinical presentations only by staff nurses:**

**Scenario 1: No pulsations can be felt in the umbilical cord**

If the cord is not pulsating, the foetus is dead. Deliver in a manner that is safest for the woman. Allow labour to progress normally if there are no contraindications for a vaginal delivery.

**Scenario 2: The cord is pulsating, and cord prolapse occurs during the second stage of labour with the cervixfully dilated**

If the cord is pulsating and the cervix is fully dilated, it means that the foetus is alive and has a reasonablechance of surviving after delivery.

Expedite the delivery with an episiotomy and Ventouse extraction or outlet forceps application. Be prepared to resuscitate the newborn. If < 24 weeks of gestation, immediately make arrangements to refer the baby for SNCU care.

**Scenario 3: The cord is pulsating, and cord prolapse occurs during the first stage of labour with the cervix not yet fully dilated**

- If the mother is in the first stage of labour

1. Ask the mother to adopt the knee-elbow position: to turn over to face the bed and crouch on all fours raising her buttocks in the air above her shoulders. The mother can stay in this position during transfer if option 3 below is not available.
2. Manually keep the presenting part out of the pelvis:

   Wear sterile gloves, insert a hand into the vagina and push the presenting part up to decrease pressure on the cord and dislodge the presenting part from the pelvis.

   Place the other hand on the abdomen on the suprapubic area and keep the presenting part out of the pelvis.

   Once the presenting part is firmly held above the pelvic brim (if this is possible), remove the other hand from the vagina. Keep the hand on the abdomen until the time that the caesarean section is performed. Try and replace the cord into the vagina if visible outside.

   It is usually only possible to maintain this position for a short time only, such as when preparing the mother on the operating table prior to caesarean section or while inserting a catheter.
3. Fill the bladder:

   Insert a Foley catheter (with balloon) and drain the urine, then fill the bladder through the catheter with 500 ml normal saline then blow up the balloon and clamp the catheter.

   Attach the catheter bag as normal but keep the catheter clamped, with fluid in catheter balloon or distending the bladderand refer patient to higher centre/FRU until the baby is delivered. Catheter clamp will be removed during c-section.

- If the mother is in the second stage of labour

  Expedite the delivery with an episiotomy and ventouse extraction or outlet forceps application. Beprepared to resuscitate the newborn.

## Prolonged labour/ Obstructed labour

Prolonged labour is active labour with regular uterine contractions but without adequate cervical dilatation and/or descent of the presenting part, lasting for more than 12 hours. Obstructed labour means that, in spite of strong uterine contractions, the foetus cannot descend because of mechanical factors.

**Prolonged Labour :** Woman has been experiencing labour pains for 24 hours or more without delivery

- **Prolonged Latent Phase :** Woman is in true labour but her cervical dilatation has not progressed at all or has not reached 4 cm in 8 hours
- **Prolonged Active Phase :** Woman is in active phase of labour (> =4 cm dilatation achieved) but cervical dilatation is not occurring at the rate of 1 cm/hour (overall should not last more than 12 hours)
- **Prolonged Expulsive Phase :** Woman is in second stage of labour (> 10 cm dilatation achieved) but baby is not delivered for more than 2 hours even after the woman has an urge to push

### Diagnosis of prolonged/obstructed labour

- A partograph is an important tool to diagnose prolonged labor and prevent obstructed labor.
- When, despite good uterine contractions for 8 hours, the woman is still in the latent phase of labour, or when the partograph crosses the "Alert line" it is an indication that the labour is not progressing normally and that the woman needs surgical intervention.

| Stages of Labour | Primigravida | Multigravida |
|---|---|---|
| First stage | Generally takes about 12 hours. | Generally takes about 6–8 hours. |
| Second stage | Generally takes about 2 hours. | Generally takes about half an hour. |

**Prolonged labour can be due to:**

- Incoordinate uterine contractions: These are contractions that are weak or not effective enough to result in cervical dilatation and/or foetal descent. There is no mechanical obstruction in these cases.

  If not managed properly, these cases may ultimately develop uterine fatigue. An ascendinginfection may also occur, especially if the membranes have ruptured. There is a danger of foetal death in these cases.

- Fetopelvic disproportion: This means that it is difficult or impossible for the foetus to passsafely through the pelvis. As the cephalic end is the most common presenting part, this condition is also known as Cephalopelvic disproportion (CPD). This condition, if not managed in time, will lead to obstructed labour.

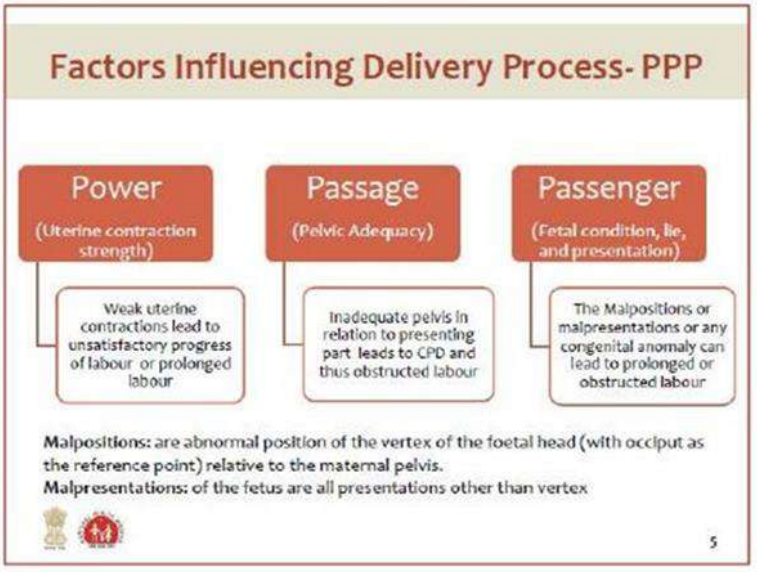
  CPD occurs when the foetal head is large compared with the pelvis. CPD may be due to asmall pelvis with a normal-sized head, or a normal pelvis with a large foetus, or a combination of a large baby and small pelvis. CPD cannot be diagnosed before the 37th week because before that the head has not reached its birth size.

## Obstructed labour

Obstructed labour means that, in spite of strong uterine contractions, the foetus cannot descend because of mechanical factors. Obstruction may occur at the inlet, within the cavity or outlet ofthe pelvis.

**Risk factors for obstructed labour**

1. Contracted pelvis, CPD is the commonest cause
2. Teenage pregnancy
3. Grand multiparity
4. Malpresentations & malpositions
5. Pelvic deformities
6. Short stature
7. Fetal malformations eg hydrocephalus
8. Rarely large tumours in the pelvis




Complications resulting from obstructed labour can be avoided if a woman in obstructed labour is identifiedearly, and appropriate action is taken. In such cases, a caesarean section is often required for delivery.

## Diagnosis of Obstructed labour

- History
  - History of prolonged pains
  - History of prolonged rupture of membranes
  - Handling the case by a 'Dai' or untrained person/ provider
  - If partogram is made then line denoting progress of labour will be to right of alert line

**General examination**

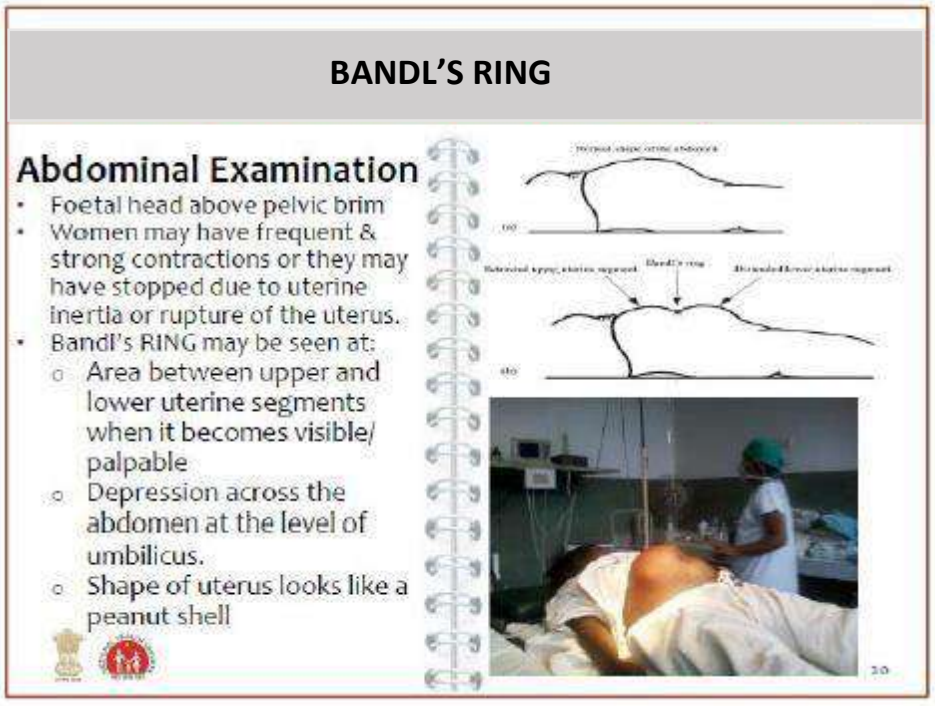
In cases of obstructed labour, the following signs are present:

- Physical and mental exhaustion
- Dehydration and ketoacidosis (ketonuria, dry mouth, tachycardia)
  - Fever (in cases of sepsis)
  - Shock (as evidenced by tachycardia, low B.P., cold extremities, pale complexion, history of oliguria or anuria). The cause of shock may be a ruptured uterus or sepsis.

**Abdominal examination**

In cases of obstructed labour, abdominal examination may reveal the following:

- Part of the foetal head (or the presenting part) can be felt above the pelvic brim because it is unable to descend inspite of good uterine contractions as there may be some obstruction in the passage (like brim contraction, mid pelvic contraction or outlet contraction).
- In case of abnormal presentations like transverse lie, the shoulder may be impacted or there may be a hand prolapse.
- The woman may have frequent and strong uterine contractions. But if she has been in labour for a long time, the contractions may have stopped because of uterine exhaustion/inertia or because of rupture of the uterus.
- The uterus may have gone into tonic contraction and is tightly moulded around the foetus.
- Bandl's ring may be seen
    - Bandl's ring is the name given to the area between the upper and lower uterine segments when it becomes visible and/or palpable during labour. It should not normally be seen or felt on abdominal examination.
    - Bandl's ring is a late sign of obstructed labour. It can be seen as a depression across the abdomenat about the level of the umbilicus. Above this is the retracted upper uterine segment. The level of the Bandl's ring keeps rising. Below the Bandl's ring is the distended lower uterine segment. This is dangerously thin and can rupture if not managed in time.
    - Palpation will reveal a tender contracted uterus, absent liquor and the fetal heart may not belocated.




**Vaginal examination**

Look for the following danger signs related to obstruction:

The vagina will be hot and dry, amniotic fluid may be foul smelling.

- Oedema of the vulva may be seen, especially if the woman has been bearing down for a long time.
- Cervix may be oedematous and loose hanging. It may be or maynot be fully dilated .
- A large caput succedaneum, or any other abnormal presentation, can be felt
- The cause of the obstruction may be felt, e.g. a severely moulded head stuck in the pelvis, shoulder

presentation, any other abnormal presentation, prolapsed arm, or a compound presentation such ashead with hand, cord, etc.

## Symptoms and signs suggestive of ruptured uterus

**Symptoms**

- There may be severe abdominal pain or H/O severe pain followed by relief in pain
- Vaginal bleeding may or may not be present

**Signs on abdominal examination**

- Shock may be present
- Abdominal tenderness is present
- The foetal parts felt superficially
- The uterine contour is not felt
- The FHS is not heard

**Signs on vaginal examination**

- The presenting foetal part is either very high up, or may not be felt at all.

## Management of obstructed labour

Explain the situation to the relatives. Take the written high risk consent and Refer patient to FRU/ district hospital/medical College where operative delivery is possible

**Pre referral management**

Ensuretaking steps for initial management before referral.

- Start management of shock with IV fluids
- Draw blood sample for grouping and cross matching
- Give intravenous antibiotics
- Catheterize urinary bladder

1. Maintain a normal plasma volume and prevent or treat dehydration and ketosis.
   - Start an IV line. Use a large needle or cannula (no. 18 )
   - Infuse with R/L or normal saline.
   - Run the fluid at a moderate rate of approximately 25-30 drops/minute.
2. Give IV antibiotics after consultation with doctor

To prevent puerperal sepsis, which may occur due to frequent vaginal examinations and premature rupture of membranes, the following antibiotics need to be administered to the woman:

- Inj. Ampicillin 1 g IV, after sensitivity testing (AST)
- Inj. Gentamicin 80 mg IV
- Inj. Metronidazole 400 mg, preferably IV (if available), otherwise orally.

3. Catheterize urinary bladder:

   **Steps of catheterization:**

   1. Place the patient in the supine position with the knees flexed and separated and feet flat on the bed, about60 cm apart. If this position is uncomfortable, instruct the patient either to flex only one knee and keep theother leg flat on the bed, or to spread her legs as far apart as possible.
   2. With the thumb, middle and index fingers of the non-dominant hand, separate the labia majora and labia minora. Pull slightly upward to locate the urinary meatus. Maintain this position to avoid contamination during the procedure.
   3. With your dominant hand, cleanse the urinary meatus, using forceps and chlorhexidine soaked cotton

balls. Use each cotton ball for a single downward stroke only.

4. Place the drainage basin containing the catheter between the patient's thighs.
5. Pick up the catheter with your dominant hand.
6. Insert the lubricated tip of the catheter into the urinary meatus.
7. Advance the catheter about 5-5.75 cm, until urine begins to flow then advance the catheter a further 1-2 cm.
8. Note: If the catheter slips into the vagina, leave it there to assist as a landmark. With another lubricated sterilecatheter, insert into the urinary meatus until you get urine back. Remove the catheter left in the vagina at this time.
9. Attach the syringe with the sterile water and inflate the balloon. It is recommended to inflate the 5cc balloonwith 7-10cc of sterile water, and to inflate the 30cc balloon with 30-35cc of sterile water.
10. Improperly inflated balloons can cause drainage and leakage difficulties.
11. Gently pull back on the catheter until the balloon engages the bladder neck. Insertion of Foley's catheter under all aseptic precautions is important as fluid intake and output in all such cases is essential. This alsohelps as a preparation before LSCS.

4. **LSCS:**

Such cases may require LSCS so refer promptly if facility for conducting C-section is not available.

## Complications following obstructed labor

### Maternal

1. Maternal fatigue

Due to prolonged labour, the mother may be dehydrated and may go into ketoacidosis.

2. Uterine rupture

This occurs when there is rupture of the membranes and the amniotic fluid has drained away. The uterus is tonically retracted over the foetus and does not relax at all. In these cases the foetal parts cannot be palpated clearly. Alternatively, the foetus is forced into the lower uterine segment and, with continuing uterine contractions, the lower segment becomes thin and is likely to rupture.

Rupture of the uterus following obstructed labour is more common in multiparous women andin those with a uterine scar due to a previous caesarean section.

Rupture of the uterus results in haemorrhage (usually internal) and shock. If not managed immediately, it can result in maternal and fetal death.

3. Infection including intrapartum chorioamnionitis & Puerperal sepsisThe chances of infection are increased in obstructed labor.

4. Fistulae

These occur due to excessive pressure of the head on the tissues of the bladder, vagina and rectum, which are trapped between the obstructed foetal head and the pelvic bones. Due to decreased oxygenation, the tissues undergo ischemic necrosis, forming various types of fistulae such as vesicovaginal (between the bladder and vagina), vesicocervical (between the bladder and the cervix), or rectovaginal (between the rectum and vagina). These fistulae allow leakage of urine or faeces from the vagina, and represent the extreme morbid conditions that may occur following the neglected or poorly managed obstructed labour.

5. Maternal death

If such cases are not managed promptly, the mother may die either due to uterine rupture and the resultant haemorrhage and shock, or death may result from the DIC.

### Fetal

1. Caput succedaneum

This is a boggy swelling on the foetal scalp formed due to pressure of the maternal pelvic boneson the foetal skull.

It usually subsides on its own after a few days.

2. Excessive moulding of the foetal skull

This may cause a change in the shape of the baby's head.

3. Birth asphyxia and its complications

Birth asphyxia can lead to foetal death/stillbirth. If the baby survives, it may have complications like cerebral palsy and/or mental retardation.

## Post Partum Haemorrhage (PPH)

**Definition**

- Postpartum hemorrhage is defined as the loss of 500 ml or more of blood from the genital tract after a vaginaldelivery or in excess of 1000 ml in cesarean delivery.
- Operational definition of PPH is the fully soaked more than one pad per hour or bright red bleeding with orwithout clots after delivery.
- Post partum loss of blood vaginally which alters the vitals leading to shock

### Risk Factor for PPH

- Poor maternal nutrition
- Anemia
- Inadequate antenatal supervision
- Mismanaged third stage of labour
- Sometimes it may occur in women with no risk factor at all

**Prevention Strategies of PPH:**

- Birth preparedness
- Early identification and management of anemia
- Avoid unnecessary procedures (e.g., episiotomy)
- Active management of third stage of labor
  - Oxytocin 10 units IM
  - Controlled cord traction
  - Uterine massage
- Early identification and management of tear and lacerations.

**Types of PPH:**

- Immediate PPH/primary PPH—during and within 24 hours of delivery. Most commonly caused by uterine atony. Other causes- include trauma to the genital tract, retained placenta etc.
- Delayed PPH/secondary PPH—after 24 hours of delivery until six weeks postpartum. Commonly causedby retained placenta fragments.

**Etiology of PPH**

- Primary PPH:
  - Uterine atony 70-80%%
    - Tissue trauma – Perineal or cervical tear/ lacerations
    - Retained placental tissue or retained placenta
    - Coagulation defects
- Secondary PPH:
  - Retained placental bits
  - Metritis

**Identifying different types of PPH**

| Signs typically present | Signs Sometimes present | Probable cause of PPH |
|---|---|---|
| • Immediate PPH<br>• Uterus is soft & not contracted<br>• Bleeding may be continuous<br>• or intermittent | Shock | Atonic uterus |
| • Immediate PPH<br>• Uterus contracted | Complete placenta on examination | Tears in the cervix orvagina |
| • Bleeding is continuous trickle | | |
| • Placenta not delivered within<br>• 30 minutes after delivery | • Immediate PPH<br>• Uterus relaxed | Retained placenta |
| • A portion of the maternal surface of the Placenta is missing or the membrane are torn | • Immediate PPH<br>• Uterus relaxed | Retained placental fragments |
| • The uterine fundus is not felt on abdominal palpation<br>• Slight or intense pain | • Inverted uterus (partial orcomplete) apparent at vulva<br>• Immediate PPH | Acute uterine inversion |
| • Delayed PPH (Bleeding between 24 hours of delivery & 6 weeks postpartum)<br>• Uterus softer and larger than expected for the elapsed time | • Bleeding is variable (light/ heavy, continuous/ Irregular) & foul-smelling discharge) | Delayed PPH |
| • Immediate PPH (bleeding is intra-abdominal and/or transvaginal)<br>• Severe abdominal pain (maydecrease after rupture of the uterus) | • Shock (may be out of proportion tovisible blood loss)<br>• Rapid maternal pulse<br>• Tender abdomen<br>• Uterine contour not felt | Ruptured uterus |

**Laboratory tests during PPH:**

Send blood samples for-

1) Complete blood count (CBC) with platelet count and differential cell count
2) Blood group and Crossmatch, Rh typing
3) **Bleeding Time (2-8 mins)***
4) **Clotting Time***
5) **Clot retraction time increased***
6) Prothrombin time increased
7) Activated partial thromboplastin time
8) Platelet Count decreased
9) Blood urea nitrogen (BUN) and creatinine
10) Fibrinogen- decreased (If facilities are not available then bedside clotting test)
11) Liver function test

Incase facilities are not available or functional at BEmONC level, bedside clotting test can be done forimmediate results to facilitate decision making.

**Clot observation Test/ Clot retraction Test**

- Take 2 mL venous blood in a small, dry, clean, plain glass test tube (approx. 10 x 75 mm)
- Hold tube in your closed fist to keep it warm (+ 37°C)
- After 4 minutes, tilt tube slowly to see if clot is forming.
- Then tilt it again every minute until blood clots and tube can be turned upside down
- Failure of a clot to form after 7 minutes or a soft clot that breaks down easily suggests coagulopathy
- This clot is further observed for clot retraction to assess platelet function. Plasma should retract awayfrom the sides of the glass tube within a few hours. Normal clot retraction time is 0-2 hrs.

- **Estimation of Blood Loss**
  - Signs of blood loss- Fast weak pulse >110/min, Rapid breathing (> 30 breaths/min), Cold clammy sweat skin, restlessness, Anxious or confusion or unconscious, Systolic BP < 90 mmHg, Urine (< 30ml/ hr.)

- Bleeding may occur at a slow rate over several hours; soitis important for the ANM/staff nurse to do continuous observation for 10 minutes.

**By the time a woman presents with systolic BP< 90 mmhg, she has already lost 1/3rd of thecirculating volume (an average woman has 6 liters of blood in her circulation).**

Note: fall in BP is a late sign as mentioned in the below table as well.

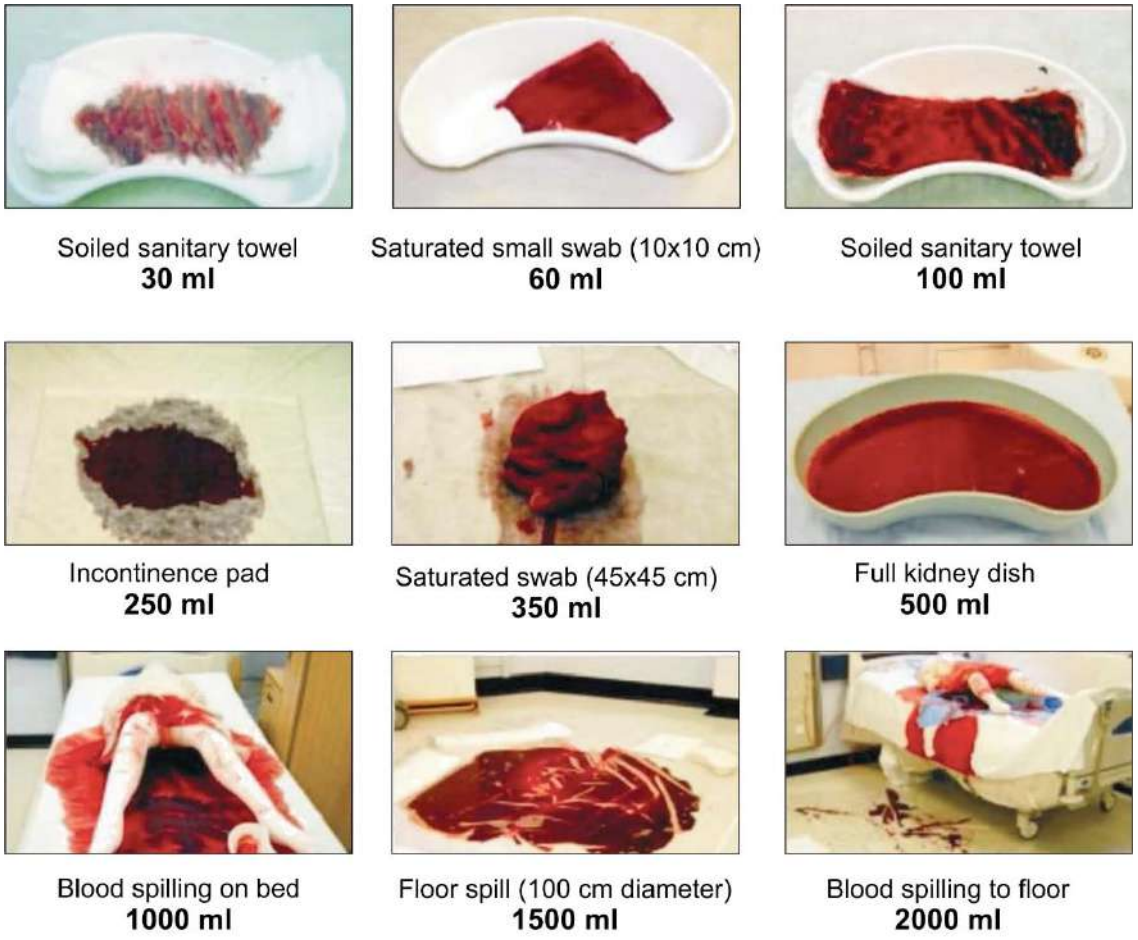
Blood loss can be estimated clinically or visually. It can be classified into 4categories based on the severity as follows-

**Clinical Estimation:**

| Clinical signs | Class I | Class II | Class III | Class IV |
|---|---|---|---|---|
| Blood loss(ml.) | 500-1000 | 1200-1500 | 1800-2100 | >2400 |
| Pulse (beats/min.) | normal | 100 | 120 | 140 |
| Systolic BP (mm of Hg) | normal | normal | 60-80 | 60 |
| Mean arterial pressure (mm Hg) | 80-90 | 80-90 | 50-70 | 50 |
| Tissue perfusion | Postural hypotension | Peripheral vasoconstriction | Pallor, restlessness, oliguria | Collapse, anuria, airhunger |

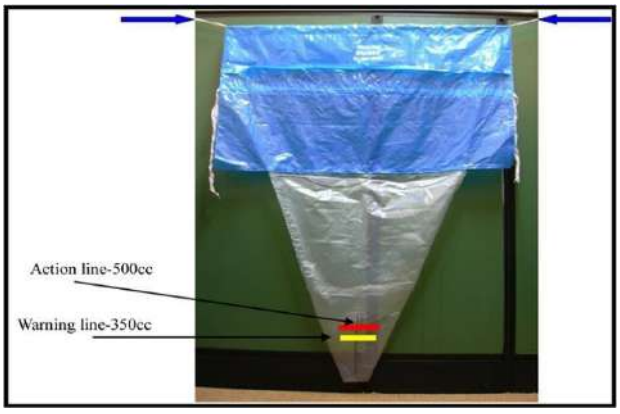
**A Pictorial Reference Guide to Aid Visual Estimation of Blood Loss at Obstetric Haemorrhage: Accurate Visual Assesment is Associated with fewer Blood Transfusions**

**Dr Patrick Bose, Dr. Fiona Regan, Miss Sara-Paterson Brown**




Accurate measurement of the amount of blood lost after childbirth helps to quickly diagnose life-threatening hemorrhage. This can improve the timely management of PPH.

2. Calibrated Delivery Drape Sheet




- This is a calibrated drape to measure the volume of post-partum blood loss and isused after delivery of the placenta.
- The blood drape is a plastic sheet that is placed under the woman and siphons the blood into a calibratedmeasuring pocket on the sheet.
- The warning line is marked at 350 ml of blood loss and action line at 500 ml blood loss. The sheet is decontaminated and thendisposed of as medical waste or incinerated after use.
- Monitoring of woman until stable is done on below listed parameters:

- Continuous monitoring of vitals (blood pressure, pulse rate, respiratory rate, body temperature), fundal height and vaginal bleeding
  - Every 15 minutes - during the first hour

- Subsequently every 30-60 minutes to 1 hour for 4 hours
- Then every 6 hours for 24 hours

- Monitors urine output (normal ≥ 30 mL/h) until the woman is stable
- Once bleeding stops for 24 hours, check for anemia and manage accordingly

### Atonic PPH

Atonic PPH refers to bleeding from the placental site due tolack of tone in the uterus. 80% cases of PPH are due to atonic PPH.

- Any condition that interferes with uterine contraction, such as retained placenta, placental bits or fragments will predispose to atonic bleeding.
- Hence, the most important step in making a diagnosis of thecause of PPH is to keep a hand on the lower abdomen of the woman and feel for the uterine tone.
- If the uterus is soft and not contracted, it indicates atonic PPH (with or without associated genital tract trauma).

**Management of Atonic PPH**

- The general management focus on rapid Initial assessment and triage (ANM and staff nurse).
- The specific management focus on cause-specific management which includes
  - use of uterotonic drugs as a first line of treatment given in table below as per Doctor's advice (ANM and staff nurse)
  - concurrent use of interventions :
    - Bimanual compression (ANM and staff nurse)
    - External aortic compression (ANM and staff nurse)
    - Uterine Balloon Temponade (UBT) etc. to reduce bleeding. (staff nurse)
- There is no defined guidance on which intervention shall be prioritized. It depends entirely on care providers' assessment of the situation, condition of the woman and previous experience. However, current evidences support use of UBT for effective and quick results.

| Name of the drug (in order of preference) | Dose and route IV | Maximum dose | Precautions/ Contraindications |
|---|---|---|---|
| Oxytocin | • Initial Dose: Infuse 20 IU in 1 L NS/RL at 60 drops per minute<br>• Continuing dose: Infuse 20 IU in 1 L NS/RL at 40 drops per minute | Not more than 3L ofIV fluids containing oxytocin | Do not give as an IVbolus |
| Ergometrine/ Methylergometrine | • 0.2 mg IM or IV (slowly), repeat after 15 minutes.<br>• If required, give 0.2 mg IM/IV (slowly), every 4 hours | maximal 5 doses, total 1 mg | Pre-eclampsia, hypertension, heartdisease |
| 15-Methyl Prostaglandin F2α | 0.25 mg IM every 15 minutes | maximal 8 doses, total 2 mg | Asthma |
| Misoprostol | 800 mcg rectal | | Asthma |
| Tranexamic Acid | 1 gm I/V in 10 ml. over 10 min. (100 mg/ min), may repeat after30 min | | |

The two situations during atonic PPH can be either due to:

- Atonic PPH occurring after delivery of complete placenta
- Atonic PPH occurring due to incomplete delivery of placenta or remaining placental bits

To stop the bleeding, it is essential to make the uterus contract by emptying it.

## Rapid Initial Assessment (RIA) and triage (ANM and staff nurse)

**Step 1 RIA (ABC approach)**

Activate the initial protocol by

- Assess – by using AVPU scale: A- Alert, V - responds to Vocal stimuli, P-responds to Painful stimuli U-Unresponsive to all stimuli (Check by giving a painful stimulus by applying supra-orbital pressure or call the woman by her name)
- Give Left lateral tilt with her legs higher than her chest (till 6 weeks postpartum)

**A - Airway**

- Do Head tilt, chin life and Jaw thrust (if no anticipated mandibular fracture)
- Inspect mouth and remove visible foreign body
- Look at chest movements, listen for breath sounds (using stethoscope) or feel air through nostrils

**B- Breathing**

1. If breathing, give 2- 4 litre/ minute of Oxygen by nasal canula
2. If not breathing, assess carotid pulse for 10 seconds:
   a. If pulse is palpable, ventilate with bag and mask every 5 -6 seconds, ensure visible chest rise and check carotid pulse every 2 minutes
   b. If pulse not palpable, Perform CPR (chest compression: Ventilation – 30:2)
3. If breathing, start oxygen @ 6-8 lit./ min. by mask
4. If no breathing is detected, give two rescue breaths. Use Oxygen, if available. Recheck the circulation every 10 breaths, taking no more than 10 seconds each time.
5. If the patient starts to breathe on her own but remains unconscious, turn her into the recovery position and administer oxygen. (Recovery position)

**C - Circulation –**

1. Insert 2 wide bore IV cannula (16-18 Gauze size). Start crystalloid fluids – Ringer Lactate or Normal Saline.

**Note:** Estimated replacement is usually 3 times blood loss.

2. Sizes of cannula: 20 G (pink) can run 1 L in 15 mins, 18 G (green) can run 1 L in 10 mins,16 G (grey) can run 1 L in 5 mins.
3. Continuously monitor: Pulse, BP, Respiration, uterine tonus, vaginal bleeding, and Lungs for pulmonary oedema
4. Give blood transfusion when maternal losses exceed 1.5 L, i.e.,30% of circulating blood volume
5. Catheterize the bladder and note the volume of urine in the bag.

**Points to remember:**

- Fall in BP is a LATE sign, pulse becomes thready first
- Sizes of cannula: 20 g (pink) can run 1 L in 15 mins, 18 gauge (green) can run 1 L in 10 mins, 16 gauge (grey) can run 1 L in 5 mins.

**Step 2: Specific Management:** Concurrent steps

**If Atonic PPH with Placenta delivered:**

In this case the uterus is soft, distended & not well contracted.

1. Continue uterine massage.
2. Try putting the baby to the breast or use nipple stimulation if the baby does not suckle. Early initiation of breast feeding stimulates uterine contractions.

3. Keep patient warm by keeping her covered with blanket and the room warm.
4. Infuse Oxytocin 20 IU in 1 lt of IV fluids (NS or RL) @ 60 drops/minute to keep the uterus well contracted. Continue Oxytocin infusion @ 40 drops/minute. No more than 100 IU of Oxytocin should be given in 24 hours. Oxytocin should never be given as an IV bolus.
5. Withdraw blood for Hb, grouping & cross matching, clotting time & clot retraction time.
6. Catheterize the patient to facilitate uterine contraction and assess the urine output
7. Monitor the vital signs- BP, pulse, RR and urinary output.
8. Review the expelled placenta and membranes for completeness. Infuse RL/ NS until the condition of the woman stabilizes.
9. Attach pulse oximeter if available
10. Transfuse blood when available.
11. If the bleeding persists and the uterus continues to be in the relaxed state, perform Bimanual compression.

**Points to remember:**

- A rising BP (systolic 90 mmHg) and heart rate/pulse under 100 beats/ minute are signs of stabilization.
- Early initiation of breast feeding stimulates uterine contractions.

## Bimanual Compression of the Uterus (ANM and staff nurse)

**Procedure**

a) Wearing elbow length high-level disinfected gloves, insert a handinto the vagina and form a fist.

b) Place the fist into the anterior fornix and apply pressure againstthe anterior wall of the uterus.

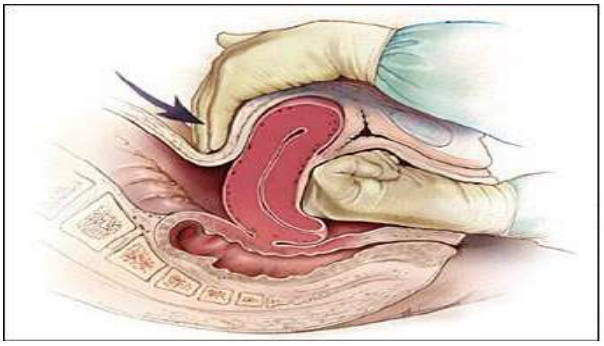
c) With the other hand, press deeply into the abdomen behind theuterus, applying pressure against the posterior wall of the uterus.

d) Maintain compression until bleeding is controlled and the uteruscontracts.

e) After the procedure, broad-spectrum antibiotics (as advised by doctor) may be startedas a prophylaxis against infection.

12. If uterus still not contracted, other uterotonic drugs like Inj. Ergometrine, Inj. Carboprost (PGF2 alpha & Tab Misoprostol (PGE1) as per recommended doses should be given.
13. **Uterine Balloon Tamponade** should be done if bleeding persists despite above methods and plan referral (in-house while shifting to OT or while referring to higher facility).

**BIMANUAL COMPRESSION**



## Balloon Tamponade (only by staff nurses):

- If the woman is bleeding and uterus is atonic, a uterine balloon can be placed in her uterus and inflated with normal saline.
- UBT is a minimally invasive intervention which involves inserting a balloon device into the uterus and then incrementally filling with liquid this slowly applies pressure to the uterus until the bleeding stops.
- In this way patient can be stabilized and if necessary, transferred to higher center for further observation or treatment.

**Insertion of Balloon Tamponade (condom catheter):**

Following are the essential steps for insertion of balloon tamponade-

A) Apply antiseptic solution to the perineal area and vagina.

B) Prepare the condom balloon tamponade by tying condom on the tip of Foley's catheter.

C) Gently insert a sterile speculum into the vagina and grasp the anterior lip of the cervix with a ring or sponge holding forceps. By forceps, insert the balloon into the uterine cavity through the cervical opening and not just in the vagina.

D) Now with the help of syringe, inflate the condom balloon with warm saline solution/ water into the catheter port, till bleeding stops. This usually requires 300-500 ml of liquid but it can vary.

E) Pack the upper vagina with rolled gauze to prevent expulsion of balloon.

F) Palpate the uterine fundus abdominally and mark with a pen, as a reference line from which any uterine enlargement or distension would be noted during observation.

G) A single dose of antibiotic (ampicillin 2 gm IV/ single dose cephalosporin) according to doctor's order is recommended.

Once the balloon is in place and bleeding has stopped, patient should betransferred to referral facility. No surgery is required at this stage if bleeding stops for 30 minutes. If bleeding continues, consider surgical interventions. Monitor vital signs, vaginal bleeding and urine output everyhour. The balloon should remain inside the uterus for 12-24 hours.

**External Aortic Compression Technique (ANM and staff nurse)**

Procedure

1. Apply downward pressure with a closed fist over the abdominal aorta directly through theabdominal wall.
2. The point of compression is just above the umbilicus and slightly to the left.
3. Aortic pulsations can be felt easily through the anterior abdominal wall in the immediatepost-partum period.
4. With the other hand, palpate the femoral pulse to check adequacy of compression.
5. If the femoral pulse is palpable during compression, the pressure exerted by the fist isinadequate.
6. If it is not palpable, the pressure exerted is adequate.
7. Maintain compression until bleeding is controlled.
8. This is a temporary measure to control the bleeding during referral till adequate definitivemeasures are instituted.
9. The pressure should be exerted intermittently.
10. Refer if placenta not removed and Atonic PPH present

**Atonic PPH with retained placenta**

- Follow the same procedure as above with uterine massage, expulsion of clots, Inj. Oxytocin IM, starting an IV line with Oxytocin infusion, etc. Do NOT give Ergometrine as it causes tonic uterine contraction, which may delay expulsion of placenta.
- Continue Assessment of patient's condition (pulse, respiration, BP, colour, consciousness, uterine tone) and estimate how much blood is getting lost to understand the replacement (Blood and fluids). If the woman is in shock, make sure that the airway is open, turn her head to one side and give her oxygen @ 6-8 L/minute through a mask or nasal cannula. Resuscitate with IV fluids and refer to higher centre.
- Empty the bladder and attempt Controlled Cord Traction (CCT). If it is successful, examine the placenta to ensure that it is complete.
- Keep the uterus contracted by massaging the fundus. Put 10 IU of Oxytocin in 500 ml of RL/NS and run it rapidly @ 60 drops/minute. (You may need to set up a second IV drip). Put the baby to the breast or use nipple stimulation if the baby does not suckle to get natural Oxytocin secreted.
- If CCT is not successful, a gentle vaginal examination should be performed. If the placenta can be felt

protruding through the cervix, it should be grasped with the fingers and steadily withdrawn. The other hand fixes the uterus over the suprapubic space, pushing the uterine fundus upwards to prevent inversion of the uterus.

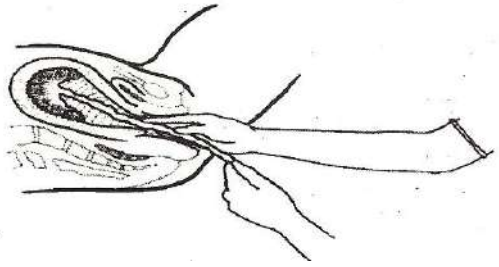
**DO NOT ATTEMPT MANUAL REMOVAL OF PLACENTA IN THE LABOR ROOM.**

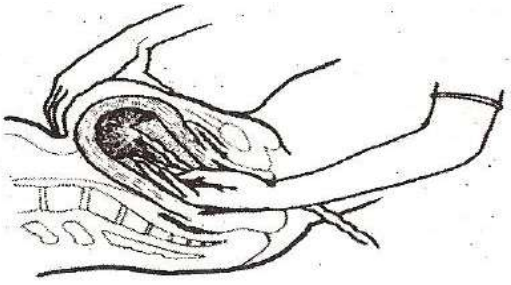
- If the placenta cannot be delivered and the cervix is dilated, keep the oxytocin drip going & giving the patient plasma expanders if required. Refer to FRU/DWH for manual removal of the placenta (MRP).

### Manual Removal of Placental Bits or Placenta (Staff Nurse)

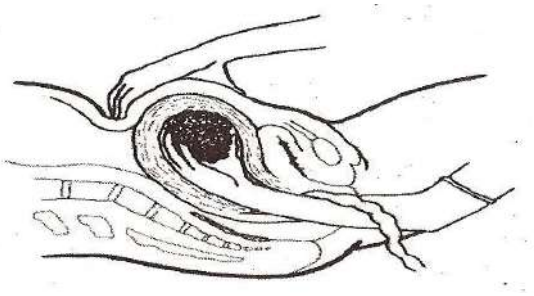
Steps:

1. Start an IV drip (Ringer lactate/ Normal saline) if not started already. Run it fast ifhypovolemia has not been corrected yet or give plasma expanders.
2. Explain the intervention to the woman and reassure her.
3. Do the procedure preferably under GA. If not available give Injection 50 mg Tramadol IM/ Pentazocine & Phenergan.
4. Give the single dose of prophylactic antibiotics:
    - Inj. Ampicilin 2g IV/ Inj. Cephalosporin 2g PLUS
    - Inj. Metronidizole 500 mg IV PLUS
    - Inj. Gentamycin 80 mg IV
5. Start Inj. Oxytocin 20 U in 1 Lit (10 U in 500 ml Ringer Lactate) IV fluids (NS/RL) @ 60 drops/min.
6. Help woman lie on her back with knees bent. Make sure that the bladder is empty. If she is unable to pass urine, pass a catheter & drain the urine, as a full bladder can prevent delivery of the placenta.
7. Clean around the vagina and the perineal area with an antiseptic solution.
8. Wash and scrub your hands and arms well. Put on a pair of short, sterile gloves first. Then on the right hand, which will be inserted into the vagina, put on a long, sterile glove on top of the short one. This will prevent the introduction of bacteria from the arm.
9. Hold the umbilical cord with a clamp & pull it gently until the cord is parallel to the floor.
10. Introduce the right hand in the shape of a cone by drawing the fingers and thumb together intothe vagina.
11. Follow the cord till you locate the edge of placenta.
12. Let go off the cord, and place the left hand on the abdomen, steadying the fundus of uterus from above. This will stop the uterus from moving.
13. Insinuate the ulnar border of the right hand between the edge of the placenta and the uterine wall with the dorsum of your handtowards the uterine wall. Using a side-to-side movement (i.e. alternate abduction and adduction movements of the hand), the placenta is gently separated from the uterine wall.





14. Once you have put your hand into the uterus, do not bring it out until you have separatedthe placenta and brought it out. Do not go in and out of the uterus as this increases the riskof infection
15. When the entire placenta is separated andcomes in the palm of your hand, remove the left hand from the fundus of uterus place it supra-pubically to provide counter-traction. Bring out the placenta and the membranes with the right hand. Re-explore the uterine cavity with the right hand (which is still inside the uterus) for any left-over pieces of the placenta/membranes.



16. After making sure that the uterine cavity is empty, withdraw your right hand.
17. Continue Oxytocin drip. If there is heavy bleeding, give IV Methylergometrine 0.25mg inj. Or Tab Misoprostol 800µg rectally whichever is available.
18. Have an assistant massage the uterus to encourage uterine contraction.
19. Examine the removed placenta and check for its completeness.
20. Monitor the vital signs of the woman (pulse, blood pressure and temperature).
21. Give antibiotics for 5 days
    - Cap. Ampicillin 500 mg 6-hourly, orally
    - Tab. Metronidazole 400 mg 8-hourly, orally
    - Inj. Gentamicin 80 mg IM, 12-hourly)
22. Check for tears in the birth canal.
23. Record the procedure fully.

NOTE: If placenta does not separate easily, it is likely to be morbidly adherent placenta. Furtherefforts to remove may result in heavy bleeding or uterine perforation. Hence, it is advisable toabandon the procedure and refer such cases.

**Post-procedure care in Atonic PPH with/ without Retained placenta**

- Monitor the vital signs (pulse, BP, RR) every 10 minutes for the first 30 minutes, every 15 minutes for the next 30 minutes and then every 30 minutes for the next 3-6 hours or until stable.
- Palpate the uterine fundus to ensure that the uterus remains contracted.
- Check for excessive bleeding every 30 minutes.
- Continue infusion of IV fluids & manage shock.
- If the bleeding continues, assess the clotting status using a bedside clotting test. Failure of a clot to form after 7 minutes or formation of a soft clot that breaks down easily suggests coagulopathy. In such cases, refer the woman immediately to higher facility.
- If there are signs of infection (fever, foul-smelling vaginal discharge), give antibiotics.
- Monitor the urinary output (should be more than 400 ml in 24 hours).

**When to Refer and transfer**

- The woman may be referred to a higher facility (District Hospital/ Medical Colleges) if
  - The bleeding is not controlled
  - There is sustained hypotension & woman is not responding to treatment
  - There are retained bits of placenta which cannot be removed manually
  - The placenta is retained due to a constriction ring or if hours or days have passed since delivery as in these cases it may not be possible to get the entire hand into the uterus.
- While referring the woman with non-responding atonic PPH, Uterine tamponade may be
- given as a life saving measure using Foley's catheter along with a Condom.

## Traumatic PPH

Traumatic PPH is recognized when there is bleeding from the genital tract, but the uterus is well contracted, and placenta has been delivered completely along with the membranes. Trauma is usually seen co-exist with atonic uterus. The bleeding may be from any of the following:

- Perineum: tear or episiotomy wound
- Vulva: ruptured varicosities, tears or a hematoma can occur (hematoma may not be obvious immediately after delivery but can cause severe pain and shock)
- Vagina: lacerations of the wall or rupture of varicosities

**Types of Perineal Tears**

There are four degrees of perineal tears that can occur during delivery:

- First degree tears involve the vaginal mucosa and the connective tissue
- Second degree tears involve the vaginal mucosa, connective tissue and underlying muscles.
- Third degree tears involve complete transaction of the anal sphincter
- Fourth degree tears involve the rectal mucosa

- Cervix: lacerations/tear
- Uterus: scar dehiscence, rupture or inversion of the uterus can also occur and is accompanied by marked pain and shock.
- Broad ligament hematomas

**General Management**

- Follow steps of RIA
- If the woman is in shock, make sure that the airway is open, turn her head to one side and give her oxygen @ 6-8 L/minute through a mask or nasal cannula.
  - Estimate the blood loss and Resuscitate with IV fluids

**ANM to pack the vagina and refer to FRU/DWH**

## Specific Management by staff nurses only

- Explore the perineal cavity and look for any tear or laceration under good light
- Give Tranexamic acid (1 gm I/V in 10 ml. over 10 min. i.e.100 mg/ min), may repeat after 30 min (within 3 hours of birth) as per doctor's advice
- Repair the 1st and 2nd degree tears with catgut/ lubricated vicryl

**Women with 3rd and 4th degree tears should be referred to FRU/DWH for management by specialist**

- If a small bleeder is seen, catch it with an artery forceps and tie it with catgut/ lubricated vicryl
- Start the woman on a broad-spectrum antibiotic according to doctors advice such as Inj. Ampicillin 1 g stat IM followed by 500 mgevery 6 hours for five days OR Cap. Amoxicillin 1 g stat orally followed by 500 mg every 8 hours.

**Referral and transfer**

- The woman may be referred to a higher facility (District Hospital/ Medical Colleges) if
  - The bleeding is not controlled
  - There is sustained hypotension & woman is not responding to treatment

**While referring the woman with traumatic PPH, do tight packing of vagina and cervix with ribbon gauze.**

## Management of Neglected Cases/Complications

A perineal tear is always contaminated with fecal material. If closure is delayed more than 12 hours, infection is inevitable. Delayed primary closure is indicated in such cases.

Patient is to be referred to medical college/ District Hospital for further management. At the time of referral stabilize the patient, give antibiotics and do local dressing.

THUMB RULE: Irrespective of size and degree of tear – if bleeding tear – REPAIR

## Complications after repairing a tear and their management

a. Early complications

1. Bleeding: It may occur if the blood vessels have not been ligated properly. Prevent it by carefully ligating the bleeding points while suturing. Make sure that the bleeding is not coming from an atonic uterus.
2. Hematoma: This refers to a collection of blood in the vaginal wall, which commonly occurs as a complication of vaginal injury. It may present with vaginal or vulval swelling or intense pain and retention of urine. Prevent it by carefully ligating the bleeding points while suturing.

   **If the hematoma is large and painful, refer the woman to higher facility,** as the hematoma needs to be incised and drainedunder general anesthesia. Arrange blood to be transfused if needed.
3. Retention of urine: The woman should be encouraged to pass urine frequently. She can sit or squat for the same. If she is unable to pass urine on her own, a self-retaining catheter may have to be inserted to avoid straining. Keep the catheter in place for 48 hours under antibiotic cover.
4. Infection: This is a common complication and may be avoided by giving the woman prophylactic antibiotics and using an aseptic technique to repair the tear. However, if infection sets in, remove the sutures which come out or are lying loose. Remember all the sutures need not be removed at the same time. If the wound is gaping, secondary sutures need to be applied but only after the infection has cleared.

b. Late complications

1. Scarring and vaginal stenosis (narrowing) may occur in some cases of neglected tears of the vagina and may cause pain during intercourse and obstructed labour in subsequent deliveries.
2. Cervical scarring due to an unrepaired cervical tear may lead to prolonged labour in subsequent pregnancies because the cervix cannot dilate properly. If cervical tears are not sutured properly, it may lead to repeated abortions on account of "cervical incompetence". There is also a tendency for repeat cervical tear in subsequent deliveries at the site of the previous tear.
3. Vesicovaginal, Vesico-cervical or Rectovaginal fistulae can occur if vaginal or cervical tears extendinto the bladder or rectum.
4. Risk of developing Anal Incontinence or risk of worsening symptoms in subsequent pregnancies. All women who have sustained an obstetric anal sphincter injury in a previous pregnancy and who are symptomatic should have the option of elective caesarean birth.

## Inversion of uterus

Uterine inversion occurs when the uterine fundus collapses into the endometrial cavity, turning the uterus partially or completely inside out. Although a rare complication of vaginal or cesarean birth

- The inversion may be complete or incomplete.
- Acute inversion of the uterus is often followed by circulatory collapse that may be associated with

neurogenic shock due to pull on the infundibulo-pelvic ligaments.

- The woman needs immediate management, as the condition can be fatal.

**Causes**

- There may be a h/o pulling on the umbilical cord in the absence of a uterine contraction, during the third stage of labor, in an effort to deliver the placenta OR
- There may be a h/o pulling on the cord in the presence of "placenta accreta" (i.e. an implantation of the placenta in which there is an abnormally firm adherence to the uterine wall) OR
- There may be a h/o excessive fundal pressure given on a relaxed uterus in an effort to deliver the baby or placenta.

**Findings on Examination**

- **Acute uterine inversion should be suspected** in postpartum patients with hypotension out of proportion to estimated blood loss and/or when the provider is unable to palpate a normally positioned fundus on abdominal examination.
- Vaginal bleeding potentially resulting in shock and lower abdominal pain are supportive findings.

**The diagnosis is confirmed** when the fundus is seen protruding through the cervix or vaginal opening or when transcervical examination finds the fundus inside the uterine cavity and trans abdominal examination finds a cup-like defect in the area of the normally globular fundus.

- The uterus may be contracted or relaxed, depending on whether the placenta has been delivered or not.

**Prevention**

- Do not pull on the cord in the absence of a uterine contraction.
- Always apply "counter-traction" with the other hand while carrying out CCT.
- Do not apply fundal pressure to deliver the baby or the placenta.

**Management**

- Rapidly evaluate the woman's condition and follow the steps of RIA. Such women are usually in a state of shock Start IV fluids (RL) to be infused fast.
- Examine vital signs i.e. pulse, BP and look for pallor to assess for the presence of shock.
- Ask/ look whether the placenta has been delivered or not. If placenta is delivered, reexamine the placenta for completeness or any additional lobe or any abnormality.
- Do not remove the placenta until the uterus has been replaced. Removing the placenta before replacing the uterus increases blood loss, which may be severe
- **Take a written informed consent of the woman or any family member accompanying her, in case the woman is not in a position to give informed consent.**

### Complications in the Postpartum Period

- Puerperal pyrexia & puerperal sepsis
- Breast conditions
  - Cracked nipples
  - Breast engorgement
  - Mastitis

## POSTPARTUM PERIOD

### Puerperal Pyrexia & Puerperal Sepsis

**Puerperal Pyrexia**

Low-grade fever is very common in the postpartum period, especially in the first 24 hours. The causes include dehydration, tissue trauma, reaction to foetal proteins and breast engorgement. Although fever occurring in the

first 24 hours after delivery has generally been regarded as being unrelated to infection temperature of ≥ 38° C ( ≥ 100.4° F) or higher within the first 24 hours should alert you to the possibility ofpuerperal sepsis developing in the patient.

| Diagnosis of fever after childbirth | | |
|---|---|---|
| **Presenting Symptom and Other Symptoms and SignsTypically Present** | **Symptoms and Signs Sometimes Present** | **Probable Diagnosis** |
| • Fever/chills<br>• Lower abdominal pain<br>• Shock<br>• Purulent, foul-smelling lochia<br>• Tender uterus | • Light vaginal bleeding | Metritis |
| • Lower abdominal pain anddistension<br>• Persistent spiking fever/chills<br>• Tender uterus | • Poor response toantibiotics<br>• Swelling in adnexa or pouch ofDouglas<br>• Pus obtained upon culdocentesis | Pelvic abscess |
| • Low-grade fever/chills<br>• Lower abdominal pain<br>• Absent bowel sounds | • Rebound tenderness<br>• Abdominal distension<br>• Anorexia<br>• Nausea/vomiting<br>• Shock | Peritonitis |
| • Breast pain and tenderness 3-5days after delivery | • Hard enlarged breasts<br>• Both breasts affected | Breast engorgement |
| • Breast pain and tenderness<br>• Reddened, wedge-shaped area on breast<br>• 3-4 weeks after delivery | • Inflammation preceded byengorgement<br>• Usually only one breast affected | Mastitis |
| • Firm, very tender breast<br>• Overlying erythema | • Fluctuant swelling in breast<br>• Draining pus | Breast abscess |
| • Unusually tender wound withbloody or serous discharge | • Slight erythema extending beyondedge of incision | Wound abscess, woundseroma or wound haematoma |
| • Painful and tender wound<br>• Erythema and oedema beyondedge of incision | • Hardened wound<br>• Purulent discharge<br>• Reddened area around wound | Wound cellulitis |
| • Dysuria<br>• Increased frequency andurgencyof urination | • Retropubic/suprapubic pain<br>• Abdominal pain | Cystitis |
| • Dysuria<br>• Spiking fever/chills<br>• Increased frequency and urgencyof urination<br>• Abdominal pain | • Retropubic/suprapubic pain<br>• Loin pain/tenderness Tendernessin rib cage<br>• Anorexia<br>• Nausea/vomiting | Acute pyelonephritis |
| • Spiking fever despite antibiotics | • Calf muscle tenderness | Deep vein thrombosis |
| • Fever<br>• Difficulty in breathing<br>• Cough with expectoration<br>• Chest pain | • Consolidation<br>• Congested throat<br>• Rapid breathing<br>• Rhonchi/rales | Pneumonia |

| | | |
|---|---|---|
| • Fever<br>• Decreased breath sounds | • Typically occurs postoperative | Atelectasis |
| • Fever<br>• Chills/rigors<br>• Headache<br>• Muscle/joint pain | • Enlarged spleen | Uncomplicated malaria |
| • Symptoms and signs ofuncomplicated malaria<br>• Coma<br>• Anaemia | • Convulsions<br>• Jaundice | Severe/complicated malaria |
| • Fever<br>• Headache<br>• Dry cough<br>• Malaise<br>• Anorexia<br>• Enlarged spleen | • Confusion<br>• Stupor | Typhoid |
| • Fever<br>• Malaise<br>• Anorexia<br>• Nausea<br>**Dark urine and pale stool**<br>• Jaundice<br>• Enlarged liver | • Muscle/joint pain<br>• Urticaria<br>• Enlarged spleen | Hepatitis |

## Puerperal Sepsis

Puerperal sepsis is an infection of the genital tract at any time between the onset of rupture of membranes or labour and the 42nd day following delivery or abortion in which any two or more of the following signs and symptoms are present:

- Fever of $\geq 38^{o}$ C ( $\geq$ 100.4° F) or higher, measured orally on any one occasion;
- Abnormal vaginal discharge;
- Abnormal smell, foul odour of the vaginal discharge;
- Pelvic pain;
- Delay in the rate of reduction of the size of the uterus (subinvolution of the uterus; < 2cm/day)

**How puerperal sepsis occurs :**

Puerperal sepsis occurs due to colonization of the genital tract by microorganisms. These **organisms can be introduced from within (infection of endogenous origin), or from outside (infection of exogenous origin).**

**Endogenous** infections are caused by bacteria that normally live in the vagina and rectum without causing harm (commensals). These bacteria can become harmful if:

- They are brought into the uterus by the examining finger or by instruments during pelvic examinations
- There is bruised, lacerated or dead tissue
- They ascend into the uterus during premature and prolonged rupture of the membranes.

**Exogenous** infections are introduced into the vagina from outside the body, by:

- Unclean hands and unsterile instruments
- Foreign substances introduced into the vagina, e.g. herbs oils, etc. during an illegal and unsafe abortion

- By sexual activity.

**Puerperal sepsis can occur both intrapartum and postpartum**.

- During the intrapartum period, due to PROM, the bacteria ascend and can cause chorio-amnionitis. This is a very serious condition and can endanger the life of both the mother and the baby.
- During the postpartum period, puerperal sepsis may be localized to the perineum, vagina, cervix or uterus; or it can spread and also infect the fallopian tubes, the ovaries, etc. It can lead to parametritis, peritonitis and even septicaemia. It can result in complications such as DIC, and can be rapidly fatal for the woman.

Women are vulnerable to infection during the puerperium due to the large, raw placental site that is warm, dark and moist. It has a rich blood supply. The site is not far from the outside environment and the rectum. These factors make it very easy for bacteria to enter and colonize the genital tract. The scars in the cervix, vagina, and/or perineum which may have occurred during the birthing process make the genital tract even more susceptible to infection, and for the infection to spread to the underlying tissues.

The most common site of infection in puerperal sepsis is the placental site in the uterus. Other sites of infection are tears of the cervix, vagina, perineum and the site of episiotomy.

## Risk Factors For Puerperal Sepsis

1. **Patient-related risk factors**
   - Poor patient hygiene
   - Pre-existing anaemia and malnutrition
   - Pre-existing sexually transmitted infections (STIs)/RTIs
   - Not immunized against tetanus
   - Pre-existing diabetes
2. **Risk factors related to the delivery process and interventions**
   - Failure to follow aseptic techniques
   - Frequent vaginal examinations
   - Manipulations high in the birth canal
   - Presence of dead tissue in the birth canal (due to IUD, retained placental fragments or fragmentsof membranes, necrosis of tissue due to prolonged labour, etc.)
   - PROM
   - Prolonged/obstructed labour
   - Caesarean section, or other assisted deliver (forceps, ventouse)
   - Unrepaired vaginal/cervical lacerations
   - PPH
3. **Risk factors related to health service delivery**
   - Delivery by untrained persons
   - Lack of asepsis during delivery
   - Lack of routine postpartum care
   - Inadequate monitoring of the temperature during prolonged labour and after delivery
   - Non-availability of proper antibiotics
   - Inadequate management with appropriate antibiotics in a case in whom puerperal sepsis has set in

   Further operative intervention in a case where puerperal sepsis has set in
4. **Providing Prophylactic Antibiotics**

It is preferable to start prophylactic antibiotics before following procedure to prevent infectionincluding:

- Cesarean section
- Manual removal of placenta
- Correction of uterine inversion

- Repair of ruptured uterus
- Postpartum hysterectomy
- Prolonged rupture of membranes (Group B streptococcus)

Give prophylactic antibiotics 30 minutes before skin incision. Recommended antibiotic Inj Ampicillin 2g IV injecton. Except with cesarean section, give antibiotics when cord is clamped after delivery of newborn. One dose is enough (as effective as 3 doses or 24 hours of antibiotics). If procedure is longer than 6 hours or blood loss is 1,500 ml or more, give second dose. Ampicillin have similar efficacy in reducing postoperative endometritis. No need for more broad spectrum agents or multiple doses. If infection is suspected or diagnosed, therapeutic antibiotics are more appropriate

**5. Management**

- The basic principles of infection control should be followed to prevent the spread of infection to other women and their babies.

Women will die of puerperal sepsis and septicaemia if appropriate antibiotic therapy is not given early enough. The aim of starting antibiotic therapy immediately is to manage/treat the current infection and to stop it from spreading further. Treat specific infection with specific antibiotics

- Give a combination of antibiotics :
  - Ampicillin 2 g IV every 6 hours;
  - Gentamicin 5 mg/kg body weight IV every 24 hours;
  - Metronidazole 500 mg IV every 8 hours

Response poor > 48 hours:

- Ensure adequate dosages of antibiotics are being given
- Re-evaluate woman for other infection or abscess
- Treat based on reported microbial sensitivity

End point is when:

- Woman is fever-free for 48 hours
- Clinical examination shows woman is improving
- Woman completes course of antibiotics

6. Prevention

Puerperal sepsis is to a great extent preventable, provided certain measures are undertaken duringantenatal, intranatal & postnatal period.

**Antenatal:**

- Improve Hb level to > 11 gms%
- Treat any septic focus (skin,throat & tonsils, etc)

**Intranatal**: Asepsis during delivery

**Postpartum:**

- Maintain perineal hygiene
- Use clean sanitary pad

## Secondary or delayed PPH

Secondary or delayed PPH is defined as excessive vaginal bleeding from 24 h after delivery up to 6 weeks postpartum. Unlike the definition of Primary PPH, there is no clear or standard definition for quantity of the blood loss associated with secondary PPH, and clinically, the definition varies from ‘increased lochia’ to massive bleeding.

**Causes of Delayed or Secondary PPH:**

- Subinvolution of the uterus – retained placental tissue and/or endometritis, fibroid uterus
- Lower genital tract lacerations/hematoma
- Surgical injury
- Dehiscence of cesarean section scar
- Vascular abnormality – arteriovenous malformation
- Placental abnormality – placenta accreta, percreta and increta
- Choriocarcinoma
- Coagulopathies and bleeding disorders

**Risk Factors:**

- Pre-existing risk factors: Maternal smoking at the time the antenatal history is taken, A previous history of secondary PPH, Multiparous women
- Antepartum risk factors: Prelabor rupture of membranes at term, Threatened miscarriage, Multiple pregnancy, Antepartum hemorrhage, Hospital admission during the third trimester
- Intrapartum risk factors: Delivery by cesarean section, Precipitate labor of less than 2 hours, Prolonged third stage, Incomplete placenta or membranes passed at birth, or both
- Postpartum risk factors: Primary postpartum hemorrhage, Not breastfeeding, Postnatal sepsis

**Signs and Symptoms:**

Clinically, bleeding is variable & may be light or heavy, continuous or irregular & foul smelling. The amount of blood loss at presentation varies but most patients are hemodynamically stable.

Complete history taking regarding parity, labor, mode of delivery, third-stage or puerperal complications and any relevant medical and family history is important.

Clinical signs and symptoms at the time of presentation may include offensive lochia, abdominal cramping, uterine tenderness, pyrexia, uterus is softer and larger than expected for the elapsed time since delivery with an open cervical os.

Delayed PPH could be because of retained placental fragments or may be a sign of metritis.

**Investigations at FRU/DWH**

Baseline blood tests include full blood count, coagulation studies, C-reactive protein, serum HCG. Vaginal swabs should be taken at the time of examination for aerobic as well as anaerobic bacterial growth, including swabs from episiotomy or vaginal tear sites.

In women with signs of infection, a mid-stream urine specimen should be collected and, if maternal temperature is more than 38°C, blood cultures should be obtained.

- Full Blood Count
- Urea and Electrolytes
- C-Reactive Protein
- Coagulation profile
- Blood cultures (if the patient has pyrexia)

Ultrasound imaging of the pelvis should be considered if there are concerns of retained placental tissue. If this is obtained within 7–14 days of delivery, interpretation may be difficult as remaining blood clots may appear as mixed echogenic material in a similar manner to retained tissue.

**Management of Delayed PPH:**

The majority of cases of secondary PPH are due to subinvolution of the uterus caused by uterine infection and/or retained placental tissue.

- Initial management include resuscitation as given under **RIA and use of uterotonic agents, administration of antibiotics and surgical evacuation. The fluid replacement is based on amount of blood loss and shall be done with caution to prevent any fluid overload.**

**Uterotonics**

Oxytocin can be administered as an intravenous or intramuscular bolus (10 units) or in combination with ergometrine 1 ampoule as an intramuscular injection. This can be followed by a Oxytocin infusion (20 units in 500 ml normal saline at an infusion rate of 125 ml/h).Oxytocin should never be given as an IV bolus. No more than 100 U of Oxytocin should be given in 24 hours.

Prostaglandin F2α can be given by intramuscular injection at a dose of 250 µg every 15 min,up to a total of 2 mg(i.e. 8 doses).

Misoprostol can also be given as an alternative prostaglandin (400–800 µg orally or rectally).

**Antibiotics:**

Start broad spectrum antibiotics as per doctors orders

- Tab. Ampicillin 500 mg by mouth four times per day for 5 days PLUS
- Tab. Metronidazole 400 mg by mouth three times per day for 5 days
- Inj. Gentamycin 80 mg IM 12 hrly x 5days

**REFER TO FRU/DWH for SURGICAL EVACUATIION:**

Removal of large clots & placental fragments if cervix is dilated digitally (only staff nurses)

If cervix is not dilated, evacuation of the uterus by doctor using MVA.

- SUPPORTIVE TREATMENT:
- If patient is anemic, manage with blood transfusion or oral anemia supportive care as required.
- Rarely if bleeding continues, refer the woman to a District Hospital or Medical College for further management.

## Breast Conditions in Postpartum period

### Breast Problems During Lactation

Sore and fissured nipples, breast engorgement, mastitis and breast abscess are painful conditions of the breast commonly seen in a woman during the postpartum period. Hence, breast examination should be an essential part of routine postpartum examination of the mother.

**Diagnosis :**

To diagnose conditions affecting the breasts examine the woman for the following:

- Measure the body temperature of the woman.
- Look at the breasts for
  - swelling
  - shiny skin
  - redness
- Palpate the breasts for any tenderness.
- Look at the nipples for fissuring
- Observe the woman during a breastfeed, if you have not yet done so.

**Diagnosis of breast problems during the postpartum period**

| Symptoms and signstypically present | Symptoms and signs sometimespresent | Probable diagnosis | Treatment |
|---|---|---|---|
| • Retracted Nipple<br>• Nipple sore or fissured | | • Retracted nipple<br>• Baby is not well attached | • Retracted nipple: Manually stretch and roll out the nipple several times a day or with 10 ml plasticsyringe- pull out the nipple<br>• Nipple sore/ fissued: Check attachment and apply hind milk |
| • Breast pain and tenderness<br>• Occurs 3-5 days after delivery<br>• Temperature is <38 ºC<br>• The baby is not attaching well | • Hard and enlarged breasts<br>• Breasts areshinyand patchy red.<br>• Both the breastsare affected | • Breast engorgement | Described later |
| • Breast pain and tenderness<br>• Reddened, wedge-shaped area on the breast<br>• Occurs 3-4 weeks after delivery | • Inflammation preceded by engorgement<br>• Usually only one breast is affected | Mastitis | • Treat with antibiotics, analgesics<br>• Continue breastfeeding |
| • Firm, acutely tender breast<br>• Over lying erythema | • Fluctuant swellingin thebreast<br>• Draining pus | Breast abscess | • Treat with antibiotics, analgesics<br>• Continue breastfeeding<br>• Drain theabscess |

**Not enough milk**- Many mothers complain that they do not have enough milk.

- Reassurance is needed if baby is gaining weight adequately, passing urine 6-8 times/day and sleeps for 2-3 hrs after each feed.
- Common causes of not enough milk include –
  - Less fluid intake,
  - Not enough frequency of breast feeding,
  - Too short or hurried breastfeeds,
  - Poor suckling position,
  - Poor oxytocin reflex,
  - Breast engorgement or mastitis.
- If baby is not gaining weight adequately, ask the mother to feed the baby more frequently and feed especially during the night (exclusive breast feeding). Make sure that attachment is proper.
- Advise plenty of fluids, and milk
- Any painful condition in mother such as sore nipple, mastitis should be managed promptly.
- Initiating early suckling prevents breast feeding problems

### Breast Engorgement

Breast engorgement is an exaggeration of the lymphatic and venous engorgement that occurs before lactation. It is not the result of over distension of the breast with milk.

- If the woman is breastfeeding and the baby is not able to suckle, encourage the woman to express milk

by hand or with a pump.

- If the woman is breastfeeding and the baby is able to suckle :
  - Encourage the woman to breastfeed more frequently, using both breasts at each feeding.
  - Show the woman how to hold the baby and help it attach (proper positioning and attachment).
  - Relief measures before feeding include:
    - Apply warm compresses to the breasts just before breastfeeding, or encourage thewoman to take a warm shower.
    - Massage the woman's back and neck.
    - Have the woman express some milk manually before breastfeeding
    - Relief measures after feeding may include:
    - Support the breasts with a binder or brassiere.
    - Apply cold compresses to the breasts between feeds to reduce the swelling and pain.
    - Give Tablet Paracetamol 500 mg orally as needed.
- Follow up in 3 days to ensure response.
- If the woman is not breastfeeding (due to separation from the child or death of the child)
  - Support the breasts with a binder or a brassiere.
  - Apply cold compress to the breast to reduce the swelling and pain
  - When the breasts are tender and full, express just enough to give the woman relief. Do NOT empty the breasts fully. This will help suppress lactation gradually.
  - Avoid massaging or applying heat to the breasts.
  - Avoid stimulating the nipples.
  - Give Tablet Paracetamol 500 mg orally as needed.
  - Follow up in 3 days to ensure response.
  - To suppress lactation in case the baby expires, use dopamine agonists like bromocriptine/ cabergolin

**Mastitis**

- Treat with antibiotics:
  - Cap. Ampicillin 500 mg orally three times a day for 10 days; if there is no improvement after 72 hours, change to another antibiotic OR
  - Tab Erythromycin 250 mg orally three times a day for 10 days.
- Encourage woman to:
  - Continue breastfeeding.
  - Support the breasts with a binder or a brassiere.
  - Apply cold compresses to the breasts between feeds to reduce the swelling and pain.
- Give Tablet Paracetamol 500 mg orally.
- Follow up in 3 days to ensure response.

**Breast Abscess**

- Treat with antibiotics:
  - Cap. Ampicillin 500 mg orally four times a day for 10 days; if there is no improvement after 72 hours change to another antibiotic OR
  - Tab Erythromycin 250 mg orally three times a day for 10 days.
- Refer to FRU/DWH for drainage of the abscess taking aseptic precautions:
  - Drainage under GA or IM analgesia
  - Cavity loosely packed with gauze which is removed after 24 hrs & redress the wound
- Encourage woman to:

    - Continue breastfeeding from the normal breast even when there is a collection of pus. Express milk from the diseased breast.
    - Support the breasts with a binder or brassiere.
    - Apply cold compresses to the breasts between feeds to reduce the swelling and pain.
- Give Tablet Paracetamol 500 mg orally as needed.
- Follow up in 3 days to ensure response.

## Checklist for Postabortion Family Planning Counseling

(To be used by the Participants/ Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR POSTABORTION FAMILY PLANNING COUNSELING

(Many of the following steps/tasks should be performed simultaneously.)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| INITIAL INTERVIEW | | | | | |
| **1.** Greet the woman respectfully and with kindness. | | | | | |
| **2.** Assess whether counseling is appropriate at this time (if not, arrange for her to be counseled at another time and be sure she understands that she can become pregnant before her next menses). | | | | | |
| **3.** Assure necessary privacy. | | | | | |
| **4.** Obtain biographic information (name, address, etc.). | | | | | |
| **5.** Ask if she was using contraception before she became pregnant. If she was, find out if she:<br>• Used the method correctly<br>• Discontinued use<br>• Had any trouble using the method<br>• Has any concerns about the method | | | | | |
| **6.** Provide general information about family planning. | | | | | |
| **7.** Explore any attitudes or religious beliefs that either favor or rule out one or more methods. | | | | | |
| **8.** Give the woman information about the contraceptive choices available and the benefits and limitations of each:<br>• Show where and how each is used.<br>• Explain how the method works and its effectiveness.<br>• Explain possible side effects and other health problems.<br>• Explain the common side effects. | | | | | |
| **9.** Discuss the woman's needs, concerns and fears in a thorough and sympathetic manner. | | | | | |
| **10.** Help the woman begin to choose an appropriate method. | | | | | |
| **SCREENING** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **1.** Screen the woman carefully to make sure there is no medical condition that would be a problem (complete Screening Checklist). | | | | | |
| **2.** Explain potential side effects and make sure that each is fully understood. | | | | | |
| **3.** Perform further evaluation (physical examination), if indicated. (Nonmedical counselors must refer woman for further evaluation.) | | | | | |
| **4.** Discuss what to do if the woman experiences any side effects or problems. | | | | | |
| **5.** Provide followup visit instructions. | | | | | |
| **6.** Assure woman she can return to the same clinic at any time to receive advice or medical attention. | | | | | |
| **7.** Ask the woman to repeat instructions. | | | | | |
| **8.** Answer the woman's questions. | | | | | |

Rating by Trainer

| | |
|---|---|
| Satisfactory | ☐ |
| Unsatisfactory | ☐ |
| Not Observed | ☐ |

## Checklist for Bimanual Compression of the Uterus

(To be used by the Participants/ Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR BIMANUAL COMPRESSION OF THE UTERUS
(Many of the following steps/tasks should be performed simultaneously.)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| GETTING READY | | | | | |
| **1.** Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| **2.** Provide continual emotional support and reassurance, as feasible. | | | | | |
| **3.** Put on personal protective equipment. | | | | | |
| BIMANUAL COMPRESSION | | | | | |
| **1.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a sterile cloth or air dry. | | | | | |
| **2.** Put high-level disinfected or sterile surgical gloves on both hands. | | | | | |
| **3.** Clean the vulva and perineum with antiseptic solution. | | | | | |
| **4.** Insert one hand into the vagina and form a fist. | | | | | |
| **5.** Place the fist into the anterior vaginal fornix and apply pressure against the anterior wall of the uterus. | | | | | |
| **6.** Place the other hand on the abdomen behind the uterus. | | | | | |
| **7.** Press the abdominal hand deeply into the abdomen and apply pressure against the posterior wall of the uterus. | | | | | |
| **8.** Maintain compression until bleeding is controlled and the uterus contracts. | | | | | |
| POSTPROCEDURE TASKS | | | | | |
| **1.** Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out.<br>• If disposing of gloves, place them in a leak proof container or plastic bag.<br>• If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **2.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry. | | | | | |
| **3.** Monitor vaginal bleeding and take the woman's vital signs:<br>• Every 15 minutes for 1 hour<br>• Then every 30 minutes for 2 hours | | | | | |
| **4.** Make sure that the uterus is firmly contracted | | | | | |

Rating by Trainer

| | |
|---|---|
| Satisfactory | |
| Unsatisfactory | |
| Not Observed | |

## Checklist for Preparation & Administration of MgSO4

(To be used by the Participants/ Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

LEARNING GUIDE FOR PREPARATION & ADMINISTRATION OF MgSO4

(Many of the following steps/tasks should be performed simultaneously.)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| **INITIAL ASSESSMENT** | | | | | |
| 1. Confirm that the patient has convulsions due to eclampsia | | | | | |
| 2. Ensure that her vitals have been assessed, IV line secured, oxygen mask attached, indwelling catheter put in and all necessary investigations have been sent | | | | | |
| **GETTING READY** | | | | | |
| 1. Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| 2. Provide continual emotional support and reassurance, as feasible. | | | | | |
| 3. Determine that the necessary drugs and supplies are present:<br>• Inj MgSO4 50% solution<br>• Disposable syringes- 20 ml & 10 ml<br>• Inj Lignocaine 2% without adrenaline<br>• Normal saline or distilled water<br>• Spirit swab | | | | | |
| **PREPARATION OF 4 g 20% MgSO4 FOR IV LOADING DOSE** | | | | | |
| 1. 1 amp of 2 ml MgSO4 solution = 1 g MgSO4<br>4 amp of 2 ml MgSO4 solution = 4 g MgSO4 | | | | | |
| 2. Take 4 amp of Inj MgSO4 50% (2 ml in each ampoule = 8 ml in 4 ampoules) in a 20 ml disposable syringe | | | | | |
| 3. Add 12 ml distilled water OR normal saline to make a 4 g 20 % solution of MgSO4 | | | | | |
| 4. Give slow IV over 5 min | | | | | |
| **REPARATION OF 10 g 50% MgSO4 FOR IM LOADING DOSE** | | | | | |
| 1. 1 amp of 2 ml MgSO4 solution = 1 g MgSO4 so<br>5 amp of 2 ml 50% solution = 5 g Magsulf (10 ml solution) | | | | | |
| 2. Load two 10 ml disposable syringes with 5 amp MgSO4 each (10 ml each) | | | | | |
| 3. Put 1 ml 2% Lignocaine in same syringe | | | | | |
| 4. Give 5 g Magsulf deep IM in each buttock in gluteus muscle (total 10 amp = 10 g given) | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **IF CONVULSIONS RECUR AFTER 15 MINUTES** | | | | | |
| Give an additional 2 g of Magnesium sulphate (2 amp Inj MgSO4 50% solution (=4 ml) diluted in 6 ml normal saline OR distilled water to make 10 ml of 20% solution) slow IV over 5 minutes | | | | | |
| **MONITOR THE FOLLOWING BEFORE ADMINISTRATION OF MAINTENANCE DOSE AFTER 4 HRS** | | | | | |
| * The urine output is at least 100 ml per 4 hours;<br>* Knee jerk reflexes are present;<br>* The RR is at least 16 breaths/ minute. | | | | | |
| **PREPARATION OF 5 g 50% MgSO4 FOR IM MAINTENANCE DOSE** | | | | | |
| 1. 1 amp of 2 ml 50% solution = 1 g Magsulf<br>5 amp of 2 ml 50% solution = 5 g Magsulf | | | | | |
| 2. Load one 10 ml disposable syringe with 5 amp In j MgSO4 50% solution (10 ml ) | | | | | |
| 3. Put 1 ml 2% Lignocaine in same syringe | | | | | |
| 4. Give deep IM in alternate buttock in gluteus muscle every 4 hrly (total 5 g given) | | | | | |
| 5. Continue maintenance dose of 5 g MgSO4 4 hrly till 24 hrs after delivery or the last convulsion whichever occurs later. | | | | | |
| **CHECK FOR SIGNS OF MAGNESIUM TOXICITY BEFORE EACH MAINTENANCE DOSE** | | | | | |
| * The urine output is less than 100 ml in last 4 hours;<br>* Knee jerk reflexes absent<br>* The RR less than 16 breaths/ minute. | | | | | |
| If any of the above signs are present, withhold the next dose of MgSO4 | | | | | |
| Give Inj Calcium gluconate 1g IV (10ml of 10% solution) over a period of 10 minutes. | | | | | |
| Serum Creatinine must be done in all cases of Eclampsia & if it > 1.1 mg%, then maintenance dose should be withheld | | | | | |

Rating by Trainer

| | |
|---|---|
| Satisfactory | ☐ |
| Unsatisfactory | ☐ |
| Not Observed | ☐ |

## Checklist for Compression of the Abdominal Aorta

(To be used by the Participants/ Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

| LEARNING GUIDE FOR COMPRESSION OF THE ABDOMINAL AORTA<br>(Many of the following steps/tasks should be performed simultaneously.) | | | | | |
|---|---|---|---|---|---|
| STEP/TASK | CASES | | | | |
| GETTING READY | | | | | |
| **1.** Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| **2.** Provide continual emotional support and reassurance, as feasible. | | | | | |
| Note: Steps 1 and 2 should be implemented at the same time as the following steps. | | | | | |
| COMPRESSION OF THE ABDOMINAL AORTA | | | | | |
| **1.** Place a closed fist just above the umbilicus and slightly to the left. | | | | | |
| **2.** Apply downward pressure over the abdominal aorta directly through the abdominal wall. | | | | | |
| **3.** With the other hand, palpate the femoral pulse to check the adequacy of compression:<br>• If the pulse is palpable during compression, the pressure is inadequate.<br>• If the pulse is not palpable during compression, the pressure is adequate. | | | | | |
| **4.** Maintain compression until bleeding is controlled. | | | | | |
| POSTPROCEDURE TASKS | | | | | |
| **1.** Monitor vaginal bleeding and take the woman's vital signs:<br>• Every 15 minutes for 1 hour<br>• Then every 30 minutes for 2 hours | | | | | |
| **2.** Make sure that the uterus is firmly contracted. | | | | | |

Rating by Trainer

| | |
|---|---|
| Satisfactory | |
| Unsatisfactory | |
| Not Observed | |

## Checklist for Application and Removal of NASG

**(To be used by Participants / Trainers)**

**Rate the performance of each step or task observed using the following rating scale:**

1. Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted (write 'N' if applicable)**
2. Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently (write 'C' if applicable)**
3. Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary) (write 'P' if applicable)**

**LEARNING GUIDE FOR APPLICATION AND REMOVAL OF NASG**

(Many of the following steps/tasks should be performed simultaneously.)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| GENERAL MANAGEMENT | | | | | |
| 1. CALL FOR HELP to urgently mobilize available personnel. | | | | | |
| 2. Greet the woman respectfully and with kindness. | | | | | |
| 3. If the woman is conscious and responsive, tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| 4. Provide continual emotional support and reassurance, as feasible. | | | | | |
| APPLICATION OF NASG | | | | | |
| 1. Check the woman's vital signs:<br>• Temperature<br>• Pulse<br>• Blood pressure<br>• Respiration | | | | | |
| 2. Turn the woman onto her side and slip NASG under her | | | | | |
| 3. The technique for application is for one person to stretch the neoprene panels with all their strength and fasten them with the Velcro as tightly as possible. | | | | | |
| 4. Begin tying from panel 1 in both legs and then proceed to panel 2 and so forth. 2 people can tie panel 1, 2 and 3 on both legs simultaneously but panel 4,5,6 are to be tied by one person only. | | | | | |
| 5. If the woman experiences difficulty breathing, the abdominal panel (panel 6) should be loosened slightly, but not removed. | | | | | |
| 6. However, if dyspnea continues, the NASG should be removed and the cause of the respiratory problem evaluated. | | | | | |
| 7. A woman with normal cardiorespiratory function should experience no problems with ventilation. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 8. If there is no prompt response in terms of vital signs with placement of the NASG, the application should be checked for adequate tightness, and additional saline infusion given promptly. | | | | | |
| 9. As soon as the patient is stable, there must be a diligent evaluation for the specific source and cause of the blood loss. | | | | | |
| 10. If pelvic examination or vaginal procedures are needed, the NASG should be left in place; | | | | | |
| 11. If laparotomy is necessary, open the abdominal segment. | | | | | |
| 12. Often there will be a drop in blood pressure when this panel is removed; this should respond to additional saline infusion. | | | | | |
| 13. Cover the woman with a blanket to ensure warmth. | | | | | |
| **Removal of NASG** | | | | | |
| 1. The NASG is left in place as long as needed to achieve hemostasis and replace red blood cell volume with transfusion of donor blood. | | | | | |
| 2. The NASG can be removed when pulse < 100, and the systolic pressure > 100 mmHg. | | | | | |
| 3. Removal of the NASG begins with the lowest segment (panel1) and proceeds upwards, allowing 15 min between removing each segment for redistribution of blood. | | | | | |
| 4. If the blood pressure falls by 20 mmHg or the pulse increases by 20 beats/min after a segment is removed, replace the NASG and consider the need for more saline or blood transfusions. | | | | | |
| 5. If there is recurrent bleeding, replace the NASG and determine the source of bleeding. | | | | | |
| POSTPROCEDURE TASKS | | | | | |
| **1.** Immerse NASG in 0.05% bleaching solution for atleast 15-20 minutes and then clean with detergent and water. Hang it to dry.<br>**2.** Before removing gloves, dispose of waste materials in a leakproof container or plastic bag. | | | | | |
| **3.** Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **4.** Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out.<br>• If disposing of gloves, place them in a leakproof container or plastic bag.<br>• If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **5.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry. | | | | | |
| **6.** Record the procedure on the woman's record. | | | | | |

Rating by Trainer

| | |
|---|---|
| **Satisfactory** | |
| **Unsatisfactory** | |
| **Not Observed** | |

## Checklist for Manual Removal Of Placenta

(To be used by the Participants/ Trainers)

Rate the performance of each step or task observed using the following rating scale:

1. Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted
2. Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
3. Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary)

| LEARNING GUIDE FOR MANUAL REMOVAL OF PLACENTA<br>(Many of the following steps/tasks should be performed simultaneously.) | | | | | |
|---|---|---|---|---|---|
| STEP/TASK | CASES | | | | |
| GETTING READY | | | | | |
| **1.** Prepare the necessary equipment. | | | | | |
| **2.** Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| **3.** Provide continual emotional support and reassurance, as feasible. | | | | | |
| **4.** Have the woman empty her bladder or insert a catheter, if necessary. | | | | | |
| **5.** Give anesthesia (IV pethidine and diazepam, or ketamine). | | | | | |
| **6.** Give a single dose of prophylactic antibiotics:<br>• Ampicillin 2 g IV PLUS metronidazole 500 mg IV, OR<br>• Cefazolin 1 g IV PLUS metronidazole 500 mg IV | | | | | |
| **7.** Put on personal protective equipment. | | | | | |
| MANUAL REMOVAL OF PLACENTA | | | | | |
| **1.** Use antiseptic handrub or wash hands and forearms thoroughly with soap and water and dry with a sterile cloth or air dry. | | | | | |
| **2.** Put high-level disinfected or sterile surgical gloves on both hands. (Note: elbow-length gloves should be used, if available.) | | | | | |
| **3.** Hold the umbilical cord with a clamp. | | | | | |
| **4.** Pull the cord gently until it is parallel to the floor. | | | | | |
| **5.** Place the fingers of one hand into the vagina and into the uterine cavity, following the direction of the cord until the placenta is located. | | | | | |
| **6.** When the placenta has been located, let go of the cord and move that hand onto the abdomen to support the fundus abdominally and to provide counter-traction to prevent uterine inversion. | | | | | |
| **7.** Move the fingers of the hand in the uterus laterally until the edge of the placenta is located. | | | | | |
| **8.** Keeping the fingers tightly together, ease the edge of the hand gently between the placenta and the uterine wall, with the palm facing the placenta. | | | | | |
| **9.** Gradually move the hand back and forth in a smooth lateral motion until the whole placenta is separated from the uterine wall:<br>• If the placenta does not separate from the uterine wall by gentle lateral movement of the fingers at the line of cleavage, suspect placenta accreta and arrange for surgical intervention. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **10.** When the placenta is completely separated:<br>• Palpate the inside of the uterine cavity to ensure that all placental tissue has been removed.<br>• Slowly withdraw the hand from the uterus bringing the placenta with it.<br>• Continue to provide counter-traction to the fundus by pushing it in the opposite direction of the hand that is being withdrawn. | | | | | |
| **11.** Give oxytocin 20 units in 1 L IV fluid (normal saline or Ringer's lactate) at 60 drops/minute. | | | | | |
| **12.** Have an assistant massage the fundus to encourage atonic uterine contraction. | | | | | |
| **13.** If there is continued heavy bleeding, give ergometrine 0.2 mg IM or give prostaglandins. | | | | | |
| **14.** Examine the uterine surface of the placenta to ensure that it is complete. | | | | | |
| **15.** Examine the woman carefully and repair any tears to the cervix or vagina, or repair episiotomy. | | | | | |
| POSTPROCEDURE TASKS | | | | | |
| **1.** Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out.<br>• If disposing of gloves, place them in a leakproof container or plastic bag.<br>• If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **2.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry. | | | | | |
| **3.** Monitor vaginal bleeding and take the woman's vital signs:<br>• Every 15 minutes for 1 hour<br>• Then every 30 minutes for 2 hours | | | | | |
| **4.** Make sure that the uterus is firmly contracted. | | | | | |
| **5.** Record procedure and findings on woman's record. | | | | | |

Rating by Trainer

| | |
|---|---|
| Satisfactory | ☐ |
| Unsatisfactory | ☐ |
| Not Observed | ☐ |

## Checklist for Application and Removal of Uterine Baloon Tamponade

**(To be used by Participants / Trainers)**

**Rate the performance of each step or task observed using the following rating scale:**

4. Needs Improvement**: Step or task not performed correctly or out of sequence (if necessary) or is omitted (write 'N' if applicable)**
5. Competently Performed**: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently (write 'C' if applicable)**
6. Proficiently Performed**: Step or task efficiently and precisely performed in the proper sequence (if necessary) (write 'P' if applicable)**

LEARNING GUIDE FOR APPLICATION AND REMOVAL OF UTERINE BALOON TAMPONADE

(Many of the following steps/tasks should be performed simultaneously)

| STEP/TASK | CASES | | | | |
|---|---|---|---|---|---|
| **GENERAL MANAGEMENT** | | | | | |
| 2. CALL FOR HELP to urgently mobilize available personnel. | | | | | |
| 3. Greet the woman respectfully and with kindness. | | | | | |
| 4. If the woman is conscious and responsive, tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns. | | | | | |
| 5. Provide continual emotional support and reassurance, as feasible. | | | | | |
| 6. Apply antiseptic solution to the perineal area and vagina. | | | | | |
| 7. Prepare the condom balloon temponade by tying condom on the tip of Foley's catheter | | | | | |
| 8. Gently insert a sterile speculum into the vagina and grasp the anterior lip of the cervix with a ring or sponge holding forceps. | | | | | |
| 9. By forceps, insert the balloon into the uterus through the cervical opening and not just in the vagina. | | | | | |
| 10. Now with the help of syringe, inflate the condom balloon with warm saline solution/ water into the catheter port, till bleeding stops. This usually requires 300-500 ml of liquid but it can vary. | | | | | |
| 11. Pack the upper vagina with roller gauze to prevent expulsion of balloon | | | | | |
| 12. Palpate the uterine fundus abdominally and mark with a pen, as a reference line from which any uterine enlargement or distension would be noted during observation. | | | | | |
| 13. A single dose of antibiotic (ampicillin 2 gm IV) is recommended. | | | | | |
| 14. Once the balloon is in place and bleeding has stopped, patient should be transferred to referral facility. No surgery is required at this stage if bleeding stops for 30 minutes. If bleeding continues, consider surgical interventions. Monitor vital signs, vaginal bleeding and urine output every hour. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 15. The balloon should remain inside the uterus for 6-24 hours | | | | | |
| **Removal of Balloon temponade** | | | | | |
| 16. After 6-24 hours, if the uterine fundus remains at the same level and there is no active vaginal bleeding, balloon then should be deflated 50-100 ml every hour as long as there is no further bleeding at each interval. | | | | | |
| 17. If significant bleeding resumes, balloon should be re-inflated. Recommence oxytocin infusion and prepare for surgical intervention when her condition becomes stable. | | | | | |
| 18. If there is no bleeding after 30 minutes of complete deflation, then remove and discard the balloon and stop oxytocin. | | | | | |
| POSTPROCEDURE TASKS | | | | | |
| **7.** Before removing gloves, dispose of waste materials in a leak proof container or plastic bag. | | | | | |
| **2.** Place all instruments in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **3.** Immerse both gloved hands in 0.5% chlorine solution. Remove gloves by turning them inside out.<br>• If disposing of gloves, place them in a leak proof container or plastic bag.<br>• If reusing surgical gloves, submerge them in 0.5% chlorine solution for 10 minutes for decontamination. | | | | | |
| **4.** Use antiseptic handrub or wash hands thoroughly with soap and water and dry with a clean, dry cloth or air dry. | | | | | |
| **5.** Record the procedure on the woman's record. | | | | | |

Rating by Trainer
**Satisfactory** ☐
**Unsatisfactory** ☐
**Not Observed** ☐

# Chapter 6
# Infection Control and Biomedical Waste Management

Clean and hygienic environment in the health facility not only leads to a better perception of the visitors towards the facility but also enables health care provider to have an environment which reduce the Hospital Acquired Infection. As per World Health Organization (WHO), out of every 100 hospitalised patients at any given time, seven in developed and 10 in developing countries will acquire at least one healthcare-associated infection.

Standard precautions

## Standard Precautions

In healthcare setting many infections can be prevented and controlled by taking basic.

These include:

- Hand hygiene
- Use of personal protective equipment
- Appropriate handling of patient care equipment, instruments and linen
- Safe handling of bio medical and hazardous waste
- Disinfection**,** environment cleaning and spill management

## A. Hand Hygiene

Hand hygiene is the most important universal precaution to avoid the transmission of harmful germs and prevent healthcare-associated infections.

Any healthcare worker, caregiver or person involved in direct or indirect patient care needs to adhere to proper hand hygiene practices, their nails should be kept trimmed at all times.

All ornaments and wrist watch should be removed before hand washing.


| | |
|---|---|
| **1. Before Patient Contact** | **When:** Clean your hands before touching a patient when approaching him/her **Why:** To protect the patient against harmful germs carried on your hands **Example:** Shaking hands, helping a patient to move around, clinical examination |
| **2. Before Performing Clean/ Aseptic Procedure** | **When:** Clean your hands immediately before performing a clean/aseptic procedure<br>**Why:** To protect the patients from harmful germs, including patients' own, from entering his/her body<br>**Example:** Oral/dental care, secretion aspiration, wound dressing, catheter insertion, preparation of food and medications |
| **3. After Body Fluid Exposure Risk** | **When:** Clean your hands immediately after an exposure risk to body fluids and after glove removal<br>**Why:** To protect yourself and healthcare environment from harmful patient germs<br>**Example:** Oral/dental care, secretion aspiration, drawing and manipulating blood, cleaning up of urine, faeces, handling of waste |

| | |
|---|---|
| **4. After Touching a Patient** | **When:** Clean your hands after touching a patient and his/her immediate surroundings, when leaving the patient's side<br>**Why:** To protect yourself and healthcare environment from harmful patient germs<br>**Examples:** Shaking hands, helping a patient to move around, clinical examination |
| **5. After Touching Patient Surroundings** | **When:** Clean your hands after touching any object or furniture in the patient's immediate surroundings when leaving – even if the patient has not been touched<br>**Why:** To protect yourself and healthcare environment from harmful patient germs<br>**Example:** Changing linen, perfusion speed adjustment |

## Handwashing Technique

World Health Organization (WHO) recommends following steps of hand washing both through use of soap/liquid hanwash and water and also by use of alcohol-based hand rub. Both these techniques of hand washing are depicted in following educational posters:

**Hand Hygiene Technique with Soap and Water**

**How to use alcohol handrub?**


Hand rub using alcohol-based hand rub (Source - WHO Guidelines on Hand Hygiene in Healthcare)

**Important points to keep in mind when using an alcohol-based hand rub:**

- Take adequate quantity to wet all surfaces of both hands
- Apply to dry hands. Do not apply to latex gloves
- Dry the solution by rubbing the hands following the steps shown above
- The solution should remain wet on the hands for at least 20-30 seconds for adequate disinfection.

## B. Personal Protective Equipments (PPE)

PPEs refers to a variety of barriers used alone or in combination to protect mucous membranes, airways, skin and clothing from contact with infectious agents and from chemical agents. These include:

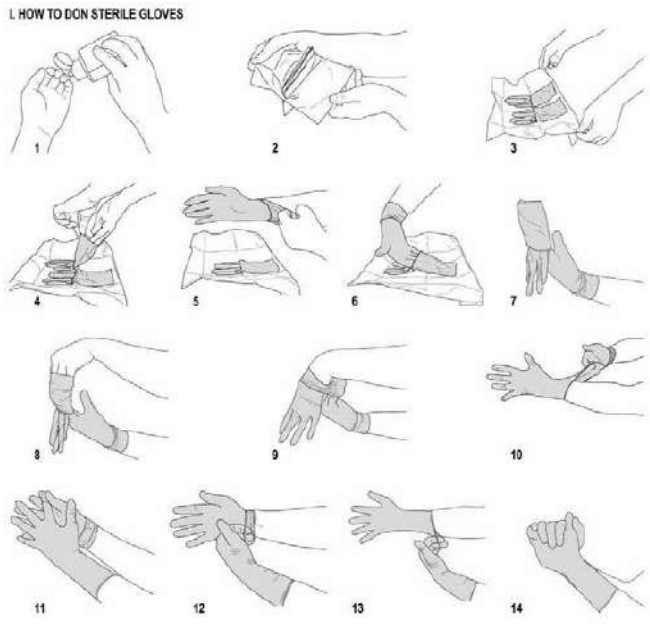
**Examples of PPE**

- Gloves
- Gowns
- Shoe cover
- Face masks
- Eye wear
- Caps/Hair cover
- Aprons
- Boots
- Eye protection wherever required

| DOs AND DON'TS OF GLOVE USE | |
|---|---|
| **DOs** | **DON'Ts** |
| • **Do** wear the correct size glove, particularly surgical gloves. A poorly fitting glove can limit your ability to perform the task and may be damaged (torn or cut) more easily<br>• **Do** work from clean to dirty side i.e. touch the clean body sites or surfaces before touching the dirtyor contaminated area<br>• **Do** change the gloves if torn or highly contaminated (even during use on same patient. Change the gloves after each patient use<br>• **Do** keep fingernails trimmed moderately short (less than 3 mm or 1/8 inch beyond the finger tip) to reduce the risk of tears<br>• **Do** pull gloves up over cuffs of gown (if worn) to protect the wrists<br>• **Do** use water-soluble (non-fat-containing) hand lotions and moisturisers often to prevent hands from drying, cracking and chapping due to frequent hand washing and gloving. | • **Don't** touch your face or adjust PPE with the soiled glove<br>• **Don't** touch the environment surfaces except as necessary during patient care<br>• **Don't** use oil-based hand lotions or creams, because they will damage latex rubber surgical and examination gloves.<br>• **Don't** store gloves in areas where there are extremes in temperature (e.g., in the sun, or near a heater, air conditioner, ultraviolet light, fluorescent light or X-ray machines). These conditions may damage the gloves (cause breakdown of the material they are made of), thus reducing their effectiveness as a barrier<br>• **Don't** reuse the patient care gloves. |

## Correct Method of Donning and Removing of Gloves

The purpose of this technique is to ensure maximum aspects for the patient and to protect the health care worker from the patient's body fluid(s). To achieve this goal, the skin of the health care worker remains exclusively in contact with the inner surface of the glove and has no contact with the outer surface. Any error in the performance of this technique leads to a lack of asepsis requiring a change of gloves.




Method of donning sterile gloves

Source - WHO Guidelines on Hand Hygiene in Healthcare

1. Perform hand hygiene before an "aseptic procedure" by handrubbing or hand washing.
2. Check the package. Open the first non-sterile packaging by peeling it completely off the heat seal to expose the second sterile wrapper, but without touching it.
3. Place the second sterile package on a clean, dry surface without touching the surface. Open the package and fold it towards the bottom so as to unfold the paper and keep it open.
4. Using the thumb and index finger of one hand, carefully grasp the folded cuff edge of the glove.
5. Slip the other hand into the glove in a single movement, keeping the folded cuff at the wrist level.

6-7. Pick up the second gove by sliding the fingers of the gloved hand underneath the cuff of the glove.

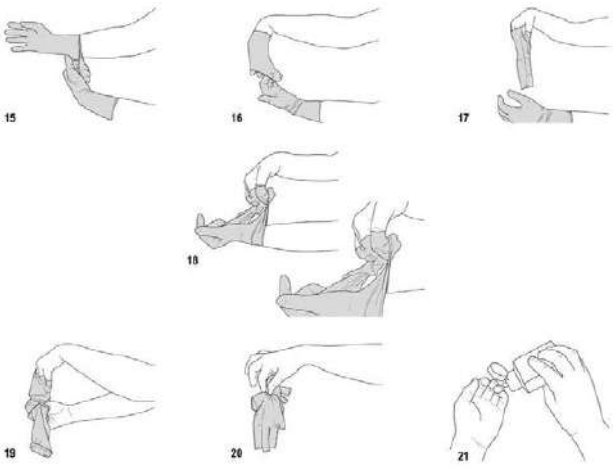
8-10. In a single movement, slip the second glove on the ungloved hand while avoiding any contact/resting of the gloved hand on surfaces other than the glove to be donned (contact/resting constitutes a lack of asepsis and requires a change of glove).

11. If necessary, after doning both gloves, adjust the fingers and interdigital spaces until the glove fit omfortably.

12-13 unfold the cuff of the first gloved hand by gently slipping the fingers of the other hand inside the fold, making sure to avoid any contact with a surface other than the outer surface of the glove (lack of asepsis requiring a change of gloves).

14. The hands are gloved and must touch exlusively sterile devices or the previously-disinfected patient's body area.

## How to Remove Sterile Gloves



*Method to remove sterile gloves*

Source - WHO Guidelines on Hand Hygiene in Healthcare

15-17. Remove the first glove by peeling it back with the fingers of the opposite hand. Remove the gove by roling it inside out to the second finger joints (do not remove competely).

18. Remove the other glove by turning its outer edg on the fingers of the partially ungloved hand.

19. Remove the glove by turning it inside out entirely to ensure that the skin of the health care worker is always and exclusively in contact with the inner surface of the gove.

20. Discard gloves.

21. Perform hand hygiene after glove removal according to the recommended indication..

## Masks

- Masks prevent microorganisms expelled during talking, coughing or breathing from entering the client and protect the provider's mouth from splashes of blood or other fluids.
- Masks should be worn while performing any procedure/intervention, such as while conducting a delivery.

## Eye covers

- Eye covers are used to protect the eyes from accidental splashes of blood or otherbody fluids. They should be used, for example, while conducting a delivery or cleaning instruments.

## Gowns/aprons

- Gowns and waterproof aprons prevent microorganisms from the provider's arms, bodyand clothing from entering the client's body and protect the provider's skin and clothes from splashes of blood and other fluids.

## Caps

- Caps prevent microorganisms from the hair and skin on the provider's head from entering the client.

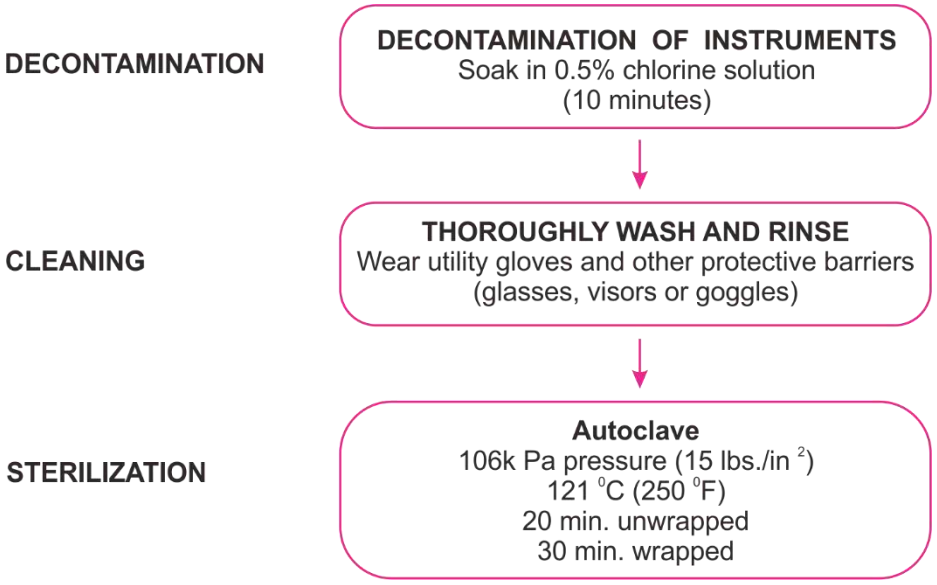
## Footwear

- Footwear that is clean and sturdy helps minimise the number of microorganisms brought into the labor room and protects the service provider's feet from injury or splashes of blood and other fluids.

## Processing of instruments

Processing instruments and other items used during clinical and surgical proceduresconsists of four steps:

1. Decontamination
2. Cleaning
3. Sterilisation
4. Storage




1. **Decontamination**: This kills viruses such as Hepatitis B, other Hepatitis viruses and HIVand many other microorganisms making items safer for handling by staff that performs cleaning and further processing. To decontaminate items use 0.5% chlorine solution.
2. **Cleaning:** Cleaning refers to scrubbing with a brush, detergent and water and is a crucialstep in processing. Detergent is important for effective cleaning because water alone will not remove protein, oils and grease.

   Do not use hand soap for cleaning instruments and other items as fatty acids in soap willreact with the minerals of hard water, leaving behind a residue that is difficult to remove.
3. **Sterilisation:** Sterilisation ensures that items are free of all microorganisms (bacteria, viruses, fungi and parasites) including endospores. Sterilisation kills all microorganisms and is therefore recommended for items such as instruments that come in contact with the bloodstream or tissues under the skin.

**Steam sterilisation - Autoclaving**

Autoclave is a device which uses steam under pressure to kill bacteria, viruses, fungi and spores and hence, used to sterilize linen and instruments in health care settings.


Place the autoclave on a clean, dry, flat surface.

- Twist the lid of the autoclave anti-clockwise and lift the lid.
- Fill the bottom of the autoclave with clean water up to the ridge to submerge the immersion heating coil but the top of the tripod stand should stay just above the water surface.

- Place the items loosely in the autoclave drum to allow steam to circulate. Place the indicator strip inside the drum and close the lid.
- Place the drum in the autoclave with its side windows open, inside the autoclave on the tripod stand.
- Put on the lid of the autoclave, press it down and turn it clockwise until it does not turn anymore. The autoclave in the closed position will have both handles parallel and one above the other on either side.
- Lift the lid screws upright and tighten them so that the opposite screws are tightened together.
- Check that the lid is tightly sealed by the rubber gasket.
- Tighten the steam release and vacuum release valve. Check that the pressure gauze reading is at 0.
- Switch on the power.
- After few minutes steam will start generating. When the pressure is at 2 Psi, open the steam release valve slowly so that the air in the autoclave is expelled and the entire autoclave is filled with steam. Once, the pressure goes back to 0, close the valve again and let steam build.
- Note the time when steam emits from the pressure whistle.
  - Keep the wrapped items for 30 mins and
  - Unwrapped items for 20 mins at 15 lbs/sq. inch at 121°C.
- After the designated time, turn off the power.
- Open the pressure valve to release the steam and allow the autoclave to cool for 15-30 mins before opening.
- Make sure that there is no steam left in the autoclave and pressure gauge is also at Zero lb psi.
- Now open the autoclave lid by opening the lid screws, twisting it anticlockwise and lift the lid off.
- Remove the drums from the autoclave, close the windows, remove the indicator strip, check for the colour change and stick the strip in the autoclave strip register with date and time.
- Remove all the water from the base chamber and close the autoclave by putting the lid on it clockwise.
- Keep the drums in a clean, dry place. If the container is not opened, the instruments can be used within 7 days. If the lid is opened, re-sterilize the remaining instruments within 24 hours.

**How to stop leakage:**

**Replace the Gasket when**

- It begins to show sign of leakage.
- When found visibly damaged.
- When shrinkage has occurred.

**If a new gasket leaks or a persistent leaks develops**

- Remove the gasket from the lid and clean the surface with scrubbing pad rinsed in warm soapy water.
- Also clean the surface of the base unit where gasket rests.
- Do not lubricate Gasket.

**Care and maintenance of autoclave**

- Disconnect the autoclave from the main power supply before cleaning.
- Ensure that no material falls into the base chamber i.e. autoclave tape, glass etc as they may affect the operation of the exhaust valves.
- Ensure that the pressure gauge is operating correctly.
- Clean & dry the unit after the day use.
- Use the autoclave only for intended purpose.
- Weekly clean both interior and exterior with warm, soapy water ensuring the electrical parts are kept dry. (In case of electric autoclave).

**WARNING**

- Do not operate the autoclave without water. Avoid using hard water in the unit.
- Make sure the rubber seal is in a good shape & condition.

- Close the autoclave lid properly never try to open it by force without first releasing the steam.
- Do not use any alkaline solution in the unit.

4. **Storage of Instruments:** The windows of the drum should be closed immediately after taking out from autoclave. Sterilised items should be used or properly stored immediately after processingso that they do not become contaminated.

**If the drum is opened, use the contents within 24 hours**

**If the drum is not opened, re-autoclave after 3 days.**

### D. Biomedical Waste Management

Biomedical waste is waste that is generated during the diagnosis, treatment or immunisationof human beings. There is evidence that viruses causing infections such as Hepatitis B andHIV are transmitted via health care waste. These viruses can be transmitted through injuriesfrom needles that are contaminated with human blood.

**Segregation of BMW Waste as per BMW Rules, 2016 & 2018 (Amendment)**

| S. No. | Category | Type of Waste | Colour & Type of Container |
|---|---|---|---|
| 1. | Yellow Category | • Human Anatomical Waste (eg. placenta<br>• Soiled Waste (eg. pads)<br>• Discarded or ExpiredMedicine<br>• Chemical Liquid Waste<br>• Chemical LaboratoryWaste | Yellow colour non chlorinated plastic bags or containers   |
| 2. | Red Category | Contaminated Waste(Recyclable) (eg. gloves, catheters, iv tubing, urobags) | Red colour non chlorinated plastic bags and containers   |
| 3. | White Category | Waste Sharps includingmetals (metallic sharps - eg. needles) | White colour puncture proof, leak proof, tamper proof containers  |
| 4. | Blue Category | • Glassware (eg. vials, and ampules | Puncture proof and leak proof boxes or containers with blue coloured marking (2018 Amendment)  |

## Proper handling and disposal of sharps

The following measures should be strictly followed while handling needles and syringes.

- Use each disposable needle and syringe only once.
- Always wear utility gloves while handling sharps.
- Dispose of the needle with a hub cutter which cuts the plastic hub of the syringe and notthe metal part of the needle.
- Dispose of needles in white puncture-proof container.
- Do not disassemble the needle and syringe after use.
- Do not recap, bend or break needles before disposal.
- Never burn syringes.

## Collection of Waste General Requirements

- All the bags used for waste collection need to be sealed once they are full to 3/4th of their capacityand transported to the central waste storage area or interim storage areas
- Collection of the waste needs to be done in closed covered containers which are sturdy preferably wheelbarrows

## Transportation of Waste

- BMW generated from the health facilities should be transported in covered wheelbarrow based sturdy trolleys through a route which has low traffic flow of patients and visitors (whenever possible)
- The waste transportation trolleys should be dedicated for the purpose of waste transportation only
- The transportation trolleys need to be separate for general waste and for BMW


Transportation of waste

## Storage Of Biomedical Waste

- The BMW generated from the hospital needs to be stored in a dedicated waste storage area.
- Waste should be collected within 48 hours of storage by CBWTF


BMW Collection area

## Disposal of Biomedical Waste

Hospitals need to ensure that they have adequate arrangements for the disposal of BMW generated from the health facility.

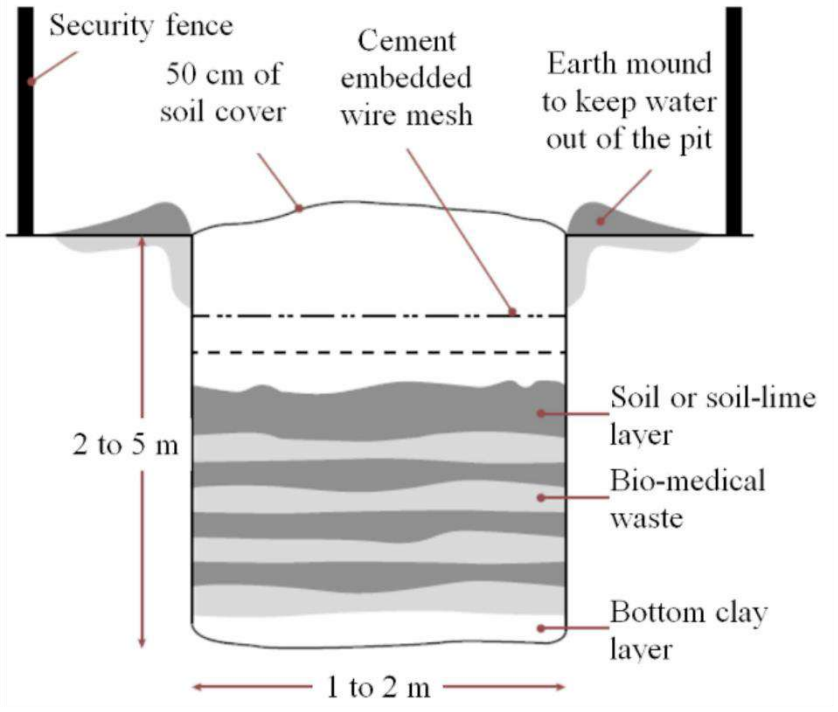
The final disposal of the BMW generated from the health facility can be taken up by the CBMWTF or through deep burial and sharp pits.

## Hospitals Not Under Contract with CBMWTF

Hospitals which are situated outside 75 km areas of the CBMWTF should ensure that they have the facility of disposal of waste within the premises of the hospital i.e. deep burial and sharp pits.

## Standards for Deep Burial

- A pit or trench should be dug about two meters deep. It needs to be half filled with waste, and thencovered with lime within 50 cm of the surface, before filling the rest of the pit with soil
- It should be ensured that animals do not have any access to burial sites. Covers of galvanised iron or wire meshes may be used
- On each occasion, when wastes are added to the pit, a layer of 10 cm of soil shall be added to cover the wastes
- Burial should be performed under close and dedicated supervision
- The deep burial site should be relatively impermeable and no shallow well should be close to the site
- The pits should be distant from habitation, and located so as to ensure that no contamination occurs
- to surface water or ground water. The area should not be prone to flooding or erosion
- The ground water level should be a minimum of six meters below the lower level of deep burial pit.




Design of deep burial pit

## Spill Management

In a hospital, hazardous substances such as body fluids, drugs, cleaning fluids and other chemicals are in very close proximity to hundreds of people each day. Thus in hospital spillage of blood, body fluids or chemicals can occur at any time due to broken or faulty equipment or human error. Any such spill poses risk to the staff, visitors and patients who are extremely susceptible to infection.

**Small volumes of spill (few drops):**

- Wear workman's gloves and other PPE appropriate to the task
- When sharps are involved use forceps to pick up sharps, and discard these items in a puncture resistant
- container
- Wipe the spill with a newspaper moistened with hypochlorite solution (1% dilution containing
- minimum 500ppm chlorine). Discard the paper as infected waste
- Repeat until all visible soiling is removed
- Wipe the area with a cloth mop moistened with 1% hypochlorite solution and allow drying naturally
- All contaminated items used in the clean-up should be placed in a bio-hazardous bag for disposal.

**Large spills (>10ml):**

- Confine the contaminated area
- Wear workman's gloves and other PPE appropriate to the task
- Cover the spill with newspaper or appropriate absorbent material to prevent from spreading
- Flood the spill with 10% hypochlorite solution. While flooding the spill with 10% hypochlorite solution it is to be ensured that both the spill and absorbent material is thoroughly wet
- Alternatively, chlorine granules can be sprinkled on the spill first and then the paper put over it
- Wait for five minutes.
- Remove and discard the paper as infected waste
- Wipe the area with paper moistened with 10% hypochlorite again if required until all visible soiling is cleaned
- Wipe the area once with 10% hypochlorite and a cloth mop and allow drying naturally
- All contaminated items used in the clean-up should be placed in a bio-hazardous bag for disposal.

**Spill Kit**

Blood and body fluid spill kit contents:

- Workman's gloves x 2 pairs
- Apron
- Mask
- Shoe over or plastic bag to cover the shoes
- Absorbent material like newspaper or blotting paper
- Waste collection bag

*For further details refer to Kayakalp guideline

## OSCE Checklist 1: Hand Washing

| # | Steps | Score | Participant | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1 | Remove rings, bracelets, threads and watch. | 1 | | | | | |
| 2 | Wet hands in clean running water under elbow tap. Apply soap. | 1 | | | | | |
| 3 | Vigorously rub hands on both sides in following manner<br>• Palms, fingers and web spaces<br>• Back of hands<br>• Knuckles<br>• Thumbs pointing down<br>• Nails and creases<br>• Wrist and forearm up to the elbow | 6 | | | | | |
| 4 | Thoroughly rinse hands in clean running water. Close the tap with elbow. | 1 | | | | | |
| 5 | Allows air dry keeping the hands above waist level. | 1 | | | | | |
| | **Total** | **10** | | | | | |

**Key points to remember**:

1. Alcohol rub can also be used if the hands are not soiled by blood or any other secretion. However, alcohol rub is not a substitute for proper hand washing.
2. Alcohol hand rub is to be used on both sides of hands for 30 seconds or till the solution is dry in the same manner as hand washing is performed.

## OSCE Checklist 2: Personal Protective Equipment (PPE)

PPE are the items used to protect the healthcare worker from splashes of blood, body fluids, excretions or droplets or aerosolization of organisms from the respiratory tract (WHO). These consist of gloves, caps, eye-covers, masks, gowns and footwear.

**Scenario:** You are going to deliver a baby in the labour room.

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| A | **Demonstrate how you would use personal protective equipment to protect yourself and the patient** | | | | | | |
| 1. | Shoe covers | 1 | | | | | |
| 2. | Waterproof apron | 1 | | | | | |
| 3. | Eye cover | 1 | | | | | |
| 4. | Cap | 1 | | | | | |
| 5. | Mask | 1 | | | | | |
| 6. | Gown | 1 | | | | | |
| 7. | Gloves | 1 | | | | | |
| **B** | **Put on the sterile gloves using the following procedure** | | | | | | |
| 8. | Ask assistant to open the outer package of the gloves | 1 | | | | | |
| 9. | Open the inner wrapper exposing the cuffed gloves with the palm facing upwards | 1 | | | | | |
| 10. | Pick up the first glove by the cuff, touching only the inside portion of the cuff | 1 | | | | | |
| 11. | Hold the cuff in one hand and slip the other hand into the glove ensuring that the fingers enter the corresponding finger of the glove | 1 | | | | | |
| 12. | Pick up the second glove by sliding the fingers of the gloved hand under the cuff of the second glove | 1 | | | | | |
| 13. | Put the second glove on the ungloved hand by maintaining a steady pull through the cuff until the fingers reach the end of the corresponding finger of the glove | 1 | | | | | |
| 14. | Adjust the cuff until the gloves fit comfortably and cover both the wrists. | 1 | | | | | |
| **C** | **After the procedure, how would you remove the contaminated gloves?** | | | | | | |
| 15. | Grasp one of the gloves near the cuff and pull downwards towards the fingers | 1 | | | | | |
| 16. | Grasp the second glove and pull downwards | 1 | | | | | |
| 17. | Pull off the two gloves at the same time, being careful to touch only the inside surfaces of the gloves with your bare hands | 1 | | | | | |
| 18. | Discard them in red bin | 1 | | | | | |
| **D** | **What precautions should you take to avoid contaminating sterile gloved hands?** | | | | | | |
| 19. | Don't touch unsterile items with gloved hands. Keep gloved hands above waist level | 1 | | | | | |
| 20. | Wash hands thoroughly with soap and water and dry them after the procedure | 1 | | | | | |
| | **Total score:** | **20** | | | | | |

## OSCE Checklist 3: Preparation of 0.5% Chlorine Solution

**Objective:** By the end of this exercise the participant will be able to prepare of 0.5% Chlorine solution for decontamination of instruments and gloves.

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | Keep the necessary items ready (plastic bucket and mug, wooden stirrer, tea spoon, bleaching powder in an airtight container, 1 litre water, plastic apron, utility gloves) | 1 | | | | | |
| 2. | Wear plastic apron and utility glove | 1 | | | | | |
| 3. | Take 1 litre water in a plastic bucket | 1 | | | | | |
| 4. | Put 3 level tea spoonful of bleaching powder (15g) in the plastic mug and add little water to make thick paste | 1 | | | | | |
| 5. | Add this paste to 1 litre water in the bucket to make 0.5 % chlorine solution | 1 | | | | | |
| 6. | Stir the solution with a wooden stirrer – a milky white solution will appear. Keep it covered. | 1 | | | | | |
| | **Total** | **6** | | | | | |

**Key points to remember**:

a. Store the bleaching powder in air tight container away from sun light

b. Always prepare the solution using plastic spoon and mug wearing utility gloves

c. Keep the 0.5% chlorine solution in a wide mouth plastic tub/container

d. Change the chlorine solution every 6 hours or if it appears turbid due to multiple/frequent use and prepare fresh solution.

e. Ensure the instruments are submerged in the 0.5% chlorine solution for 10 mins for decontamination

## OSCE Checklist 4: Processing of Instruments

**Objective:** By the end of this exercise the participant will be able to process of instruments

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| 1. | **Decontamination** | | | | | | |
| | • Place the used items/instruments unlocked in 0.5% Chlorine solution in a plastic container<br>• Let it soak for 10 minutes<br>• Wear utility gloves, removes instruments from chlorine solution and rinses them in water | 3 | | | | | |
| 2. | **Cleaning** | | | | | | |
| | • Clean the instrument with detergent and cold water using soft brush<br>• Scrub the instruments with special attention at toothed areas & locks in a container filled with water to avoid splashing<br>• Rinse them thoroughly to remove all detergent and air dry them | 3 | | | | | |
| 3. | **Sterilization** | | | | | | |
| | • Fill the bottom of the autoclave with water till the ridge<br>• Place the items in autoclave drum loosely and puts it on the stove or electrically connected system<br>• Note the timing when the steam emits from the pressure valve. Keeps the wrapped items for 30 min and unwrapped for 20 min at 15 pounds per square inch (PSI) at 121 degrees centigrade (106 Kilo Pascal).<br>• Open the pressure valve to release the steam and allow the autoclave to cool for 15-30 min before opening. | 5 | | | | | |
| 4 | Storage – store the instruments at a clean dry place. | 1 | | | | | |
| | **Total** | **12** | | | | | |

**Key points to remember**

- Place the items loosely in the autoclave to allow steam to circulate.
- Avoid splashing while decontaminating or cleaning instruments
- While autoclaving, use a biological indicator to ensure the items are sterilized

## OSCE Checklist 5: Segregation of Bio-Medical Waste and Their Disposal

| # | Steps | Score | Participants | | | | |
|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 |
| **1** | **Segregation** | | | | | | |
| | **Yellow Category** Contaminated Waste (Non- Recyclable)<br>• Human Anatomical Waste<br>• Soiled Waste<br>• Discarded or Expired Medicine<br>• Chemical Liquid Waste<br>• Chemical Laboratory Waste | 1 | | | | | |
| | **Red Category** Contaminated Waste (Recyclable)<br>• Gloves<br>• Catheters<br>• IV tubing<br>• Urobag | 1 | | | | | |
| | **Blue Category**<br>• Glassware (ampules and vials) | 1 | | | | | |
| | **White Category**<br>Metallic sharps ( needles) | 1 | | | | | |
| **2A** | **Common Biomedical Waste Treatment Facility, Agency (CBMWTF) available and providing services** | | | | | | |
| i | Proper storage before transportation – locked, covered, well ventilated storage area has to be there with colour coded cabins or partitions | 1 | | | | | |
| ii | Safe disposal – to be done by the agency | 1 | | | | | |
| **2B** | **Rural facilities, Agency (CBMWTF) not available** | | | | | | |
| i | Disinfection of waste – blood or body fluid- stained plastics, glass items, metallic sharps as mentioned above to be disinfected using 0.5% chlorine solution for 20 minutes. | 1 | | | | | |
| ii | Proper storage before transportation - locked, covered, well ventilated storage area has to be there with colour coded cabins or partitions | 1 | | | | | |
| iii | Safe Disposal –<br>• **Yellow Bin Waste** – deep burial pit<br>• **Red Bin Waste** – disinfected, mutilated items to be sold for recycling<br>• **Puncture Proof Box Waste** – to be buried in sharps pit<br>• **Municipality/ General waste** – to be picked by municipality | 3 | | | | | |
| | **Total** | **12** | | | | | |

# Chapter 7
# Nurturing Positive Patient Environments with Empathy

Every patient expects safe and quality patient care. A satisfying journey during antenatal care visits, institutional delivery and postnatal care will determine a patient's perception and experience of quality of care.

Experience at first and other every contact with service providers at a public health facility leaves a lasting impression on patients which affects their desire to access services, affecting understanding and adherence to treatment plans and engage actively in their healthcare, ultimately leading to better health outcomes.

ANMs and staff nurses provide a significant component of patient care in this continuum of care, compared to any other service provider, making their contribution very critical to achieving the goal of reduction in maternal and neonatal morbidity and mortality in our communities.

## Background

A patient's health care journey involves numerous interactions before, during, and after receiving care. Patients entering health facility usually feel vulnerable and anxious making them sensitive to behaviour of health care providers, which greatly influences their perception of care.

'Mera Aspataal', a Government of India initiative, collects patient feedback on hospital services, focusing on satisfaction. From April 2023 to June 2024, 27% of contacted clients were unsatisfied, with 40% citing staff behaviour as a major issue.

## Intervention

Patient safety is the keystone of quality of care since the outcomes of poor-quality care are mortality and morbidity. A skilled birth attendant whether an ANM providing antenatal or postnatal care through outreach in CiVHND or staff nurses conducting vaginal deliveries in the labour room have to understand how patients perceive things, which is a vital element for improving patient care.

Patient satisfaction is a crucial aspect of healthcare and by prioritizing patient-centered care, healthcare providers can improve overall experiences and ultimately lead to enhanced health outcomes. When patients feel valued and respected during their interactions, they're more likely to adhere to treatment plans and engage actively in their healthcare, ultimately leading to better health outcomes.

- Active listening to enable empathetic understanding
- Emotional support and counselling
- Clear transparent and concise communication
- cultural sensitive patient education
- Engagement and inclusion of marginalised groups

The following points should be kept in mind while dealing with the woman and her family.

- Respect the woman's dignity and her right to privacy.
- Be sensitive and responsive to the woman's needs.
- Be non-judgemental about the decisions that the woman and her family have made
- regarding her care. You should provide corrective counselling, if required, but only
- aft er the complication has been dealt with and not before or during the management
- of problems.
- Respect the right of women to receive maternity care services.

In recent years, India has implemented a number of MCH interventions to expand the access of maternity care services. Most notable of these is the Janani Suraksha Yojana (JSY) scheme, which was implemented by the National Rural Health Mission (NRHM) in 2005 to provide underprivileged pregnant women with cash assistance.To improve ANC uptake among Indian women and other MCH outcomes, the Government of India has recently launched new MCH schemes, including the Pradhan Mantri Matru Vandana Yojana and Pradhan Mantri Surakshit Matritva Abhiyan.

Despite all these interventions that have been rolled out access by women and children who are marginalised due to social inequities continues to persist because of the lack of empathy of providers toward the following factors that prevent uptake of the maternal and child services.

- lack of education of couple
- lower household wealth and class
- poor exposure to the media
- belonging to other tribes or castes
- lack of support from their partner and family
- social and gender norms around woman's autonomy to access health services

Although there is a need to improve women's autonomy in the household, as well as increase the reach and impact of health promotion campaigns and access to media sources for vulnerable women service providers need to be specially sensitive to the needs of these women.

### Rights of women

As the health-care provider, you should be aware of the rights women; when they receive maternity care services. These are as follows:

- Every woman receiving care has a right to information about her health.
- Every woman has the right to discuss her concerns in an environment in which she feels confident.
- Every woman should know, in advance, all the relevant information regarding the type/s of procedure/s that will be performed on her.
- Every woman has a right to privacy. While working in a facility, procedures should be conducted in an environment (e.g. labour wards) in which the woman's right to privacy is respected.
- Every woman has a right to express her views about the care and services she receives.

When you talk to a woman about her pregnancy or a related complication, you should use simple language and basic communication techniques. This will help you establish an honest, caring and trusting relationship with the woman. If a woman trusts you and feels that you have her best interests at heart she will be more likely to either go to the PHC or call you at home to conduct her delivery. She will also be more likely to approach you early in case she feels there is a complication and share her experience with other women in the community who might also be encouraged to use the services provided by you and at the PHC.

### Supportive care during a normal delivery

- Ensure that the woman has a companion of her choice and wherever possible the same caregiver throughout labour and delivery. Supportive companionship can enable a woman to face fear and pain and reduce loneliness and distress.
- When possible, encourage the companion to take an active part in the care of the woman. Position the companion at the head end of the woman to allow her/him to focus on talking to the woman and caring for her emotional needs.
- Both during and aft er the delivery/event, provide as much privacy as possible to the woman and her family.

## Supportive care during an emergency/complication

**Emotional and psychological reactions of the woman and her family**

The reaction of various members of the family to an emergency situation depends on the social, cultural and religious circumstances, the personalities of the people involved and the gravity of the problem. Common reactions of people to obstetric emergencies or maternal

death include:

- Denial (feelings of 'it can't be true')
- Guilt regarding possible responsibility
- Anger (frequently directed towards the health care staff , but oft en masking anger directed at oneself for 'failure')
- Depression and loss of self-esteem, which may be long-lasting
- Disorientation

## General principles of communication and support

While each emergency situation is unique, the following general principles off er guidance on how to handle emergencies. Communication and genuine empathy are probably the most important components of effective care in such situations.

**At the time of the event**

- Listen to those who are distressed. The family/woman will need to discuss their hurt and sorrow.
- Do not change the subject or move on to easier or less painful topics of conversation.
- Show empathy.
- Tell the family/woman as much as you can and as much as they can understand about what is happening. Understanding the situation and its management can reduce their anxiety and prepare them for what happens next.

## A Day of Struggle at the Hospital

**[Scene 1: Outside the District Medical Unit]**

**Characters:**Sony: 9 months pregnant, about to give birth to her third child.

**Husband:** Sony's  concerned and anxious husband.

**Security Guard:** Hospital's gatekeeper, busy with the crowd.

(Sony and her husband arrive at the labour room entrance .  Sony is in intense labor pain.)

**Husband:** (Panicking) Please, my wife is in labor! We need help immediately!

**Ward Attendant:** (Irritated) It's shift change time. The next nurse will call you. Just wait here.

(Sony's pain intensifies. Within 5 minutes, she delivers the baby right there in the waiting area.)

**Scene 2: Inside the Hospital, Moments Later](The security guard runs to the delivery room and calls the ward attendant.)**

**Ward Attendant:** (Furious) Why didn't you inform us earlier? And why did you come so late?

She reluctantly helps Sony and the baby onto a wheelchair and takes them to the delivery room so late

**Ward attendant:** To the husband) Call the sweeper and have this area cleaned up immediately.

**Scene 3: Hospital Ward, Two Hours Later](Sony and her baby are admitted to the ward. The husband is asked to wait outside.)(In the evening, Sony needs to use the restroom but finds it very dirty.)Sony:**

(To the ward attendant) Can you please call the cleaner to clean the restroom?Ward Attendant: (Busy) I'm making pads right now. Ask your husband to call the cleaner

(Frustrated by the hospital staff's behavior, the husband decides to take Sony and the baby home that evening in an auto-rickshaw.)

Q. Read the case studiy and ask the participants to volunteer to play each of the characters and then discuss the behaviour of the staff with clients. Discuss whether behaviour was appropriate and if not, what should be the desired behaviour.

# Chapter 8
# Various Scheme for Mother and Baby in State of Uttar Pradesh

The Govt. of Uttar Pradesh is dedicated to providing good outcomes to mothers and their babies and ensuring health for them.

## 1. Janani Suraksh Yojana (JSY)

To promote institutional deliveries through monitory benefits to the pregnant woman. To promote institutional deliveries incentive of Rs 1000/- in Urban and Rs 1400/- in Rural area is being provided to Pregnant Woman for institutional delivery. In addition ASHA is also incentivized with Rs 300/- for Delivery &Rs 300/- for complete ANC of Pregnant Woman in Rural and Rs 200/- for Delivery & Rs 200/- for complete ANC in urban area.

## 2. Janani Shishu Suraksha Karyakram (JSSK)

To eliminate Out of Pocket expenses during ANC &Institutional Delivery-**Free Drug, Free Diagnostics, Free Diet** to Delivered Women during their stay at Health care Facility, **Free Blood transfusion** and **Free Transportation** from home to Health care facility and Back is being provided under this scheme. To reduce maternal anemia Iron sucrose administration has been increased across the state apart from IFA tablets.

## 3. Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)

To provide comprehensive quality ANC during second and third trimester of pregnancy by MBBS doctors. The program aims to provide assured, comprehensive and quality antenatal care by MBBS Doctor, free of cost, universally to all pregnant women on the 1st, 9th, 16th& 24thof every month. It is implemented in 1781 (District, Block) health facilities. Private sector MBBS Doctors were also involved for providing ANC services on voluntary basis. Tests which include Height, Weight, BP, Hb, Blood grouping, HBSAg, HIV, Syphlis, Urine for albumin & sugar and one USG is being provided & Identification of HRPs.

- **PMSMA:-USG e₹UPI voucher** A digital solution to allow cashless payments that facilitates one time transaction. Vital initiative to address the prolonged waiting periods and non-availability of ultrasonography services, for pregnant women, at government health facilities. These vouchers offer pregnant women an alternative by allowing them to redeem the service at any empanelled private USG center in state of their own choice e₹UPI voucher is an easy, safe, secure and transparent modePayment to private USG center became transparent, hassle free, easier and at faster mode.
- **Pre-identified HRP- covered under PMSMA & e PMSMA** If post-natal mother was already identified as high-risk pregnancy during her PMSMA visit, the concerned ASHA will make HBNC visits after delivery, as per the schedule and shall be entitled to Rs.500/-per HRP for healthy outcome of both mother and newborn at 45th day of delivery, under extended PMSMA scheme .Subsequent to confirmation and management of the high-risk condition by the Medical Officer/OBGY specialist, and on achieving a healthy outcome for both mother and the baby, **the concerned ASHA will be incentivized @ Rs.250/-per high-risk post-natal mother, after 45th day of delivery**. **The confirmation of a healthy outcome of mother and baby shall be done by concerned MO/ANM.**
- e₹UPI voucher generated on PMSMA days only. As PW comes to Health facility on PMSMA days and Medical Officer suggests for USG, She has to only provide her name and mobile no. consequently the SMS and QR code is received on her mobile no. Showing this SMS at the empaneled USG center she may avail USG services free of cost.

## 4. Maternal Death Surveillance & Response Program

Aim of this program isto identify the gaps in provision of care and suggest suitable strategies to improve the quality of care and facility preparedness for further reduction in maternal deaths. Maternal death review program is operational in UP since 2012-13. In order to ensure reporting of all community maternal death provision of Rs 1000/ to first informer for reporting through 104 call centre has been made.

## 5. High Risk Pregnancy (HRPs) tracking to ensure safe delivery

Quality ANC care, identification of High Risk pregnant women and their supervised institutional delivery are the most important interventions for reducing maternal mortality. To bring focus on quality antenatal care to identify HRPs and ensure safe institutional deliveries of identified HRPs A specific plan for HRP tracking and follow up has been institutionalized in the system. Incentives of Rs-200/case are given to ANMs for identification of HRPs and Rs-300/case to ASHA for getting 4ANCs and institutional delivery.

**SURAKSHIT MATRITVA AASHWASAN (SUMAN) :** SUMAN initiative focuses on assured delivery of maternal & new-born healthcare services encompassing wider access of free and quality services, zero tolerance for denial of services, assured management of complications along with respect for women's autonomy, dignity, feelings, choices and preferences, etc. This provides an opportunity to provide respectful and quality health care services at no cost and ensures complete and comprehensive care during pregnancy and childbirth.

### Maternal, Perinatal, Child Death Surveillance and Response (MPCDSR)

- Child Death Review (CDR) is a strategy to understand the geographical variation in causes of child deaths and thereby initiating specific child health interventions. Analysis of child deaths provides information about the medical causes of death, helps to identify the gaps in health service delivery and social factors that contribute to child deaths. All deaths among children in the age group 0-59 months will be reviewed and reported irrespective of the place it takes place: at home, in health facility or in transit
- The details to be investigated will vary in neonates (0-28 days) and children (29 days-59 months)

**Child Death Review will be of two types**

1. Community Based Child Death Review (CBCDR)
2. Facility Based Child Death Review (FBCDR)

**Notification Card (Form 1) – (ASHA)**

- Honorarium & mobility support: Where ASHA is the primary informant, she may be given Rs. 50/- per child death reported.
- Means of verification: Reporting of the child death by ASHA or any other primary informant can be confirmed by the Notification Card retrievable from the family by the concerned ANM.
- Maintenance of records: The Notification Cards should be maintained as records in the Sub center.
- Report age in hours if child is less than 1 day old; in days if child's age is less than one month; and in months if child is less than a year old.

### A First Brief investigation (Form- 2)- ANM

- First Brief Investigation will be conducted for all child deaths.
- First brief investigation will be done by the ANM/equivalent urban health worker of the area, by interviewing the parents/close caregivers of the deceased, who were present at the time of death.
- ASHA would accompany the ANM for First Brief Investigation.
- ANM will record the relevant information in the format including the cause of death based on the interpretation of the information shared by the parents/ caregivers.
- Honorarium & mobility support: ANM/ equivalent urban health worker may be given Rs. 100/- per child death investigation carried out by her/him.
- Time period: The First Brief Investigation should be done within 2 weeks after the notification of death and report should be submitted to MoIC/BMO, by one month of notification of death.
- Maintenance of records: FBIRs of all child deaths in the block should be maintained as records at the office of MoIC/BMO.

**The MOIC is responsible for the conduct of detailed investigation (Verbal Autopsy)( Form -3a/3b/3c)**

- **Time period:** Detailed investigation is to be undertaken within 1-2 months of notification of death.
- **Honorarium & mobility support**: A sum **of Rs. 150/-** can be given to each member of the investigating team for each death investigated.
- **In addition uptoRs. 100/-** provided to cover the cost of travel to the household and back.
- **Maintenance of records:** One copy of the Verbal Autopsy Form of all child deaths investigated in the block will be kept on record at the office of the MOIC

The original format will be sent to DNO within one week of receiving the report.

A Verbal Autopsyis an investigation of chain of events, circumstances, symptoms and signs of illness leading to death through an interview of the family/relatives of the deceased.

### Family Planning

World Health Organization says, “Family planning allows individuals and couples to anticipate and attain their desired number of children and the spacing and timing of their births

### Basket of choices available for community at Public Health Facilities

- **Limiting Method:-** Male Sterilization & Female Sterilization
- **Spacing Method:-** Intra Uterine Contraceptive Devices (IUCD), Post-Partum IUCD, Post Abortion IUCD, Male Condom& Oral Contraceptive Pills, Non Hormonal OCP- CHHAAYA, 3 monthly MPA Injection-ANTARA

### PPIUCD

- Cu 380 A (effective for 10years) and Cu 375 (effective for 5 years) both are approved for Immediate Post-Partum Insertion

### Prerequisites:

- Counseling of the women in antenatal period, early labor or immediate postpartum (not during active phase of labor)
- Informed consent by the client
- Trained service provider
- Facility with delivery services and acceptable standards of Infection prevention

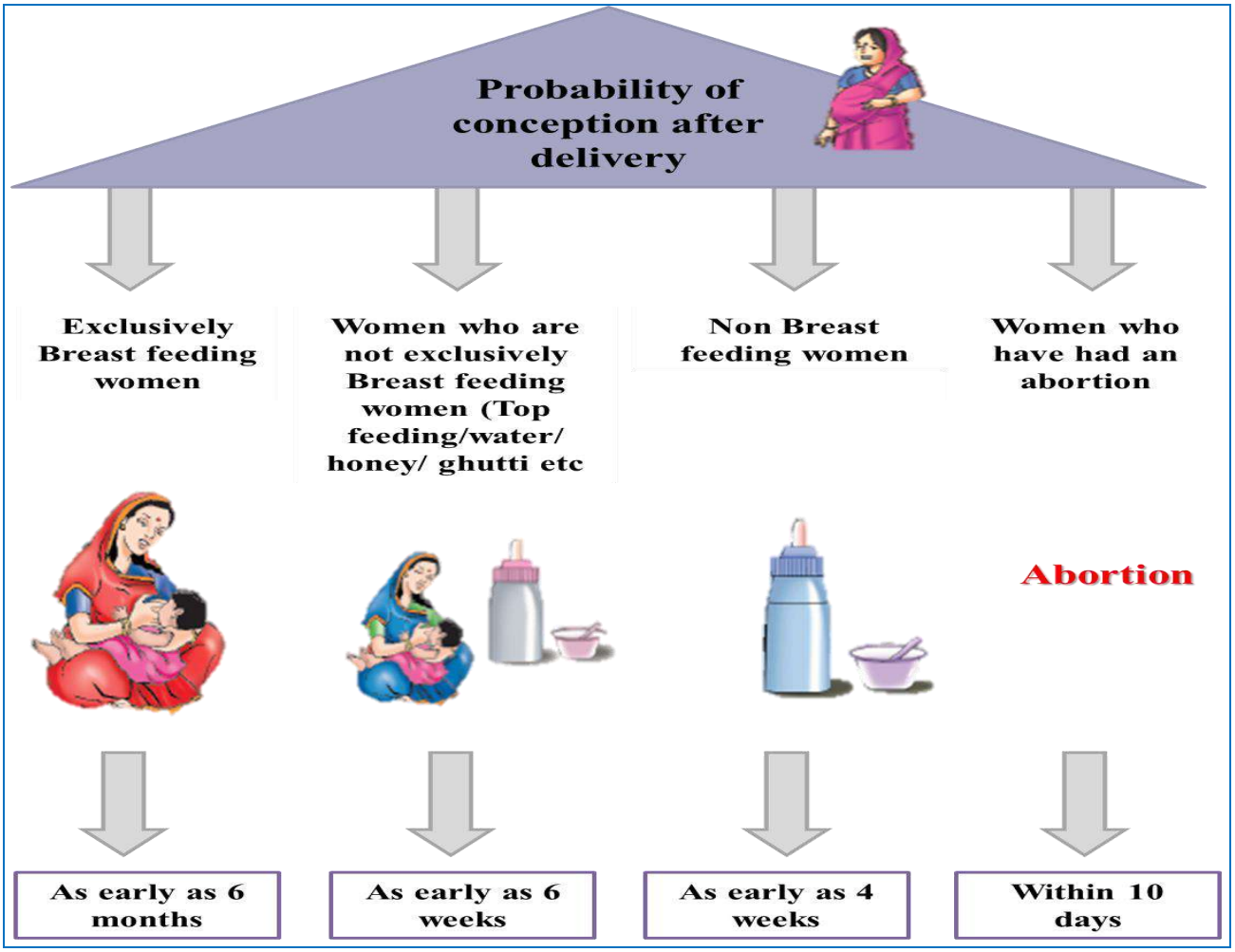
### Timing of Postpartum IUCD Insertion:

- Post Placental: Right after birth (within 10 minutes after delivery of placenta)
- Immediate Postpartum: Soon after birth (< 48 hours after delivery)
- Intra - Cesarean: During cesarean section

### Timing of initiation of FP methods

| FP Method | Post-Partum | | Interval | Post Abortion |
|---|---|---|---|---|
| | Breast feeding client | Non breast feeding client | | |
| **Female sterilization** | Within 7 days After delivery | | within 7 days of onset of menstruation | Immediately or within 7 days after abortion |
| **Male sterilization** | any time | | | |
| **IUCD** | Postpartum PPIUCD- Within 48 hours of delivery or 6 weeks after delivery | | Within 12 days of the start of menstruation or within 5 days of unprotected sex | Immediately or within 12 days after abortion |
| **Oral Contraceptive Pills** | 6 month after delivery | 3 week after delivery | within 5 days of onset of menstruation | Immediately or within 7 days after abortion |
| **Antra Injection** | 6 week after delivery | Immediate after delivery | within 7 days of onset of menstruation | Immediately or within 7 days after abortion |
| **Centchroman (Chhaya)** | Immediate after delivery | | from the first day of menstruation | Immediately or within 7 days after abortion |

**Return to fertility:** In the extended post partum period, i.e. from immediate post partum period to 12 months post delivery fertility may return even before return of menses. Therefore counselling regarding return to fertility should be customized to each woman's individual need and breast feeding status.




### Nayi Pahel Kit (Shagun Kit) - A FP Kit for "Newly Weds

A kit having family planning contraceptives and relevant literature is being provided to newly-wed couple through ASHA.

### Saas Bahu Sammellan

SaasBahuSammelan is aimed to facilitate improved communication between mothers-in-law and daughters-in-law through interactive games and exercises and building on their experiences and to bring about changes in their attitudes and beliefs about Family Planning. It is being organized through ASHAs at the sub-centre level.The following participants are to be invited giving priority, such as –

- Newly married couple during last one year
- High risk pregnant women within the last 01 year
- Couples who have not adopted any means of family planning.
- Couples having 03 or more than 03 children
- Ideal Couple - Couples who have had their first child after 2 years of marriage, whose gap between the first child and the second child is at least 03 years or the couple has adopted permanent means after two children.

## Khushaal Pariwar Diwas


To bring the boost to the Family planning program State has initiated Khushal Parivar Divas on 21st of every month as campaign since November 2020.

Three target groups have identifies which are as follows –

1. Women who have been delivered having High Risk Pregnancy Women (HRP) in last one year.
2. Newly married Couple in last one year.
3. Eligible Couples having 3 or more children.

- Community activities conducted by frontline worker with engagement and counselling by ASHA, identification and registration.
- Assured service delivery to clients who have counselled at sites and linkages through public and private health facilities accredited and mapped under Hausla Sanjhdari
- Ensuring commodities and service providers
- Distribution of Shagun kits to newlyweds with FP counselling

## 102- National Ambulance Services

- Main objective of 102 is to provide transport services to Pregnant Mother and infant child and for Anti Natal checkups.
- Provision of **24*7** ambulance services.
- Toll free number **102** for free of cost ambulance services.
- Provide pick and drop both services.
- 102 service is available across the UP state.

## 108-Emergency Medical Transport Services

- Main objective of 108 is to provision and management of Ambulance Services for responding to medical emergencies and transporting the patient to the nearest Community Health Centre or District Hospital within the shortest possible time.
- Provision of **24*7** ambulance services.
- Toll free number **108** for free of cost ambulance services.
- 102 service is available across the UP state.

## Chapter 09

# MaNTrA (Maa Navjaat Tracking App)- Labour Room Online MIS and Birth Registration


MaNTrA (Maa Navjaat Tracking App), the Labour Room Online MIS, was rolled out on 5 December 2021 in Uttar Pradesh. MaNTrA mobile application is available to staff nurses posted at delivery points including Medical colleges, across all 75 districts of UP to capture real-time information.

MaNTrA has facilitated monitoring of parameters around birth such as active management of third stage of Labour (AMTSL) use of antenatal corticosteroids and birth dose vaccination. It has also facilitated monitoring of perinatal deaths, community follow-up of low-birth-weight (LBW) newborns and performance tracking of service providers. Client feedback monitoring and automated SMS messages to beneficiaries for home-based care of new-born is also inbuilt in MaNTrA.

Integration of MaNTrA with the Civil Registration System (CRS) for registration of births, has been done. This has enabled timely registration of births in public health facilities. Integration of MaNTrA with Safe Delivery App developed by Maternity Foundation, is also achieved to incorporate capacity-building tools for staff nurses such as for management of complications.

## Annexure 1


प्रसव पूर्व, प्रसव के दौरान और प्रसव पश्चात सम्मानपूर्ण मातृत्व देखभाल प्राप्त करना प्रत्येक महिला का अधिकार है।
प्रत्येक महिला को समुचित एवं सुरक्षित उपचार प्राप्त करने का अधिकार है।
परीक्षण के दौरान विनम्र रहें, और आश्वस्त करें।
प्रत्येक महिला को अपनी प्राथमिकताएँ और अपने पसंद का साथी रखने का अधिकार है।
प्रसव पीड़ा एवं शिशुजन्म के समय महिला के साथ उसकी पसंद का साथी हो, जिससे वह सहज व आश्वस्त महसूस करे।
गोपनीयता और निजता प्रत्येक महिला का अधिकार है।
गोपनीयता महत्वपूर्ण है। बिस्तर/परीक्षण टेबल के बीच पर्दे या स्क्रीन लगायें। महिला का मेडिकल रिकार्ड और विवरण गोपनीय रखें।
प्रत्येक महिला को प्रसव सम्बन्धी प्रक्रियाओं की जानकारी, अनुमति/इंकार एवं अपनी प्राथमिकताओं के प्रति सम्मान का अधिकार है।
महिला को सशक्त और जानकार बनायें। चिकित्सा प्रक्रियाओं के लिए उसकी अनुमति लें।
प्रत्येक महिला को एकसमान न्यायसंगत और भेदभाव से मुक्त देखभाल का अधिकार है।
सभी महिलाएँ समान हैं। महिला की पृष्ठभूमि, संस्कृति, सामाजिक, शैक्षणिक या आर्थिक स्तर की परवाह किए बिना सम्मानपूर्ण देखभाल करें।
प्रत्येक महिला को सर्वोत्तम स्वास्थ्य सेवाएं प्राप्त करने का अधिकार है।
सुरक्षित एवं स्वस्थ्य प्रसव के लिए छोटे-छोटे कदम महत्वपूर्ण हैं। महिला को अकेला न छोड़ें, निर्धारित समय पर देखभाल करें, देखभाल सम्बन्धी प्रोटोकाल का पालन करें।
मातृत्व की सम्मानपूर्ण देखभाल प्रत्येक महिला का अधिकार है।
प्रसव और शिशु जन्म को यादगार लम्हा बनायें... हर माँ को परिवार नियोजन, टीकाकरण तथा 08 माह तक शिशु को केवल माँ का दूध दिये जाने सम्बन्धी जानकारी दें।
मातृत्व की सम्मानपूर्ण देखभाल प्रत्येक महिला की मानवीय भावनाओं, विकल्पों और प्राथमिकताओं का सम्मान करती है।
unicef
for every child
मातृत्व की सम्मानपूर्ण देखभाल

## Annexure 2

Maternal Health Division
Ministry of Health and Family Welfare
Government of India

# Antenatal Checkup

- Helps in identifying complications of pregnancy on time and their management
- Ensures healthy outcomes for the mother and her baby
- Necessary for well-being of pregnant woman and foetus

**Registration and 4 minimum Antenatal Checkups during pregnancy and more if indicated**

| | |
|---|---|
| Registration & 1st ANC | In first 12 weeks of pregnancy |
| 2nd ANC | Between 14 and 26 weeks |
| 3rd ANC | Between 28 and 34 weeks |
| 4th ANC | Between 36 weeks and term |

**Supplementation during Pregnancy**

- Folic acid tab 400 µg daily in Ist trimester
- Iron Folic acid tab daily from 14 weeks onwards
- For Anemic women, Iron Folic acid tab twice daily


## First Visit

- Pregnancy detection test
- Fill up MCP Card and ANC register
- Give filled up MCP Card and Safe Motherhood booklet to the woman
- Past and present history of any illness/complications in this or previous pregnancy
- Physical examination (weight, BP, respiratory rate) and check CVS/Resp system, breast, pallor, jaundice and oedema
- Two doses of Inj. TT 4 weeks apart whenever pregnancy is detected

**Investigations**

- Hb%, urine examination
- Blood group including Rh factor
- RPR/ VDRL, HBsAg, HIV screening
- RDK test for malaria (in endemic areas)

**Information for pregnant woman and her family**

- Encourage institutional delivery/ensure delivery by identification of SBA
- Explain entitlement under JSSK & JSY
- Identify the nearest functional PHC/FRU for delivery
- High risk pregnancy to be attended in District Hospital and Medical College
- Pre-identification of referral transport and blood donor

## At All Visits

- Physical examination
- Abdominal palpation for foetal growth, foetal lie and auscultation of foetal heart sound

**Investigations**

- Hemoglobin estimation
- Urine exam for protein, sugar and micro exam
- At 24–28 weeks blood sugar (OGCT)– 2nd or 3rd visit

**Counselling for**

- Adequate rest, nutrition and balanced diet
- Recognition of danger signs during pregnancy, labour and after delivery or abortion and signs of normal labour
- Initiation of breastfeeding immediately after birth
- Counselling for small family norm
- Use of contraceptives (birth spacing or limiting) after birth/abortion

*For use in medical colleges, district hospitals and FRUs*

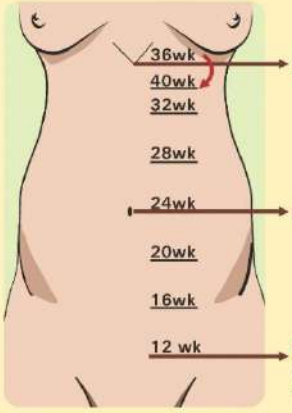
Maternal Health Division
Ministry of Health and Family Welfare
Government of India

# Antenatal Examination

## Preliminaries

- Respect woman's rights
- Explain procedure and ensure privacy
- Ensure bladder is empty
- Examiner stands on right side
- Abdomen is fully exposed from xiphisternum to pubis symphysis
- Keep woman's legs straight
- Centralise uterus

## FUNDAL HEIGHT




Symphsio-fundal height in cms corresponds to weeks of gestation after 28 weeks

Correct dextrorotation

Ulnar border of left hand is placed on upper most level of fundus and marked with pen

Measure distance between upper border of pubic symphysis and marked point

## GRIPS

Legs are slightly flexed and separated for obstetrical grips

Fundal Grip

Lateral Grip

First Pelvic Grip

Second Pelvic Grip

Foetal heart sound is usually located along the lines as shown

*For use in medical colleges, district hospitals and FRUs*

# प्रसव के समय का साथी

महिला का लगातार हौसला बढ़ाने हेतु महत्वपूर्ण भूमिका निभाता है।

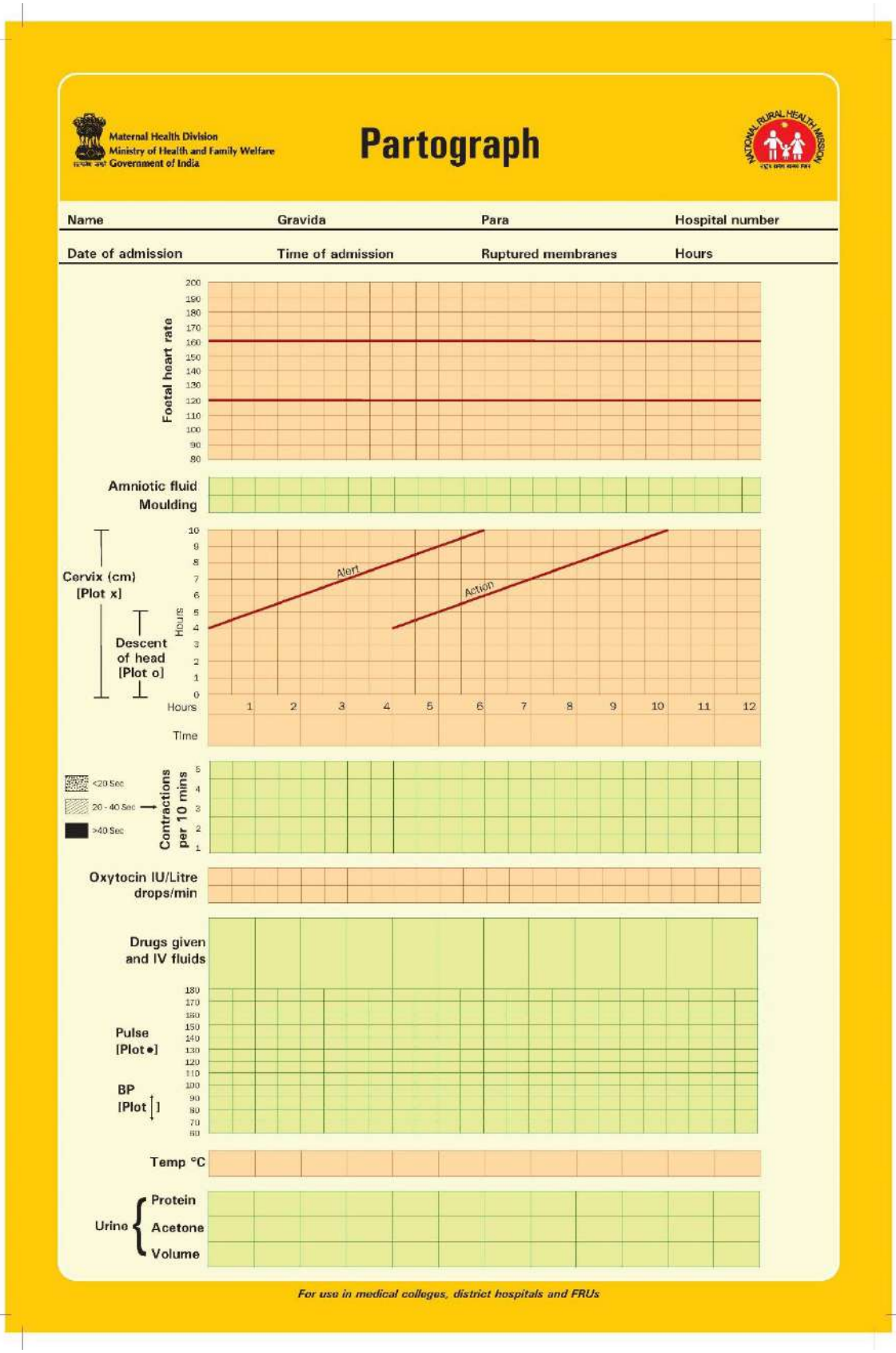

**प्रसव के समय का साथी किसी भी खतरे के चिन्ह/लक्षणों के प्रति सावधान रहता/रहती है।**

| माताओं में | नवजात शिशु में |
|---|---|
| • भयंकर सरदर्द। | • स्तनपान करने में कठिनाई। |
| • देखने में परेशानी। | • बुखार होना या ठंडा पड़ना। |
| • योनि से अत्यधिक रक्तस्राव। | • सांस लेने में कठिनाई/तेज सांस चलना। |
| • गंभीर पेट दर्द। | • शिशु का कम हलचल के साथ सुस्त/ बेहोश होना। |
| • सांस लेने में दिक्कत। | • हथेली और तलवे पीले पड़ना। |
| • झटके आना या दौरे पड़ना। | |
| • पेशाब करने में कठिनाई | |
| • दुर्गंध युक्त योनि स्त्राव। | |
| • बुखार या ठंड लगना। | |


unicef for every child

मातृत्व की सम्मानपूर्ण देखभाल

# Annexure 4


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Partograph
NATIONAL RURAL HEALTH MISSION
Name
Gravida
Para
Hospital number
Date of admission
Time of admission
Ruptured membranes
Hours
Foetal heart rate
200
190
180
170
160
150
140
130
120
110
100
90
80
Amniotic fluid
Moulding
Cervix (cm)
[Plot x]
Descent
of head
[Plot o]
10
9
8
7
6
5
4
3
2
1
0
Hours
Alert
Action
Hours
1
2
3
4
5
6
7
8
9
10
11
12
Time
<20 Sec
20 - 40 Sec
>40 Sec
Contractions
per 10 mins
5
4
3
2
1
Oxytocin IU/Litre
drops/min
Drugs given
and IV fluids
Pulse
[Plot •]
BP
[Plot ]
180
170
160
150
140
130
120
110
100
90
80
70
60
Temp °C
Urine
Protein
Acetone
Volume
For use in medical colleges, district hospitals and FRUs

## Annexure 5

Maternal Health Division
Ministry of Health and Family Welfare
Government of India

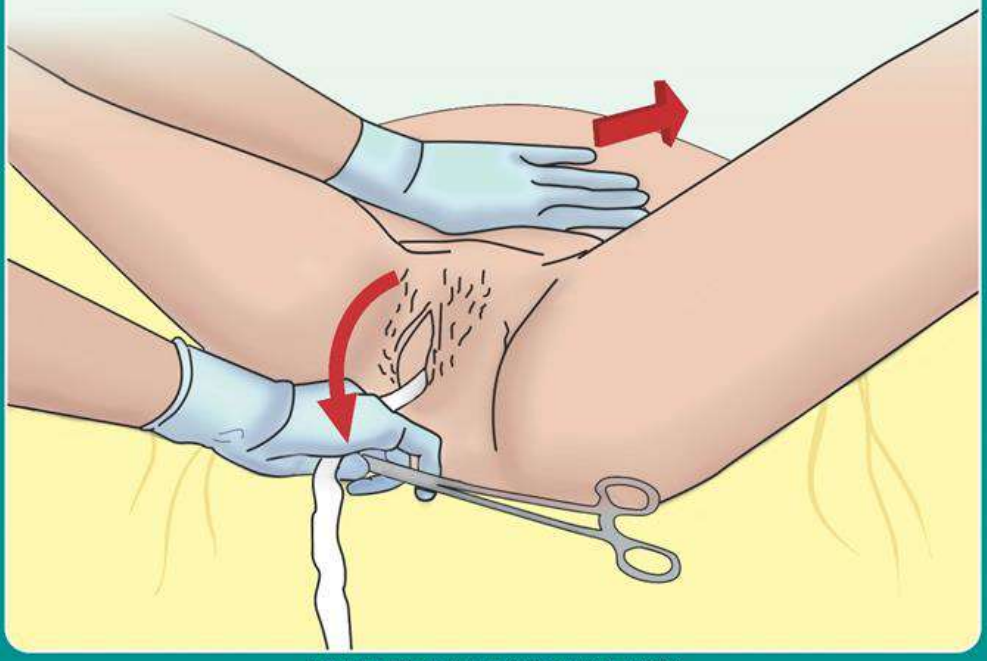
# Active Management of Third Stage of Labour (AMTSL)

- Mandatory for all deliveries (vaginal and abdominal)
- Exclude presence of another baby after delivery of first baby

**Step 1** Inj. Oxytocin 10 units IM immediately after birth

**Step 2**
- Controlled cord traction once uterus is contracted and cord is cut
- Apply cord traction (pull) downwards and give counter-traction with other hand by pushing uterus up towards umbilicus

**Step 3** Uterine massage to keep uterus contracted



*For use in medical colleges, district hospitals and FRUs*

# Annexure 6

# Episiotomy

Episiotomy should NOT be performed routinely (Only to be performed by Staff Nurses).

Episiotomy should be considered only in the case of:-

Tight perineum leading to prolonged second stage

- complicated vaginal delivery (breech, shoulder dystocia, forceps, vacuum);
- scarring from female genital cutting or poorly healed third or fourth degree tears;
- scarring from improperly sutured episiotomy/perineal tears
- Fetal distress.
    - Review general care principles and apply antiseptic solution to the perineal area.
    - Provide emotional support and encouragement. Use local infiltration with lignocaine
    - Make sure there are no known allergies to lignocaine or related drugs.

**I. Preparation of lignocaine 1 % solution**

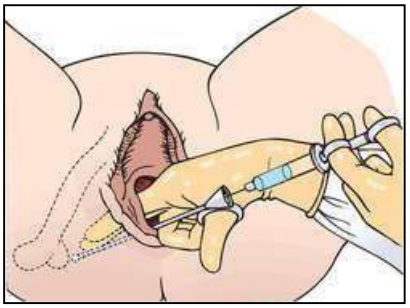
| Combine 1 part Lignocaine 2% (concentration in which it is commonly available) with 1 part Normal saline or sterile distilled water (Do not use glucose solution as it increases the risk of infection) |
|---|

- Infiltrate beneath the vaginal mucosa, beneath the skin of the perineum and deeply into the perineal muscle using about 10 mL 1% lignocaine solution.
- Note: Aspirate (pull back on the plunger) to be sure that no vessel has been penetrated. If blood is returned in the syringe with aspiration, remove the needle. Re check the position carefully and try again. Never inject if blood is aspirated. The woman can suffer seizures and death if IV injection of lignocaine occurs.
- Wait 2 minutes and then pinch the incision site with forceps. If the woman feels the pinch, wait 2 more minutes and then retest.

| Anaesthetize early to provide sufficient time for effect |
|---|

Infiltration of perineal tissue with local anaesthetic

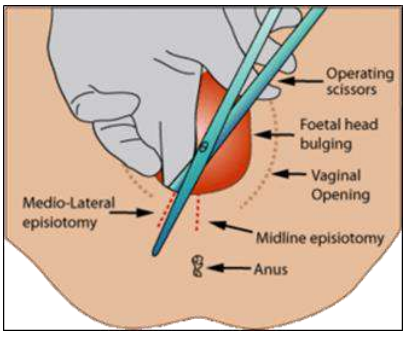
- Wait to perform episiotomy until:
    - the perineum is thinned out; and
    - 3-4 cm of the baby's head is visible during a contraction.



| Performing an episiotomy will cause bleeding. It should not, therefore, be done too early |
|---|

- Wearing high-level disinfected gloves, place two fingers between the baby's head and the perineum.
- Use scissors to cut the perineum about 3-4 cm in the mediolateral direction.
- Control the baby's head and shoulders as they deliver, ensuring that the shoulders have rotated to the midline to prevent an extension of the episiotomy.
- Carefully examine for extensions and other tears and repair

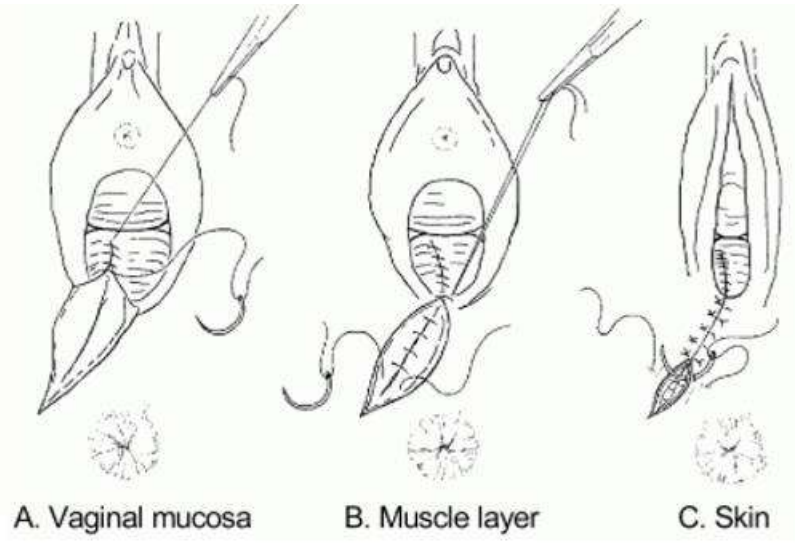
Making the incision while inserting two fingers to protect the baby's head



## Repair of Episiotomy

It is important that absorbable sutures be used for closure. Polyglycolic sutures are preferred over chromic catgut for their tensile strength, non-allergenic properties and lower probability of infectious complications and episiotomy breakdown. Chromic catgut is an acceptable alternative, but is not ideal.

- Close the vaginal mucosa using continuous 2-0 suture:
- Start the repair about 1 cm above the apex (top) of the episiotomy. Continue the suture to the level of the vaginal opening;
- At the opening of the vagina, bring together the cut edges of the vaginal opening
- - Bring the needle under the vaginal opening and take out through the incision and tie.
- Close the perineal muscle using interrupted 2-0 sutures.
- Close the skin using interrupted (or subcuticular) 2-0 sutures.
- 1st and 2nd degree perineal tears are to be repaired in similar manner. 3rd and 4th degree tears are to be referred to higher centre. In all cases a per rectal examination must be done to rule out anal/rectal involvement (details are given in chapter on PPH)




**Repair of episiotomy**

RBSK

# EXAMINATION OF THE NEWBORN FROM HEAD TO TOE FOR COMMON BIRTH DEFECTS

NATIONAL HEALTH MISSION

## GENERAL OBSERVATION : If present, refer

• Looks ill • Lethargic • Abnormal cry • Not feeding • **Colour of skin:** a) Pale b) Blue c) Yellow

*Wash your hands, before touching the baby*

## ❶ HEAD AND SPINE

1. Size too large > 38 cms (full term)
2. Size too small < 32 cms (full term)
3. Absence of skull cap
4. Swelling or protruding of the brain
5. Abnormal swelling of the spine

## ❷ EYES, EARS, MOUTH AND LIPS

### EYES

1. Eyelid – swelling
2. Eyelid – droopy
3. Gap in eyelid
4. Eyeball – absent
5. Eyeball – small
6. Inside the eye – corneal clouding
7. Inside the eye – opacity of lens/white reflex

### EAR

1. Absent 2. Abnormal shape

### MOUTH

1. Cleft (split) lip 2. Cleft (split) palate 3. Cleft (split) lip and palate

## ❸ ABDOMEN AND ANUS

### ABDOMEN

1. Scaphoid (sunken and concave) with respiratory distress: X-ray chest
2. Distended: X-ray abdomen
3. Wall defect- gap with herniation of the gut

### ANUS

1. Absent/imperforate/ abnormally positioned

## ❹ GENITALIA

1. Ambiguous genitalia
2. Vaginal opening absent
3. Urethral opening away from the tip of the penis – look where the urine comes out

## ❺ URINARY TRACT

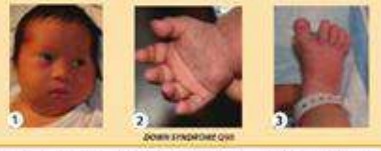
1. Bladder – not covered
2. Wrinkled abdominal wall
3. Urinary stream – check if male child

## ❻ LIMBS (UPPER & LOWER)

1. Absence of a whole or part of upper limb
2. Absence of a whole or part of lower limb
3. Fused digits
4. Absence of digits or split hand/foot
5. Extra digits
6. Club foot

## ❼ CHROMOSOMAL - DOWN SYNDROME

1. Face: Upward slanting eyes, fold on the inner corner of the eye (epicanthal), flat nose, small ear, small mouth, excess skin at the nape of neck
2. Palm: Single crease
3. Foot: Increased gap between 1st and 2nd toe



* *Need urgent referral*

→ *If any of the above identified, record findings in RCH register and RBSK birth defect recording format along with MCTS details*

# Annexure 8

## Case Sheet for Maternity Services - L2 Facility

### Admission Form

| | | | |
|---|---|---|---|
| MCTS No. | | Name of Facility | |
| Booked | Yes ☐ No ☐ | Block | |
| IPD/Registration No. | | District | |
| BPL/JSY Registration | Yes ☐ No ☐ | Contact number (facility) | |
| Aadhar Card No. | | Name of ASHA | |
| Referred from & Reason | | | |

Name: Age: W/o OR D/o:

Address:

Contact No: Marital status:

Admission date: / / Time: Name of birth companion:

Admission category: presented with labor pain ☐ presented with complications of pregnancy ☐
referred in from other facility ☐

LMP: / / EDD: / /

Provisional Diagnosis: Final Diagnosis:

Contraception History:

Delivery outcome: Live ☐ Abortion ☐ Sex of Baby: Male ☐ Female ☐

Fresh Still Birth ☐ Macerated Still Birth ☐ Preterm: Yes ☐ No ☐

Single ☐ Twin/Multiple ☐ Birth weight (in kgs) ☐ Inj.Vit.K1 ☐

Delivery date: / / Time: Immunization: BCG ☐ OPV ☐ HepB ☐

Mode of Delivery/ Procedure: Normal ☐ Assisted ☐ CS ☐ Other (specify)

Indication for assisted/ LSCS/ Others

Final outcome: Discharge/ Referral/ Death/ LAMA/ Abortion

Name and signature of service provider: Designation: .....
Phone No:..... Date & Time: .....

**Presenting complaints:**

**Past Obstetrics History:**

APH: ☐
PPH: ☐
PE/E: ☐
C-section: ☐
Obstructed labor: ☐
Still births: ☐
Congenital anomaly: ☐
Anemia ☐
Others (Specify):.....
.....

**Medical/ Surgical History:**
(Please specify)

**Family H/o chronic illness:**
(Please specify)

Date and time of onset of labor: / / ☐

Gravida: ☐ Parity: ☐ Abortion: ☐ Living children: ☐

**General Examination**

Height: ☐ cms Weight: ☐ kgs
Pallor: ☐ Jaundice: ☐ Pedal Edema: ☐

**Vitals**

BP: ☐ mmHg Temperature: ☐ $^{o}C/^{o}F$
Pulse: ☐ /min. Respiratory rate: ☐ /min. FHR: ☐ /min.

**PA Examination**

Presentation: Cephalic: ☐ Others (specify):.....
Engagement: ☐ Lie: ☐

**Gestational Age**

Pre-term: Yes ☐ No ☐
Antenatal corticosteroid given: Yes ☐ No ☐

LMP: / / EDD: / /
Fundal heights (in wks): ☐ Final estimated Gestational Age (in wks): ☐
Age from USG: ☐

**PV Examination**

No. of PV Examinations ____

Cervical dilatation: ☐ (in cms) Cervical effacement: ☐ (%)
Membranes: Ruptured ☐ Intact ☐
Colour of amniotic fluid: Clear ☐ Meconium ☐ Blood ☐
Pelvis adequate: Yes ☐ No ☐

**Investigations**

Blood Group & Rh: ☐ Anti-D given: ☐
Hb: ☐ Blood Sugar: ☐
Urine Protein: ☐ Urine Sugar: ☐
HIV: ☐ HBsAg: ☐
Syphilis: ☐ Malaria: ☐

Others: .....

## Before Birth : SAFE CHILDBIRTH CHECKLIST

### CHECK-1 On Admission

**Does Mother need referral?**
☐ Yes, organized
☐ No

Refer to FRU/Higher centre if any of following danger signs are present, mention reason and given treatment on transfer note:
☐ Vaginal bleeding ☐ Severe abdominal pain
☐ High fever ☐ History of heart disease or other major illnesses
☐ Severe headache or blurred vision ☐ Difficulty in breathing ☐ Convulsions

**Partograph started?**
☐ Yes
☐ No: will start when ³ 4 cm

Start when cervix ³4 cm, then cervix should dilate ³1 cm/hr
- Every 30 min: Plot maternal pulse, contractions, FHR and colour of amniotic fluid
- Every 4 hours: Plot temperature, blood pressure, and cervical dilation in cm

**NO OXYTOCIN/ other uterotonics for unnecessary induction/ augmentation of labor**

**Does Mother need**
- Antibiotics?

☐ Yes, given
☐ No

Give antibiotics to Mother if:
☐ Mother's temperature ³38°C (³100.5°F)
☐ Foul-smelling vaginal discharge
☐ Rupture of membranes >12 hrs without labour or >18 hrs with labour
☐ Labour >24 hrs or obstructed labour
☐ Rupture of membranes <37 wks gestation

- Inj. Magnesium Sulfate?

☐ Yes, given
☐ No

Give first dose of inj. magnesium sulfate and refer immediately to FRU/Higher center OR give full dose (loading and then maintenance) if at FRU if:
Mother has systolic BP ³160 or diastolic ³110 with ³+3 proteinuria **OR** BP systolic ³140 or diastolic ³90 with proteinuria trace to +2 along with any of:
☐ Presence of any symptom like:
- Severe headache
- Pain in upper abdomen
- Blurring of vision
- Oligouria (passing <400 ml urine in 24 hrs)
- Difficulty in breathing

☐ Convulsions

Corticosteroid
☐ Yes, given
☐ No

Give corticosteriods in antenatal period (between 24 to 34 weeks) to mothers if:
☐ True pre-term labour
☐ Conditions that lead to imminent delivery like APH, Preterm Premature ROM, Severe PE/E Dose: Inj. Dexamethasone 6 mg IM 12 hourly - total 4 doses

HIV status of the mother:
☐ Positive
☐ Negative

☐ **Follow Universal Precautions**

If HIV+ and in labour:
☐ If mother is on ART, continue same
☐ If not on ART, start ART
☐ If ART is not available, refer immediately after delivery to ICTC/ART Centre/Link ART Centre for further HIV management
If HIV status unknown:
☐ Recommend HIV testing

**Encouraged a birth companion to be present during labour, at birth and till discharge ☐ Yes ☐ No**

**Are soap, water, gloves available?**
☐ Yes, I will wash hands and wear gloves for each vaginal exam
☐ No, supplies arranged

☐ **Confirm if mother or companion will call for help during labour if needed**

Explain to call for help if there is:
- Bleeding
- Severe abdominal pain
- Difficulty in breathing
- Severe headache or blurring vision
- Urge to push
- Can't empty bladder every 2 hours

Counsel Mother and Birth Companion on:
- Support to cope up with labour pains
- No bath/oil for baby
- No Pre-Lacteal feed
- Initiate breastfeeding in half-an-hour
- Clothe and wrap the baby

Name of Provider: .....Date: ..... Signature: .....

*Adapted from "WHO Safe Childbirth Checklist"*

## Just Before and During Birth : SAFE CHILDBIRTH CHECKLIST

### CHECK-2 Just Before and During Birth (or C-Section)

**Does Mother need:**

- *Antibiotics?*

☐ Yes, given
☐ No

Give antibiotics to Mother if any of the following are present:
☐ Mother's temperature ³38°C or ³100.5°F
☐ Foul-smelling vaginal discharge
☐ Rupture of membranes >18 hrs with labour
☐ Labour >24 hrs or obstructed labor now
☐ Cesarean section

- *Inj. Magnesium sulfate?* ☐ Yes, given

☐ No

Give first dose of inj. magnesium sulfate and refer immediately to FRU/Higher center OR give full dose (loading and then maintenance) if at FRU if:
Mother has systolic BP ³160 or diastolic ³110 with ³+3 proteinuria **OR** BP systolic ³140 or diastolic ³90 with proteinuria trace to +2 along with any of:
☐ Presence of any symptom like:
- Severe headache
- Pain in upper abdomen
- Blurring of vision
- Oligouria (passing <400 ml urine in 24 hrs)
- Difficulty in breathing

☐ Convulsions

☐ **Skilled assistant identified and ready to help at birth if needed**

**Confirm essential supplies are at bedside/labour room:**

*For Mother*
☐ Gloves
☐ Soap and clean water
☐ Oxytocin 10 units in syringe
☐ Pads for mother

Prepare to care for mother immediately after birth of baby (AMTSL)*
- Confirm single baby only (rule out multiple babies)
- Give inj. oxytocin 10 units IM within 1 minute
- Do controlled cord traction to deliver placenta
- Massage uterus after placenta is delivered, check for completeness (all Cotyledons and Membranes)

*For Baby*
☐ Two clean dry, warm towels
☐ Sterile scissors/blade to cut cord
☐ Mucus extractor
☐ Cord ligature
☐ Bag-and-mask

Prepare to care for baby immediately after birth
- Dry baby, wrap, and keep warm, give Vit. K, start breastfeeding
- If not breathing: clear airway and stimulate
- If still not breathing:
  - Cut cord
  - Ventilate with bag-and-mask
  - Call for help (Pediatrician/SNCU/NBSU/F-IMNCI trained doctor if available)

Name of Provider: .....Date: ..... Signature: .....

*Adapted from "WHO Safe Childbirth Checklist"*

## After Birth : SAFE CHILDBIRTH CHECKLIST

### CHECK-3 Soon After Birth (within 1 hour)

**Is Mother bleeding abnormally?**

☐ Yes, shout for help, refer if needed or treat if facilities available
☐ No

If bleeding ≥500 ml, or 1 pad soaked in <5 min:
- Call for help, massage uterus, start oxygen, start IV fluids, start oxytocin drip 20 units in 500 ml of RL@40-60 drops/min, treat cause
- If placenta not delivered or completely retained: give IM or IV Oxytocin, stabilize, 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?*

☐ Yes, given
☐ No

Give antibiotics to mother if manual removal of placenta is performed, or if mother's temperature ≥38°C (≥100.5°F) and any of:
☐ Chills
☐ Foul-smelling vaginal discharge
☐ Lower abdominal tenderness
☐ Rupture of membranes >18 hrs during labour
☐ Labour was >24 hours

- *Inj. Magnesium sulfate?*

☐ Yes, given
☐ No

Give first dose of inj. magnesium sulfate and refer immediately to FRU/Higher center OR give full dose (loading and then maintenance) if at FRU if:
Mother has systolic BP ≥160 or diastolic ≥110 with ≥+3 proteinuria **OR** BP systolic ≥140 or diastolic ≥90 with proteinuria trace to +2 along with any of:
☐ Presence of any symptom like:
- Severe headache
- Pain in upper abdomen
- Blurring of vision
- Oligouria (passing <400 ml urine in 24 hrs)
- Difficulty in breathing

☐ Convulsions

**Does Baby need:**

- *Antibiotics?*

☐ Yes, given
☐ No

Give baby antibiotics if antibiotics were given to mother, or if baby has any of:
☐ Breathing too fast (>60/min) or too slow (<30/min)
☐ Chest in-drawing, grunting
☐ Convulsions
☐ Looks sick (lethargic or irritable)
☐ Too cold (baby's temp <36°C and not rising after warming)
☐ Too hot (baby's temp >38°C)
☐ Excessive crying

- *Referral?*

☐ Yes, organized
☐ No

Refer baby to NBSU/SNCU/FRU/higher centre if:
- Any of the above (antibiotics indications)
- Baby looks yellow, pale or bluish

- *Special care and monitoring?* ☐ Yes, organized

☐ No

Arrange special care/monitoring for baby if any of the following is present:
☐ Preterm baby
☐ Birth weight <2500 gms
☐ Needs antibiotics
☐ Required resuscitation

- *Syrup Nevirapine*

☐ Yes, given and will continue upto 6 weeks
☐ No

Give if mother is HIV+:
- If mother has received >24 weeks of ART, give syrup Nevirapine to baby for 6 weeks
- If mother has received <24 weeks of ART or mother is not on ART, give syrup Nevirapine to baby for 12 weeks

☐ **Started breastfeeding. Explain that colostrum feeding is important for baby.**
☐ **Started skin-to-skin contact (if mother and baby well) and KMC in pre-term and low-birth weight babies.**
☐ **Explain the danger signs and confirm mother/companion will call for help if danger signs present.**

Name of Provider: .....Date: ..... Signature: .....

*Adapted from "WHO Safe Childbirth Checklist"*

## After Birth : SAFE CHILDBIRTH CHECKLIST

### CHECK-4 Before Discharge

**Is Mother's bleeding controlled?**

- ☐ Yes
- ☐ No, treat, observe and refer to FRU/ higher centre if needed

**Does mother need antibiotics?**

- ☐ Yes, give and delay discharge
- ☐ No

Give antibiotics to mother if mother has temperature ≥38°C or ≥100.5°F with any of:

- ☐ Chills
- ☐ Foul-smelling vaginal discharge
- ☐ Lower abdominal tenderness

**Does baby need antibiotics?**

- ☐ Yes, give, delay discharge and refer to FRU/ higher centre
- ☐ No

Give baby antibiotics if baby has any of:

- ☐ Breathing too fast (>60/min) or too slow (<30/min)
- ☐ Chest in-drawing, grunting
- ☐ Convulsions
- ☐ Looks sick (lethargic or irritable)
- ☐ Too cold (baby's temp <36°C and not rising after warming)
- ☐ Too hot (baby's temp >38°C)
- ☐ Stopped breastfeeding
- ☐ Umbilical redness extending to skin or draining pus

**Is baby feeding well?**

- ☐ Yes, encourage mother for exclusive breastfeeding for 6 months.
- ☐ No, help mother, delay discharge; refer to NBSU/ SNCU/ Higher centre if needed

- ☐ **Discuss and offer family planning options to mother**
- ☐ **Confirm post delivery stay at facility for 48 hours in normal delivery and 7 days in C-section cases**
- ☐ **Explain the danger signs and confirm mother/companion will seek help/ come back if danger signs are present after discharge**
- ☐ **Arrange transport to home and follow-up for mother and baby**

**Thank mother for availing services from you**

### Danger Signs

**Mother has any of:**

- Excessive bleeding
- Severe abdominal pain
- Severe headache or visual disturbance
- Breathing difficulty
- Fever or chills
- Difficulty emptying bladder
- Foul smelling vaginal discharge

**Baby has any of:**

- Fast/difficulty breathing
- Fever
- Unusually cold
- Stops feeding well
- Less activity than normal
- Whole body becomes yellow

Name of Provider: ..... Date: ..... Signature: .....

*Adapted from "WHO Safe Childbirth Checklist"*

## Discharge/ Referral/ LAMA/ Death Form (Tick (✓) whichever applicable)

| | | | |
|---|---|---|---|
| Name of Facility: | | | |
| Block: | | District: | |
| Name and signature of service provider: | | Phone No. | |

| Name: | W/o or D/o: | Age (yrs): | MCTS No. |
|---|---|---|---|
| | | | |

| Date of admission: / / | Time of admission: | Date of Discharge/ Referral: / / | Time of Discharge/Referral: |
|---|---|---|---|
| Date of delivery: / / | Time of delivery: | Delivery outcome: Live birth ☐ Abortion ☐ Single ☐ Fresh Still birth ☐ Macerated Still birth ☐ Twins/Multiple ☐ | |

**Final outcome: Discharge/ Referred out/ LAMA/ Death/ Abortion**
**(Tick (✓) whichever applicable)**

| Discharge summary: | Referral summary: |
|---|---|
| Condition of mother ..... | Reason for referral ..... |
| FP option (if provided) ..... | ..... |
| Condition of baby ..... | Facility name (referred to) ..... |
| Sex of baby M ☐ F ☐ Birth weight (kgs)..... | ..... |
| Pre-term: Yes ☐ No ☐ Inj. Vit K1: Yes ☐ No ☐ | Treatment given ..... |
| Immunization: BCG ☐ OPV ☐ Hepatitis B ☐ | ..... |
| Advice on discharge: | ..... |
| ☐ Counselling on danger signs for mother and baby | ..... |
| ☐ Rest, nutrition and plenty of fluids | ..... |
| ☐ Tab iron ..... ☐ Tab calcium..... | ..... |
| Treatment given ..... | ..... |
| ..... | ..... |
| Follow-up date ..... | ..... |

Notes on Discharge/ Referral/ Death

## Annexure 9

# Preparation of the delivery room for Newborn Care

Preparedness of labor room for safe care during delivery includes readiness at newborn care area and infection prevention practices with biomedical waste management. The providers must communicate with the mother and her attendant, take informed consent and empower birth companion. A birth companion is someone who will be by the side of the woman in labour during and immediately after delivery. She can be an important partner in care provision, if properly empowered through knowledge related to the delivery process. Respectful maternity care (as envisaged in SUMAN Guidelines) to be ensured.

### Preparation in the delivery room includes:

- Close all the doors and windows and draw the curtains to ensure privacy
- Providing warmth: Switch off the fans to avoid direct draught of air over the baby. A well-lit, room with temperature in the range of 26-28°C is ideal for delivery room.
- Switch on the radiant warmer, twenty minutes before the delivery and place two baby sheets before delivery to ensure that the baby is received in a pre-warmed sheet to maintain warm chain. Use heating/cooling devices depending on local conditions.

**Newborn care corner** is the designated place to perform resuscitation. *Important points about the equipment used for resuscitation:*

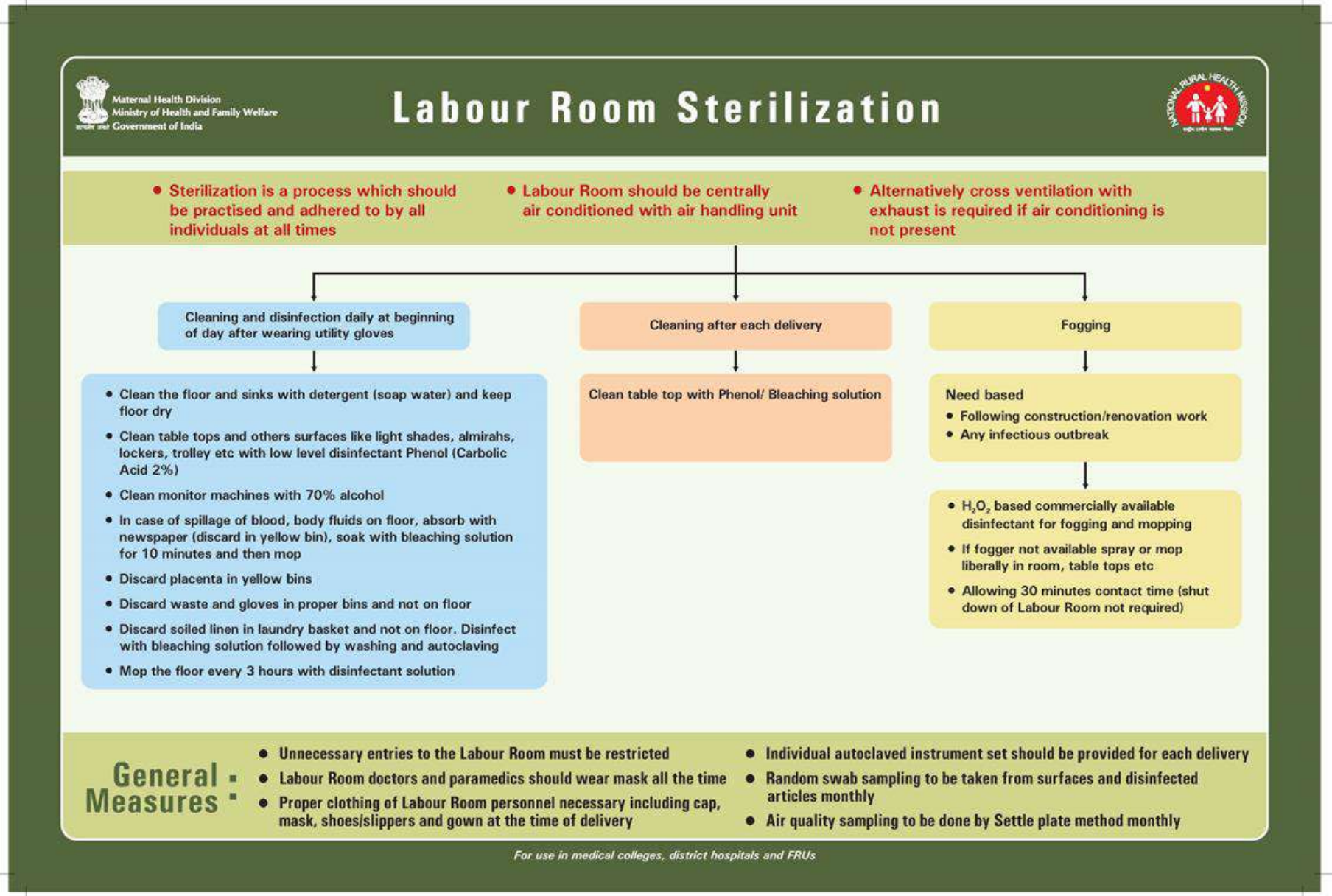
1. Before every delivery ensure that all essential equipment is in place in working condition
2. Disinfect bag and mask, neonatal stethoscope, radiant warmer and suction machine prior to each use.
3. Do not use ambu bag of volume > 500 ml and use appropriate size mask always
4. In case of an electrical suction machine, the negative pressure of 100 mmHg should not be exceeded.
5. Discard mucus extractor & suction catheter after single use and replace with new ones.
6. Broken equipment is dangerous and should be replaced.

### Equipment and supplies:

1. Baby tray with two clean, warm towels/sheets, mucous extractor (Dee Lee's), gloves, cord clamp/tie, cotton swabs, Needle (26 gauge) and syringe (1ml.), Inj. Vitamin K-1
2. Clean cord cutting equipment (sterile or boiled scissors and if not available then new blade).
3. Wall clock with seconds hand
4. Functional self- inflating bag (250 & 500 mL); infant masks in two sizes: size '1' for normal weight baby and '0' for small baby
5. A functional radiant warmer
6. Oxygen source
7. Stethoscope
8. Suction machine (electrical/foot operated) (suction pressure 80-100 mmHg), suction catheters 10 &12F
9. A folded piece of cloth to be used as shoulder roll during resuscitation (1/2 to 3/4th inches thick)

The service providers who are designated for the delivery room need to understand that team building is a part of preparation where, before the delivery, each member is aware of his/her task during resuscitation. A person skilled in bag and mask ventilation and use of oxygen should be available and in case further intervention such as intubation, chest compressions and drugs are to be used then a person trained in these skills should be available on call.

The support staff must be aware of the contact details of the referral transport and the driver. One of them should be designated to do the record keeping, communicate with the family and call for additional help. A working telephone is always useful in contacting the team.


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Labour Room Sterilization
NATIONAL RURAL HEALTH MISSION
• Sterilization is a process which should be practised and adhered to by all individuals at all times
• Labour Room should be centrally air conditioned with air handling unit
• Alternatively cross ventilation with exhaust is required if air conditioning is not present
Cleaning and disinfection daily at beginning of day after wearing utility gloves
• Clean the floor and sinks with detergent (soap water) and keep floor dry
• Clean table tops and others surfaces like light shades, almirahs, lockers, trolley etc with low level disinfectant Phenol (Carbolic Acid 2%)
• Clean monitor machines with 70% alcohol
• In case of spillage of blood, body fluids on floor, absorb with newspaper (discard in yellow bin), soak with bleaching solution for 10 minutes and then mop
• Discard placenta in yellow bins
• Discard waste and gloves in proper bins and not on floor
• Discard soiled linen in laundry basket and not on floor. Disinfect with bleaching solution followed by washing and autoclaving
• Mop the floor every 3 hours with disinfectant solution
Cleaning after each delivery
Clean table top with Phenol/ Bleaching solution
Fogging
Need based
• Following construction/renovation work
• Any infectious outbreak
• $H_2O_2$ based commercially available disinfectant for fogging and mopping
• If fogger not available spray or mop liberally in room, table tops etc
• Allowing 30 minutes contact time (shut down of Labour Room not required)
General Measures
• Unnecessary entries to the Labour Room must be restricted
• Labour Room doctors and paramedics should wear mask all the time
• Proper clothing of Labour Room personnel necessary including cap, mask, shoes/slippers and gown at the time of delivery
• Individual autoclaved instrument set should be provided for each delivery
• Random swab sampling to be taken from surfaces and disinfected articles monthly
• Air quality sampling to be done by Settle plate method monthly
For use in medical colleges, district hospitals and FRUs

## Annexure 10

Maternal Health Division
Ministry of Health and Family Welfare
Government of India

# Postnatal Care

**Post natal care ensures well-being of the mother and the baby**

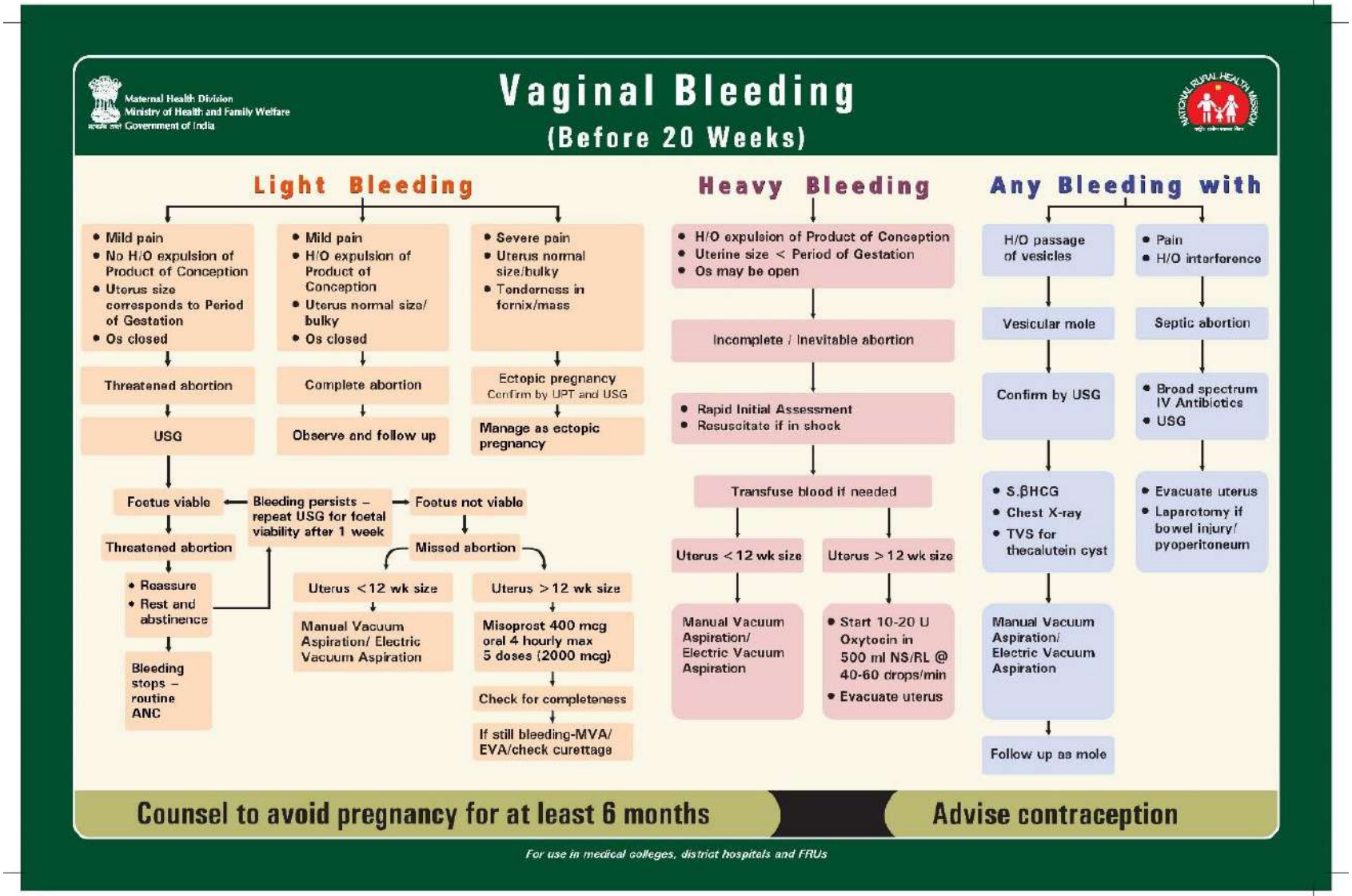
| | |
|---|---|
| 1st Check up | 1st day of delivery |
| 2nd Check up | 3rd day of delivery |
| 3rd Check up | 7th day of delivery |
| 4th Check up | 6 weeks after delivery |

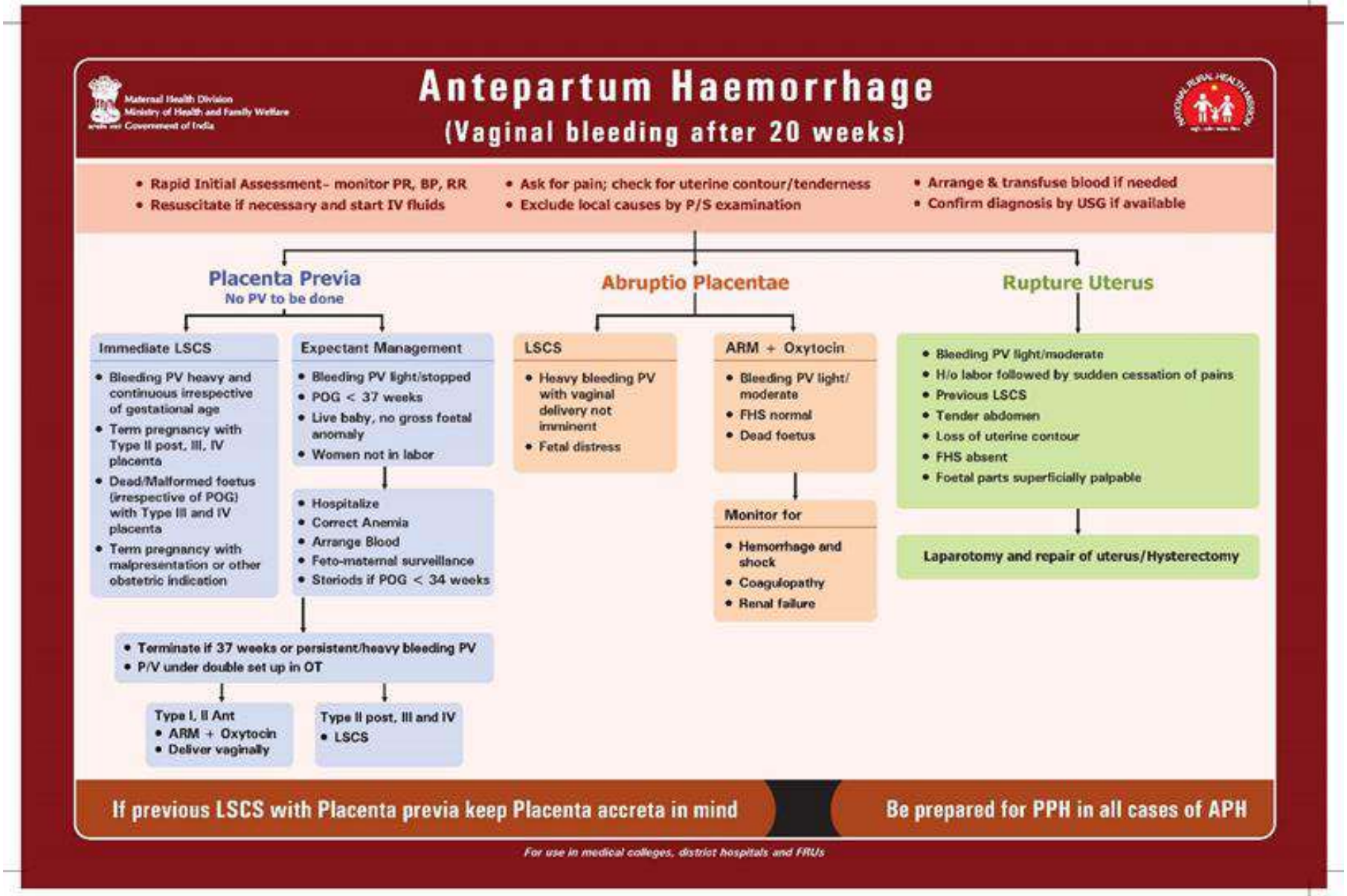
**Additional check ups for Low Birth Weight babies on 14th, 21st and 28th days**

## SERVICE PROVISION DURING CHECK UPs

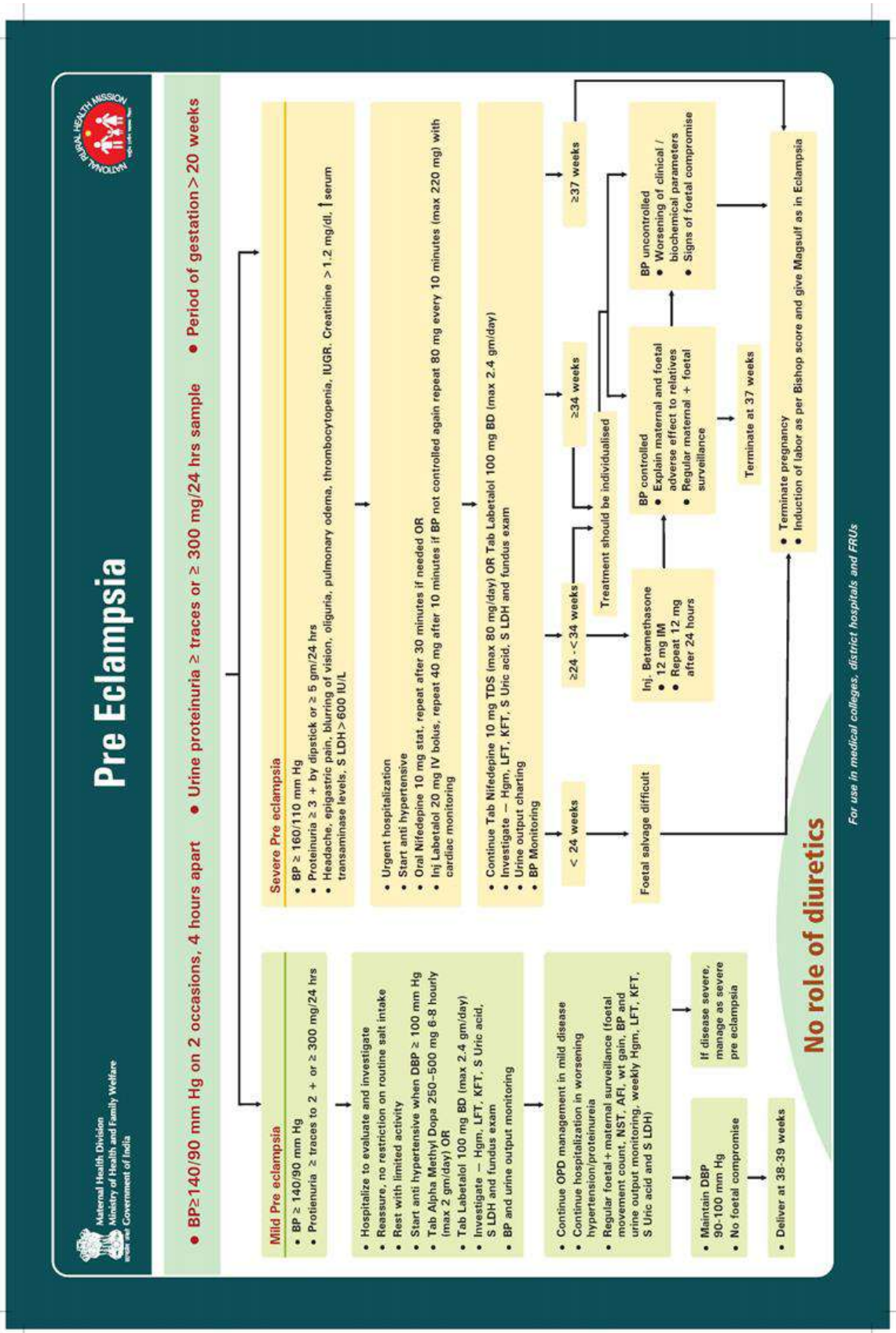
| | Mother | Newborn |
|---|---|---|
| Ask | • Heavy bleeding<br>• Breast engorgement | • Confirm passage of urine (within 48 hours) and stool (within 24 hours)<br>• For convulsions, diarrhea and vomiting |
| Observe & Check | • Pallor, pulse, BP and temperature<br>• Urinary problems and perineal tears<br>• Excessive bleeding (PPH)<br>• Foul smelling discharge (Puerperal sepsis) | • Activity, color and congenital malformation<br>• Temperature, jaundice, cord stump and skin for pustules<br>• Breathing, chest in drawing<br>• Suckling by the baby during breast feeding |
| Counsel For | • Danger signs<br>• Correct position of breast feeding and care of breast and nipples<br>• Exclusive breast feeding for 6 months<br>• Nutritious diet and calcium rich foods<br>• Maintaining hygiene and use of sanitary napkins<br>• Choosing contraceptive method | • Keeping the baby warm<br>• No bathing on first day<br>• Keep the cord stump clean and dry<br>• Additional check up for the Low Birth Weight babies<br>• On importance of Routine Immunisation<br>• Danger signs in baby |
| Do | • Hb% estimation<br>• Give IFA supplementation to the mother for 3 months | • Give 0 dose BCG, OPV, Hepatitis B<br>• Give Inj. Vitamin K 1 mg IM |

*For use in medical colleges, district hospitals and FRUs*


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Vaginal Bleeding
(Before 20 Weeks)
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


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Antepartum Haemorrhage
(Vaginal bleeding after 20 weeks)
• Rapid Initial Assessment- monitor PR, BP, RR
• Resuscitate if necessary and start IV fluids
• Ask for pain; check for uterine contour/tenderness
• Exclude local causes by P/S examination
• Arrange & transfuse blood if needed
• Confirm diagnosis by USG if available
Placenta Previa
No PV to be done
Immediate LSCS
• Bleeding PV heavy and continuous irrespective of gestational age
• Term pregnancy with Type II post, III, IV placenta
• Dead/Malformed foetus (irrespective of POG) with Type III and IV placenta
• Term pregnancy with malpresentation or other obstetric indication
Expectant Management
• Bleeding PV light/stopped
• POG < 37 weeks
• Live baby, no gross foetal anomaly
• Women not in labor
• Hospitalize
• Correct Anemia
• Arrange Blood
• Feto-maternal surveillance
• Steriods if POG < 34 weeks
• Terminate if 37 weeks or persistent/heavy bleeding PV
• P/V under double set up in OT
Type I, II Ant
• ARM + Oxytocin
• Deliver vaginally
Type II post, III and IV
• LSCS
Abruptio Placentae
LSCS
• Heavy bleeding PV with vaginal delivery not imminent
• Fetal distress
ARM + Oxytocin
• Bleeding PV light/ moderate
• FHS normal
• Dead foetus
Monitor for
• Hemorrhage and shock
• Coagulopathy
• Renal failure
Rupture Uterus
• Bleeding PV light/moderate
• H/o labor followed by sudden cessation of pains
• Previous LSCS
• Tender abdomen
• Loss of uterine contour
• FHS absent
• Foetal parts superficially palpable
Laparotomy and repair of uterus/Hysterectomy
If previous LSCS with Placenta previa keep Placenta accreta in mind
Be prepared for PPH in all cases of APH
For use in medical colleges, district hospitals and FRUs

# Annexure 12


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
NATIONAL RURAL HEALTH MISSION
Pre Eclampsia
• BP≥140/90 mm Hg on 2 occasions, 4 hours apart • Urine proteinuria ≥ traces or ≥ 300 mg/24 hrs sample • Period of gestation > 20 weeks
Mild Pre eclampsia
• BP ≥ 140/90 mm Hg
• Protienuria ≥ traces to 2 + or ≥ 300 mg/24 hrs
• Hospitalize to evaluate and investigate
• Reassure, no restriction on routine salt intake
• Rest with limited activity
• Start anti hypertensive when DBP ≥ 100 mm Hg
• Tab Alpha Methyl Dopa 250–500 mg 6-8 hourly (max 2 gm/day) OR
• Tab Labetalol 100 mg BD (max 2.4 gm/day)
• Investigate – Hgm, LFT, KFT, S Uric acid, S LDH and fundus exam
• BP and urine output monitoring
• Continue OPD management in mild disease
• Continue hospitalization in worsening hypertension/proteinureia
• Regular foetal+maternal surveillance (foetal movement count, NST, AFI, wt gain, BP and urine output monitoring, weekly Hgm, LFT, KFT, S Uric acid and S LDH)
• Maintain DBP 90-100 mm Hg
• No foetal compromise
If disease severe, manage as severe pre eclampsia
• Deliver at 38-39 weeks
Severe Pre eclampsia
• BP ≥ 160/110 mm Hg
• Proteinuria ≥ 3 + by dipstick or ≥ 5 gm/24 hrs
• Headache, epigastric pain, blurring of vision, oliguria, pulmonary odema, thrombocytopenia, IUGR. Creatinine > 1.2 mg/dl, ↑ serum transaminase levels, S LDH > 600 IU/L
• Urgent hospitalization
• Start anti hypertensive
• Oral Nifedepine 10 mg stat, repeat after 30 minutes if needed OR
• Inj Labetalol 20 mg IV bolus, repeat 40 mg after 10 minutes if BP not controlled again repeat 80 mg every 10 minutes (max 220 mg) with cardiac monitoring
• Continue Tab Nifedepine 10 mg TDS (max 80 mg/day) OR Tab Labetalol 100 mg BD (max 2.4 gm/day)
• Investigate – Hgm, LFT, KFT, S Uric acid, S LDH and fundus exam
• Urine output charting
• BP Monitoring
< 24 weeks
Foetal salvage difficult
≥24 - <34 weeks
Inj. Betamethasone
• 12 mg IM
• Repeat 12 mg after 24 hours
Treatment should be individualised
≥34 weeks
BP controlled
• Explain maternal and foetal adverse effect to relatives
• Regular maternal + foetal surveillance
Terminate at 37 weeks
≥37 weeks
BP uncontrolled
• Worsening of clinical / biochemical parameters
• Signs of foetal compromise
• Terminate pregnancy
• Induction of labor as per Bishop score and give Magsulf as in Eclampsia
No role of diuretics
For use in medical colleges, district hospitals and FRUs

Maternal Health Division
Ministry of Health and Family Welfare
Government of India

# Eclampsia

## Pregnancy with Convulsion; BP≥140/90 mmHg; Proteinuria

### Immediate Management

1. Keep her in quiet room in bed with padded rails on sides
2. Position her on left side, Oropharyngeal airway to be kept patent.
3. Ensure preparedness to manage maternal and foetal complications

Oxygen by mask at 6-8 l/min, Start IV fluids-RL/ NS at 60 ml/hr, Catheterize with indwelling catheter

**Anti Hypertensive**

- If Diastolic BP≥ 100 mmHg
- Strict BP monitoring
- Oral Nifedepine 10 mg stat, repeat after 30 minutes if needed (if pt unconscious through ryles tube) OR
- Inj Labetalol 20 mg IV bolus, repeat 40 mg after 10 minutes again repeat 80 mg every 10 minutes if needed (maximum 220 mg) with cardiac monitoring

**Anti Convulsants**

- Magnesium Sulfate is drug of choice
- Loading dose:
  - 50% of 4 gm diluted to 20% (8 ml drug with 12 ml NS) to be given slowly IV in 5 minutes
  - 5 gm IM (50%) each buttock with 1 ml of 2% Xylocaine (Total 10 gm)
  - If recurrent fits after 30 minutes of loading dose – repeat 2 gm 20% (4 ml drug with 6 ml NS) slow IV in 5 minutes
- Maintenance dose:
  - 5 gm IM (50%) alternate buttocks after monitoring every 4 hourly
- Monitor:
  - Presence of patellar jerks
  - Resp. rate (RR) ≥16/min
  - Urine output ≥ 30 ml/hr in last 4 hours
- Continue till 24 hours after last fit/delivery which ever is later
- If Patellar jerk absent or urine output < 30 ml/hr withhold Magsulf and monitor hourly– restart maintenance dose if criteria fulfilled
- If RR < 16/min, withhold Magsulf, give antidote – Calcium Gluconate 1 gm IV 10 ml of 10% solution in 10 minutes

- Deliver the baby irrespective of gestational age
- Admission-delivery interval should not be more than 12 hours

**Favourable Cervix**

- Induction with ARM and Oxytocin
- 2nd stage to be cut short by Forceps/ Ventouse

**Unfavourable Cervix**

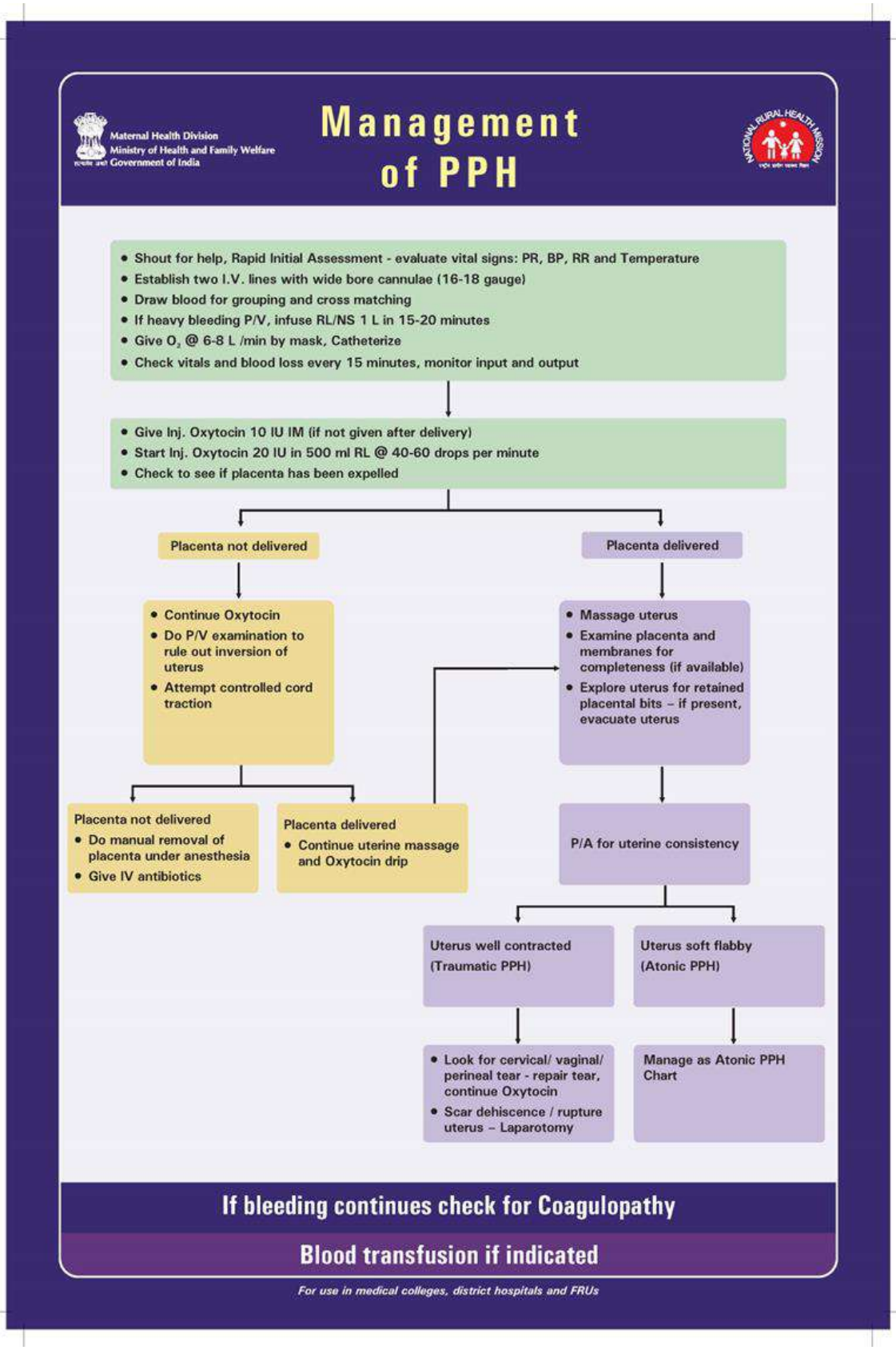
- Ripening with Dinoprostone gel/ intracervical indwelling catheter and after 6 hours

**LSCS:**

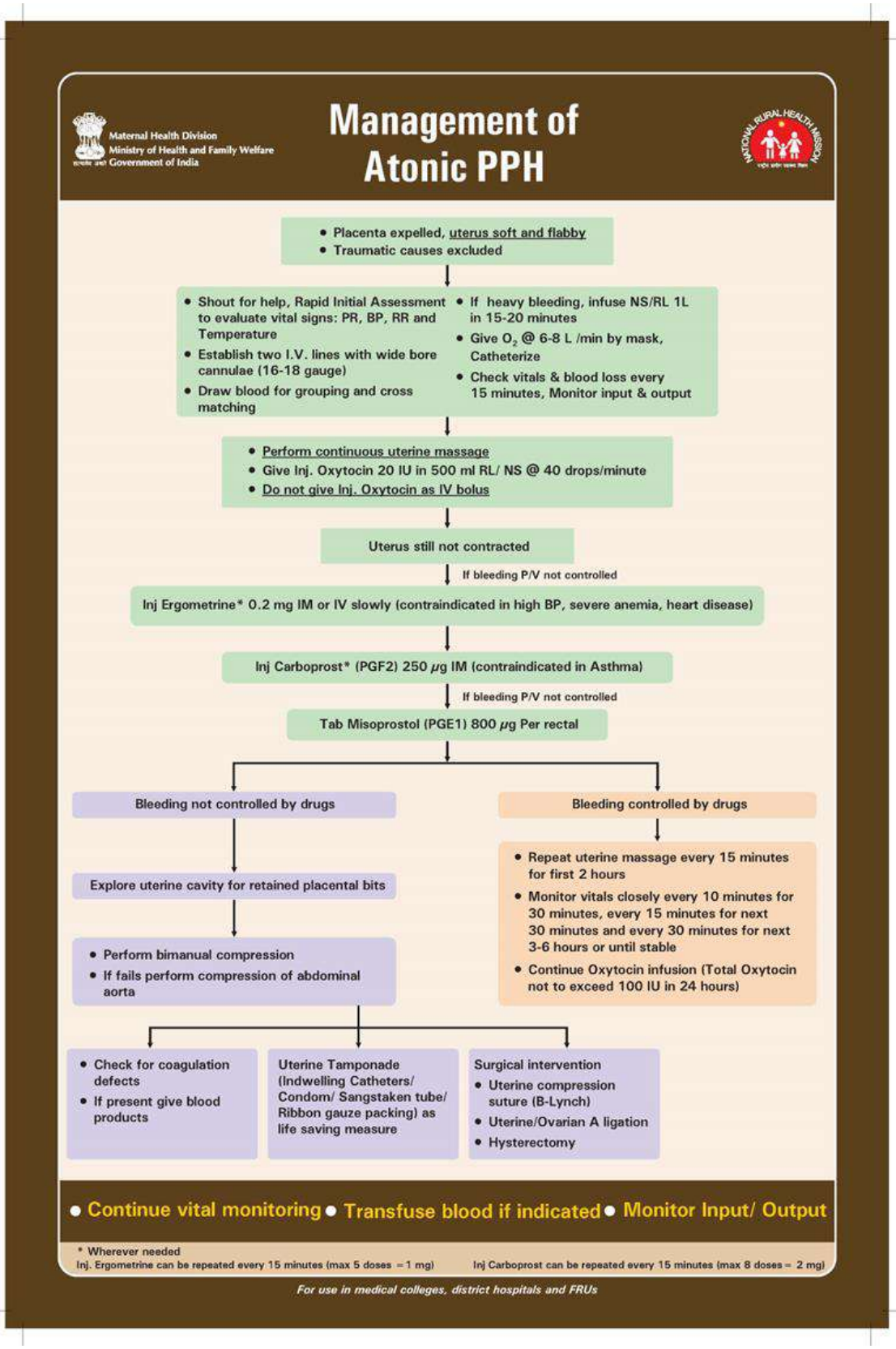
- If fits not controlled/ status eclampticus
- Failed Induction
- Foetal distress
- Any other obstetric indication
- Deteriorating maternal condition

*For use in medical colleges, district hospitals and FRUs*

## Annexure 13


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Management of PPH
NATIONAL RURAL HEALTH MISSION
• Shout for help, Rapid Initial Assessment - evaluate vital signs: PR, BP, RR and Temperature
• Establish two I.V. lines with wide bore cannulae (16-18 gauge)
• Draw blood for grouping and cross matching
• If heavy bleeding P/V, infuse RL/NS 1 L in 15-20 minutes
• Give $O_2$ @ 6-8 L /min by mask, Catheterize
• Check vitals and blood loss every 15 minutes, monitor input and output
• Give Inj. Oxytocin 10 IU IM (if not given after delivery)
• Start Inj. Oxytocin 20 IU in 500 ml RL @ 40-60 drops per minute
• Check to see if placenta has been expelled
Placenta not delivered
Placenta delivered
• Continue Oxytocin
• Do P/V examination to rule out inversion of uterus
• Attempt controlled cord traction
• Massage uterus
• Examine placenta and membranes for completeness (if available)
• Explore uterus for retained placental bits – if present, evacuate uterus
Placenta not delivered
• Do manual removal of placenta under anesthesia
• Give IV antibiotics
Placenta delivered
• Continue uterine massage and Oxytocin drip
P/A for uterine consistency
Uterus well contracted (Traumatic PPH)
Uterus soft flabby (Atonic PPH)
• Look for cervical/ vaginal/ perineal tear - repair tear, continue Oxytocin
• Scar dehiscence / rupture uterus – Laparotomy
Manage as Atonic PPH Chart
If bleeding continues check for Coagulopathy
Blood transfusion if indicated
For use in medical colleges, district hospitals and FRUs

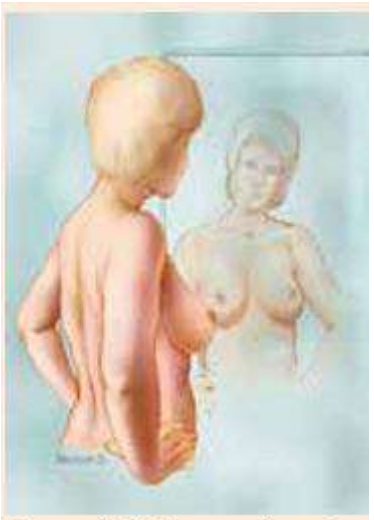
# Annexure 14


Maternal Health Division
Ministry of Health and Family Welfare
Government of India
Management of Atonic PPH
NATIONAL RURAL HEALTH MISSION
• Placenta expelled, uterus soft and flabby
• Traumatic causes excluded
• Shout for help, Rapid Initial Assessment to evaluate vital signs: PR, BP, RR and Temperature
• Establish two I.V. lines with wide bore cannulae (16-18 gauge)
• Draw blood for grouping and cross matching
• If heavy bleeding, infuse NS/RL 1L in 15-20 minutes
• Give $O_2$ @ 6-8 L /min by mask, Catheterize
• Check vitals & blood loss every 15 minutes, Monitor input & output
• Perform continuous uterine massage
• Give Inj. Oxytocin 20 IU in 500 ml RL/ NS @ 40 drops/minute
• Do not give Inj. Oxytocin as IV bolus
Uterus still not contracted
If bleeding P/V not controlled
Inj Ergometrine* 0.2 mg IM or IV slowly (contraindicated in high BP, severe anemia, heart disease)
Inj Carboprost* (PGF2) 250 µg IM (contraindicated in Asthma)
If bleeding P/V not controlled
Tab Misoprostol (PGE1) 800 µg Per rectal
Bleeding not controlled by drugs
Explore uterine cavity for retained placental bits
• Perform bimanual compression
• If fails perform compression of abdominal aorta
• Check for coagulation defects
• If present give blood products
Uterine Tamponade (Indwelling Catheters/ Condom/ Sangstaken tube/ Ribbon gauze packing) as life saving measure
Surgical intervention
• Uterine compression suture (B-Lynch)
• Uterine/Ovarian A ligation
• Hysterectomy
Bleeding controlled by drugs
• Repeat uterine massage every 15 minutes for first 2 hours
• Monitor vitals closely every 10 minutes for 30 minutes, every 15 minutes for next 30 minutes and every 30 minutes for next 3-6 hours or until stable
• Continue Oxytocin infusion (Total Oxytocin not to exceed 100 IU in 24 hours)
• Continue vital monitoring • Transfuse blood if indicated • Monitor Input/ Output
* Wherever needed
Inj. Ergometrine can be repeated every 15 minutes (max 5 doses = 1 mg)
Inj Carboprost can be repeated every 15 minutes (max 8 doses = 2 mg)
For use in medical colleges, district hospitals and FRUs

# Annexure 15

## Breast Self- Examination (BSE)

- It is best to examine the breasts 7–10 days after the first day of the menstrual period (This is the time when the breasts are less likely to be swollen and tender).
- Breast should be examined every month, even after menstrual period has stopped forever.
- If not menstruating, pick the same day each month (e.g., the first day of the month) to examine the breasts


Breast Self-Exam – Step 1

### Steps of BSE:

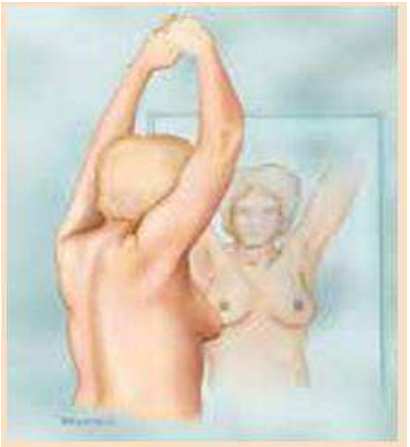
**Step 1: Stand in front of the mirror with both arms relaxed and besides your body.**

What to look for:

- Any change from the usual size, shape, and colour of skin,
- Any visible distortion or swelling of the breast
- Dimpling, puckering, or bulging of the skin

A nipple that has changed position or an inverted nipple (pushed inward instead of sticking out) or abnormal discharge (mucous or blood) from nipple

Redness, soreness, rash, or swelling


Breast Self-Exam – Steps 2 and 3

**Step 2: Keep both of your arms and press firmly over hips look for the same changes if any one of them is present**

**Step 3: Raise both your arms above the head, press your head by hands from behind and look for the same changes if any one of them is present.**

**Step 4: Lie down on your back and using palms and fingers of your hand, touch, press and examine your breasts on both sides.**

***What to look for?***

Any lump, swelling tumor, hardness, tenderness superficially just below the skin or deeper within the breast

***How to do it?***

Use your right hand to examine left breast and left hand for right breast.

Keep your palm and fingers flat on the breast and feel for the above changes over whole area of breast, from top to bottom, (from your collarbone to the top of the abdomen) and from side to side (from the armpit to cleavage). Also examine area around nipple and areola carefully for similar changes. Squeeze the nipple and look for any abnormal discharge. Repeat all these steps of the examination on breast over other side.


Breast Self-Exam – Step 4

Repeat the examination and now do it in circular fashion, from outer to inner towards nipple.

Repeat the examination in sitting position.

**Step 5: Follow step 04 while taking bath.**

Many women find that the easiest way to feel their breasts is when their skin is wet and slippery.

# Screening for Cervical Cancer

**Screening for Cervical Cancer Screening for cancer is conducted before a person has any symptoms.** Screening for cervical cancer is important, since during the early stages, women may experience no symptoms. When abnormal tissue or cancer is found early, it may be easier to treat.

A common method for screening cervical cancer is through a simple test known ***as Visual Inspection with Acetic Acid (VIA).*** This test helps to detect abnormal cells in the cervix.

Screening of cervical cancer will normally be undertaken at a PHC or CHC by a trained service provider preferably a lady physician or a staff nurse/ANM, etc. Screening should be undertaken in a separate room and privacy needs to be maintained. In many states, trained ANMs have been performing VIA. With adequate training, ANMs may be encouraged to conduct cervical cancer screening by VIA, provided the referral networks are in place.

Women who are 30 years of age and above should be screened by a trained provider lady physician or staff nurse at least once in five years except in the following situations- menstruation, pregnancy, within 12 weeks of delivery/ abortion and previous history of treatment for Cancer of the Cervix. Approximately 30 women can be screened in a day, so screening should be planned accordingly

# Annexure 16

## LaQshya Initiative

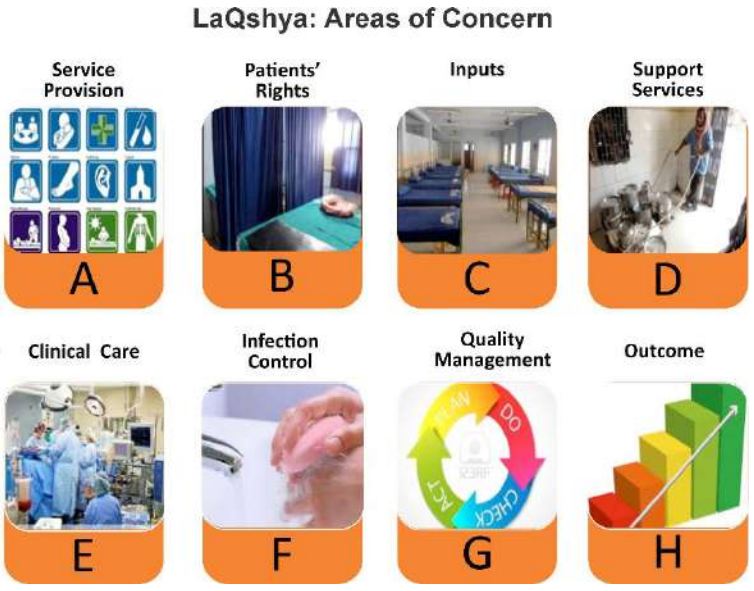
The LaQshya programme was launched in 2017 in response to urgent need to address approximately 46% maternal deaths, over 40% stillbirths and 40% newborn deaths that take place on the day of the delivery.

To achieve tangible results within short period of time the LaqQshya program is designed to ensure the health system's preparedness for prompt identification and management of maternal and newborn complications. The successful implementation of this care transformation depends not only on the availability of adequate infrastructure, functional and calibrated equipment, essential drugs and supplies, and human resources, but also on the meticulous adherence to clinical protocols by healthcare providers at all levels of care facilities.

Key approach under this initiative is breakthrough improvement using business process re-engineering concepts focussing on the identification of gaps by using a detailed checklist based on the 6 areas of concern.

Following facilities would be taken under LaQshya initiative on priority:

- All government medical college hospitals.
- All District Hospitals & equivalent health facilities.
- All designated FRUs and high case load CHCs with over 100 deliveries/60 (per month).



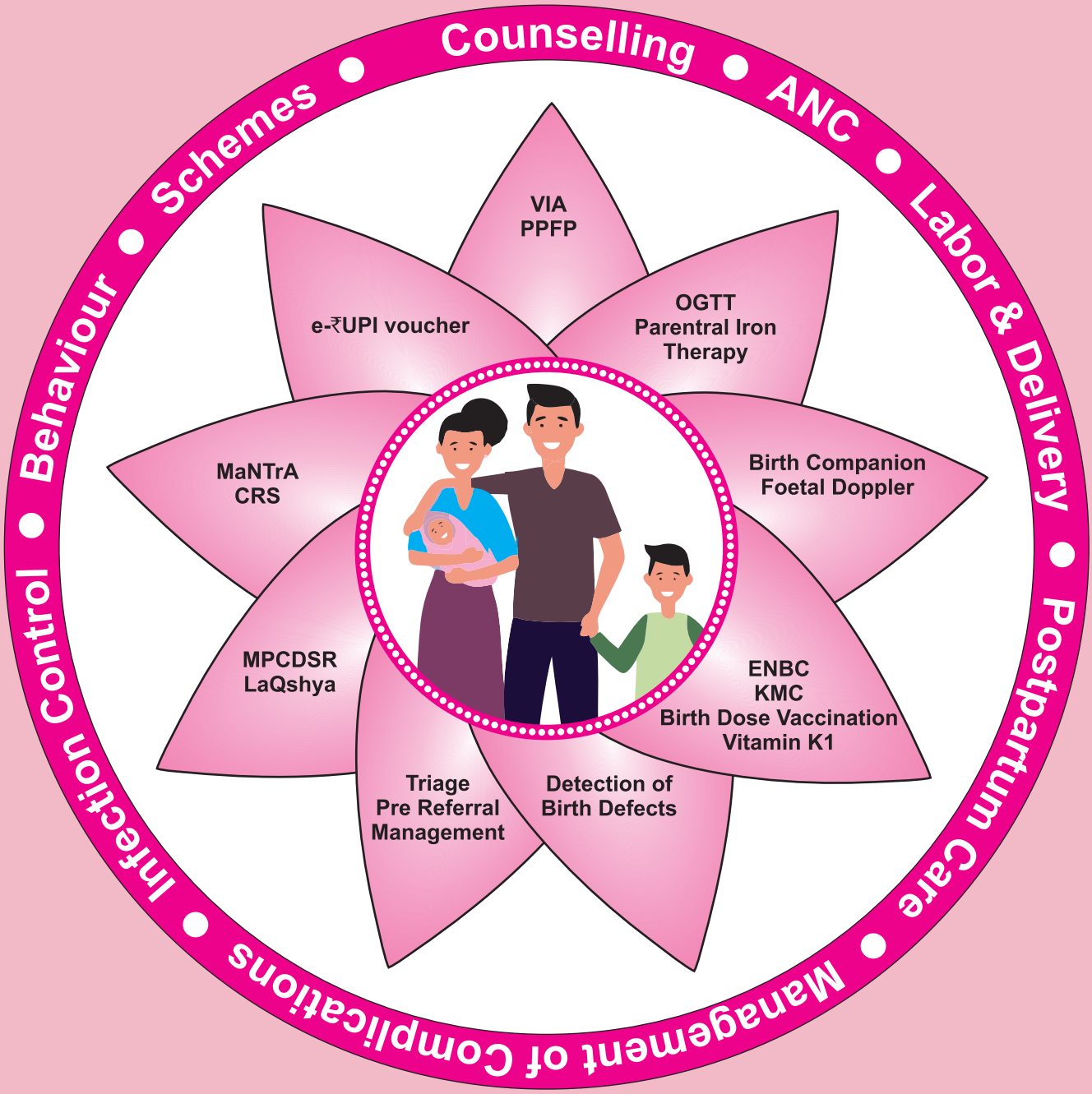

Under the National Health Mission, the States have been supported in creating Institutional framework for the Quality Assurance - State Quality Assurance Committee (SQAC), District Quality Assurance Committee (DQAC), and Quality Team at the facility level. These committees will also support implementation of LaQshya interventions. For specific technical activities and program management, special purpose groups have been suggested, and these groups will be working towards achievement of specific targets and program milestones in close coordination with relevant structures within the QA organizational framework. Outlines of Institutional arrangement under LaQshya is given in Figure 1.

**Institutional Arrangement under NQAP & LaQshya**

| Level | Quality Structure | Quality Drivers |
|---|---|---|
| National Level | CQSC | National Mentoring Group |
| State Level | SQAC | State Mentoring Group |
| District Level | DQAC | Coaching Team |
| Facility Level | Quality Team | Quality Circle (LR & OT) |

# References


- Emergency obstetric care for doctors and midwives: Course Handbook for participants/Trainer's Manual (2003) Managing complications in pregnancy and childbirth: a guide for midwives and doctors. WHO Library Cataloguing-in-Publication Data 2007.
- Trainees' Handbook for Training for Medical Officer in Pregnancy Care and Management of Common Obstetric Complication; MOHFW, GOI, Aug 2009
- Integrated Management of Pregnancy and Childbirth; Reproductive Health and Research; World Health Organization 2000, reprint 2007
- CEmONC guidelines 2020, MoHFW, GoI
- WHO recommendation on Tranexamic Acid for the Tratment of Postpartum Haemorrhage - 2017
- ICOG Guidelines.
- Integrated Management of Pregnancy and Childbirth - A Guide for Midwives and Doctors (IMPAC) - 2017.
- Regional Resource Training Centres:Nurse Facilitators' Guide, 2023
- ANM ke Prarambhik Prashikshan Hetu Module; RMNCH+A, Sanchari Evam Gair Sanchari Rogon Se Sambandhit Sewaon Ki Pradaygi 2024.
- Kayakalp Implementation Guideline, MoHFW, Govt. of India.
- Standard Operating Procedure for Labour Room, MoHFW, Govt. of India


Counselling
ANC
Labor & Delivery
Postpartum Care
Management of Complications
Infection Control
Behaviour
Schemes
VIA
PPFP
OGTT
Parentral Iron
Therapy
Birth Companion
Foetal Doppler
ENBC
KMC
Birth Dose Vaccination
Vitamin K1
Detection of
Birth Defects
Triage
Pre Referral
Management
MPCDSR
LaQshya
MaNTrA
CRS
e-₹UPI voucher

UP-TSU