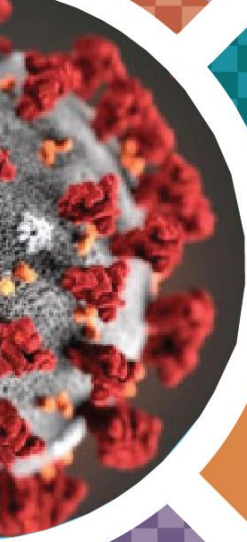




**Ministry of Health  
and Family Welfare  
(MOHFW)  
& Obstetrical and  
Gynaecological  
Society of  
Bangladesh (OGSB)**



# **Labour Room Management Protocol**

**SECOND EDITION**



**OGSB**



**icddr, b**



**Save the Children**



**World Health  
Organization**



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The Government of Bangladesh has laid significant emphasis on improving the quality of care during the intra and immediate postpartum period. This is owing to the fact that risk of maternal and newborn mortality is disproportionately high around the period of childbirth. It was recognized that major causes of maternal and newborn mortality are preventable through appropriate care of mothers during and after labor and appropriate care of the newborns immediately after birth.

The scale of the COVID-19 outbreak has brought in an unprecedented change in the global and national landscape on daily wellbeing. As health institutions show strain in responding to the pandemic, concern is increasing that COVID-19 will disrupt health-service delivery, including for maternal and newborn health services, particularly in resource-limited situation. This protocol has the ability to guide resource allocation and better prepare hospitals and caregivers on the frontlines.

In order to sustain this effort, it is imperative to strengthen the labor rooms at the facilities, which form an integral part of intra and immediate postpartum service delivery. Therefore, Director General of Health Service, Ministry of Health and Family Welfare has compiled this protocol for the standardization of labor room across all the facilities amid COVID-19 pandemic.

This protocol will enable systematic and uniform strengthening of existing labor rooms, re-organizing them high-efficiency and high quality service delivery, and development of new ones. I am confident that the labor room guidelines will act as standard protocols for setting up and strengthen labor rooms in facilities, enabling a favorable environment for reducing maternal and infant mortality at large, by improving quality of care during and after delivery.

**Prof Dr. Abul Bashar Mohammad Khurshid Alam**



**Dr. Md. Shamsul Haque**

Line director

MNC & AH

Director General of Health Services

Ministry of Health and Family Welfare)

Maternal health is amongst the major concerns worldwide and the Government of Bangladesh is determined to reduce maternal mortality rate with the assurance of a quality of care. We have already achieved the target MMR for Millennium Development Goal and our aim is to reduce MMR to 70 per 100,000 live births by 2030 to reach the target of Sustainable Development Goal. To achieve the target institutional normal delivery should be encouraged and it should be done in accordance with scientific methods proven to be effective worldwide. It is my great pleasure to publish a time honored document “Manual on Labor Room Management Protocol for Health Facilities in Bangladesh” along with OGSB and the technical contribution of WHO, UNICEF, UNFPA, Save the Children and icddr,b.

The effect of COVID-19 on maternal health cannot only be measured by the infection rate nor by death rate caused by the infection itself. But the passive impact is much larger which is seen in the significant decrease in the healthcare seeking practice as well as healthcare delivery system. During this crisis moment of our country this protocol will guide the health professionals working in the labor room and thereby aid in the labor process with proper directives so that uninterrupted healthcare can be delivered maintaining all the infection prevention and control measures as appropriate during the COVID-19 context.

I appreciate the hard work of the members of OGSB and the Developing partners who have made it possible to publish this protocol in this critical time. By employing the Manual on Labor Room Management Protocol for Health Facilities in Bangladesh, I believe we can end preventable maternal deaths and improve the quality of care.

**Dr. Md. Shamsul Haque**

Line director, MNC & AH, DGHS



**Professor Dr. Sameena Chowdhury**

President

OGSB

Pregnancy is one of the most important phases of a woman's life and our healthcare providers are working round the clock in order to ensure safe motherhood, standard delivery practices and quality care of the new mother and her child. We have successfully reduced MMR from 340 to 172 per 100,000 live births in just 7 years (from 2000 to 2017). COVID-19 has changed the entire dynamics of healthcare delivery system and has posed a lot of challenges to our health professionals to maintain the proper service delivery. Keeping the present situation in mind, we have updated the existing Labour Room Management Protocol to incorporate a safe delivery system for both the care givers and care seekers. Several discussions across the board involving Director General of Health Services, Ministry of Health and Family Welfare and Development Partners were held to develop this protocol. This protocol will guide the service providers from grassroot levels to tertiary healthcare facilities regarding safe delivery practices overcoming the challenges imposed by COVID-19 pandemic. Improving the maternal health, providing evidence-based quality care and reducing maternal mortality are the major goals to be achieved for it is the right of every woman to enjoy a safe motherhood. Whenever a pregnant mother comes for delivery, she should be received with warmth, provided with the utmost care and dignity. She should be given up-to-date service, maintaining privacy. The aim of this protocol is to enable the healthcare facilities and healthcare providers to be equipped with all the necessary instruments, expertise and knowledge so that mothers' lives can be protected in the context of COVID-19 pandemic. I appreciate all the efforts of the members of OGSB and technical supports of WHO, UNICEF, UNFPA, Save the Children and icddr,b; for whose active contribution has made it possible to publish the Manual on Labour Room Management Protocol for Healthcare Facilities in Bangladesh.

**Professor Dr. Sameena Chowdhury**

President, OGSB

Faced with an unknown virus, management with collaboration is the best solution. COVID-19 diseases is an unprecedented global war and the first battlefield is the hospital where soldiers are the health care providers. This emerging infection can have a significant impact on pregnant women and fetuses.

This labour room management protocol provides guidelines for the management of labour ward activities. It is hoped that by providing clear guidelines, it will assist in the efficacy of the ward and provision of high quality and evidence-based medical care to all pregnant women.

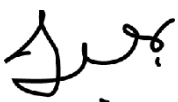
In the last decade, there has been an increased interest in exploring the impact of the physical birth environment on birth outcomes.

A proper labour room is designed, inspired by knowledge from evidence-based healthcare design which advocates proper birth environment which has an impact on birth outcomes and birth experience of the mother. So, comprehensive and consolidated guidelines on care during the delivery time for healthy pregnancy outcomes. When we give a complete package of care to mothers that will ensure good quality and evidence-based care. In addition, to set up essential clinical practices that support a mother during her delivery time, the guideline is focused on positivity and inhibits unnecessary, nonevidence-based and potentially harmful practices during birth time.

To ensure that each recommendation revised and updated the guidelines for improvement of care provided around childbirth and during the immediate postpartum period by having targeted steps to ensure respectful maternity care. This guideline target to strengthen key process related to labor room and maternity operation theater so that verifiable targets of maternal and new -born care are achieved as soon as possible. These guidelines are expected to enhance, supplement, and boost the existing efforts, ongoing initiatives and programs.

We need a time-bound plan for the implementation of these guidelines to improve maternal and newborn health indicators.

This pandemic is a common challenge faced by mankind in the age of globalization. To improve the maternal-child outcome the real remedy for this pandemic is not isolation but cooperation.



Prof. Sameena Chowdhury  
President, OGSB



Prof. Saleha Begum Chowdhury  
Secretary-General, OGSB



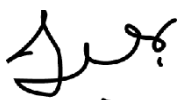
Prof. Rowshan Ara Begum  
Past President, OGSB



Prof. Farhana Dewan  
Vice President, OGSB

Safe motherhood is a condition where the woman has the right to safe pregnancy and safe delivery. In Bangladesh, in the COVID situation the Govt. has given a considerable effort to address the health of the women. Safe delivery is the cornerstone of healthy motherhood. For some time, there was a need to develop a protocol that will define and outline the service a woman will be provided during labour in COVID-19 pandemic. The labour room protocol will ensure that a pregnant woman, wherever she delivers is taken care of, it may be a tertiary care center on a grassroots level facility. But, whenever a woman comes to delivery, she should be received with warmth, should be provided with the utmost care & dignity. The women should be given evidence-based service, maintaining privacy. The center must be fully equipped to provide quality service to the parturient woman and her baby.

In this challenging COVID situation it is not impossible to implement standard labour room services in Bangladesh. Keeping this in mind, the Labour room protocol has been updated. Several meetings have been held with the Honorable Minister, State Minister of Ministry of Health & Family Welfare & DGHS & other Stakeholders for this issue only. This labour room management protocol has been prepared keeping in mind the safety of the patient and the healthcare provider from the spreading of this SARS-COV-2 infection Although it may be difficult to implement it at all levels, but the motivation of the service providers and the IPC measure will be enough to bring into practice an ideal Labour Room Protocol at all levels of facilities.



Prof. Sameena Chowdhury  
President, OGSB



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Currently the world is facing it's one of the greatest challenges in the means of COVID-19 pandemic. Severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2) is the newest member of coronavirus family. The other 2 members of this family - Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) and Middle East Respiratory Coronavirus (MERS-CoV) have contributed to the 2 major outbreaks in the past two decades causing more than 10,000 cases worldwide together. Following the trend, SARS-CoV-2 has created a global emergence through the disease it causes called COVID-19 and hence was declared as Public Health Emergency of International Concern (PHEIC) by WHO Director General on 30<sup>th</sup> January. Bangladesh reported the first case on 8<sup>th</sup> March and since then thousands of cases have been reported with the case fatality rate of 1.32% [12]. Although 32% of the total confirmed cases is contributed by women, there is no substantial evidence indicating that pregnant women are more prone to COVID-19 infection or belong to high risk group.

The routes of transmission of COVID-19 from man to man are through respiratory droplets and direct contact with infected people or indirect contact with contaminated surface.

Nonetheless, airborne transmission is possible in special hospital settings, such as endotracheal intubation, bronchoscopy, open suctioning, administration of nebulized treatment, manual ventilation before intubation, turning the patient to the prone position, disconnecting the patient from the ventilator, non-invasive positive-pressure ventilation, tracheostomy, and cardiopulmonary resuscitation. The sign symptoms include – fever, cough, sore throat, nasal congestion, aches and pains and diarrhea. Pregnancy can modify the clinical manifestations, such as marked lymphocytopenia. The other test results, such as increased CRP and multiple patches of ground glass opacity on chest X-ray or CT-scan, coincide with the usual findings of COVID-19 investigations.

The majority of the infected cases range from asymptomatic to moderately severe, only a handful of cases progress towards a more severe life-threatening condition. [8] In addition, there is no confirmed report on congenital infection or vertical transmission. However, due to limited data on this new virus in pregnancy, the risks cannot be completely ruled out.

To break the chain of spreading of the disease by maintaining social distancing, The Government of the Peoples Republic of Bangladesh has declared a general holiday from March 25, 2020, and the country has gradually turned towards effective lockdown alike majorities of the countries of the world.

The complications during pregnancy and childbirth can happen without warning and can strike any woman at any time. That is why safe delivery practices should be ensured for all labour. A special care known as

Emergency Obstetric Care is required by a woman once she develops any kind of complication during pregnancy, delivery and postpartum period to save her life.

To avoid the substantial impact of this cessation and decrease the potential poor maternal and newborn outcomes, maternity services should continue to be an essential core health service and prioritized. Maternal health care providers (including midwives and all other health care workers providing maternal and newborn care) by accessing their rights for personal protective equipment (PPE), sanitation, a safe and respectful working environment will ensure a healthy workforce by providing quality care for women and their newborns.

In response to the COVID-19 pandemic OGSB with the technical assistance from UNFPA and icddr,b has updated the Labour room protocol which is the management protocol of women during labour in the COVID-19 pandemic.

There are standard guidelines that are used for patients attending the Antenatal Clinic, Labour and delivery ward and post-partum clinics. The labour ward protocol not only deals with the care of pregnant women and management of normal and low risk labour but also covers abnormal and high-risk labour. Cornerstones of good labour ward practice also include communication, documentation and incident reporting, often poorly done in the labour ward at present.

Providing good-quality care is one of the most effective ways of ensuring that maternal health services are used, and that women's lives are saved. This can be achieved by assuring the respect of standards of care, decreasing barriers to care, and improving provider responsiveness to cultural and social norms.

The protocol has also incorporated the infection prevention and control program and the use of personal protective equipment to reduce the risk of infection among healthcare providers as well as the patients and ensure the continuity of care in a safe environment. In other words, the provision of good quality care improves the "Women friendliness" of health services.

## Purpose

- To set clear definitions of pregnant patients during COVID-19 who will be appropriate for referral/admission
- To provide individualized service, during assessment, treatment or admission
- To ensure that system of clear referral pathways is established so that pregnant patients who require additional care are managed and treated by the appropriate specialist team when problems are identified
- To maintain the safety of the health care providers



## Aims

To achieve a safe delivery during COVID-19 period, without injury to mother or baby as safely as possible. The mother's wishes and expectation should be respected, but not necessarily followed if they are not to her benefit or that of her baby: a discordance in this respect if an indication for in depth counseling.

### The key to success:

- Good team spirit
- Good communication
- Regular audit of work
- Effecting changes where needed
- Continuing professional Education and Research
- Teaching and mentoring of junior colleagues and trainees by seniors to enhance quality skills

## Objectives

### General objective

- To prepare user-friendly and informative protocol on the basis of existing health care facilities and for dissemination during the COVID-19 period to make the best use of protocol by service providers.

### Specific Objective:

- To prepare standard guidelines in flow charts based on information provided in the standard management LRP (Labour room protocol) on emergency obstetric care
- To take steps for implementation of using these protocols and flowcharts:
  - Arrange demonstration and hands on training by seniors in each training institutions at different health care facilities
  - Post-training monitoring in the field
  - Dissemination of protocols and flowchart at different health care facilities

Bangladesh Government has issued an effective lockdown in order to contain the transmission of SARS-CoV-

2. Henceforth, the health sector has come to a standstill and there is a possibility of marked reduction in the maternal and fetal health outcome. This negative impact on the hard-earned progress on MMR reduction by our country is not acceptable. Maternal health service is considered as one of the essential core health services. Again, safe environment and healthy workforce are key components to ensure quality care. Therefore, updated guidelines regarding triage, IPC and PPE are adopted in the labour room protocol so that healthcare can be continued flawlessly during this COVID-19 pandemic. The frontline healthcare providers are encouraged to continue providing this essential service by following the guideline and taking appropriate safety measures.

WHO has recommended that all labour should be monitored by the use of partograph. The partograph is the graphic representation of progress of labour and condition of mother and fetus during labour. The partograph has an underlying algorithm aimed at identifying women who are likely to present labour-related poor outcomes.

Here in the labour room protocol partograph is an integral part. Besides that, the labour ward protocol should contain all the evidence-based activities related to normal labour and childbirth. Before going to discussion about labour room protocol, there is a necessity to discuss about ANC.

## General description of the facility

- The area should be clean and free from clutter and the room temperature should be maintained at approximately 25<sup>o</sup>-32<sup>o</sup>C
- Essential equipment and supplies (i.e. delivery packs containing necessary instruments and materials for birth) should be available, easily accessible, and ready for use (i.e. clean and high-level disinfected/sterile). These should be stored in sufficient quantities to meet the needs of the labour unit for responding to normal and complicated births
- Contaminated objects and waste should be removed or placed in the appropriate containers
- Separate containers for soiled linen (to be laundry) and contaminated instruments (to be processed) should be conveniently located
- Separate containers for proper disposal of different kinds of waste should be conveniently located, including

- Containers for general (nonmedical, nontoxic) waste, such as paper, bottles, and cans
- Covered containers for medical waste, such as blood and bandages; and
- Puncture-proof containers for sharps, such as needles and glass slides
- Surfaces should be wiped with chlorine solution (1%) [11] before use
- There should be strategies in place to minimize infestation with vermin (particularly cockroaches and rats)

## Clean water supply

A supply of clean water should be available. The water may come from a faucet, pump, or portable containers with a tap, or it may be poured from a container or basin. All water containers, basins and jugs must be cleaned so that these will not contaminate the water. Water that is unlikely to be clean (e.g. water from uncovered or soiled containers) should not be used.

## Light Source

A reliable source of adequate light, which may be artificial or natural, should be available. Natural light, as from a window, may be adequate for a general physical examination. A generator (or solar back up power supply) should be available when city power is unavailable. The examination surface should be positioned toward the window, but it should not be possible to see into the care site from outside of the room. Artificial light sources, such as a lamp or torch (flashlight), may provide more intense light. These light sources are better for certain procedures, such as a pelvic examination, repair of the cervix or vagina, or examination of the inside of a newborn's mouth.

## Heating

A reliable source of heating should be available during the winter months in all patient care areas. Room heater must be needed in winter seasons. A newborn resuscitation unit with overhead heater should be available for neonatal resuscitation and early newborn care of at-risk babies.

Suitable furnishing should be made available in the labour, delivery and operating rooms, as follows:

## Furnishing

Suitable furnishing should be made available in the labour, delivery and operating rooms as follows:

## Labour Room and Delivery Area

- Triage
- Separate Isolation cabin for suspected COVID19 patients
- Separate Isolation OT or Labour room for suspected COVID19 patients

- PCR for suspected COVID19 patients
- Referral of COVID19 positive patients to designated COVID19 hospitals
- Comfortable beds to allow mother to labour comfortably
- Small bedside tables for mother to store belongings
- Curtains or screens between beds
- Seating for the mother's companion (family member)
- A trolley or table for equipment

### **Delivery Room /Labour room**

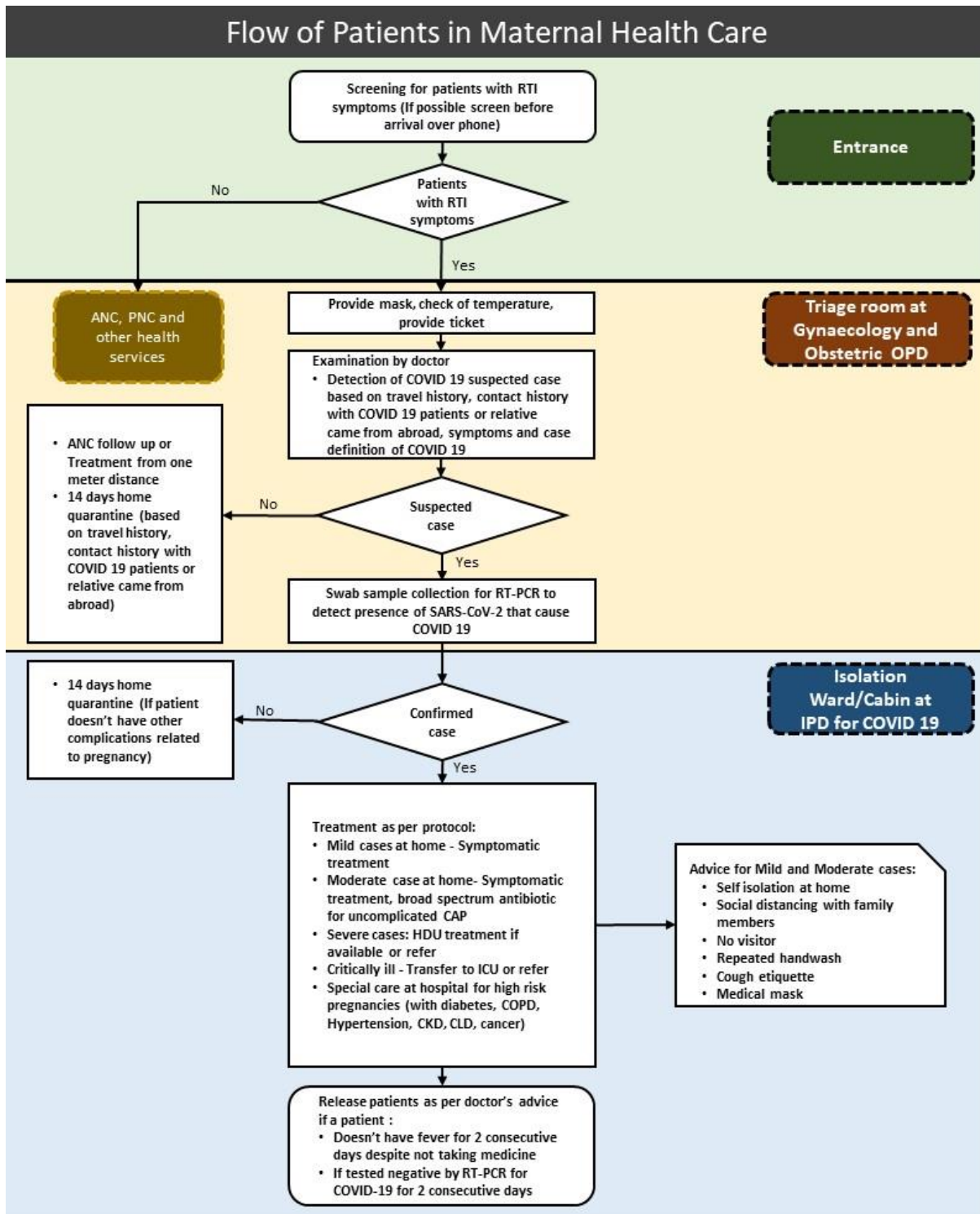
- Labour bed comfortable, Squatting Chair, delivery ball, rubber covered mattresses and pillows; the foot end of the beds should be close to the screened or painted windows to allow for natural light
- Curtains to screen delivery beds
- Clean, conveniently located trolleys for instruments, supplies, and equipment
- A clean, warm surface for newborn resuscitation (to be placed as far away as possible from air conditioners or fans)
- Baby Corner for resuscitation with appropriate technology heater: available Ambu bag in proper place
- Cupboards for storing drugs, equipment, and supplies
- Delivery Kits, PPH Kits & Eclampsia Kits
- PPE: PPE suits, gloves, face masks, face shields, boots, goggles
- An angle lamp and stool (for repair of tears or episiotomy)
- A small trolley for emergency equipment
- White board (for patients and doctors names)
- Board for partograph
- Receptacles for infection prevention
- Tool for sitting of Nurses, accompanying person
- Ensure Clean Toilet, closed to labour room and delivery room.
- Ensure water supply and maintain cleanliness regularly.
- Refrigerator

## Screening and triage

Triage is a key component of infection prevention and control program at any given healthcare setting during COVID-19 pandemic. It is the standard method using a valid tool to sort patients according to their health conditions into groups who need immediate medical attention, who should be quarantined, isolated or referred.

All patients should be asked to wear mask and gloves for coming to the health care facility. Mothers who are coming to the facility should be separated, non –COVID mother from Suspected COVID mother after checking the body temperature and then sent to the designated Labour ward or isolated cabin (COVID suspected mothers will be sent to the isolated cabin for COVID Positive while non-COVID mothers will be sent to general Labour ward).

## Flow of Patients in Maternal Health Care





## Protective Measures that Apply to All Episodes of Patient Contact

- a) All staff and patients need to have access to hand washing facilities and be encouraged to do so as they enter the health facility. Ensure supply of clean water (even from a bucket if running water unavailable) in every location or room where staff work and in waiting areas for patients
- b) Ensure availability of simple soap at every wash station in the health facility and a clean cloth or single use towel for drying hands
- c) Midwives providing direct patient care need to wash their hands with soap and water frequently: Hands needs to be washed with soap and water thoroughly for at least 20 seconds. Wash before every new woman is seen and again before physical examination. Wash again immediately after examination and once the woman leaves. Wash hands after cleaning surfaces. Wash hand after coughing or sneezing. Hand sanitizer can also be used, particularly as a backup for where there is an unreliable water source
- d) Avoid touching the eyes, nose and mouth
- e) Advise all persons (patients and staff) to cough into a tissue or their elbow and to wash hands after coughing and sneezing
- f) Midwives need to maintain social distancing of 2 arms or 1 meter or 3 feet lengths for as much as possible during any clinical encounter. Physical examination and patient contact need to be continued as usual for women without any symptom consistent with COVID-19 as well as suspected/confirmed COVID-19 patients if hand washing is performed before and after

## All women

- Triage and screening need to take place for all women and their birth companion before entering the health facility as outlined in previous sections
  - Separate cabin suspected COVID19 patients and non-COVID19 patients
  - Separate delivery room or OT for suspected COVID19 and non-COVID19 patients
  - Quarantine after exposure to COVID19 without proper PPE
  - Isolation after confirmed diagnosis of COVID19
  - Quarantine the medical staff until PCR for COVID19
  - Isolate the medical staff who are COVID19 positive
- Routine infection control precautions need to be instituted for care during every labour and birth. Patients often hide history of fever and cough due to fear, social stigma and fear of not getting treatment, so in practice triaging is done by recording the patient's body temperature preferably using an IR thermal scanner or a mercury thermometer
- It is important to remember in lower risk groups; Corona virus (SAR-CoV-2) leads to mild infection whereas acute complications unrelated to COVID-19 that can occur during pregnancy and childbirth, can carry high mortality for the mother and newborn. In the case of obstetric and newborn emergencies, care to the mother or newborn should not be delayed. Childbirth, can carry high mortality for the mother and newborn. In the case of obstetric and newborn emergencies, care to the mother or newborn should not be delayed
- Skin-to-skin care and breast feeding is allowed as long as the mother wears face mask and wash hands regularly with soap and water for 20 seconds, cough or sneeze into a clean cloth and dispose it or cough and sneeze in elbows
- All women need to be encouraged to call the health facility (where possible) for advice in early labour and to inform the maternity care provider of any respiratory or other COVID-19 related symptoms, which can then assist in planning further care or potential referral
- All women maintain their right to be treated with compassion, dignity and respect. Every woman has the right to receive information, provide consent, refuse consent and to have her choices and decisions respected and upheld, and this includes mobility during labour and birth position of choice

- One asymptomatic birth partner should be allowed to stay with the woman, through labour and birth. Continuous support by a known birth partner increases spontaneous vaginal birth, shortens labour and decreases caesarean births and other medical interventions. If birth partners are symptomatic, they should remain in self-isolation and not attend the birth. Women should be advised when making plans about their birth to identify potential alternative birth support if needed
- Family planning is most important during the COVID19 epidemic. ANC visits are restricted to 4. All contact tracing needs to be done of a COVID19 confirmed patient and quarantined at home and to be tested on a later time

### **Women with symptoms consistent with COVID-19 infection**

The FIGO guideline mentions that COVID-19 infection is not an indication for augmented delivery unless there is a need to improve maternal oxygen. Suspected or confirmed cases should have their delivery in an isolated negative pressure room and the number of staff present kept to a minimum. It is advised that birthing partners are not permitted to attend.

- Following triage and assessment, women identified as having symptoms consistent with the coronavirus (SAR-CoV-2) and requiring admission to the facility, need to be cared for in a single room where possible. All care should ideally continue in the same isolation room for the entirety of the woman's stay. Efforts need to be made to minimize the number of staff members entering the room and maternity services should develop a local policy specifying essential personnel for emergency scenarios
- Women with an acute respiratory illness should be given masks and staff should be provided with PPE for the duration of care. Women presenting at a BEmONC facility with severe respiratory symptoms requiring respiratory support should be stabilized and transferred to a CEmONC facility
- Where women do not have access to a single room, it is still essential to find a way of separating sick women from well women either by clustering alike women within a shared room or bay to reduce the risk of virus transmission – this also applies for any admission throughout pregnancy and the postpartum period
- Mode of birth needs to be individualized based on obstetric indications and the woman's preferences. The timing and mode of delivery should be individualized, dependent mainly on the clinical status of the patient, gestational age, and fetal condition. Vaginal delivery is not contraindicated in suspected/probable/confirmed COVID-19 patients
- Shortening the second stage by operative vaginal delivery can be considered, as active pushing while wearing a surgical mask may be difficult for the woman to achieve. There should be a low threshold to

expedite the delivery when there is fetal distress, poor progress in labour, and/or deterioration in maternal condition

- Septic shock, acute organ failure or fetal distress should prompt emergency cesarean delivery (or termination, if legal, before fetal viability). Cesarean delivery should be performed ideally in an operating room with negative pressure
- Care during labour should not differ from usual, however, given the association of COVID-19 with acute respiratory distress syndrome, women with moderate-severe symptoms of COVID-19 should be monitored using hourly fluid input-output charts, plus efforts targeted towards achieving neutral fluid balance in labour, in order to avoid the risk of fluid overload
- If an infected woman requires a cesarean section all staff in operation theatre should wear PPE. The greatest risk to operation theatre staff during the cesarean section relates to intubation whereby the virus load from aerosolization (the virus being airborne) is highest
- Surgical mask is enough for the medical staff if the COVID19 patient is in the isolation cabin. However, when a COVID19 positive patient is intubated in an ICU setting, N95 masks are required. Gloves and masks need to be discarded always after examining each patient. PPE suits are to be discarded if one deals with a suspected/confirmed COVID19 positive patient
- There is no evidence to suggest that steroids for fetal lung maturation when they would usually be offered, cause any harm in the context of COVID-19. Steroids should, therefore, be given where indicated. As is always the case, urgent delivery should not be delayed for their administration
- Miscarried embryos/fetuses and placentae of COVID-19-infected pregnant women should be treated as infectious tissues and they should be disposed in separate biohazard bags. If possible, testing of these tissues for SARS-CoV-2 by qRT-PCR should be undertaken

## **Psychological intervention**

- Pregnant women are at an increased risk for anxiety and depression; once they have been defined with suspected/probable/confirmed COVID-19 infection, they may exhibit varying degrees of psychiatric symptoms that are detrimental to maternal and fetal health
- Mother/baby separation may impede early bonding as well as the establishment of lactation. These factors will inevitably cause additional stress for mothers in the postpartum period

- Healthcare providers should pay attention to a patient's mental health, including promptly assessing her sleep patterns and sources of anxiety, depression, and even suicidal ideation. A perinatal psychiatrist should be consulted when necessary
- If health care worker wear PPE and dispose the PPE correctly and frequently wash their hands, they will not be infected with COVID19. So, health care workers should not neglect the COVID19 positive patients. And the mortality rate from COVID19 infection is very low. It may be an intelligent decision to send health care workers to suspected or confirmed COVID19 cabins who are healthy, young or don't have any comorbidities like DM, HTN, asthma or heart disease

### **Identify a helper and review the emergency plan**

Prepare the birth companion or another skilled helper to assist if the baby does not breathe.

- A birth companion can help the mother and call for another helper
- A second skilled helper can assist in caring the baby

The emergency plan should include communication and transportation to advanced care. Medical staff should be restricted as much as possible. Everyone cannot look over the suspected or confirmed COVID19 patients. The health system cannot afford to send all their medical staff on isolation. One may need to multitask to help their colleagues not be exposed. Also, it is wise to screen the patients who comes from the cluster areas since many COVID19 patients are asymptomatic

### **Prepare the area for delivery**

The area where a baby is born should be:

Clean - Help mother wash her hands or take warm shower before delivery.

Warm - Close windows and doors to prevent draught; supply heat (radiant warmer when available) if needed especially for winter.

Well-lighted - Use a portable lamp if needed to assess the baby.

- Wash hands thoroughly with soap and clean water or use an alcohol-based cleaner before and after caring for a mother or a baby
- Use recommended PPE to protect yourself from infections carried by blood and body fluids
- Prepare an area for ventilation and check equipment

It is wise to clean the floors, beddings with chlorine solution which is easily made with bleach powder. All clothing should be cleaned with detergents. The corona virus is a capsulated RNA virus, it is susceptible to chlorine solution, detergent and alcohol. Cleanliness and good personal hygiene may save a person from COVID19 infection. Patients should not spit or throw cough everywhere on the streets.

**Standard:** The facility has a system to perform a Rapid Initial Assessment of pregnant women in labour to identify complications and prioritize admissions/make decision accordingly. All skilled attendants (i.e., doctors, midwives, nurses with midwifery and life-saving skills) have the skills to perform a rapid initial assessment.

Prepare a dry, flat, and safe space for the baby to receive ventilation if needed. In addition to a safety kit, have equipment to help a baby breathe.

- Equipment should be disinfected after use and kept clean
- Check that all equipment and supplies are ready for use in the area for ventilation
- Test the function of the ventilation bag and mask
- The isolation OT or labour rooms or isolation cabins where the suspected COVID19 patients stay or operated on needs to be fumigated by formaldehyde
- Separate instruments are used for suspected or confirmed patients
- All used instruments need to be soaked in chlorine solution then autoclaved
- Doctors, nurses and midwives should change their PPE with each delivery or operation for each suspected patient
- Close family needs to be quarantined for COVID19 positive patients and non-COVID19 visitor should not stay with patient
- Doctors working in COVID hospitals for 7 days are quarantined for next 14 days

**If the facility cannot arrange a separate OT for the COVID-19 cases, COVID positive mothers will be operated at the end of the OT schedule of the day and the operation theatre will be cleaned by hypochlorite solution**



## Equipment and supplies for every vaginal delivery

All these instruments should be separate for non COVID patients

For Mother	For Newborn
<ul style="list-style-type: none"> <li>▪ Gloves</li> <li>▪ Plastic sheet for clean surface</li> <li>▪ Inj. Oxytocin 10 IU/ Carbetocin 100 mcg</li> <li>▪ Cord cutting scissors</li> <li>▪ IV. Fluid (Normal Saline flasks)</li> <li>▪ Needle holder</li> <li>▪ Clean clothes or sanitary pads</li> <li>▪ Saline set</li> <li>▪ Stethoscope, Doppler</li> <li>▪ Delivery Set (Suture material, needle and holder, scissors, syringe)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Gloves</li> <li>▪ Two or more warm clothes Head Covering</li> <li>▪ Scissors</li> <li>▪ Sterile ties - thread/cord clamp 7.1% Chlorhexidine Solution Suction device</li> <li>▪ Ambu bag &amp; mask (sizes 0 and 1) Stethoscope</li> <li>▪ Timer (clock /watch)</li> <li>▪ Weighing scale</li> </ul>

## Routine childbirth care

### A. Record form / Registers

Forms /Registers	UHC/DH	MCH	Private Facilities
Admission register/ Register	✓	✓	✓
History taking form	✓	✓	✓
Consent form	✓	✓	✓
Delivery register	✓	✓	✓
Partograph	✓	✓	✓
Input /output chart	✓	✓	✓
Birth Certificate	✓	✓	✓
Death certificate	✓	✓	✓
Discharge form	✓	✓	✓
Referral form Slip	X	X	
F.V sheet	✓	✓	✓

## B. Logistics/ Equipment

Items	UHC/DH	MCH	Private Facilities
1. Delivery Bed, Squatting Chair	✓	✓	✓
2. Instrument trolley	✓	✓	✓
3. Saline stand	✓	✓	✓
4. Oxygen Cylinder (With mask, tube etc.)	✓	✓	✓
5. Sucker machine	✓	✓	✓
6. Sterilizer / Autoclave	✓	✓	✓
7. Vacuum extractor	✓	✓	✓
8. Baby weight machine	✓	✓	✓
9. Small stair beside labour or delivery bed	✓	✓	✓
10. Radiant warmer	X		
11. Fetoscope			
12. BP Machine	✓	✓	✓
13. Stethoscope/Fetal Doppler (All separate instruments required for suspected or confirmed COVID19)	✓	✓	✓
14. Catheter—Plain rubber catheter, Foley’s catheter (14/16)	✓	✓	✓
15. Condoms	✓	✓	✓
16. IV Cannula (14G Orange, 16G Grey, 18G Green)	✓	✓	✓
17. Disposable syringe	✓	✓	✓
18. IV administration set	✓	✓	✓
19. Test Tubes	✓	✓	✓
20. Cotton	✓	✓	✓
21. Micropore	✓	✓	✓
22. Gloves	✓	✓	✓
23. Drum of different size	✓	✓	✓
24. Drapes and sheets	✓	✓	✓
25. Test Tube holder	✓	✓	✓
26. Napkin / towel	✓	✓	✓

27. Clean cloth, 1meterx1meter (2 pieces)	✓	✓	✓
28. Clean gauze, swab or cloth	✓	✓	✓
29. Clean perineal pad	✓	✓	✓
30. Waste disposal (Basket for waste disposal: <b>Black:</b> General wastes <b>Red:</b> Sharp <b>Yellow:</b> Hazardous wastes	✓	✓	✓

### C. Instruments: At least 3 sets instrument must be ready

Items	UHC/DH	MCH	Private Facilities
<b>Delivery set</b>			
Sponge holding forceps	✓	✓	✓
Gully pot	✓	✓	✓
Long curved artery forceps	✓	✓	✓
Mayo's scissor	✓	✓	✓
Cord cutting scissor	✓	✓	✓
Kidney basin/tray	✓	✓	✓
Umbilical cord clamp 2pc	✓	✓	✓
Sims speculum	✓	✓	✓
<b>Episiotomy set</b>			
Episiotomy scissor	✓	✓	✓
Needle holder (medium)	✓	✓	✓
Toothed dissecting forceps	✓	✓	✓
Suturing Materials– Needle, Catgut, Silk	✓	✓	✓
3 Delivery Kits	✓	✓	✓
Others			
Tray for Instrument	✓	✓	✓
3 Kits – Delivery, PPH, Eclampsia	✓	✓	✓
Tourniquet	✓	✓	✓
Jar for lifter/lifter	✓	✓	✓
Vacuum extractor kit with Bird metal posterior cup	✓	✓	✓

## D. Drugs

Name of Drugs	UHC/DH	MCH	Private Facilities
Inj. Oxytocin, Ergometrine/ Carbetocin	✓	✓	✓
Inj. Tranexamic acid	✓	✓	✓
Inj. Antibiotics (Inj. Amoxicillin)	✓	✓	✓
Hexisol/Savlon	✓	✓	✓
Inj. Frusemide	✓	✓	✓
Inj. Chlorhexidine	✓	✓	✓
Inj. Adrenaline	✓	✓	✓
Inj. Diazepam	✓	✓	✓
Tab. Misoprostol	✓	✓	✓
Inj. Calcium gluconate	✓	✓	✓
Inj.MgSO4	✓	✓	✓
Inj. Frusemide	✓	✓	✓
Inj. Adrenaline/ local anesthesia	✓	✓	✓
Entonox gas cylinder and Pethidine amps	✓	✓	✓

## E. Infusion

Name of Infusions	UHC/DH	MCH	Private Facilities
• Normal saline	✓	✓	✓
• Ringer's lactate	✓	✓	✓
• IV administration set	✓	✓	✓

### A. Emergency trolley

The equipment, supplies and drugs required to respond to emergencies should be conveniently located in delivery room and the operating room and include the items listed below. The emergency trolley and drug box must be checked on a daily basis, including drug expiry dated, and replenished when necessary.

### A. Contents of the Emergency trolley:

Emergency drugs are mentioned above. Others things for the trolley are-

Drugs/ Others	UHC/DH	MCH	Private Facilities
• Cap. Nifedipine	✓	✓	✓
• 6-18 gauze IV cannulas (4 each)	✓	✓	✓
• I.V. Infusion Set	✓	✓	✓
• Adhesive tape	✓	✓	✓
• Ambu bag - Adult, baby	✓	✓	✓
• Air Way tube	✓	✓	✓
• Examination gloves (4 pair)	✓	✓	✓

### B. Drugs

SI #	Name of drugs	UHC/DH	MCH	Private Facilities
01	Inj. Adrenaline	✓	✓	✓
02	Inj. Amoxicillin	✓	✓	✓
03	Inj. Calcium gluconate	✓	✓	✓
04	Inj. Diazepam	✓	✓	✓
05	Inj. Tranexamic Acid	✓	✓	✓
06	Inj. Labetalol	✓	✓	✓
07	Inj. Hydralazine	✓	✓	✓
08	Inj. Lidocaine 2% (for dilution to 0.5%)	✓	✓	✓
09	Inj. Magnesium sulfate	✓	✓	✓
10	Inj. Pethidine	✓	✓	✓
11	Tab. Misoprostol	✓	✓	✓
12	Tab. Nifedipine	✓	✓	✓
13	Paracetamol (Acetaminophen)	✓	✓	✓
14	Topical antibiotic ointment	✓	✓	✓
15	Labetalol /Methyldopa	✓	✓	✓

## Rapid initial assessment

### QUICK CHECK

Ask her complaints why she has come  
 Ask and check records  
 Discuss antenatal notes with patient  
 If woman is very sick, talk to her companion

### Initial Assessment-Look, Listen, Feel

Symptoms (Look, Listen) Is the woman	
In severe pain	Looking very ill/distressed/pale
In labour	Unconscious
In imminent delivery	Convulsing
Bleeding vaginally	In respiratory distress

Vital signs (Look, Listen, Feel)		
Consciousness	Anaemia	Lung auscultation
Pulse, BP	Jaundice	Heart sounds
Respiratory rate	Cyanosis	Do obstetric exam
Temperature	Edema	- Abdominal
	Dehydration	- Vaginal

### Classify and Categorize

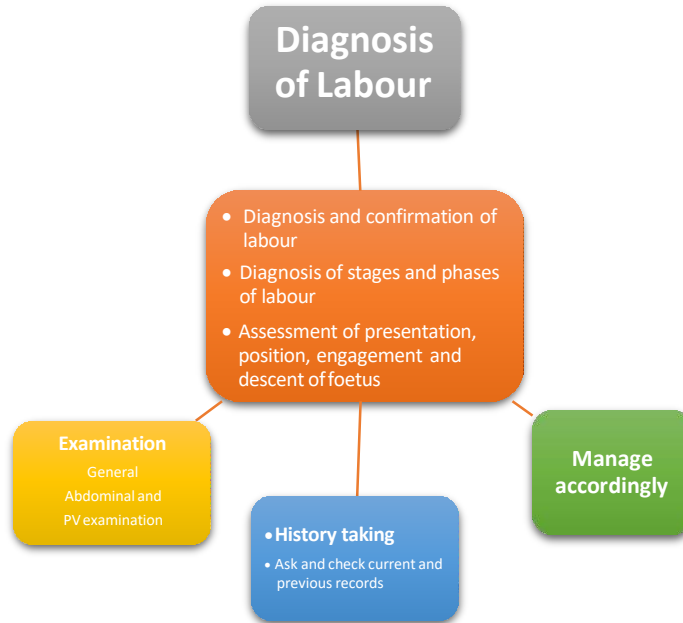
1. Emergency care	Call for help Reassure the woman & her companion Start ABCD management accordingly	2. Labour management Transfer her to labour ward	3. Routine Care	Keep her in waiting area Explain Give advice and care
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### Emergency Care (Unconscious patient) ABCD approach

<b>(A&amp;B) AIRWAY AND BREATHING</b> Shake the patient and shout for help Turn the patient on her back Advanced pregnancy Left lateral tilt Assess breathing for 10 secs Look-Chest movement Listen-Breath sounds Feel-Movement of air Open the airway- Perform head tilt, Chin lift, Jaw thrust Remove any obstruction Clear secretions	If no breathing - Ventilate with bag & mask - Ask for help If difficulty in breathing - Propped up - Oxygen inhalation - Auscultate lung base and heart sound Suspect - Eclampsia - APH - Heart failure - Diabetes (Hypo/Hyperglycemic shock) - Hepatic encephalopathy - Psychiatric disorders	<b>(C) CIRCULATION</b> Assess circulation by - Pulse -weak and rapid - Skin temperature-cold/ moist - Pallor - BP- Low - Urine output/catheter	<b>(D) LEVEL OF CONSCIOUSNESS</b> <b>A</b> Alert <b>V</b> not alert but responds to Vocal command <b>P</b> responding to Pain <b>U</b> Unresponsive
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## Normal labour and child birth

### Flow chart



## Diagnosis of stages and phases of labour

Symptoms and signs	Stage	Phase	Management
<ul style="list-style-type: none"> <li>Cervix not dilated</li> </ul>	False labour/not in Labour		<ul style="list-style-type: none"> <li>Observe/discharge with advice</li> <li>Treatment of pain</li> </ul>
<ul style="list-style-type: none"> <li>Cervical dilatation &lt;5 cm</li> <li>Weak contractions &lt;3/10 min, persists &lt; 20 sec</li> </ul>	First Stage	Latent	<ul style="list-style-type: none"> <li>Give supportive care &amp; assurance</li> <li>Monitor and record in record sheet</li> </ul>
<ul style="list-style-type: none"> <li>Cervical dilatation <math>\geq</math> 5 cm</li> <li>Strong contractions &gt; 3/10 min, persists 20-30 sec</li> <li>Rate of dilatation <math>\geq</math> 1 cm/hour</li> <li>Engagement &amp; descent of fetal head</li> </ul>	First Stage	Active	<ul style="list-style-type: none"> <li>Give supportive care &amp; assurance</li> <li>Start plotting partograph</li> </ul>
<ul style="list-style-type: none"> <li>Cervix fully dilated 10 cm</li> <li>Fetal descent continues</li> <li>No urge to push</li> </ul>	Second Stage	Early Non-Expulsive	<ul style="list-style-type: none"> <li>Close monitoring</li> <li>Continue supportive care</li> <li>Record in record sheet</li> <li>Prepare for delivery</li> </ul>
<ul style="list-style-type: none"> <li>Cervix fully dilated 10 cm</li> <li>Presenting part reaches pelvic floor</li> <li>Urge to push</li> </ul>	Second stage	Late Expulsive phase	<ul style="list-style-type: none"> <li>Close monitoring</li> <li>Take the patient to labour table</li> <li>Records in record sheet</li> <li>Prepare for delivery</li> </ul>
<ul style="list-style-type: none"> <li>Perineal bulging, peeping of head</li> <li>Crowning</li> <li>Anal gapping</li> </ul>	Imminent delivery		<ul style="list-style-type: none"> <li>Prepare for delivery</li> <li>Conduct delivery</li> </ul>

- But according to WHO, Active phase of labour should start from 5cm dilatation of cx
- We can allow 2nd stage of labour for 3 hours



Best to admit patients with 5 cm dilated in this COVID-9 epidemic and 4 mandatory ANC visits until unless emergency arises

- Convulsions/loss of consciousness
- Breathing difficulty
- Fever (feeling of hotness)
- Severe abdominal pain
- Decreased/absent fetal movement
- Foul-smelling discharge/fluid from vagina
- Vaginal bleeding
- A cord or fetal part (other than head) visible at vaginal opening
- Leaking of meconium-stained fluid from vagina
- Vaginal bleeding (heavy or sudden increase)
- *Paicalf, with or without swelling*

## Equipment and supplies for every vaginal delivery

For Mother	For Newborn
1. Gloves	1. Gloves
2. Plastic sheet for clean surface	2. Two or more warm clothes
3. Inj. Oxytocin	3. Head Covering
4. Syringe	4. Scissors
5. Cord cutting scissors	5. Sterile ties - thread/cord clamp
6. Needle holder	6. 7.1% Chlorhexidine Solution
7. Clean clothes or sanitary pads	7. Suction device
8. Saline set	8. Ventilation bag & mask (sizes 0 and 1)
9. IV. Fluid	9. Stethoscope
	10. Timer (clock /watch)
	11. Weighing scale



## Management of 1<sup>st</sup> stage of labour

### I. Supportive care during labour and Childbirth

#### 1 Communication

- Assure, praise, encourage
- Maintain a calm & confident approach
- Ask her permission before any procedure
- Explain all procedures
- Inform all findings and progress
- Ensure and maintain privacy, respect and dignity
- Involve the woman in any handover of care

#### 2 Birthing Companion

- Encourage support from chosen companion throughout the labour
- Teach the companion
- Always be with the woman
- Encourage and praise her
- Help her to walk, breath and relax
- Massage back
- Encourage her to drink and go to the toilet
- Show the woman & companions how to ask for help

#### 3 Mobility

- Encourage to walk around and
- Support woman's choice of position in each stage

#### 4 Eating/drinking

- Encourage to eat soft Carboydrate rich food-biscuits, breads
- Nutritious liquid drinks and water

#### 5 Urination and Bowel Care

- Encourage the woman to empty bladder at least 2 hourly
- If rectum is loaded give Glycerine suppository. Do not give enema

#### 7 Pain relief

##### Support the woman to cope with pain in labour

- Walking and mobility
- Change in position
- Breathing technique
- Warm shower
- Back Massage
- If pain is constant and woman is in distress or anxious, find out the cause

##### Inhalation analgesia-

Entonox: 50:50 mixture of oxygen & nitrous oxide

If needed Inj. Pethidine 1 mg/kg, no more than 100 mg IM

- With antiemetic I/M when cervix is 5 cm dilated
- Keep antidote Inj. Naloxone ready

Do not give pethidine if delivery is anticipated within 1-3 hours

##### Regional analgesia-Epidural

- Require obstetric setting/intensive level of monitoring, presence of Anesthetist

#### 8 Cleanliness

- Encourage woman to take bath and clean perineum with soap
- Wash hands with soap before or after exam
- Use sterile gloves for P/V exam
- Maintain the 5 cleans of labour and birthing area

##### 5 clean:

##### Clean hands

##### Clean delivery surface

##### Clean blade for cutting cord

##### Clean cord tie

##### Clean cord (stump care-7.1% chlorhexidine)

## **6 Breathing technique**

- Teach her to notice normal breathing
- Take deep breath slowly and relax during contraction (puff out)

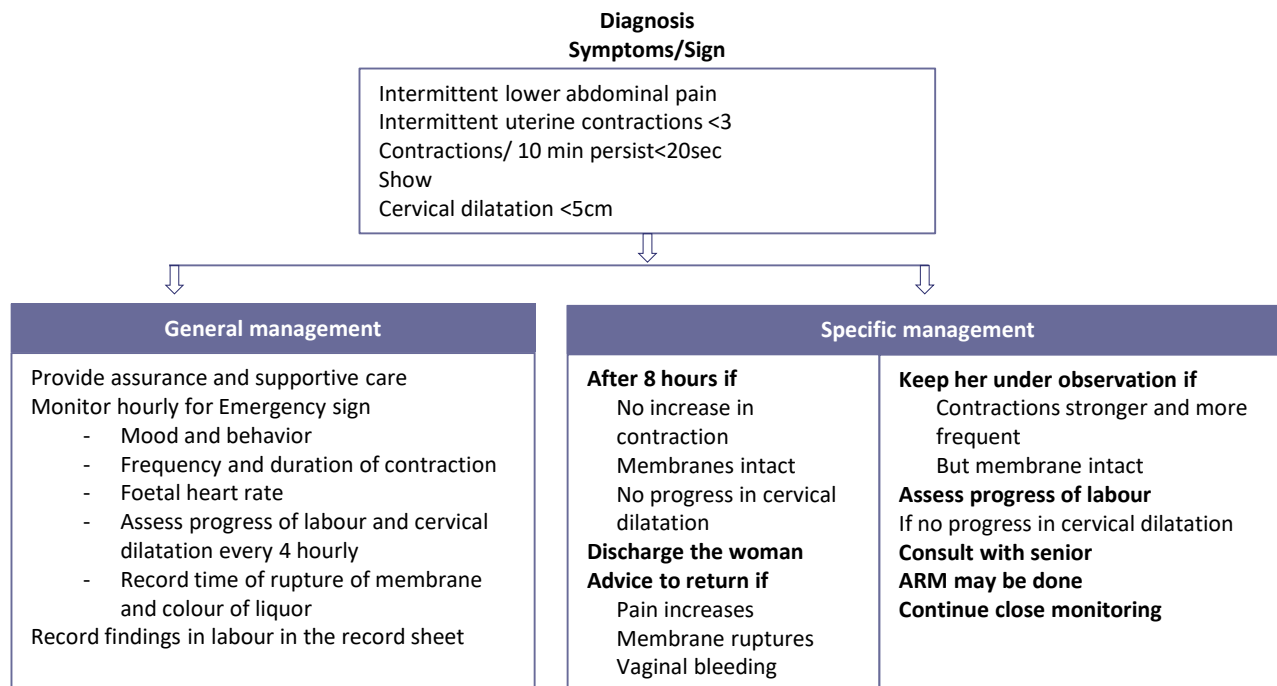
- Clean up spills
- Routine hygiene measure taken by staff

## **9 Transfer of Care/ Referral**

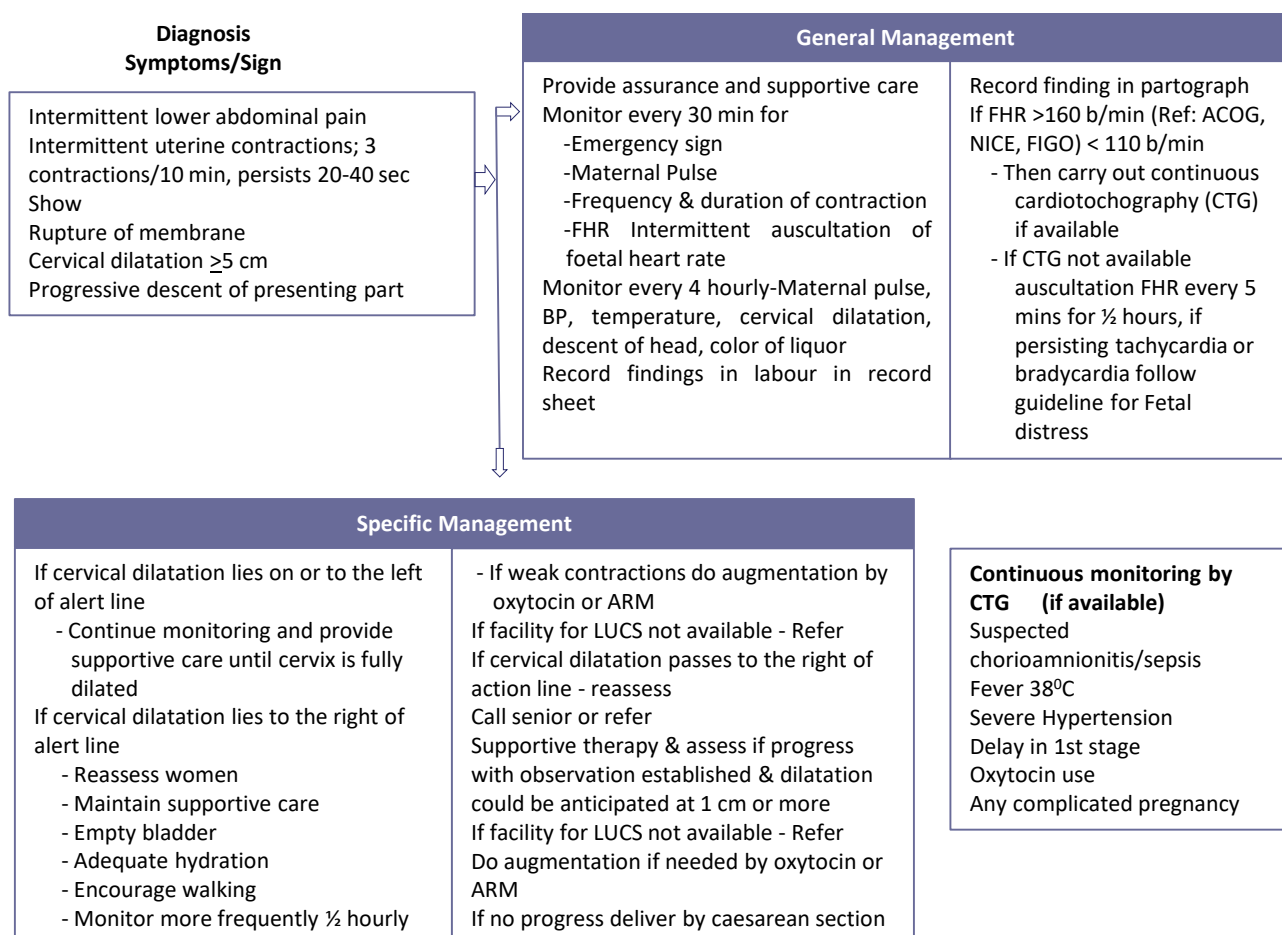
- Explain the woman & her companion about the reason for transfer
- Address any concern
- Ensure that her wishes are respected
- Ensure that informed consent obtained
- When arranging the referral- the caregiver should alert the relevant health care professionals about referral. (mobile phone)

## II. Management of 1st stage of labour

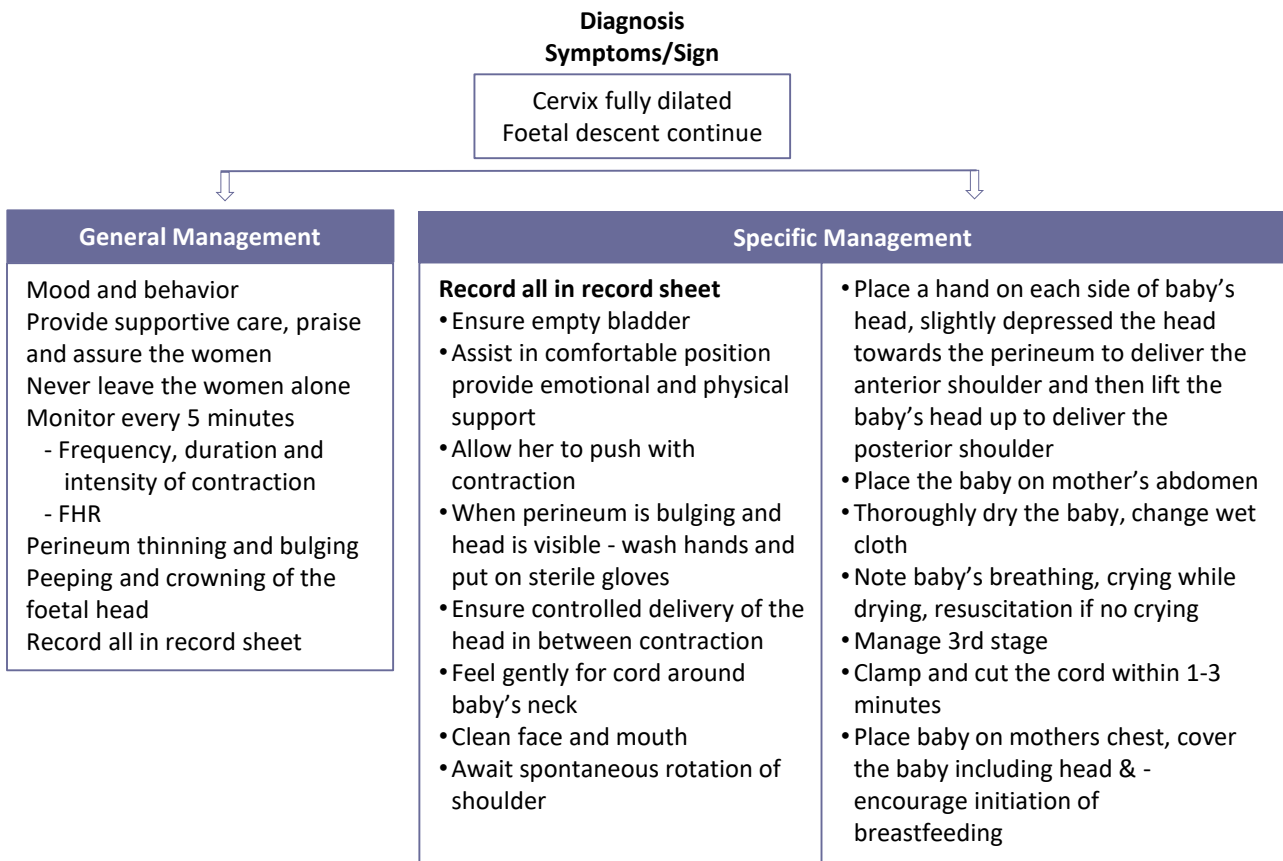
### a. Latent phase



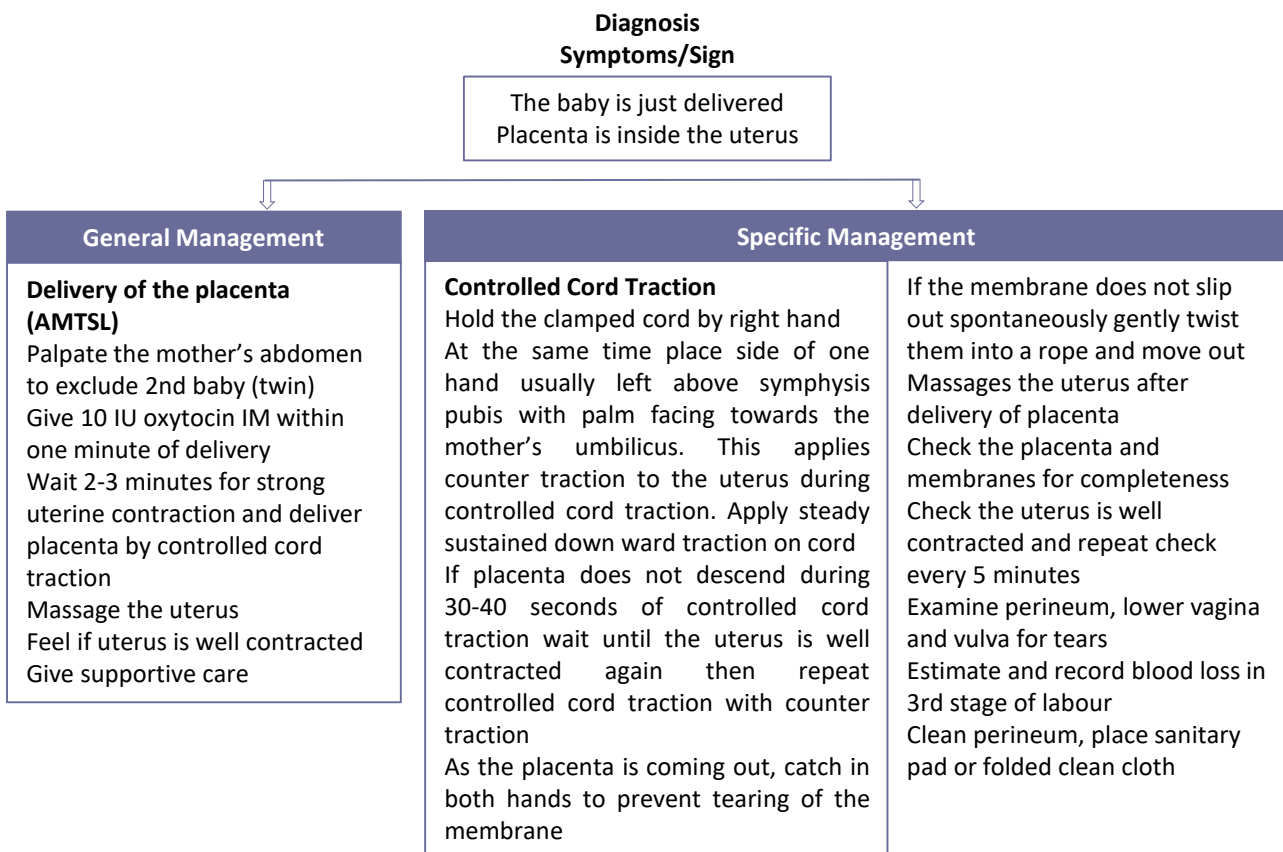
### b. Active phase



## Management of 2<sup>nd</sup> Stage of labour



## Management of 3rd stage



## 4<sup>th</sup> Stage of labour-monitoring

### Monitor mother

- Every 15 minutes for First 2 hours
- Feel and ensure uterus is hard
- Assess vaginal bleeding
- Monitor pulse, BP
- Record findings and duration of 3rd stage
- Provide supportive care

### Monitor baby

#### Every 15 minutes

- Breathing: listen grunting, look for chest in-drawing and fast breathing
- Warmth: check to see if feet are cold to touch
- Umbilical stump: look for bleeding

## Overall management during labour

- Encourage the woman to have personal support from a person of her choice throughout labour and birth:
  - For both suspected or confirmed COVID19 patients, isolation cabin is needed with separate bathroom facilities with visitor restriction and quarantine of family members
  - Arrange seating for the companion next to the woman; if the woman is not COVID positive
  - Encourage the companion to give adequate support to the woman during labour and childbirth (rub her back, wipe her brow with a wet cloth, assist her to move about)
- Ensure good communication and support by staff:
  - Explain all procedures, seek permission and discuss findings with the woman
  - Provide a supportive, encouraging atmosphere for birth that is respectful of the woman's wishes
  - Ensure privacy and confidentiality
- Maintain cleanliness of the woman and her environment:

- Encourage the woman to wash herself or bathe or shower at the onset of labour
- Wash the vulval and perineal areas before each examination
- Wash hands with soap before and after each examination
- Ensure cleanliness of labouring and birthing area(s)
- Clean up all spills immediately
- Ensure mobility:
  - Encourage the woman to move around freely
  - Support the woman's choice of position during labour and birth
  - Encourage the woman to empty her bladder
  - Ensure Privacy
  - Maintain Curtain
- If the **woman has visible severe wasting or tires during labour**, make sure she is fed during the latent phase of labour
- It is not useful to encourage a woman to eat and drink (large quantities of fluid) in the Active phase of labour. The intestine does not work well in the Active phase of labour; the woman will vomit in the 2<sup>nd</sup> stage if her stomach is full of fluid or food
- Sips of fluid is important, even in late labour
- Teach breathing techniques for labour and delivery. Encourage the woman to breathe out more slowly than usual and relax with each expiration
- Help the woman in labour who is anxious, fearful or in pain:
  - Give her praise, encouragement and reassurance
  - Give her information on the process and progress of her labour
  - Listen to the woman and be sensitive to her feelings

Note: Do not routinely give an enema to women in labour. Do not shave the vulva area.

## Pain relief:

### Non - Pharmacological

- Suggest changes of position
- Encourage mobility
- Encourage her companion to massage her back or hold her hand and sponge her face between contractions
- Encourage breathing techniques
- Encourage warm bath or shower
- Hydration-oral fluid-250ml /2 hr
- Audio Therapy

### Pharmacological

- Inj. Pethidine 1 mg/kg body weight (but not more than 100 mg) IM or slowly I/V or give morphine 0.1 mg/kg body weight IM
- Entonox (N2O2): O2 inhalation
- Epidural analgesia



The WHO partograph has been modified to make it simpler and easier to use. The latent phase has been removed and plotting on the partograph begins in the active phase when the cervix is 5 cm dilated. A sample partograph is included. Record the following on the partograph

**Patient information:** Fill out name, gravida, para, hospital number date and time of admission and time of ruptured membranes.

**Fetal heart rate:** Record every half hour.

**Amniotic fluid:** Record the colour of amniotic fluid at every vaginal examination:

- **I:** membranes intact
- **C:** membranes ruptured, clear fluid
- **M:** meconium-stained fluid
- **B:** blood-stained fluid

**Moulding:**

- 1: sutures apposed
- 2: sutures overlapped but reducible
- 3: sutures overlapped and not reducible

**Descent assessed by abdominal palpation:**

Refers to the part of the head (divided into 5 parts) palpable above the symphysis pubis, recorded as a circle (O) at every examination. For example: At 0/5, the sinciput (S) is at the level of the symphysis pubis.

**Hours:** Refers to the time elapsed since onset of active phase of labour, starting time is "0" hours.

**Time:** Record actual time.

**Contractions:** Chart every ½ hour; palpate the number of contractions in 10 minutes and their duration in seconds. Record on the right side of the time line and fill up two consecutive boxes of two lines.

- Less than 20 seconds
- Between 20 and 40 seconds
- More than 40 seconds

**Oxytocin:** Record the amount of oxytocin per volume IV fluids in drops per minute every 30 minutes when used.

**Drugs given:** Record any additional drugs given.

**Pulse:** Record every 30 minutes and mark with a dot (.)

**Blood pressure:** Record every 4 hours and mark with arrows.

**Temperature:** Record every 4 hours.

**Protein:** Perform this test at admission for all patients, but repeat as indicated for PE/Eclampsia/renal disease.

**Volume:** Record every time urine is passed, encourage to pass urine.

**Acetone:** Examine only if indicated & especially in diabetes & maternal distress.

**Cervical dilatation:** Assessed at every vaginal examination and marked with a cross (x) on alert line. Begin plotting on the partograph at 5 cm. Check every 4 hours.

**Alert line:** A line starts at 5 cm of cervical dilatation to the point of expected full dilatation at the rate of 1 cm per hour. Start 1<sup>st</sup> plotting on at least line.

**Action line:** Parallel and 4 hours to the right of the alert line.

Name _____	Gravida _____	Para _____	Hospital number _____
Date of admission _____	Time of admission _____	Ruptured membranes _____	hc _____

	200													
	190													
	180													
	170													
	160													
Fetal heart rate	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			1	2	3	4	5	6	7	8	9	10	11	12
Time														
		5												
		4												
		3												
		2												
		1												
Contractions per 10 mins														
Oxytocin U/L drops/min														
Drugs given and IV fluids														
		180												
		170												
		160												
		150												
		140												
		130												
		120												
		110												
		100												
		90												
		80												
		70												
		60												
Pulse ● and BP ▲▼														
Temp °C														
Urine	{	protein												
		acetone												
		volume												

## Second stage of labour

### Progress of Second stage of labour

- Findings suggestive of **satisfactory progress** in the second stage of labour are:
  - Steady descent of fetus through birth canal
  - Onset of expulsive (pushing) phase
- Findings suggestive of **unsatisfactory progress** in second stage of labour are:
  - Lack of descent of fetus through birth canal
  - Failure of expulsion (i.e. delivery) during the expulsive phase in 1 hour for a multipara and 2 hours for a primigravida

### Monitoring Fetal condition

- If there are **fetal heart rate abnormalities** (less than 100 or more than 180 beats per minute), suspect fetal distress
- Positions or presentations in labour other than occiput anterior with a well-flexed vertex are considered malpositions or malpresentations
- If **unsatisfactory progress of labour** or **prolonged labour is suspected**, manage the cause of slow progress

### Monitoring Maternal condition

Evaluate the woman for signs of distress:

- If the **woman's pulse is increasing**, she may be dehydrated or in pain. Ensure adequate hydration via oral or IV routes and provide adequate analgesia
- If the **woman's blood pressure decreases**, suspect hemorrhage
- If **acetone is present in the woman's urine**, suspect ketosis and give Normal Saline IV (100ml per 10Kg, i.e. 500ml for a 50Kg woman)

**Note:** Episiotomy is no longer recommended as a routine procedure. There is no evidence that routine episiotomy decreases perineal damage, future vaginal prolapse or urinary incontinence.

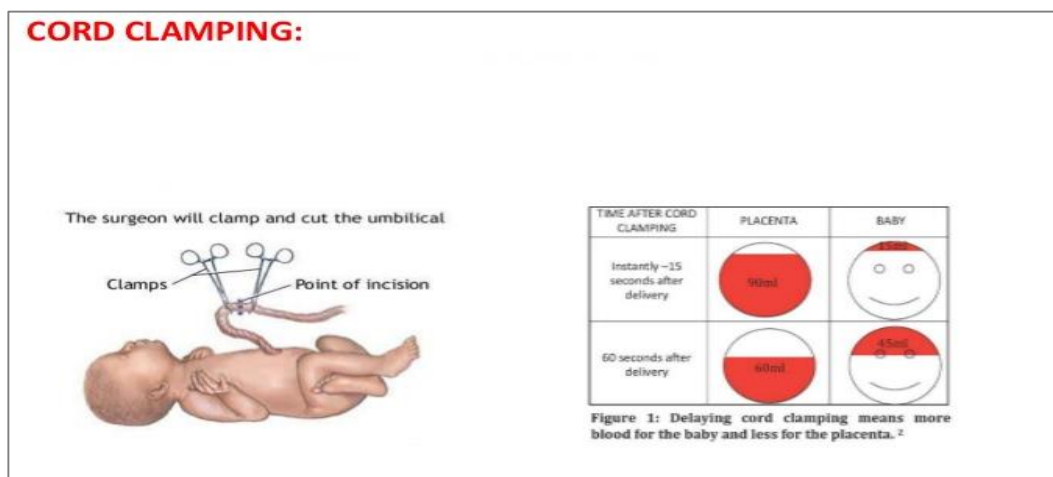
Episiotomy should be considered in cases of:

- Complicated vaginal delivery (breech, shoulder dystocia, forceps, vacuum extraction)
- Previous repair of third or fourth-degree perineal tears

When there is a rigid perineum which is holding up the delivery of the fetal head, or when the head is crowning and tearing of the perineum is imminent

## Delivery of the head

- Ask the woman to pant (quick breath) or give only small pushes with contractions as the baby's head delivers
- To control birth of the head, place the fingers of one hand against the (perineum) baby's head to keep it flexed (bent)
- Continue to gently support the perineum as the baby's head delivers
- Once the baby's head delivers, ask the woman not to push
- Suction the baby's mouth and nose if there is thick meconium (+++) present: do not suction at all if the liquor is clear
- Feel around the baby's neck for the umbilical cord:
  - If the **cord is around the neck but is loose**, slip it over the baby's head
  - If the **cord is tight around the neck**, delivery the baby and unwind it from around the neck after delivery
  - Delayed Cord Clamping if the baby is breathing and crying by 1 minute: allow the cord to stop pulsating (1-3 minutes) before clamping if the baby is fine



- Optimal time- 1-3 minutes (when the cord pulsation stops)

- If the new born is in mothers' abdomen, the cord clamping should be post-poned until the pulsation stops
- Early cord clamping is permitted only in urgent cases (if resuscitation is needed because the baby is not breathing by 1 minute after birth)

**Note: Most babies begin crying or breathing spontaneously within 30 seconds of birth:**

- If the **baby is crying or breathing** (chest rising at least 30 times per minute) leave the baby with the mother
- If **baby does not start breathing within 30 seconds, SHOUT FOR HELP** and take steps to resuscitate the baby

Anticipate the need for resuscitation and have a plan to get assistance for every baby but especially if the mother has a history of sever Pre-Eclampsia, Eclampsia, bleeding, prolonged or obstructed labour, preterm birth or infection

## Third Stage of labour

### Active Management of the Third Stage

Active management of the third stage (active delivery of the placenta) helps prevent postpartum hemorrhage. Active management of the third stage of labour includes:

- Immediate oxytocin (10 units) IM - within 60 seconds of the birth of the baby
- Division of the cord (after it has stopped pulsating), and controlled cord traction, and
- Uterine massage after the placenta has been delivered

### Oxytocin

- Within one minute of delivery of the baby, palpate the abdomen to rule out the presence of an additional baby(s) and give oxytocin 10 units IM
- Oxytocin is preferred because it is effective two to three minutes after injection, has minimal side effects and can be used in all women. Oxytocin must be kept in refrigerators

**Make sure there is no additional baby(s) (multiple pregnancies e.g. twins, triplets etc.) before giving these medications.**

Do not give Ergometrine to women with pre – eclampsia, eclampsia or high blood pressure because it increases the risk of convulsions and cerebrovascular accidents

## Controlled Cord Traction

- Clamp the cord close to the perineum with an artery forceps when the cord stops pulsating (1-3 minutes of delivery). Hold the clamped cord and the end of forceps with one hand
- Place the other hand just above the woman's pubic bone and stabilize the uterus by applying counter traction during controlled cord traction. This helps prevent inversion of the uterus
- Keep slight tension on the cord and await a strong uterine contraction (two to three minutes)
- When the **uterus becomes contracted**, very gently pull downward on the cord to deliver the placenta. Continue to apply counter traction to the uterus with the other hand
- If the **placenta does not descend** during 30 to 40 seconds of controlled cord traction (i.e. there are no signs of placental separation), do not continue to pull on the cord:
  - Gently hold the cord and wait until the uterus is well contracted again. If necessary, use an artery forceps to clamp the cord closer to the perineum as it lengthens
  - With the next contraction, repeat controlled cord traction with countertraction

**Never apply cord traction (pull) without applying counter traction (push) above the pubic bone with the other hand**

- As the placenta delivers, the thin membranes can tear off. Hold the placenta in two hands and gently turn it until the membranes are twisted
- Slowly pull to complete the delivery
- Put the placenta in a kidney dish

## Uterine massage

- Immediately after delivery of the placenta massage the fundus of the uterus through the woman's abdomen until the uterus is contracted
- Repeat uterine massage every 15 minutes for the first two hours
- Ensure that the uterus does not become relaxed (flaccid) after you stop uterine massage

## Examination of placenta

- Look carefully at the placenta to be sure none of it is missing. If a **portion of the maternal surface is missing or there are torn membranes with vessels**, suspect retained placental fragments

## Examination for tears

- Examine the woman carefully and repair any tears to the perineum or vagina or repair episiotomy

- If the **membranes tear**, gently examine the upper vagina and cervix wearing high-level disinfected or sterile gloves and use a sponge forceps to remove any pieces of membrane that are present protruding through the cervix
- If **uterine inversion occurs**, push the inverted fundus fo the uterus upward to reposition it
- If the **cord is pulled off**, manual removal of the placenta may be necessary

## Fourth (4<sup>th</sup>) stage of labour

The fourth (4<sup>th</sup>) stage of labour (1 hour after delivery) is equally important as labour and delivery because most complications occur during this period. The facilitator will explain the monitoring need and what provider will do during the time:

- To anticipate the problem
- To assess or identify the problem
- To treat or manage problems of the woman

### Monitor the postpartum mother as follows:

- Try to be respectful and observe the need of the mother and her newborn
- Perform hand hygiene and use of gloves as required
- Gently clean the vulva and perineum with clean water or a non-alcoholic antiseptic solution
- Cover the perineum with a clean sanitary pad
- Make sure that the woman is comfortable (clean, hydrated and warmly covered)
- Provide health messages and counseling based on the mother's history and other relevant findings, emphasizing warmth of the newborn and uterine message
- Closely monitor mother for first 6 hours
- Monitor general conditions: Pulse, respiratory rate, temperature, Blood pressure
- Observe vaginal bleeding, assess uterine hardness:
  - Every 15 minutes, for 2 hours
  - Every 30 minutes, for next 2 hours
  - Every hour for next 2 hours

- Messages the uterus every 15 minutes to maintain contraction
- If stable (and there is no contraindication) give her something to drink when she feels thirsty and something to eat when she is hungry
- Keep the baby in skin to skin contact with mother for 1 hour, initiate exclusive breast feeding immediately
- If possible, give counseling message for PNC & PFPF

## ARM

Bishop's Pre-induction Cervical Scoring System (Modified)				
Score	0	1	2	3
Dilatation (cm)	Closed	1-2	3-4	5+
Station	-3	-2	-1, 0	+1, +2
Consistency	Firm	Medium	Soft	-
Position	Posterior	Midline	Anterior	-
Effacement (%)	0-30	40-50	60-70	>80
*Cervical length	>4	2-4	1-2	<1

## Protocol

Review the prerequisites. Prerequisites are-

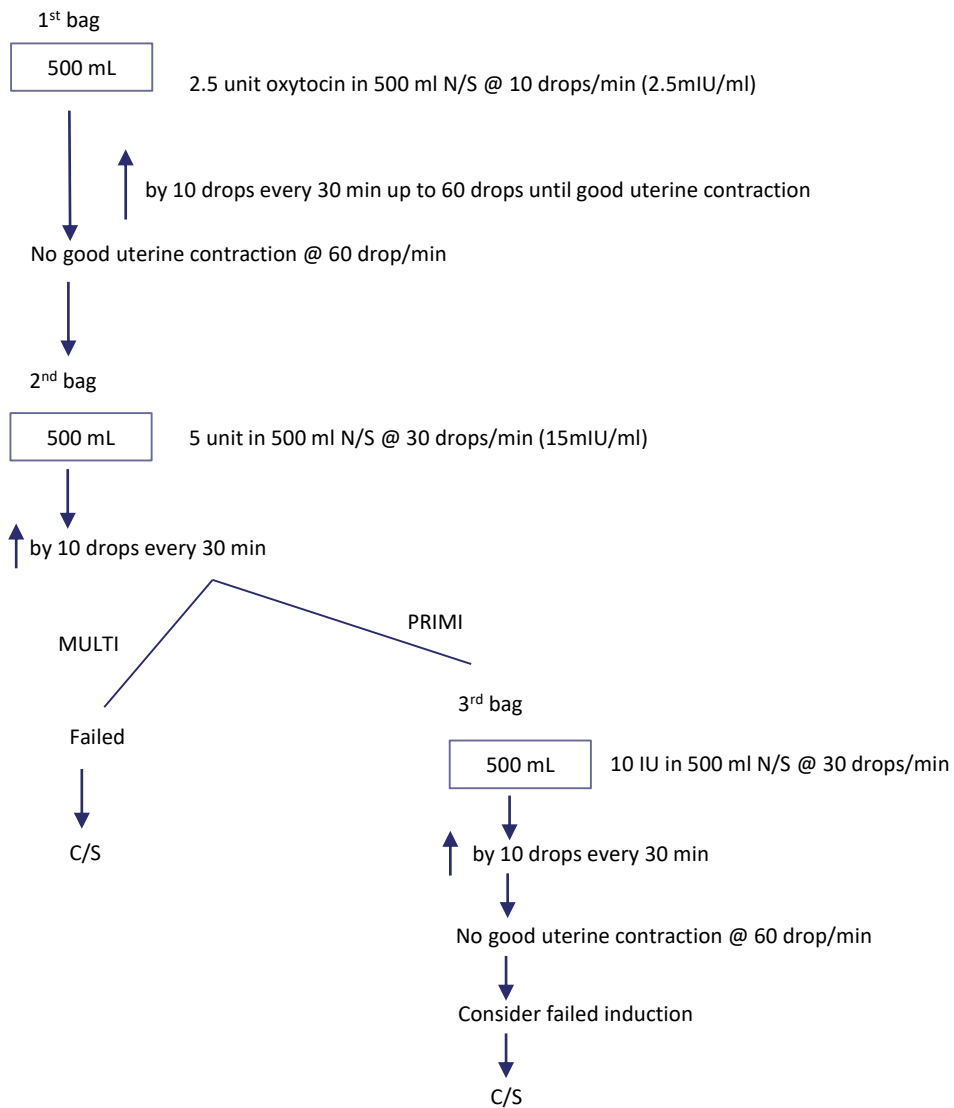
- ARM cannot be done in IUD and malpresentations
- Usually ARM is not indicated unless there is foetal distress
- ARM is done in post-dated pregnancy to see the colour of liquor, in Eclampsia/severe pre-eclampsia to expedite delivery, and in cases of foetal distress to see colour of liquor. ARM should not be routine practice
- Do not do ARM if the patient is HIV (+ve) or HBsAg (+ve)
- Position the woman in dorsal position
- Gently do PV examination and assess the cervix
- Introduce a Kocher's artery forceps inside the vagina guiding it with the fingers to the membrane
- Place two fingers against the membrane and rupture the membrane with instrument in the other hand
- Allow the amniotic fluid to drain slowly

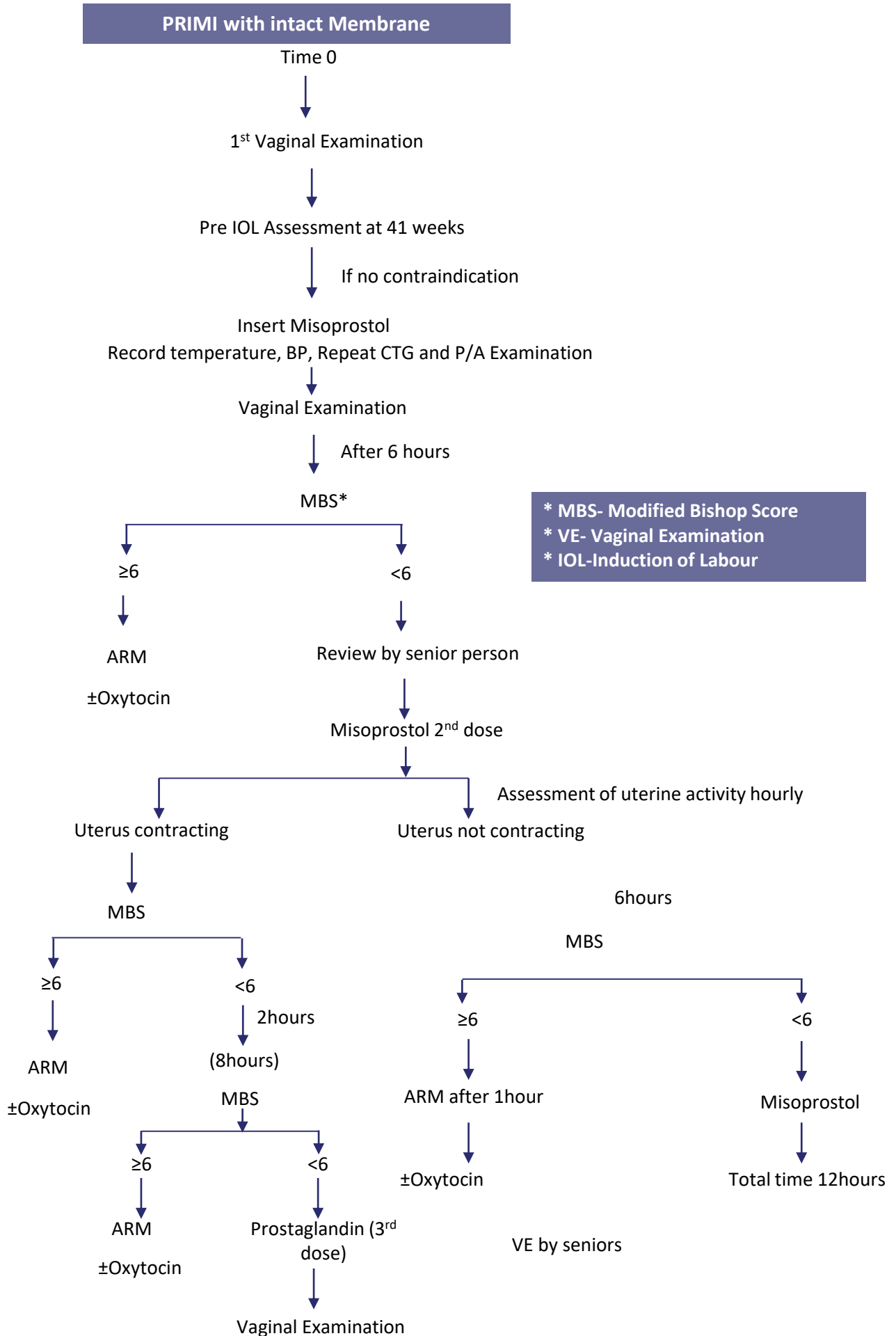


- Note the colour of the liquor, FHR
- Give prophylactic antibiotics-Inj. Amoxicillin 500 mg 8 hourly/Cephalosporin 500 mg 6 hourly
- If good labour pain not established after 1 hour of the ARM, start oxytocin infusion

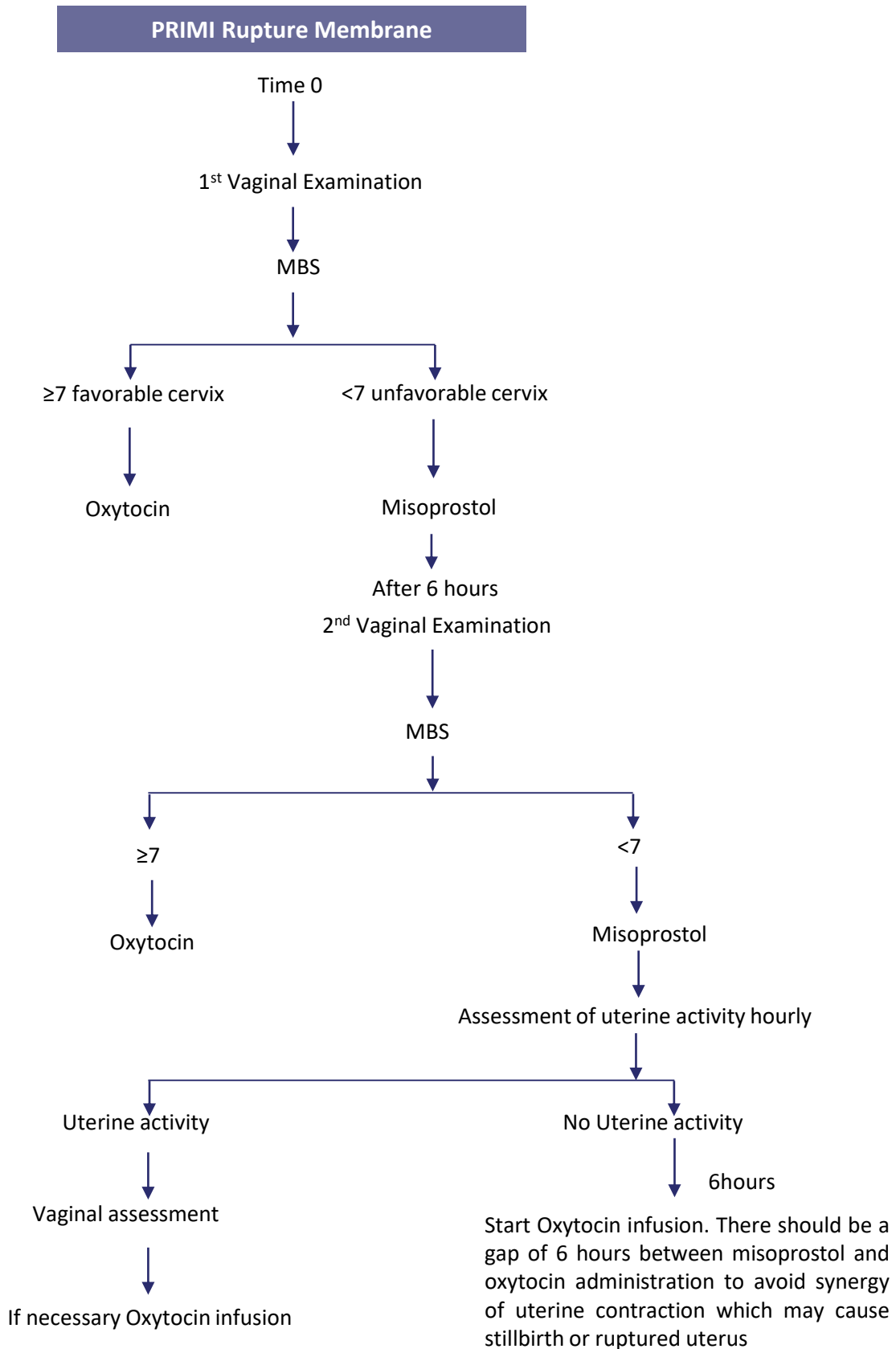
# FLOW CHART OF OXYTOCIN REGIME

- Oxytocin is only given when partograph indicates it. If the action line is crossed then oxytocin needs to be given
- Oxytocin cannot be given in foetal distress
- Oxytocin is given with close monitoring of foetal heart rate
- Unnecessary oxytocin may cause the stillbirths or uterine rupture

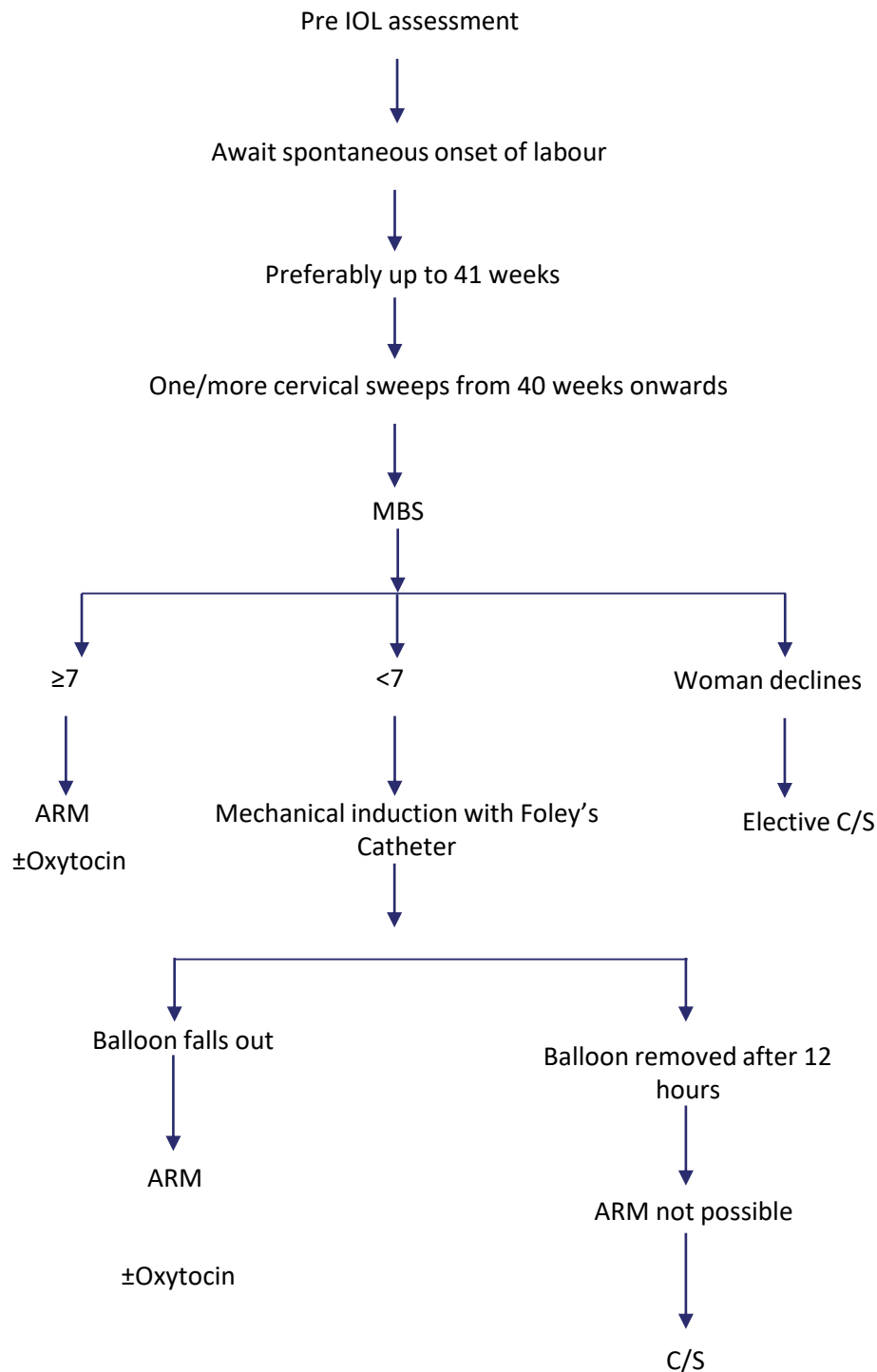




## Flow Chart

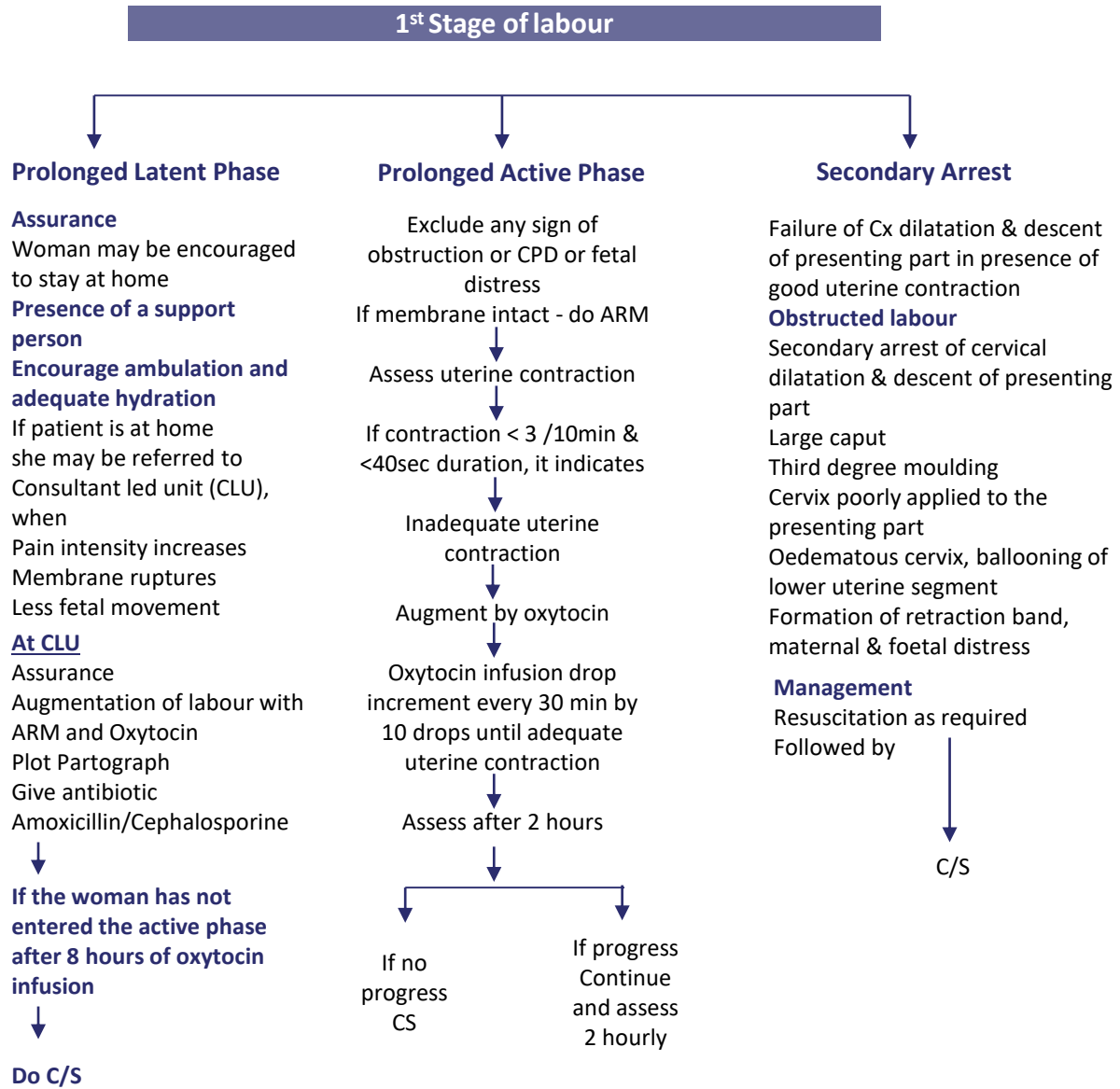


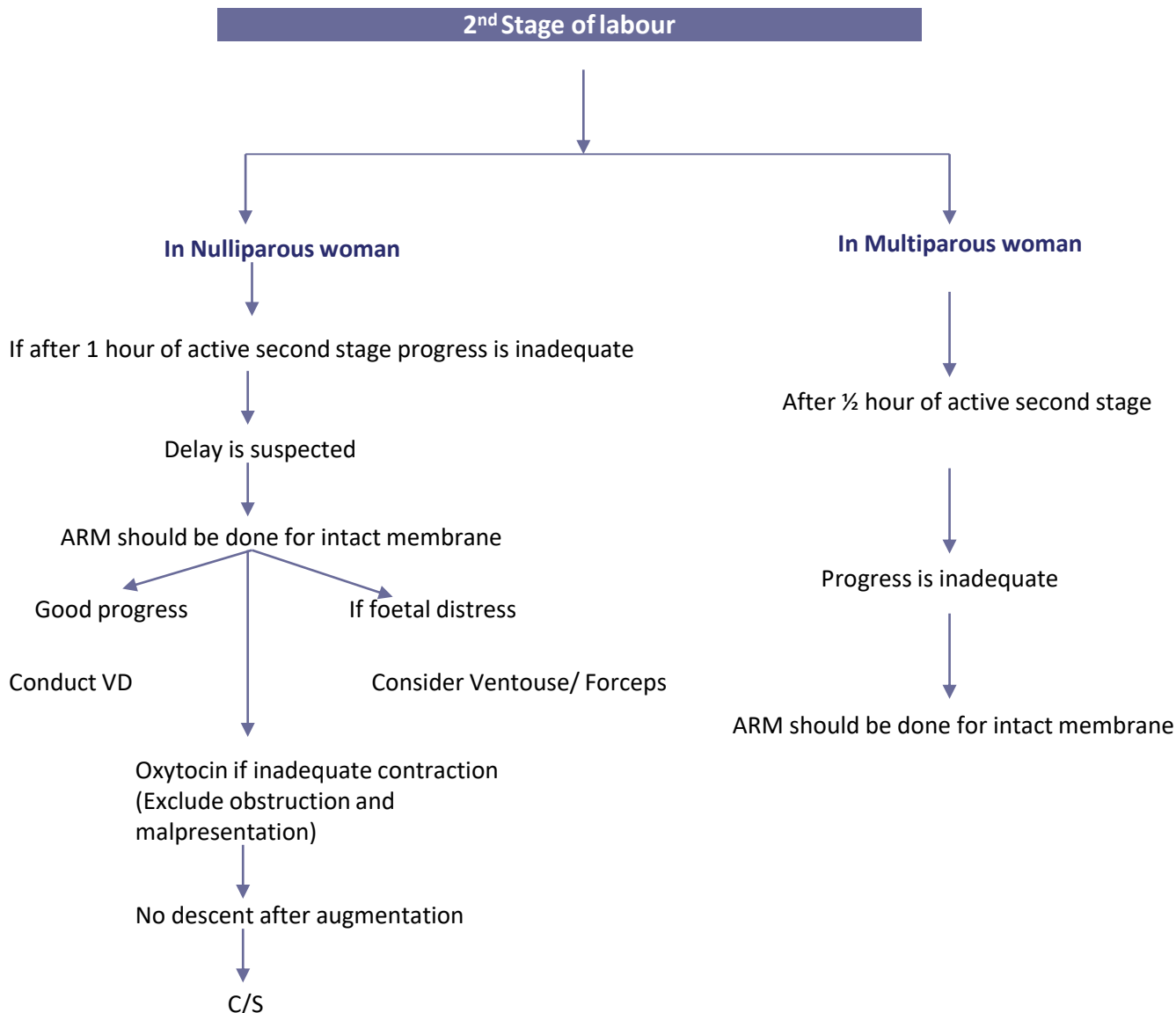
## Multiparous woman with Previous 1 C/S



### Note:

- Give antibiotic after cervical sweeping
- Surgical induction is contraindicated in IUD
- Prostaglandin is contraindicated in previous C/S
- ARM is contraindicated in previous C/S



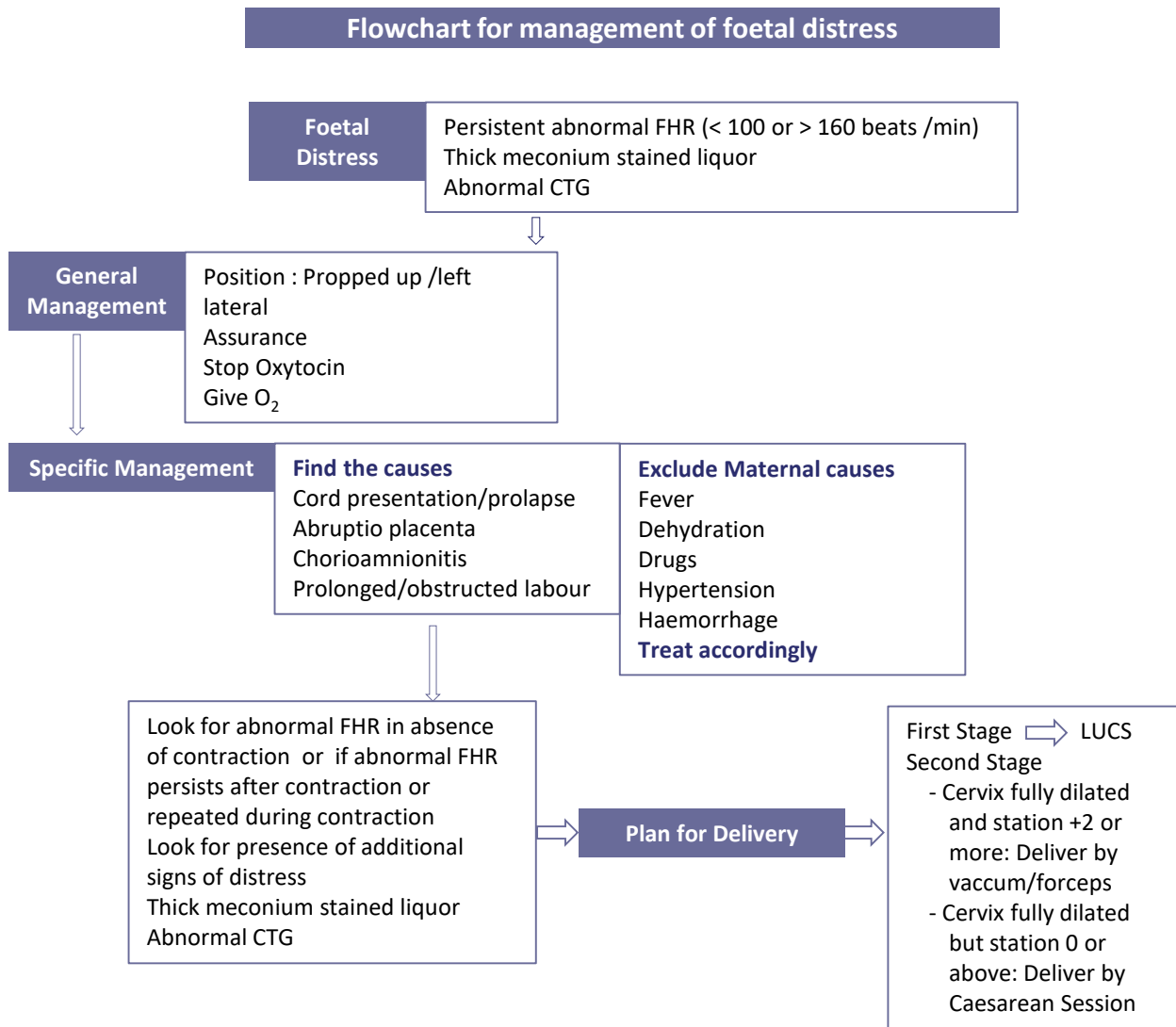


**Note:**

- Birth expected to take place in 3 hours of start of active second stage (Prolonged labour or obstructed labour can only be effectively be diagnosed using the WHO modified Partograph) in nulliparous & in 2 hours in multiparous woman
- The use of oxytocin is not recommended in parous women (Ref: NICE Guideline)
- Do not routinely use oxytocin in the second stage of labour for women with regional anaesthesia
- If women is excessively distressed, give support and sensitive encouragement
- Talk with woman & her birth companions about why birth needs to be expedited

**Reference:**

1. Clinical guidelines of Management of normal labour and prolonged labour in low risk patients, Mid Essex Hospital Services (NHS), 2015
2. WHO recommendations Intrapartum care for a positive childbirth experience WHO, ISBN 978-92-4-155021-5,2018



**Foot Note:**

- Meconium stained amniotic fluid is seen frequently as the fetus matures and by itself is not an indicator of foetal distress. A slight degree of meconium with foetal heart rate abnormalities is a warning of the need for vigilance. Foetal distress can be assessed by CTG or fetal biophysical profile
- Thick meconium suggests passage of meconium in amniotic fluid and may indicate the need for expedited delivery and management of neonatal airway at birth to prevent meconium aspiration
- In breech presentation, meconium is passed in labour because of compression of the foetal abdomen. This is not a sign of foetal distress unless it occurs in early labour



**Definition:** Shoulder dystocia is an acute obstetrical emergency where the foetal head has been delivered but the shoulders are stuck and cannot be delivered.

### Signs of recognizing shoulder dystocia:

- Foetal head has been delivered but shoulders are stuck and cannot be delivered
- Foetal head remains tightly applied to the vulva
- The chin retracts and depresses the perineum
- Traction on the head fails to deliver the shoulder either the anterior or the posterior shoulder which is caught behind the pubic symphysis or sacral promontory

### Risk factors

#### Antepartum

- Excessive weight gain (>35 lb) during pregnancy
- Maternal obesity (BMI > 30 kg/m<sup>2</sup>)
- Post term pregnancy
- Fetal macrosomia (large body compared to head)
- Diabetic mother
- Multiparity

#### Intrapartum

- Operative vaginal delivery (Vacuum, forceps)
- Prolonged second stage of labour

### Management

- Call for help
- Move the woman to lie with her buttocks over the edge of table
- Make adequate episiotomy to reduce soft tissue obstruction and to allow space for internal maneuvers
  - Apply firm, continuous traction downwards on fetal head to move anterior shoulder under the symphysis pubis
  - Avoid excessive traction on the head as this may result in brachial plexus injury

### Mc Robert maneuvers

- Mc Robert position-woman on her back, ask her to flex both thighs, bringing her knees as far up as possible towards her chest, abduct and rotate legs outwards
- Do not apply fundal pressure. This will further impact the shoulder

*If the shoulder still not delivered*

**RUBIN-1** (Suprapubic pressure) is rotation of anterior shoulder towards fetal chest under pubic symphysis. This reduces bisacromial diameter

- Have an assistant at the mother's side, place their hands on the suprapubic region of mother's abdomen
- Position is similar to that of CPR with assistant above the woman
- With the heel of the hand (or fist) and arms straight, apply moderate pressure obliquely (downward and laterally) to fetal anterior shoulder
- Use right hand for performing this maneuver if the fetus is facing mothers' right side and vice versa
- If continuous pressure does not dislodge the shoulder use a rocking motion (compression/relaxation)

### RUBIN II

*(if above measures fail)*

Insert one hand vaginally behind the posterior aspect of anterior shoulder of foetus and rotating the shoulder towards chest shifting it from midline to oblique diameter. As a result, shoulder girdle is adducted and diameter is reduced.

**Wood's screw maneuver**-which leads turning the anterior shoulder to the posterior and vice versa.

**Jacquemier's maneuver** (Delivery of posterior arm)-in which the fore arm and hands are identified in the birth canal and gently pulled. Drilling for shoulder dystocia management should be done among all doctors, nurses and midwives.

### All four position:

Placing the woman in the all fours position i.e. hands and knees (Rolling of the patient on her hand and feet), may dislodge the anterior shoulder and facilitate deliver. The all fours position offers evenly distributed weights on all four limbs and maximizes the pelvic diameters, when adequate room is available along the curve of the sacrum to allow a hand to be inserted up to the foetal waist to deliver the posterior shoulder or arm.

### Summery management of shoulder dystocia (SD)

- H Help
- E Edge & episiotomy
- L Legs (Mc. Robert's Maneuver)
- P Pressure (Supra pubic pressure)
- E Enter (RUBIN II and Wood Screw Maneuver)
- R Remove (delivery of posterior arm)
- R Roll (all 4)

## Assisted vaginal delivery (vacuum extraction or forceps):

### Vacuum extraction

When the head is low in the pelvis (0/5<sup>th</sup> above the brim), the cervix is fully dilated and the contraction are adequate (3 in 10 minutes and lasting for >35 seconds; put up oxytocin infusion if the contractions are not adequate). Assisted Vaginal Delivery is much preferable and less traumatic for both mother and baby.

#### Indications:

- Prolonged expulsive phase of the second stage: more than 1 hour for a multipara and more than 2 hours for a primigravida
- To shorten the 2<sup>nd</sup> stage in cases where it is dangerous to push for any length of time i.e. pre-eclampsia/eclampsia and heart diseases
- For suspected fetal distress in the 2<sup>nd</sup> stage of labour

#### Requirements for Safe Vacuum Extraction:

- Full dilatation of the cervix, if there is just a swollen anterior lip of cervix stuck between the fetal head and the symphysis pubis, push it up with your finger with a contraction
- Good contractions of the uterus, if the contractions are inadequate augment them with an oxytocin infusion (10 units in 1 litre and infuse at 60 drops/min while setting up for the vacuum extraction)
- Head completely in the pelvis, 0/5<sup>th</sup>; i.e. no head palpable above the symphysis pubis on abdominal examination
- Empty bladder, insert a catheter if there seems to be a full bladder

### Technique of vacuum extraction:

- Insert a maneuverable vacuum cup (e.g. Bird metal posterior cup or Kiwi omni cup) onto the flexion point on the fetal head- 5cm under the head for occipito-anterior positions, 8 cm up under the head for transverse position occiput and 10-11cm up under the fetal head for occipito-posterior positions). Non-maneuverable cups are only suitable (i.e. will reach the flexion point on the fetal head) if the head is low and anterior position
- Hold the cup in place while the vacuum pressure increases slowly to maximum (i.e. 80 KPa/m<sup>2</sup>)
- Then wait 2 minutes for the chignon to form into the vacuum cup
- Then make traction with the next contraction, downwards to the floor for the first pull and again for the second pull until the cup is delivering through the introitus, outwards as the head begins to deliver and upward as it crowns
- Perform an episiotomy if the perineum is very tight and going to tear
- Be ready for newborn resuscitation after delivery if the baby does not breath and cry within one minute of birth
- Be ready for PPH if there has been a prolonged 2<sup>nd</sup> stage of labour or in cases of pre-eclampsia

### Outlet and low forceps (Wrigley's forceps)

#### Before procedure:

- Obtain informed consent
- Vertex presentation or face presentation with chin-anterior or entrapped after-coming head in breech delivery
- Cervix fully dilated
- Foetal head at +2 or +3 station and 0/5 palpable above the symphysis pubis
- Membranes ruptured
- For outlet forceps, head should be on perineum or scalp should be visible at the introitus without separating the labia
- At a minimum, the sagittal suture should be in the midline and straight, or 45 degrees from midline, guaranteeing an occiput anterior or occiput posterior position
- Assemble the forceps before application. Ensure that the parts fit together and lock well

- Lubricate the blades of the forceps
- Wear high-level disinfected or sterile gloves

**Procedure:**

- Pudendal block and infiltration of perineum and labia by 1% lignocaine
- Catheterization
- The blades are to be applied along the sides of the head grasping the biparietal diameter in the widest part of the blades so there is negligible compression effect on the cranium
- Insert two fingers of the right hand into the vagina on the side of the foetal head. Hold the left blade in the left hand like a pencil and slide it between the head and fingers to rest on the side of the head with the help of right thumb. Use the fingers of your right hand to cover the infant's head laterally and to protect the vaginal epithelium
- Repeat the same maneuver on the other side, using the right hand and the right blade of the forceps
- In doing this the fingers of the left hand are placed inside the vagina and the thumb of the left hand against the heel of the blade
- The left hand holding the handle is rotated down in an arc while the fingers and thumb of the right hand guide the blade into correct position
- Depress the handles and lock the forceps
- Difficulty in locking usually indicates that the application is incorrect. In this case, remove the blades and recheck the position of the head. Reapply only if rotation is confirmed
- After locking, apply steady traction inferiorly and posteriorly with each contraction using the right hand holding the handle of the forceps and the left hand holding the forceps neck
- Between contractions check foetal heart rate and application of forceps
- When the head crowns, make an adequate episiotomy if necessary
- Lift the head slowly out of the vagina between contractions. The head should descend with each pull. Only two or three pulls should be necessary. The blades are removed, right one first
- Continue infant and placental delivery as in a normal labour
- Explore the birth canal with a Sim's speculum up and down to assess the birth canal laceration

In cases of vacuum extraction or forceps pull should be attempted 3 times and if fails then go for caesarian section. Vacuum extraction is relatively safer than forceps extraction.

## Squatting delivery

- According to WHO, evidence suggests that upright birth positions during the second stage of labour might reduce episiotomy and instrumental vaginal births but might also be associated with increased risk of postpartum haemorrhage (PPH) and second-degree tears
- It is important that any particular position is not forced on the woman and that she is encouraged and supported to adopt any position that she finds most comfortable
- A practical approach to positioning in the second stage for women desiring an upright birth position might be to adapt to a semi-recumbent or all-fours position just before expulsion of the fetus, to facilitate perineal techniques to reduce perineal tears and blood loss
- A 2013 Cochrane systematic review found that the duration of labour with upright and ambulant positions compared with recumbent positions and bed care for the first stage of labour is probably about 1 hour and 22 minutes shorter (15 trials, 2503 women average MD -1.36 hours, 95% CI -2.22 to -0.51)
- Findings also suggest that upright positions in the first stage probably reduce caesarean section (14 trials, 2682 women, RR 0.71, 95% CI 0.54–0.94) and epidural use (9 trials, 2107 women, RR 0.81, 95% CI 0.66–0.99)
- In most cases, a non-supine position was perceived to be more empowering and less painful and to facilitate an easier birth, although the supine position (on a bed) was still viewed as the more traditional approach to giving birth (low confidence in the evidence)
- Data from cross-sectional surveys conducted in Africa (Malawi and Nigeria) showed that more than 90% of women were aware of the supine or semi recumbent positions for labour and childbirth but less than 5% were aware of alternative positions (e.g. squatting, kneeling, and on hands and knees)
- *Perinatal hypoxia-ischemia*: The review did not report 5-minute Apgar score less than 7, cord blood acidosis, or hypoxic-ischemic encephalopathy (HIE) outcomes
- *Fetal distress*: Moderate-certainty evidence suggests that upright positions are probably associated with fewer abnormal FHR patterns (2 trials, 617 babies, RR 0.46, 95% CI 0.22–0.93)
- *Perinatal mortality*: Low-certainty evidence suggests that there may be little or no difference in perinatal mortality with upright positions (4 trials, 982 babies, RR 0.79, 95% CI 0.51–1.21)

## Planned VBAC

Planned VBAC (vaginal birth after caesarean) refers to any woman who has experienced a prior caesarean birth, who plans to deliver vaginally rather than by ERCS (elective repeat caesarean section).

## Problem

Increasing rate of primary caesarean section. So, repeat section has increased.

## Successful / Unsuccessful

A vaginal birth (spontaneous or assisted) in a woman undergoing planned VBAC indicates a successful VBAC.

Birth by emergency caesarean section during the labour indicates an unsuccessful VBAC.

## Maternal outcomes

- Uterine rupture is defined as a disruption of the uterine muscle extending to and involving the uterine serosa or disruption of the uterine muscle with extension to the bladder or broad ligament
- Uterine dehiscence is defined as disruption of the uterine muscle with intact uterine serosa
- Other outcomes: hysterectomy, thromboembolism, haemorrhage, transfusion requirement, viscus injury (bowel, bladder, ureter), endometritis, maternal death

## Antenatal counseling

- Women with a prior history of one uncomplicated lower-segment transverse caesarean section, in an otherwise uncomplicated pregnancy at term, with no contraindication to vaginal birth, should be able to discuss the option of planned VBAC and the alternative of a repeat caesarean section (ERCS)
- The antenatal counselling of women with a prior caesarean birth should be documented in the notes
- A final decision for mode of birth should be agreed between the woman and her obstetrician before the expected/planned delivery date (ideally by 36 weeks of gestation)
- Women considering their options for birth after a single previous caesarean section should be informed that, overall the chances of successful planned VBAC are 72–76%
- All women who have experienced a prior caesarean birth should be counselled about the maternal and perinatal risks and benefits of planned VBAC and ERCS when deciding the mode of birth
- The risks and benefits should be discussed in the context of the woman's individual circumstances, including:

- Personal motivation and preferences to achieve vaginal birth or ERCS
- Attitudes towards the risk of rare but serious adverse outcomes
- Plans for future pregnancies
- Chance of a successful VBAC (principally whether she has previously had a vaginal birth)
- Review of the operative notes of the previous caesarean section to identify the indication, type of uterine incision and any perioperative complications

### **Factors associated with successful VBAC**

Previous vaginal birth, particularly previous VBAC, is the single best predictor for successful VBAC

### **Factors for unsuccessful VBAC are:**

- Induced labour
- No previous vaginal birth
- Body mass index greater than 30
- Previous caesarean section for dystocia
- VBAC at or after 41 weeks of gestation
- Birth weight greater than 4000 g
- No epidural anesthesia
- Previous preterm caesarean birth
- Cervical dilatation at admission less than 4 cm
- Less than 2 years from previous caesarean birth
- Advanced maternal age
- Non-white ethnicity
- Short stature and
- A male infant

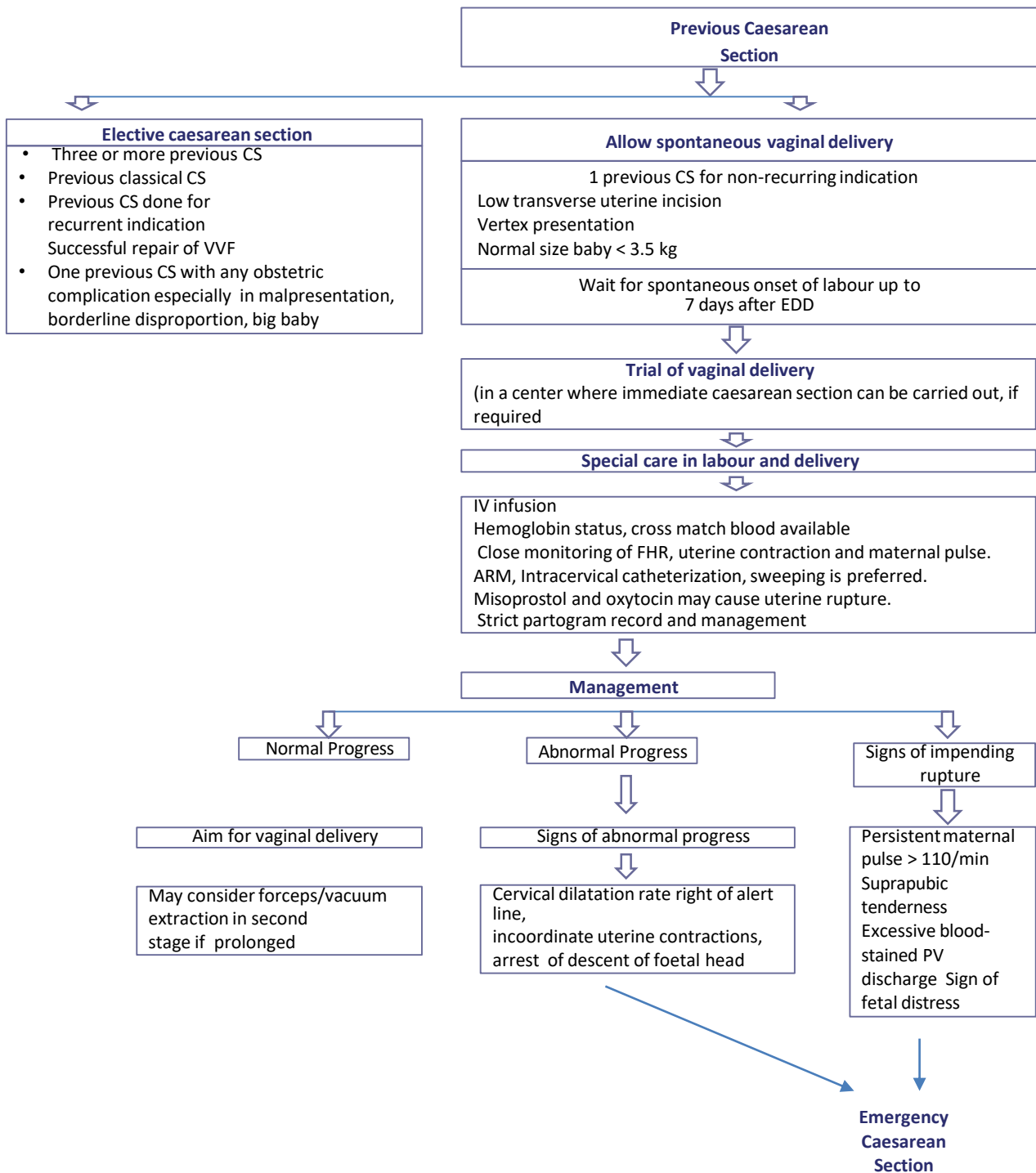
### **Contraindications to VBAC**

- Women with a prior history of one classical caesarean
- Women with a previous uterine incision other than an uncomplicated low transverse caesarean section incision
- Previous uterine rupture



- Uterine incision has involved the whole length of the uterine corpus
- Three or more previous caesarean deliveries
- Who experienced both intrapartum and postpartum fever in their prior caesarean birth were at increased risk of uterine rupture in their subsequent planned VBAC labour

## Flowchart for delivery option after caesarean section



### Reference:

Birth after previous caesarean birth, Green top Guideline. No.45, 2007p1-17

Caesarean section may be done as an emergency procedure due to various indications. In Bangladesh CS on demand should not be acceded to. CS can be a dangerous procedure, especially at full dilatation and if it needs to be repeated; the first CS can lead to repeat CSs which puts the woman’s reproductive life at serious risk in the future. The woman and her attendant should be counseled regarding the indication, pre-operative preparation and procedure of caesarean section and inquiry made if she would like to have a tubal ligation at the time of the CS.

Maternal Indications	Foetal Indications
1. Placenta previa	1. Foetal macrosomia (weight >4.0kg)
2. Contracted pelvis or cephalopelvic disproportion	2. Breech presentation in primigravida
3. Caesarian section scar with an indication of CPD	3. Twin pregnancy if 1 <sup>st</sup> baby is breech
4. Uterine dysfunction	4. Cord prolapse if baby is alive
5. Soft tissue dystocia	5. Abruptio placenta if foetus is alive
6. Primary herpes simplex infection	6. Foetal distress
7. Untreated HIV	7. Foetal malpresentation like transverse lie
8. Non-progress of labour	

### Indications of caesarian section:

#### OBSON CLASSIFICATION

Group	Description
1.	Nulliparous, single cephalic, >37 weeks in spontaneous labour
2.	Nulliparous, single cephalic, >37 weeks, induced or C/S before labour
3.	Multiparous (excluding previous C/S), single cephalic, >37 weeks in spontaneous labour
4.	Multiparous (excluding previous C/S), single cephalic, >37 weeks, induced or C/S before labour
5.	labour
6.	All nulliparous breeches
7.	All multiparous breeches (including previous C/S)
8.	All multiple pregnancies (including previous C/S)
9.	All abnormal lies (including previous C/S)
10	All single cephalic, <36 weeks (including previous C/S)

## Introduction

Excessive per vaginal bleeding > 500 ml following vaginal delivery & 1000 ml following C/S or any amount of bleeding which deteriorated material condition after childbirth.

In practice however, it is difficult to measure blood loss accurately, and the research has shown that excessive blood loss is frequently underestimated. For instance, nearly half of women who delivery vaginally often lose at least 500 ml of blood, and those who give birth by cesarean operation normally lose 1,000 ml or more. For many women this amount of blood loss does not lead to problems, but it is different from woman to woman. For severely anemic women, blood loss of even 200 to 250 ml can be fatal. This is especially important in many developing countries where significant numbers of women have severe anemia. For these reasons, a better definition of PPH might be any amount of bleeding that causes a change in the woman's condition. We cannot predict who will have PPH based on risk factors because up to 90% of women who have PPH have no risk factors. This is why it is important to remember that all women are at risk and hemorrhage prevention must be a part of every birth.

It is defined as vaginal bleeding in excess of 500 mL after childbirth within 6 weeks of delivery. The importance of a given blood volume varies with the mother's hemoglobin level. A mother with a normal hemoglobin level will tolerate blood loss that would be fatal for an anemic mother. Bleeding may occur at a slow rate over several hours, and the condition may not be recognized until the mother suddenly enters shock. Therefore, **Active Management of the Third Stage of labour (AMTSL)** should be practiced on all women because it reduces the incidence of PPH due to uterine atony.

**Immediate or Primary PPH** is increased vaginal bleeding within the first 24 hours after childbirth.

**Delayed or Secondary PPH** is increased vaginal bleeding following the first 24 hours after childbirth up to 6 weeks.

Every woman is at risk

## Causes of Postpartum Hemorrhage

There are several possible reasons for severe bleeding during and after the third stage of labour. The most common causes of severe PPH in the first 24 hours after birth is uterine atony or failure of the uterus to properly contract after delivery. The most important causes of PPH include:

- **Uterine atony:** is the main cause of bleeding after child birth. Many factors can contribute to the loss of uterine muscle tone, including:
  - Full bladder
  - Over distention of the uterus due to multiple gestation, polyhydromnions large baby or multi parity
  - Prolonged labour and obstructed labour
  - Uterine anomaly and fibroid uterus
  - APH
- **Cervical, vaginal or perineal lacerations:** This can result from
  - Episiotomy
  - Poorly controlled delivery
  - Instrument delivery or
  - Difficulty delivery
  - Undetected or untreated laceration are the second most common cause of PPH
- **Retained placenta or placental fragments:** Retained placenta is the third leading cause of PPH. If the uterus is not empty, it will not contract adequately. This can occur if even a small part of the placenta or membrane are retained. A partially separated placenta may also cause bleeding
- **Uterine rupture and uterine inversion** also cause PPH but are fortunately quite rare

Regardless of the cause of PPH, remember that all women are at risk. Prevention of PPH and careful monitoring in the first hours after birth are therefore critical for every woman at every birth. Also remember that despite the best strategies to prevent blood loss, approximately 3% of women will still lose in excess of 1,000 ml.

## Prevention

### During antenatal care

- Develop a birth preparedness plan, whenever possible, should plan to give birth with a skilled attendant who can provide interventions to prevent PPH, including AMTSL
- Prevent prolonged/obstructed labour: In case when woman cannot give birth with a skilled attendant, teach all women the signs of labour, duration of normal labour and when to come to the facility or contact the birth attendant
- Prevent harmful practices: assist women and their families to know practices that are harmful during

labour such as giving herbal medicine to cause contractions

During labour and second stage

(the longer the second stage the more likely there is to be a PPH; therefore, follow protocols for AVD if the 2<sup>nd</sup> stage is longer than 1 hour)

After birth of the baby (3<sup>rd</sup> stage and the immediate postpartum)

- Provide active management of the third stage of labour

### Uterotonic drugs for third stage of labour

Name of drug/preparations	Dosage and route	Drug action & effectiveness	Side effect and cautions
<b>Oxytocin</b> Posterior pituitary extract also called pitocin or syntocinon	Give 10 units IM injection	<ul style="list-style-type: none"> <li>• Acts within 2-3 minutes</li> <li>• Effects lasts about 15-30 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• No known contraindications for postpartum use</li> <li>• No or minimal side effects</li> </ul>
<b>Ergometrine</b> Preparation of ergot, Usually in dark brown ampoule	Give 0.2 mg IM injection	<ul style="list-style-type: none"> <li>• Acts within 6-7 minutes</li> <li>• Effects last 2-4 hours</li> </ul>	<ul style="list-style-type: none"> <li>• Increase risk of retained placenta</li> <li>• Contraindicated in women with or having history of hypertension, heart disease, pre-eclampsia, eclampsia</li> <li>• Side effects: nausea, vomiting, headaches and hypertension</li> <li>• Greater incidence of retained placenta</li> <li>• Do not use if drug is cloudy, means it has been exposed to excess heat or light and not effective</li> </ul>
<b>Misoprostol</b> <ul style="list-style-type: none"> <li>• Inj. Tranexamic acid</li> <li>• Prostaglandin E1 analog</li> </ul>	<p>1 gm - 1 ampoule IV stat</p> <p>Give 600 mcg (Single tablet or three 200 mcg tablets) orally or sublingually</p>	<p><b>Orally:</b></p> <ul style="list-style-type: none"> <li>• Acts within 6 minutes</li> <li>• Peak serum concentration between 18-34 minutes</li> <li>• Effects lasts 75 minutes/1 ½ hrs</li> </ul>	<ul style="list-style-type: none"> <li>• Shivering and elevated temperature is common</li> <li>• NEVER give oxytocin until at least 6 hours after last Misoprostol dose</li> </ul>

## Protocol for post-partum hemorrhage

<b>Signs and Symptoms</b>	<ul style="list-style-type: none"> <li>• Excessive vaginal bleeding (&gt;500ml) or prolonged moderate bleeding or any bleeding which deteriorates maternal condition after childbirth</li> <li>• Rapid pulse, low BP, Pallor</li> <li>• Shock</li> </ul>
<b>Anticipate PPH</b>	<ul style="list-style-type: none"> <li>• Prepare and be aware of PPH for every birthing women</li> <li>• Past H/O of PPH, present pregnancy: hypertension, APH, Prolonged labour, multiple pregnancy, polyhydramnios</li> <li>• Instrumental/operative delivery, injudicious intervention, chorioamnionitis, induction and augmentation of labour with oxytocin</li> </ul>
<b>General Management</b>	<ul style="list-style-type: none"> <li>• Shout for help and assess ABC and start resuscitation</li> <li>• Massage fundus to expel blood clot</li> <li>• Give 10 IU Oxytocin IM</li> <li>• IV access with wide bore canula rapidly infuse NIS/Hartman's solution with 20 IU oxytocin in 1L in 15 min and next 1L within 30 min and then regulate the rate of infusion according to response (pulse settle down &lt;100/min and systolic BP &gt;100 mm/Hg)</li> <li>• Catheterization, initiate and encourage breast feeding</li> <li>• Assess BP/monitor blood loss/Urine output until stable</li> <li>• Inj. Ergometrine 0.2 mg IM and Tab. Misoprostol 800-1000 µgm P/R</li> <li>• Tranexamic acid 1 gm in 10ml solution IV slowly for 10 min (in presence of a physician)</li> <li>• Send blood for Hb%, Grouping and Rh typing and arrange blood transfusion</li> <li>• Reassure the mother and keep the family informed</li> </ul>

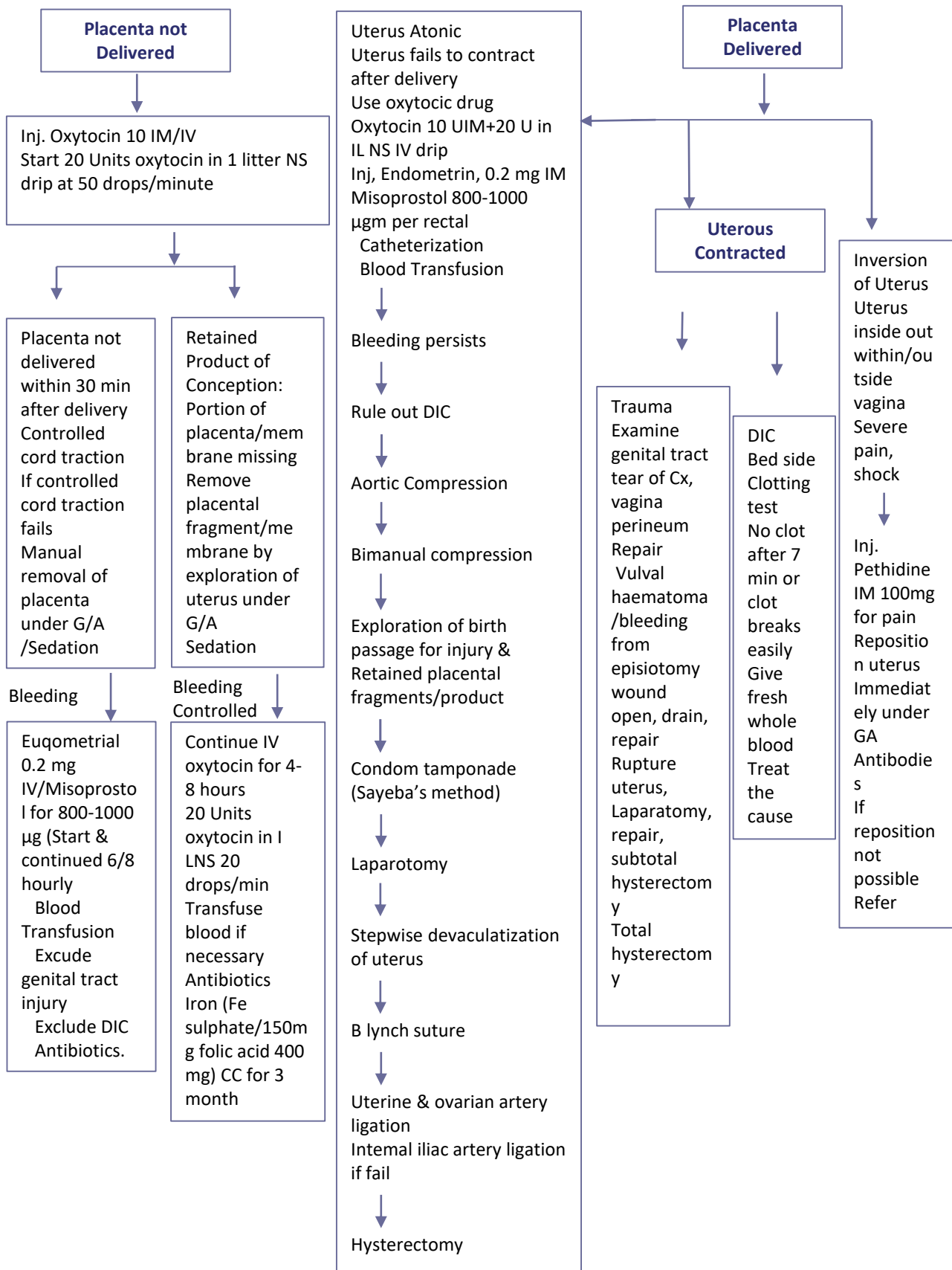
### Prevention of PPH by active Management of Third stage of labour

- Inj. Oxytocin 10 IU IM after delivery of the baby
- Delivery of placenta and membranes by controlled cord traction
- Ensure uterine contraction by massage after delivery

### If Expertise/facility unavailable:

- Provide first aid
- Counsel patient & family
- Refer

## Flow chart of specific management of PPH





## Definition

Hypertensive disorders in	Definition pregnancy
<b>Gestational hypertension</b>	<ul style="list-style-type: none"> <li>Defined as systolic blood pressure <math>\geq 140</math> mm Hg and/or diastolic blood pressure (DBP) <math>\geq 90</math> mm Hg in a previously normotensive pregnant woman after <math>\geq 20</math> weeks of gestation in the absence of proteinuria or new signs of end-organ dysfunction.</li> <li>The blood pressure readings should be documented on at least two occasions 4 hours apart.</li> </ul>
<b>Preeclampsia:</b>	<p>Occurrence of new-onset hypertension plus new – onset proteinuria after 20wk.</p> <ul style="list-style-type: none"> <li><b>Blood Pressure</b> <ul style="list-style-type: none"> <li>Greater than or equal to 140 mm Hg systolic or <math>\geq 90</math> mm Hg diastolic on two occasions at least 4 hours apart after 20 weeks of gestation, at the time or after delivery in a woman with a previously normal blood pressure<sup>11</sup></li> <li>Greater than or equal to 160 mm Hg systolic or <math>\geq 110</math> mm Hg diastolic, hypertension can be confirmed within a short interval (minutes) to facilitate timely antihypertensive therapy<sup>11</sup></li> </ul> </li> </ul> <p><b>and</b></p> <ul style="list-style-type: none"> <li><b>Significant Proteinuria</b> <ul style="list-style-type: none"> <li>Greater than or equal to 300 mg per 24-hour urine collection</li> <li>Or,</li> <li>Protein/creatinine ratio <math>\geq 0.3</math> (each measured as mg/dl)</li> <li>Dipstick reading of 1+ (used only if other quantitative methods not available)</li> </ul> </li> </ul>
<b>Mild preeclampsia/ Preeclampsia without severe features</b>	<ul style="list-style-type: none"> <li>Two readings of Systolic BP 140 to <math>\leq 160</math> mmHg &amp; DBP <math>\geq 90</math> to <math>&lt; 110</math> mmHg 4 hours apart after 20 weeks gestation</li> <li>Significant proteinuria (<math>\geq 0.3</math> gm in 24 hrs urine) or Protein creatinine ratio 0.3 or <math>\geq 1+</math> on Dipstick</li> <li>No evidence of organ dysfunction</li> </ul>

**Severe preeclampsia/ Severe features of Preeclampsia**

*(Any of these findings)*

- Systolic BP  $\geq$  160 mm Hg & or Diastolic BP  $\geq$  110 mm Hg after 20 weeks gestation on 2 occasion at least 4hrs apart
- Significant proteinuria ( $\geq$ 0.3gm in 24 hrs urine) or Protein creatinine ratio 0.3 or  $\geq$ 1+ on Dipstick
- **Or in the absence of proteinuria, new-onset hypertension with the new onset of any of the following:**
  - Thrombocytopenia- platelet count  $<$ 1,00,000/microliter
  - Renal insufficiency- serum creatinine  $>$ 1.1 mg/dl or a doubling of serum creatinine concentration
  - Impaired liver functions- elevated liver transaminases  $\geq$  twice normal concentration
  - Pulmonary oedema
  - Cerebral or visual symptoms
  - Headache (increasing frequency, not relieved by regular analgesics)
  - Blurred vision
  - Oliguria (passing less than 400 mL urine in 24 hours)
  - Upper abdominal pain (epigastric pain or pain in right upper quadrant)

**Eclampsia**

- New onset hypertension after 20 weeks gestation
- Significant Proteinuria or  $\geq$ 1+ on Dipstick
- Convulsions
- And sometimes-
  - Altered sensorium or loss of consciousness
  - Other symptoms and signs of severe preeclampsia

**Chronic hypertension**

Is defined as high BP known to predate conception or detected before 20 weeks of gestation or persists for more than 12 weeks postpartum women.

**Chronic hypertension with superimposed preeclampsia in a patient of chronic hypertension if there is:**

- Women with hypertension only in early gestation who develop proteinuria after 20wks gestation
- Women with hypertension with proteinuria before 20wks of gestation who experience a sudden exacerbation of hypertension

or need to escalate dose of antihypertensive drug in previously well controlled BP

- Sudden increase in liver enzymes to abnormal levels
- Presence with decrement in platelet levels to below 1,00,000/ microliter
- Manifest symptoms such as right upper quadrant pain and severe headache
- Develop pulmonary edema
- Develop renal insufficiency
- Have sudden, substantial and sustained increases in protein excretion

### Classification and Diagnosis of hypertensive disorders of Pregnancy based on symptoms & Signs

Symptoms and Signs Typically Present	Symptoms and Signs Sometimes Present	Probable Diagnosis
<ul style="list-style-type: none"> <li>• Two readings of systolic BP <math>\geq 140</math>mmHg or diastolic BP <math>\geq 90</math>mm Hg 4 hours apart after 20 weeks gestation</li> <li>• No proteinuria</li> </ul>	–	<ul style="list-style-type: none"> <li>• Gestational Hypertension</li> </ul>
<ul style="list-style-type: none"> <li>• Systolic BP <math>\geq 140</math>mmHg or diastolic BP <math>\geq 90</math>mm Hg or more during first 20 weeks of gestation</li> </ul>	–	<ul style="list-style-type: none"> <li>• Chronic Hypertension</li> </ul>
<ul style="list-style-type: none"> <li>• Systolic BP <math>\geq 140</math>mmHg or diastolic BP <math>\geq 90</math>mm Hg or more during first 20 weeks of gestation and further rise of BP or new development of Proteinuria <math>\geq 1+</math></li> </ul>	<ul style="list-style-type: none"> <li>• Features of severe Preeclampsia</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic hypertension with superimposed preeclampsia</li> </ul>
<ul style="list-style-type: none"> <li>• Two readings of Systolic BP <math>\geq 140</math>mmHg or diastolic BP <math>\geq 90</math>mm Hg or more after 20wks gestation 4 hours apart</li> <li>• Significant Proteinuria or <math>\geq 1+</math>proteinuria</li> </ul>	–	<ul style="list-style-type: none"> <li>• Mild Preeclampsia</li> </ul>
<ul style="list-style-type: none"> <li>• Systolic BP <math>\geq 160</math>mmHg or diastolic BP <math>\geq 110</math>mm Hg or more after 20wks of gestation</li> <li>• Significant Proteinuria</li> </ul>	<ul style="list-style-type: none"> <li>• Proteinuria might be absent</li> <li>• Headache (increasing)</li> </ul>	<ul style="list-style-type: none"> <li>• Severe Preeclampsia</li> </ul>

	<p>frequency, unrelieved by regular analgesics)</p> <ul style="list-style-type: none"> <li>• Blurred vision</li> <li>• Oliguria (passing less than 400 mL urine in 24 hours)</li> <li>• Upper abdominal pain (epigastric pain or pain in right upper quadrant)</li> <li>• Pulmonary oedema</li> </ul>	
<ul style="list-style-type: none"> <li>• Convulsions</li> <li>• Systolic BP <math>\geq 140</math>mmHg or diastolic BP <math>\geq 90</math>mm Hg after 20 weeks of gestation</li> <li>• Significant Proteinuria or <math>\geq 1+</math> in dip stick</li> </ul>	<ul style="list-style-type: none"> <li>• Coma (unconscious)</li> <li>• Other symptoms and signs of severe preeclampsia</li> </ul>	<ul style="list-style-type: none"> <li>• Eclampsia</li> </ul>

## Management of hypertensive disorders in pregnancy

- Women with preeclampsia (mild/severe) and eclampsia should be stabilized and immediately referred to a CEmONC Centre for management
- Women with mild preeclampsia may rapidly progress to severe preeclampsia

Disease	Treatment
<b>Gestational Hypertension/ Mild Preeclampsia</b>	<ul style="list-style-type: none"> <li>• Admission</li> <li>• Monitor BP 4 times a day</li> <li>• Test for 24 hrs urinary protein – Do not repeat quantification of proteinuria</li> <li>• Kick count daily</li> <li>• Blood test: Twice a week (CBC, S. creatinine, S. electrolytes, S. transaminases, Bilirubin) and urine parameters and examination of retina for changes is advisable</li> <li>• Ultrasonography to determine fetal growth every 3wks</li> <li>• Women with systolic BP 140/90mmHg to 149/99mmHg - No antihypertensive. Oral Labetalol if BP is 150/100- 159/109mmHg, ((NICE)</li> <li>• Discharge if BP normalizes and investigations are normal</li> <li>• Follow-up twice weekly with weekly platelet counts and liver enzymes</li> </ul>

- Monitor fetal growth, if signs of growth restriction consider early delivery

### Severe preeclampsia

- Admit and Stabilize patient at CEmONC Centre
- Principles of management:
  - Admission
  - Monitor BP at least 4 times a day
  - 24hrs total urinary protein (Do not repeat quantification of proteinuria)
  - Monitor blood tests: 3 times a wk (CBC, S. creatinine, S. electrolytes)
  - Start antihypertensives: Oral Labetalol
  - Plan early delivery: for maternal indications if there is organ dysfunction or when she reaches term – usually by induction of labour
  - **Magnesium Sulfate:** Start MgSo4 (10gm prophylactic dose) (if DBP  $\geq$  110 mm Hg or symptoms like headache, upper quadrant pain, blurring of vision present or persist)

**For settings where it is not possible to administer the full magnesium sulfate regimen, the use of magnesium sulfate loading dose followed by immediate transfer to a higher-level health-care facility is recommended for women with severe preeclampsia and eclampsia**

### Chronic

#### Hypertension

- Encourage rest
- Do not lower blood pressure below 120/80 mmHg. High levels of blood pressure maintain renal and placental perfusion in chronic hypertension
- If disease is well-controlled, continue the same antihypertensives if acceptable in pregnancy
- Start antihypertensives if BP  $\geq$ 150/100
- If proteinuria or other signs and symptoms are present, consider superimposed preeclampsia and manage as preeclampsia (see Table 3.1)
- Monitor fetal growth and condition:
  - If there are no complications, deliver at 37 weeks
- If fetal growth restriction is severe and pregnancy dating is accurate, assess the cervix and consider delivery

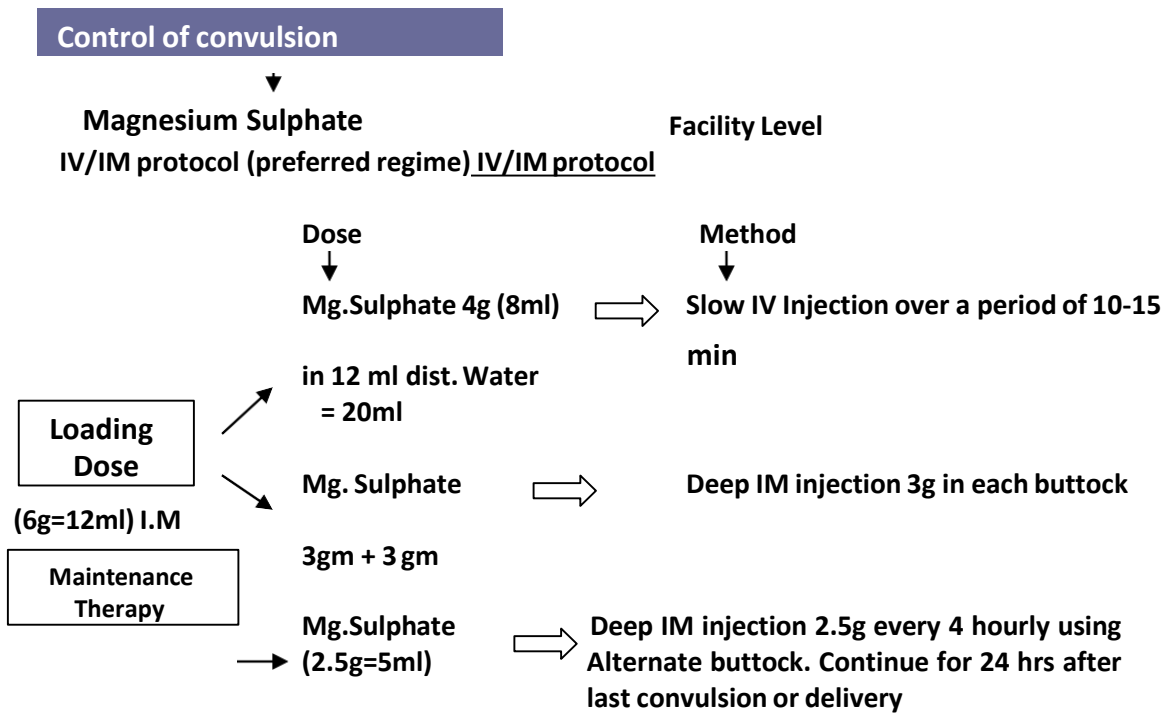
### Eclampsia

#### General Management

- If the woman is unconscious or convulsing, SHOUT FOR HELP
- Rapid assessment and management should be done simultaneously.

- Check airway breathing & circulation (ABC)
- If she is breathing, secure airway and give her oxygen @ 4-6 L per minute by mask or nasal cannula
- If she is not breathing, assist ventilation using an Ambu bag & mask & give oxygen @4-6 L per minute by ambu bag or endotracheal tube
- If the woman is convulsing/unconscious position her to left side (eclamptic position)
- Clear the mouth and throat as necessary
- Protect her from injuries, but do not attempt to restrain her and never leave the women alone
- IV access --> IV fluid: Normal saline/Hartman's solution
- Continuous catheterization to monitor urine output and proteinuria
- Give anticonvulsant drugs
- If diastolic blood pressure remains above 110 mm Hg and systolic BP more than 160 mm Hg, give antihypertensive drugs. Reduce the diastolic blood pressure to less than 100 mm Hg but not below 90 mm Hg (this helps to maintain perfusion to the fetus)
- Maintain strict fluid balance and intake output chart, prevent fluid overload (80ml/Hour, not more than 2 liters in 24 hours)
- Maintenance of nutrition: 24 hours after delivery if patient is unconscious: Give Ryle's tube feeding - 250 ml fluid 2 hourly, if conscious give oral feeding
- Antibiotics: Inj. Amoxycillin - 8 hourly/Ceftriaxone 1 gm 12 hourly
- Provide constant supervision
- Monitor Pulse, BP, respiration (>16/min), reflexes every 1/2 hrs.
- Monitor FHR, urine output, auscultate lung bases
- Care of the eye, skin and maintain oral hygiene
- Investigation: CBC, Blood group & Rh typing, S. creatinine, S. electrolytes, SGPT, Bilirubin, urine for protein, bedside clotting test, Coagulation Profile
- Consider early delivery by induction of labour (after misoprostol ripening of the cervix) when she is stabilized

## Magnesium Sulphate Therapy



### Inj. MgSo4 IV Protocol (Inj. Nalepsin)

**Loading dose:** Inj. Nalepsin - 4 gm in 100ml rapid IV @60-75 drops/min over a period of 20 minutes

**Maintenance dose:** (in the facility)

**Inj. Nalepsin 100ml (4gm) @6-7 dpm [need 4 hrs to finish one bottle & continue 6 bottles for 24 hrs (4 x 6 = 24 gm)]**

[ Inj. Nalepsin (4gm/100 ml) in 4 hrs  
 = 1 gm/hr (i.e. 25 ml/hr)  
 = 25 ml x 15 drops/hrs( 15 drops /ml)  
 = 375 drops /60 min= 6-7 drops/min]

### IM protocol (Community level)

(If skill provider to give IV injection is not available - use IM protocol)

	Dose	Method
<b>Loading Dose</b>	Inj. MgSo4 (10 gm) 4 ampoule (2.5 x 4=10gm)	5 gm (2 amp in each buttock) DeepIM
<b>Maintenance Dose</b>	Inj. MgSo4 (2.5 gm = 5 ml)	2.5 gm every 4 hours using alternate buttock up to 24 hours Deep IM

*Source: 1. WHO's essential care practice guidelines for pregnancy and childbirth  
 2. Life Saving Skills Manual, Essential Obstetric and Newborn Care, RCOG  
 3. Fernando Aries, Practical Guide to High risk pregnancy, 3rd ed Elsevier 2008*

**Antihypertensive medications (Oral) if the BP is sustained above 60/110mmHg (ie to prevent CVA)**

Drug	Dose	Side Effects
Methyldopa	250 mg tds (max 2g)	Fatigue, depression
Labetalol	100 mg bd-tds (max 2400 mg)	IUGR, hypoglycemia
Nifedipine	10 mgbd- tds (max 120 mg)	Hypotension, headache

**Drugs in hypertensive emergencies (defined as organ damage occurring because of severely elevated BP, BP≥160/110)**

Drug	Dosage (LSS)	Repeat
Labetalol	10 mg IV	<ul style="list-style-type: none"> <li>If response to labetalol is inadequate (diastolic blood pressure remains above 110 mm Hg) after 10 minutes, give Labetalol 20 mg IV; Increase dose to 40 mg and then 80 mg if satisfactory response is not obtained after 10 minutes of each dose</li> </ul>
Hydralazine	5 mg IV slowly over 5 minutes until blood pressure is lowered	<ul style="list-style-type: none"> <li>Repeat hourly as needed or give Hydralazine 12.5 mg IM every 2 hours as needed</li> </ul>
Nifedipine	5 mg oral	<ul style="list-style-type: none"> <li>If response to Nifedipine is inadequate (diastolic blood pressure remains above 110 mm Hg) after 10 minutes, give an additional 5 mg</li> </ul>

**Foot Note-1:**

- Mild preeclampsia usually has no symptom
- Mild preeclampsia may progress rapidly to severe preeclampsia
- Oedema of the feet and lower extremities are not considered a reliable sign of preeclampsia
- The risk of complications, including eclampsia, increases greatly in severe preeclampsia
- A small proportion of women with eclampsia have normal blood pressure
- Treat all women with convulsions as if they have eclampsia until another diagnosis is confirmed
- Random urine sampling, such as the dipstick test for protein, is a useful screening tool



- If dipsticks are not available, a sample of urine can be heated to boiling in a clean test tube. Add a drop of 2% Acetic Acid to check for persistent precipitates that can be quantified as a percentage of protein to the volume of the total sample
- Only clean-catch mid-stream specimens should be used

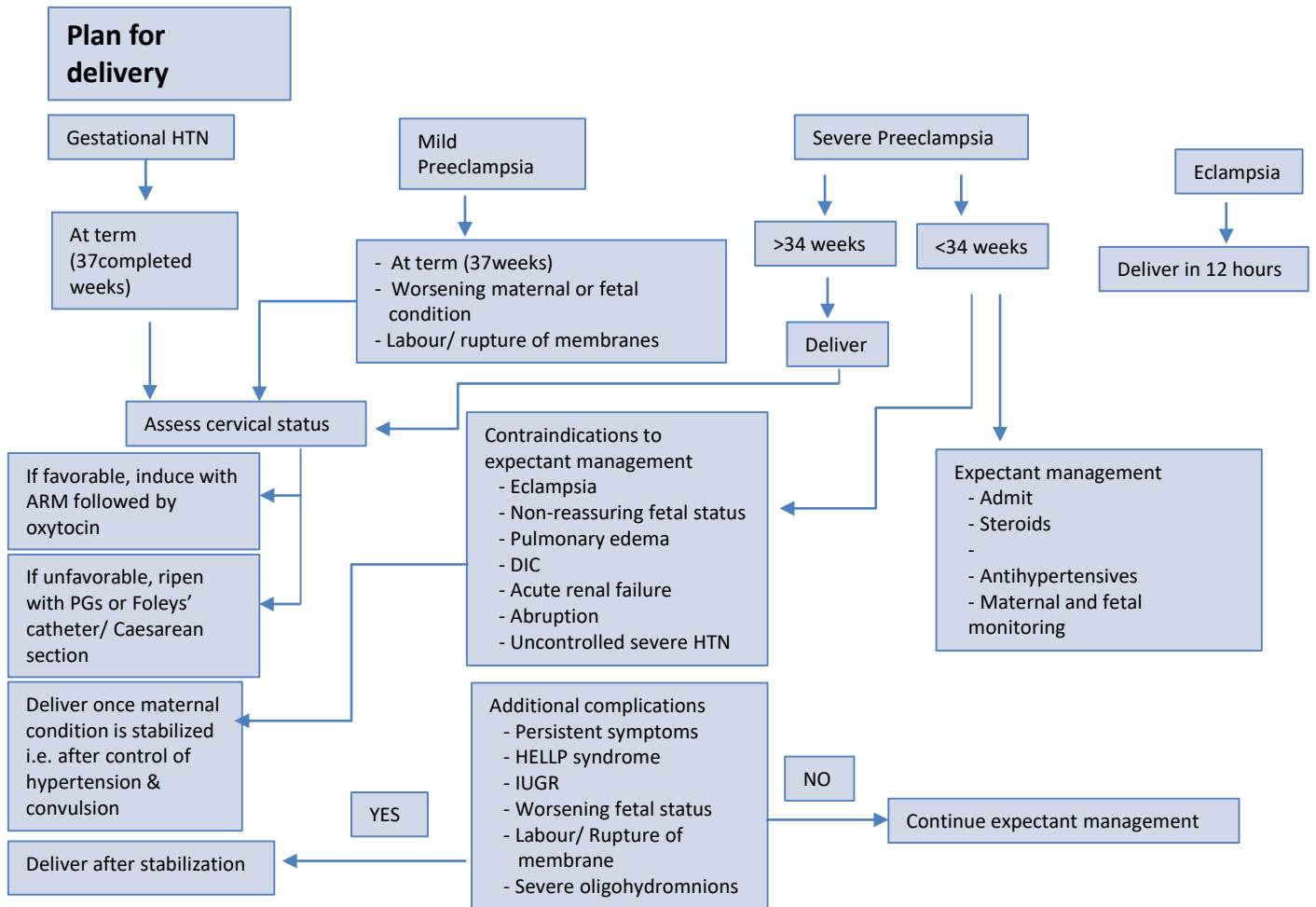
**Foot Note-2:**

- MgSO<sub>4</sub> Loading Dose: MgSO<sub>4</sub> 20% solution (4 g IV over 5 minutes), MgSO<sub>4</sub> 50% solution (3 g deep IM injection in each buttock)
- Maintenance Dose: Check & if urine output > 30 ml per hour, respiratory rate > 16, and patellar reflexes present, then give MgSO<sub>4</sub> 2.5 gm 50% solution every 4 hours 1.M in alternate buttock for 24 hrs
- MgSo4 toxicity --> RR < 16/min, urine output < 30 ml/hr, absent patellar reflex
  - Omit next doses of MgSo4
  - Give Inj. Calcium Gluconate 1 gm (10 ml) slow IV
  - Assist ventilation if needed
- If convulsion recur after 30 minutes of loading dose - add 2.5 gm of Inj. MgSo4 in 5 ml DW(20% solution) push IV over 5 minutes
- If skilled provider to use IV/IM protocol is not available use IM protocol (give 10 gm IM loading dose MgSo4 5 gm in each buttock before referral) at peripheral facility / home before referral
- Diazepam therapy - If MgSo4 not available /contraindicated
- Loading dose - 10 mg IV slow over 2 min, if convulsion recur repeat 10 mg IV slowly
- Maintenance dose: Inj. Diazepam 40 mg in 500 ml NS in IV drip. Rate adjusted so that patient remains sedated but arousable. Do not use >100mg/24 hrs
- IV fluids to maintain urine output of 30 ml/hour. Use 1 liter normal saline over 6 hours initially and monitor carefully for fluid overload.
- Bed side clotting test: Take 5ml blood in a test tube, keep it upright, turn it after 5 minutes to see clot formation.
  - If clot not forms, turn every 1 minute. If fails to clot within 10 min - test +ve - coagulation failure

## Referral

Consider referral for tertiary level care of women who have:

- Oliguria that persists for 48 hours after delivery
- Coagulation failure (e.g. coagulopathy)
- Haemolysis, elevated liver enzymes and low platelets (HELLP syndrome)
- Persistent coma lasting more than 24 hours after convulsion



প্রি-একলাম্পশিয়া ও একলাম্পশিয়া FWC  
তাৎক্ষনিক ব্যবস্থাপনা

তাৎক্ষনিক ব্যবস্থাপনা

দ্রুত সাহায্য চাওয়া

• ABC পর্যবেক্ষণ

- ❖ A-শ্বাসনালী স্বাভাবিক রাখার জন্য জিহ্বার উপরে মাউথগ্যাক দিতে হবে।
- ❖ B-শ্বাস প্রশ্বাস এর গতি পর্যবেক্ষণ করা [নরমাল-১৮টি শ্বাস প্রতি মিনিটে]।
- ❖ C-নাড়ীর গতি দেখতে হবে [স্বাভাবিক গতি ৭০-৮০]

• Oxygen প্রদান- 4-6 L/min

• রক্তচাপ নির্ণয়

খিঁচুনি নিয়ন্ত্রণ

- Inj. MgSO<sub>4</sub> লোডিং ডোজ/ (১০ গ্রাম) প্রদান
- ৫ গ্রাম করে লোডিং ডোজ প্রতি নিতম্বের মাংসপেশীতে প্রদান।
- রেফারেলঃ তথ্য সহ নিকটবর্তী সমন্বিত সেবাকেন্দ্রে পাঠানো এবং পরবর্তী সেবা নিশ্চিত করণ।

অবহিতকরণ

পরিবারের সাথে আলোচনা করে রোগীর অবস্থা জানানো এবং জরুরী ভিত্তিতে পরবর্তী চিকিৎসার জন্য পরবর্তী সেবাকেন্দ্রে পাঠানো।

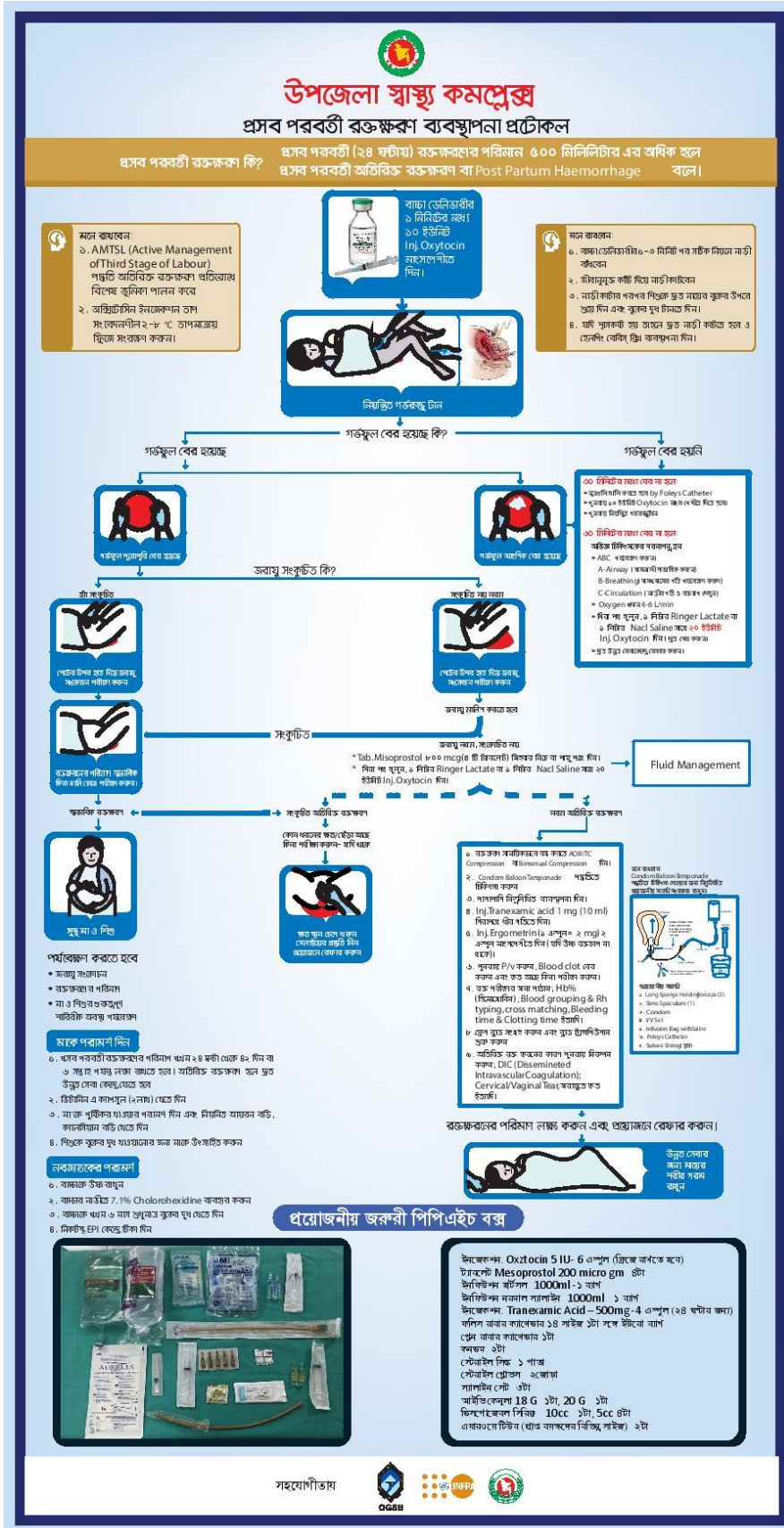
[\*5gm MgSO<sub>4</sub>  
IM MgSO<sub>4</sub> = ২ এম্পুল  
ইনজেকশন MgSO<sub>4</sub>]

প্রয়োজনীয় জরুরী একলাম্পশিয়া বক্স



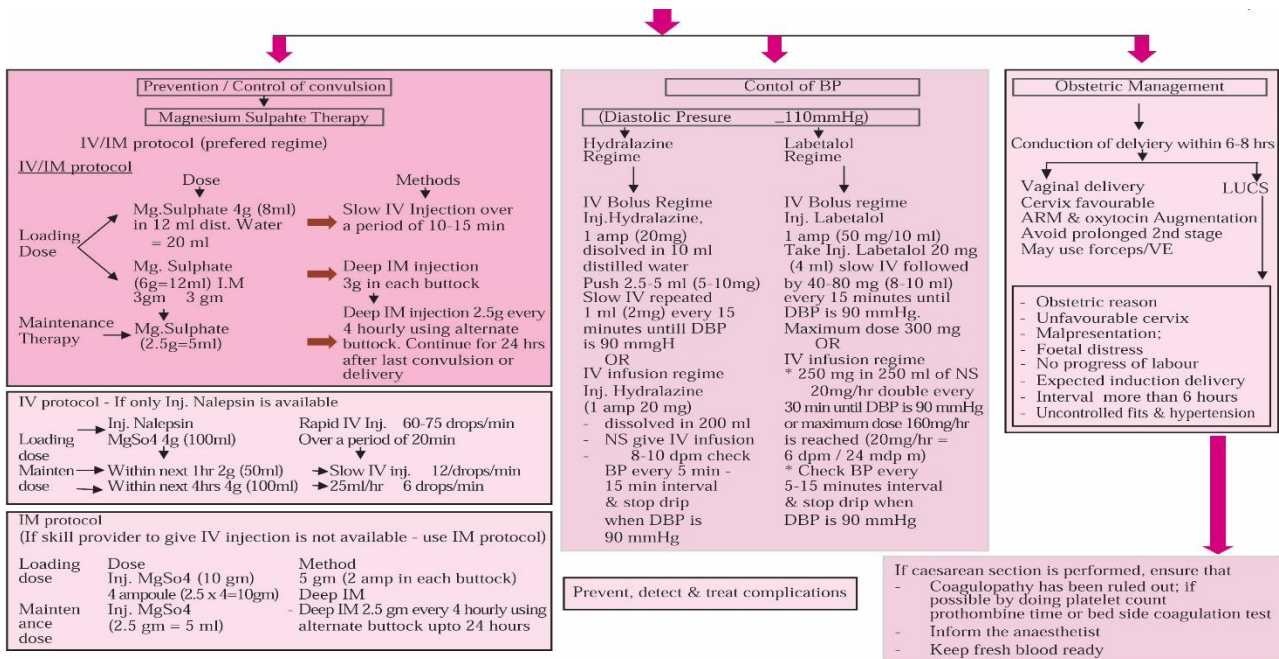
- এয়ারওয়ে টিউব (গ্রাণ্ড ব্যয়স্কদের বিভিন্ন সাইজ)- ৩টা
- ইনজেকশন, Magnesium sulfate
- ইনজেকশন, G Magsulph -১০ এম্পুল
- ইনজেকশন, NALEPSIN ১০০ml -৭ বোতল
- ফলিস রাবার ক্যাথোডার ১৪- ১টা সঙ্গে ইউরো ব্যাগ
- ইনফিউশন হার্টসল ১০০০ml - ১ ব্যাগ
- ইনফিউশন নরমাল স্যালাইন ১০০০ml- ১ ব্যাগ
- আইভি কেন্দ্রা -২০ G-২টা
- স্টাইলাইল প্লাভস- ২ জোড়া
- ডিস্টিলড ওয়াটার- ৫cc- ১০ এম্পুল
- ডিসপোজেবল সিরিঞ্জ
- ২০ cc ১টা
- ১০ cc ২টা
- ৩ cc ২টা
- স্যালাইন সেট ৩-৩টা

Note : Inj. MgSo<sub>4</sub> is given both for Loading dose 10gm & Maintenance doses and for IV & IV+Im resigm



সহযোগীতার





Source: Standard Clinical Management Protocols and Flow Charts on Emergency Obstetric and Neonatal Care

## Immediate care of the newborn:

### Preparation for newborn care before delivery:

Provider must take necessary preparations in advance to prevent problems like infections and low temperature. It is important to prepare the environment, equipment, and supplies that are needed and the resuscitation area of the newborn at birth. Following preparation for every delivery should be taken in advance to manage problems like breathing difficulty, infection etc.

### Equipment and supplies (for newborn)

Gloves	Ventilation bag and mask (0 and 1 size)
Two or more warm clothes	Ambu bag
Head covering cloth/Cap	Stethoscope
Scissors	Timer (clock/watch)
Sterile ties –thread/cord clamp	Weighing scale
Suction device/Penguin sucker	7.1% Chlorhexidene

### **Preparation of Birth place:**

Each delivery room must be:

- Clean
- Good lighting and well-ventilated
- Privacy: Let the mother decide who will be present at the time of delivery, provide as much privacy as possible by using curtains and closing door, windows as needed

### **Steps of Immediate Newborn Care:**

#### **Step 1. Deliver the baby onto the mother's abdomen**

Place a dry pre-warmed clean cloth on mother's abdomen to dry the baby after delivery. In case of C-section, same procedure can be done or the baby can be kept next to the mother on a clean warm surface.

#### **Step 2. Dry and stimulate the baby**

For the first 60 seconds after birth or Golden Minute, focus on drying and stimulating the baby: vigorous drying with a clean dry absorbent cloth (nappy or soft towel) starting from head towards the toes. Wipe off any fluid with special attention to the body creases and axilla. Do not to remove the vernix (the creamy, white substance which may be on the skin) as it protects the skin and may help prevent infection. Remove the wet cloth and cover baby's head with a cap or extra layer of cloth. **If there is meconium in the amniotic fluid then clear the airway before drying.**

#### **Step 3. Remove the wet towel**

If the baby is crying/breathing well by 60 seconds after birth, cover both mother and baby with a warm cloth/blanket.

#### **Step 4. Assess colour and breathing**

Assess crying/breathing and colour as you dry the baby. Baby needs resuscitation if the baby is 'not crying or breathing well' by 60 seconds after birth, initiate bag-and-mask ventilation of the baby. Proceed to next step if the baby is crying or breathing regularly without any grunting.

#### **Step 5. Give a quick look to see if there is any malformations/birth injury**

Observe thoroughly and quickly to see if there are any malformations/birth injuries. A complete physical examination may be done at a later time.

#### **Step 6. Keep the baby skin-to-skin with the mother**

Put the baby on the mother's chest for skin-to-skin contact for 1 hour with the mother. This will keep the baby warm and help to initiate early and exclusive breastfeeding. Initiate Kangaroo Mother Care (KMC) for stable premature infants.

#### **Step 7. Clamp and cut the cord**

There should be no hurry or undue delay to clamp the cord (cut the cord when pulsations stop (i.e. 1-3 minutes after birth). Make three knots: the first knot 2cm from the abdomen, the second knot 1cm from the first, the third knot 4cm from the second. Milk the cord blood towards placenta and place the third knot at four fingers from the second knot. Cut at one finger from the second tie with a surgical blade or sterile scissors. If you clamp the cord, use two cord clamps and cut 1cm away from the second clamp. Apply 7.1% Chlorhexidine, single application, on the cord followed by dry cord care.

#### **Step 8. Place an identity label on the baby**

#### **Step 9. Help mother to initiate breastfeeding**

Do not separate the mother and baby for weighing until after the baby has breastfed. Help the mother begin breastfeeding within the first hour of birth. Do not limit the time the baby feeds; early and unlimited breastfeeding gives the newborn energy to stay warm, nutrition to grow and antibodies to fight infection.

#### **Step 10: Weigh the baby, keep record including time, place and mode of delivery; weight and sex of the baby, whether urine/meconium passed etc.:**

- Breathing: Count the breathing rate, listen for grunting and look for chest indrawing. A normal breathing rate is 30 to 60 breaths per minute
- Colour: Look at the colour of the lips and inside of the mouth. Note the colour of the skin over the face, the body and the hands and feet. The lips and mouth should be pink. A bluish or pale colour of the lips, mouth, face or body may mean the baby is not breathing well. Bluish hands and feet may be normal if the rest of the baby is pink
- Heart rate: Evaluate the heart rate if the breathing pattern or colour is not normal. A normal heart rate is more than 100 beats per minute in the first hours after birth
- Temperature: Touch the body and the feet of the baby. The temperature should be the same. If the feet are cold, warm the baby skin to skin with mother. Cover the baby with warm clothes or blankets and head with a cap
- Breastfeeding: A baby should breastfeed 8 to 12 times per day. The baby who is not interested in breastfeeding or who vomits after each breastfeeding may be sick



Assess the newborn in every ½ an hour for 1st 2 hours and then 1 hour in next 4 hours

<b>Breathing</b>	The normal baby will breathe 30-59 times a minute with no gasping
<b>Warmth</b>	Check (if baby is warm) feel baby's abdomen or back with your hand or use thermometer if available
<b>Color</b>	Check that face, chest and gums are pink
<b>Bleeding</b>	Check the cord for bleeding. As it dries out the ties may become loose from the cord. If the cord tie is loose, tie it again tightly with another cord tie.

### Basic needs of the newborn at birth

- To breathe normally
- To be warm
- To be fed
- To be protected **Neonatal resuscitation Birth Asphyxia**

A baby who is not breathing well will be:

- Gasping - taking a single deep breath followed by a long pause or several deep, irregular breaths followed by a pause

Or,

- Not breathing at all

Some babies will have shallow, irregular, slow, or noisy breathing immediately after birth. Others may have chest in-drawing (retractions). These babies will require close monitoring of their breathing, heart rate, and colour to decide if they need more help to breathe

The baby should be managed as per the Bangladesh Helping Babies Breathe (HBB) protocol.

If liquor is meconium stained, suction mouth first and then both nostrils before drying.

**Not breathing well:** Gasping or not breathing at all

### Improve ventilation:

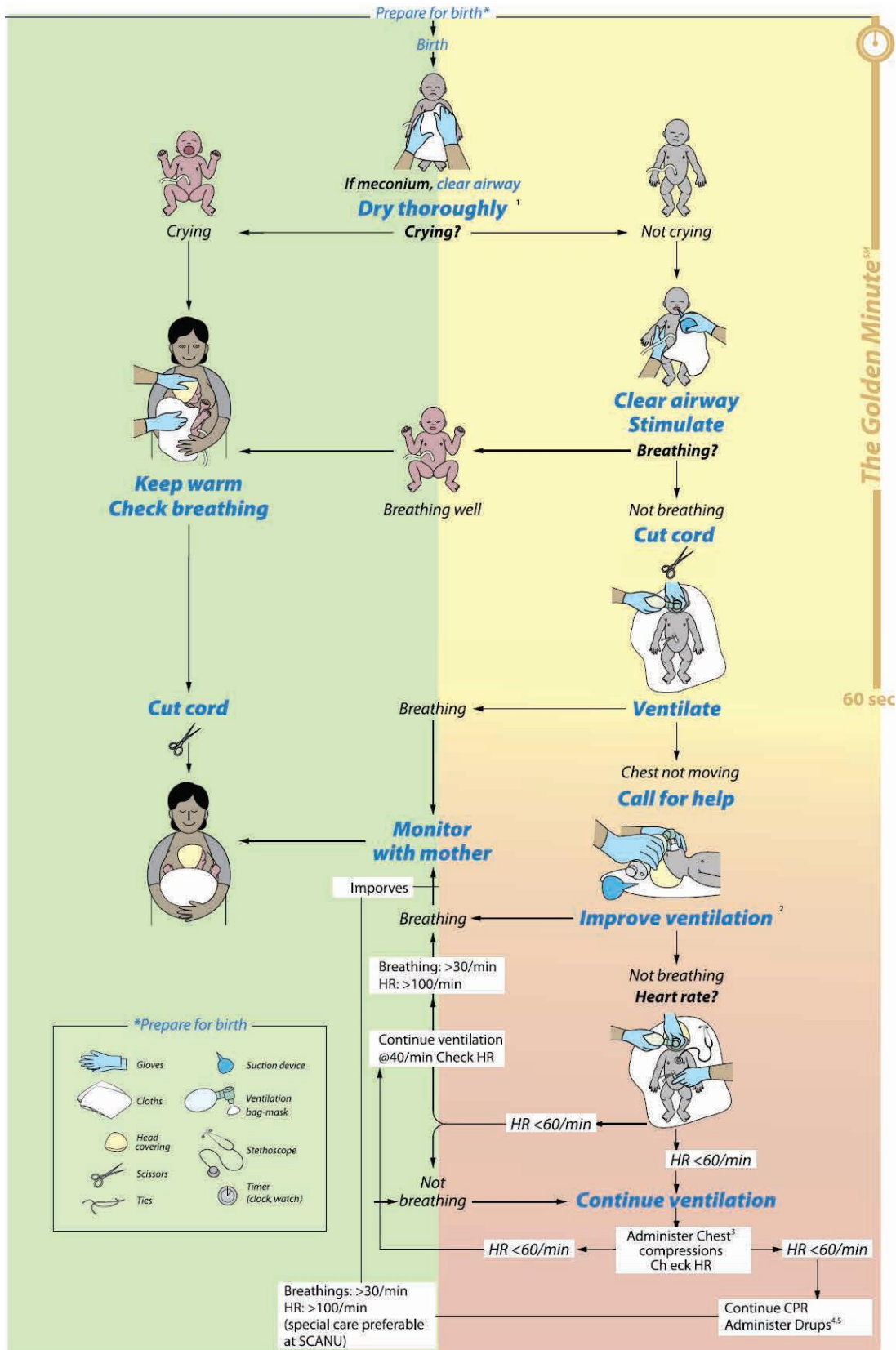
- Check mouth, oropharynx & nose for secretion; give suction if necessary
- Keep mouth wide open

- Reapply mask and make a better seal
- Reposition the neck
- Apply harder and longer squeeze

**CPR:** One CPR cycle comprises of 3 chest compressions and 1 ventilation. To give chest compression, hold the baby with the fingers around the torso, thumbs in front, in midline just below the nipple line, over the lower third of the sternum. Compress the sternum to a depth of one third of the antero-posterior diameter of chest. Continue the cycle for 30 secs and evaluate breathing and heart rate to take next action.

**Drugs:** Injectable Adrenaline 1:1000 solution is mixed with 9 ml distilled water to make 1:10,000 dilution. Give 0.1-0.3 ml/kg IV or 0.5-1.0 ml/kg intra-tracheal.

# ALGORITHM FOR NEONATAL RESUSCITATION



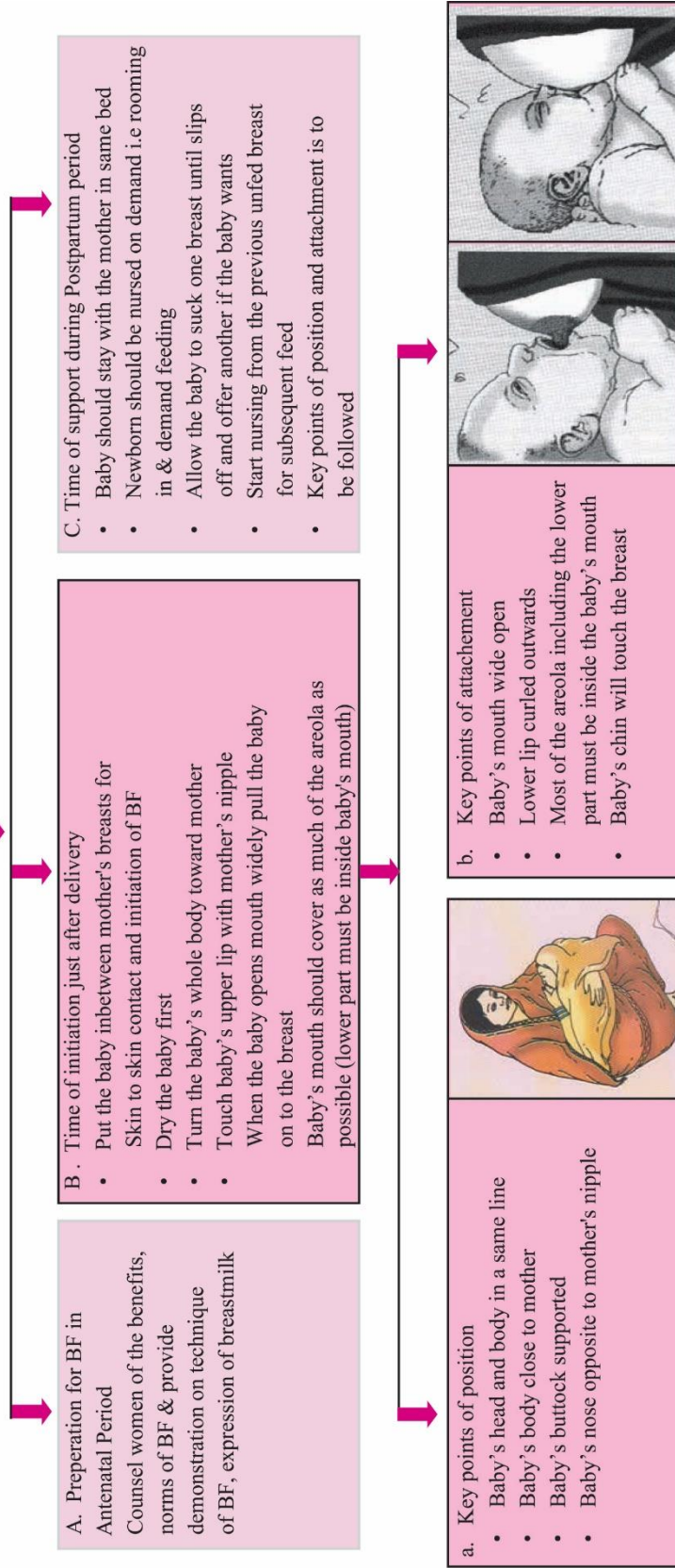
## Newborn Danger signs

Recognize the danger signs that mean a baby is not well. Teach the danger signs to parents. A baby with any of the danger signs needs urgent care and treatment.

- Not feeding well
- Low body temperature (less than 35.5C or 95.5F) or Fever (37.5C or more than 99.5F)
- Fast breathing (60/min or above)
- Severe chest indrawing present
- Movement only when stimulated or no movement at all
- History of convulsion
- Umbilical redness extending to skin

- Breastfeeding (BF) is the gold standard of infant feeding making bridge between mother and baby to provide substantial health benefit for baby, mother and nation
- It protects the babies from main killer diseases
- Early start within one hour of birth prevent newborn death by 31%.

## Breastfeeding Management



In case of any difficulty advice to contact with lactation management centre or lactation management expert STS- Skin to Skin contact

Flowchart 3: Flow chart for Management of Breastfeeding

Early breast feeding is started just after birth of the baby as well as early skin to skin contact and/or Kangaroo Mother Care. In the current context, vertical transmission from mother-to-child of corona virus during pregnancy is unlikely, as the virus has not been detected in amniotic fluid, breast milk, or other maternal samples. A very small number of babies have tested positive for the virus shortly after birth. However, it is unknown if these babies got the virus before or after birth. Maybe it spread during breastfeeding. Therefore mothers should take some necessary steps during breastfeeding.

## **Breastfeeding if the mother has COVID-19:**

- Breast milk provides protection against many illnesses and is the best source of nutrition for most infants
- You, along with your family and healthcare providers, should decide whether and how to start or continue breastfeeding
- In limited studies, COVID-19 has not been detected in breast milk; however, we do not know for sure whether mothers with COVID-19 can spread the virus via breast milk
- If you are sick and choose to direct breastfeed:
  - Wear a face mask and wash your hands before each feeding
- If the you are sick and choose to express breast milk:
  - Express breast milk to establish and maintain milk supply
  - A dedicated breast pump should be provided
  - Wash hands before touching any pump or bottle parts and before expressing breast milk
  - Follow recommendations for proper pump cleaning after each use, cleaning all parts that come into contact with breast milk
  - If possible, consider having someone who can feed the expressed breast milk to the infant



Parents and caregivers who may need to be separated from their children, and children who may need to be separated from their primary caregivers, should have access to appropriately trained health or non-health workers for mental health and psychosocial support

## Monitor behavior

After following steps 1-10, monitor the newborn's behavior for the identification of possible danger signs. Look for open eyes, flexed arms and legs, and spontaneous movement are among the normal behaviors indicative of healthy alertness, posture and movement. A baby who is always sleepy or crying, floppy or stiff, or not moving, may be sick.

## Recognizing danger signs

Recognize the danger signs that mean a baby is not well. Teach the danger signs to parents. A baby with any of the below danger signs needs urgent care and treatment:

- Not feeding well
- Low body temperature (less than 35.5°C or 95.5°F) or fever (37.5°C or more than 99.5°F)
- Fast breathing (60/min or above)
- Severe chest in-drawing present
- Movement only when stimulated or no movement at all
- History of convulsion
- Umbilical redness extending to skin

## Caring for the preterm or small baby (Preterm - Baby born before 37 weeks, Small baby- Birth Wt. <2500gm):

The pre-term or small baby needs special attention to cleanliness, warmth, and nutrition.

- Cleanliness of all persons and objects: All caregivers must wash their hands before touching the baby. All objects (clothes and cups or spoons to help give breast milk) should be clean
- Continued skin-to-skin care: Skin-to-skin contact between mother and baby can help keep breathing and temperature stable. It also encourages frequent breastfeeding. It is permissible to give skin-to-skin care if the mother is COVID-19. However, the mother should wear medical mask and maintain hand and respiratory hygiene while handling her baby
- Frequent breastfeeding: Frequent breastfeeding helps avoid low blood sugar. Expressed breast milk- Preterm, small or sick babies may need to have breastfeeding supplemented with expressed mother's milk given by cup or spoon

### **Kangaroo Mother Care (KMC)**

KMC needs to be provided to all stable baby weighing <2000 gm at birth. **KMC should be provided as per the 'Kangaroo Mother Care for Premature/LBW baby'.**

KMC began in areas where there was not enough NICU incubators for preterm babies. Bangladesh can adapt the practice of KMC until preterm baby is 2.5 kg since many people suffer from poverty and can not afford NICU or there is not enough NICU incubators.

COVID-19 positive or suspected mothers can provide KMC, but she should wear medical masks at all times while giving the care. She should wash hands properly before and after holding her baby and follow respiratory etiquette. However, KMC can be given by father, siblings or grandparents which is a better approach if the mother has the infection. The care-giver should be infection free and wear masks and wash hands properly. It is necessary to always keep the preterm infant on the bare chest and there should be direct skin to skin contact between the care-giver and infant's bare chest. Take breaks only to feed or clean the baby.

### **Recording Births as per the Mother and Newborn Care Register (EmONC)**

Record the birth as soon as possible after mother and baby are stable.

- Date, time of birth and sex
- Place of delivery and delivery conducted by
- Gestational Age
- Temperature
- APGAR score\* gives important information about a baby who needs consultation or referral
- Weight: Weigh the baby after the first hour and within 24 hours of birth when the temperature is stable; babies less than 2500 grams are small
- Birth attendant note: Describe what was done including immediate care provided and the help provided for baby's breath and the baby's response

\*Though colour, respiration & heart rate are assessed to decide immediate actions for respiration, APGAR scoring is still used as a predictor of long-term prognosis of the infant.



Apgar Scoring System			
Indicators	0 Point	1 Point	2 Points
<b>Appearance (Skin colour)</b>	Blue, Pale	Pink body, Blue extremities	Pink
<b>Pulse (Heart rate)</b>	Absent	<100 bpm	>100 bpm
<b>Grimace (Reflex irritability)</b>	No response to stimulation	Minimal response to stimuli (Grimace/ facial movement or weak cry when stimulated)	Prompt response to stimuli (Cry/sneeze)
<b>Activity (Tone)</b>	Floppy	Flexed arms and legs	Active (Well flexed and resisting extension)
<b>Respiration</b>	Absent	Slow and irregular	Vigorous cry

## Immediate postnatal care

### Standard

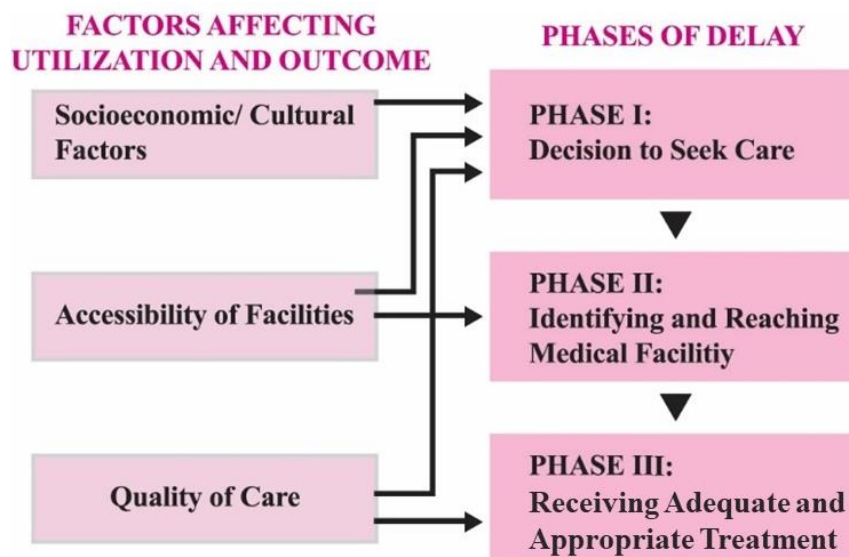
All mothers should continue to be monitored for a minimum of two hours after childbirth and provided appropriate support and counselling.

Vigilant monitoring of the postpartum mother is vital to averting death from postpartum hemorrhage. Encouraging the mother to initiate early and exclusive breastfeeding helps to stimulate the mother's uterus to contract, decreasing blood loss. This also helps to establish a successful pattern of breastfeeding, prevent newborn hypothermia and hypoglycemia, provide energy that the baby needs for adjusting to life outside of the uterus, and promote mother-baby bonding. Reviewing the Emergency birth plan (developed during antenatal care) helps ensure the mother and her family are prepared for a possible emergency. Essential health messages should be provided to help keep the mother and her baby healthy and prevent possible complications.

Emergency Obstetric and Newborn Care (EmONC) services are life-saving obstetric and neonatal services that can be performed at various levels of the health system. Making these services available to all women who develop complications aids efforts to reduce maternal mortality. All five direct causes of maternal mortality as well as critical neonatal causes of death can be treated at well-staffed, well-equipped health facilities.

In the long term, this means that all births should take place in appropriate health facilities, as is the case in all countries that have managed to significantly reduce their maternal mortality ratios. In the meantime, universal access to emergency obstetric care requires that all women and newborns with complications have rapid access to well-functioning facilities, whether in a district hospital or in an upgraded maternity center.

The below graphic illustrates the key barriers that prevent women from utilizing and benefiting from institutional delivery services. Equitably standardizing, enhancing and expanding EmONC services will reduce these barriers for all women.



Following are the essential functions that define obstetric first aid, BEmONC and CEmONC:

A. Functions used to define Obstetric First Aid:

- Administer parental oxytocic drugs to control hemorrhage
- Administer parental antibiotics to control infection
- Administer parental anticonvulsant drugs to control eclampsia fits

B. Functions used to define Basic EmONC:

- All functional included in obstetric first aid
- Manual removal of placenta
- Manual vacuum aspiration (MVA) and Post-Abortion Care (PAC)
- Assisted vaginal delivery (e.g. Vacuum extraction or forceps)
- Essential Newborn Care

#### C. Functions used to define Comprehensive EmONC

- All those included in Basic EmONC
- Surgery (e.g. caesarean section and destructive delivery)
- Blood transfusion

Comprehensive emergency obstetric and newborn care, typically delivered in district hospitals, maternal and child welfare centers and upgraded maternity care centers, includes all the basic functions listed above. Guidelines by WHO, UNICEF and UNFPA recommend that for 500,000 people there should be four facilities offering basic and one facility offering comprehensive emergency obstetric care. To manage obstetric complications - the life-saving component maternity care - a facility must have at least three pairs of skilled birth attendants covering 24 hours a day and seven days a week, assisted by trained support staff. To manage complications requiring surgery, the facilities must have a functional operating theatre, more support staff and must be able to administer blood transfusions and anesthesia.

Note: In CEmONC facilities, normal vaginal delivery and caesarean section will be available. However, if complications arise during the process of labour or in the puerperium period, where more specialized care may be required (i.e., for certain cases of eclampsia, heart disease, asthma, shock, disseminated intravascular coagulation etc.), the patient may need to be referred to a hospital where an Intensive Care Unit (ICU) is available.

#### **Equipment and supplies**

The equipment and supplies including drugs/vaccines are listed Annex. They cover routine care infection prevention and emergency care (including obstetric surgery, anesthesia and blood transfusion). In addition to listing what must be available for routine and emergency care, optional equipment and supplies are also included.

## Sepsis

First defense

- Combination therapy of antibiotics: Third generation Cephalosporin IV and Metronidazole IV; if the clinical response is poor in spite of adequate dose of antibiotics, thoroughly re-evaluate the patient for the source of infection or consider altering treatment according to reported microbial sensitivity

If staphylococcal infection is suspected, add

- Cloxacillin or
- Vancomycin

If clostridial infection is suspected, add

- Penicillin 2 million units 4 hourly

Continue antibiotics until the woman is fever free for 48 hours, in case of metritis no oral antibiotics recommended. Women with a blood stream infection, however, will require antibiotics for at least 7 days.

## Preterm labour and delivery

Pre-term delivery is associated with higher perinatal morbidity and mortality. Women are at increased risk of pre-term birth when they experience one of the following complications of pregnancy: pre-term labour, pre-term rupture of membranes, antepartum hemorrhage or severe pre-eclampsia/eclampsia. The management of possible pre-term delivery is dependent upon the level of the health system. In general, efforts should be made to transfer the woman to a higher level of care before the time of birth. This is based on the understanding that the foetus is more protected within the womb than following delivery.

Women who present with abdominal pain, palpable uterine contractions or blood-stained mucus discharge from vagina should be urgently assessed for gestational age. If the pregnancy is confirmed to be less than 37 weeks, the woman should be managed for pre-term labour.

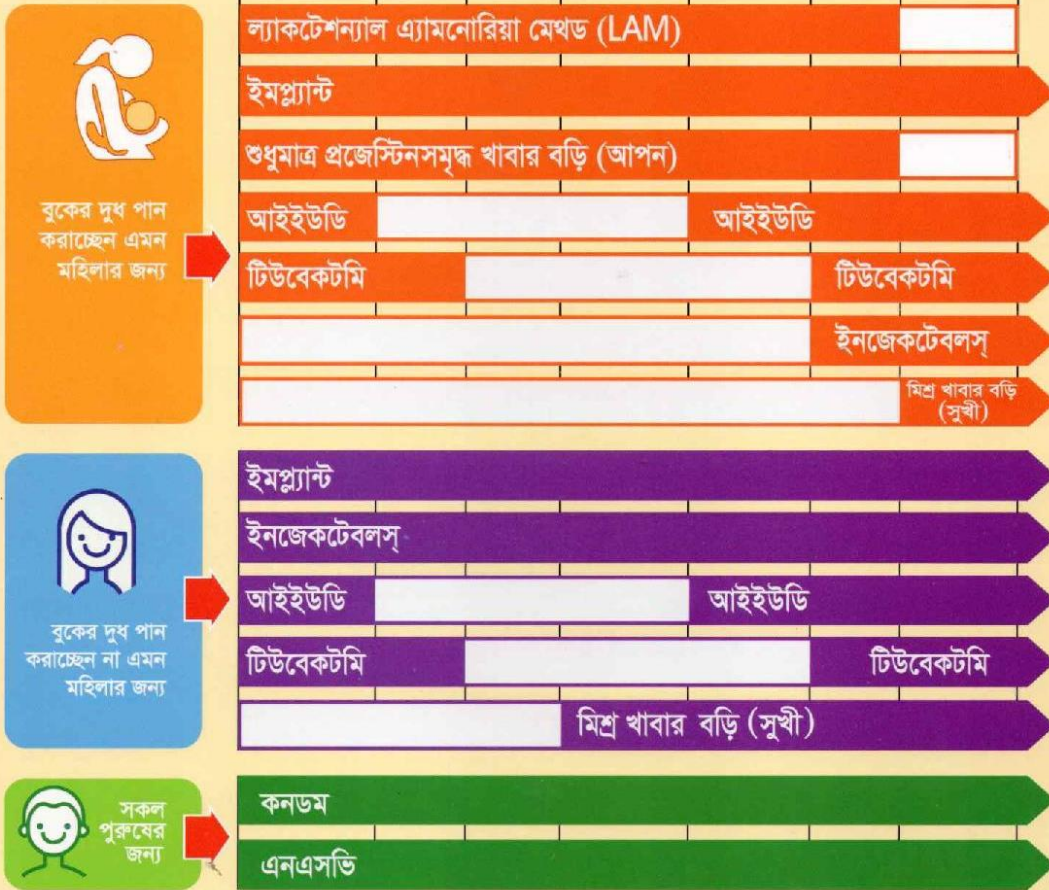
Post-partum contraception is essential to prevent any unwanted pregnancy as well as the need of abortion, specially during COVID-19 crisis. Abortion should be strongly discouraged as it poses added risk to the life the mother. Also, the patients should be encouraged for birth spacing for a healthy rearing up of the child.

- Counsel the parents before delivery, discuss the options of post-partum contraceptions with them and properly explain the advantages and disadvantages of each method
- Encourage the patients to take long acting reversible post-partum contraceptive methods (such as, IUD, Implant, injectables etc.) as it will help them to avoid repeated visits to healthcare facilities or pharmacies for a refill of short-acting contraceptive methods
- Reassure the mothers that there is no adverse effect of delayed removal of IUD or implants and strongly discourage them to try to remove the contraceptives by themselves. Ask them to seek advice from the healthcare provider through telemedicine. If the date expires then the mother or her husband should take short-acting contraceptions (such as, condoms, pills or emergency contraceptive pills) until their visit with the healthcare provider
- If there is any contraindication of long-acting post-partum contraception prescribe short-acting contraceptions and provide them enough so that they can avoid repeated visits to healthcare facility or pharmacy for a refill
- IUD and implant insertion or removal has low risk of aerosol generation. However, the healthcare provider should wear medical masks, eye protection. Gloves and plastic apron during the procedure
- Ask the patients to seek telemedicine service for family planning advice. The hotline number is 16767. Ask them to contact and make an appointment prior to visiting the healthcare facility



## প্রসব পরবর্তী সময়ে ব্যবহার উপযোগী পরিবার পরিকল্পনা পদ্ধতিসমূহ

প্রসব ৪৮ ঘণ্টা ৬ দিন ৩ সপ্তাহ ৪ সপ্তাহ ৬ সপ্তাহ ৬ মাস ১ বছর



দ্রষ্টব্য : সময়ের বারের সাদা অংশের সময়ে পদ্ধতি ব্যবহার করা যাবে না

Source : World Health Organization Post-Partum Family Planning Compendium 2016

দীর্ঘমেয়াদি বা স্থায়ী পদ্ধতি নিন- থাকুন ভাবনাহীন



পরিবার পরিকল্পনা অধিদপ্তর



বিশ্ব স্বাস্থ্য সংস্থা






জাতিসংঘ জনসংখ্যা অধিদপ্তর



UKaid



## প্রসব পরবর্তী সময়ে ব্যবহার উপযোগী পরিবার পরিকল্পনা পদ্ধতিসমূহ

পদ্ধতিসমূহ	ব্যবহার শুরু করার সময়
 <p>ল্যাকটেশন্যাল এ্যামোরিয়া মেথড (LAM)</p>	<p>LAM পদ্ধতি কার্যকর হবে যদি নিচের তিনটি শর্তই কার্যকর থাকে</p> <ul style="list-style-type: none"> <li>• মা শিশুকে শুধুমাত্র বুকের দুধ খাওয়ান</li> <li>• শিশুর বয়স ৬ মাসের কম</li> <li>• শিশুর জন্মের পর মায়ের মাসিক শুরু হয়নি।</li> </ul>
 <p>ইমপ্ল্যান্ট</p>	<ul style="list-style-type: none"> <li>• প্রসবের পর থেকে যে কোন সময়</li> </ul>
 <p>শুধুমাত্র প্রজেস্টিন সমৃদ্ধ খাবার বড়ি (আপন)</p>	<ul style="list-style-type: none"> <li>• সন্তানকে বুকের দুধ খাওয়াচ্ছেন এমন মায়ের জন্য প্রসবের পর থেকে ৬ মাস পর্যন্ত</li> </ul>
 <p>আইইউডি</p>	<ul style="list-style-type: none"> <li>• স্বাভাবিক প্রসবের পর থেকে ৪৮ ঘন্টার মধ্যে</li> <li>• প্রসবের ৪ সপ্তাহ পর থেকে</li> <li>• সিজারিয়ান অপারেশনের সময়</li> </ul>
 <p>টিউবেকটমি</p>	<ul style="list-style-type: none"> <li>• স্বাভাবিক প্রসবের পর থেকে ৬ দিন পর্যন্ত</li> <li>• প্রসবের ৬ সপ্তাহ পর থেকে</li> <li>• সিজারিয়ান অপারেশনের সময়</li> </ul>
 <p>ইনজেকশন</p>	<ul style="list-style-type: none"> <li>• সন্তানকে বুকের দুধ খাওয়াচ্ছেন এমন মায়ের জন্য সন্তানের বয়স ৬ সপ্তাহ হওয়ার পর থেকে</li> <li>• সন্তানকে বুকের দুধ খাওয়াচ্ছেন না এমন মায়ের জন্য প্রসবের পর থেকে</li> </ul>
 <p>মিশ্র খাবার বড়ি (সুখী)</p>	<ul style="list-style-type: none"> <li>• সন্তানকে বুকের দুধ খাওয়াচ্ছেন এমন মায়ের জন্য সন্তানের বয়স ৬ মাস হওয়ার পর থেকে</li> <li>• সন্তানকে বুকের দুধ খাওয়াচ্ছেন না এমন মায়ের জন্য প্রসবের ৩ সপ্তাহ পর থেকে</li> </ul>
 <p>কনডম</p>	<ul style="list-style-type: none"> <li>• প্রসবের পর থেকে যে কোন সময়</li> </ul>
 <p>এনএসভি</p>	<ul style="list-style-type: none"> <li>• প্রসবের পর থেকে যে কোন সময়</li> </ul>

বিস্তারিত তথ্য, পরামর্শ ও সেবার জন্য আপনার নিকটস্থ মাঠকর্মী, কমিউনিটি ক্লিনিক, ইউনিয়ন স্বাস্থ্য ও পরিবার কল্যাণ কেন্দ্র, উপজেলা স্বাস্থ্য কমপ্লেক্স, মা ও শিশু কল্যাণ কেন্দ্র, জেলা সদর হাসপাতাল, মেডিকেল কলেজ হাসপাতাল অথবা যে কোনো বেসরকারি ক্লিনিক/হাসপাতালে যোগাযোগ করুন।

প্রকাশনায় : ক্লিনিক্যাল কন্ট্রোলস সার্ভিসেস ডেপার্টমেন্ট, পরিবার পরিকল্পনা অধিদপ্তর, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মহলাদায়  
প্রকাশকাল : মার্চ ২০১৯

COVID-19 is a notifiable disease. Please inform all cases (confirmed or suspected) to health authority (Civil surgeon, DGHS)

## Standard

All skilled birth attendants who provide care during labour and childbirth should complete the records required for the mother and her newborn

Accurate record keeping is essential for adequate monitoring of the condition of the mother and newborn and for providing continuity of care (over time and across healthcare workers). Records should be complete, accurate, easy to read, and should be written at the time of client/patient contact, whenever possible.

The specific records to be completed for the mother and newborn includes the following:

- Antenatal register
- Counselling register
- Breast feeding counselling register
- Delivery patient admission register
- Delivery Register
- Delivery patient admission form
- Discharge certificate
- Partograph
- Referral form.
- Birth certificate
- Postnatal register

### Recording and reporting

**Objective:** To collect and keep record of all information of pregnant woman and newborn admitted in the labour room including abortion, Ectopic pregnancy and molar pregnancy.

#### Who will fill up the register?

Doctor and Nurses. The EmONC register has total 48 columns. From column 1-13, Doctor and Nurses will fill up those columns during admission of the patient. From column 14-36, Doctor/ Nurses will fill up during



delivery. From column 37-48, on duty Doctor, Nurse will write patients discharge or referral or death information after collecting all the information related to maternal and newborn health service.

### **Who will supervise?**

Head of the Ob/Gyn department, Registrar, Residential Surgeon, Residential Medical Officer and Medical Officer.

The type of information that should be included on each mother's record are as follows:

- Personal information (e.g. mother's name, age, address etc.)
- Chief complaint (client's reason for coming to the health facility)
- Findings from the history, physical examination, screening and other diagnostic tests and procedures
- Details of the care provided
- Referrals made, if any

The specific records to be completed for the mother and newborn which should include the following:

- Admission Register
- Family card (to be kept by mother)
- Delivery register
- Partograph (including delivery record on reverse side)
- Referral form
- Discharge form
- Birth certificate
- Death Certificate

**Column 1:** Need to write the monthly or yearly serial number in the section of labour section or unit  
**Column 2:** Mention the date of admission, time and type of patient. If patient referred from other hospital

**Column 3:** Mention the serial number starting from 1st January of the year

**Column 4:** Write the name clearly

**Column 5:** Write the name of husband or father clearly

**Column 6:** Write the mailing address clearly including mobile number of the patient if any. If not, then write down the mobile number of husband or near relative or neighbour

**Column 7:** Add the full age of the patient. If cannot tell the age exactly, then ask related questions to find out the age.

**Column 8:** Write the total number of pregnancy (pregnancy more than 28 weeks)

**Column 9:** Write the total number of pregnancies including present pregnancy and before

## Standard

The basic conditions for referral and transfer are applied for all mothers and /or newborns requiring referral and transfer for further care.

### Indications for Newborn and Maternal referral

Mothers or newborns need to be referred from lower level facilities/home to higher level facilities if they have any of the following condition:

Maternal danger signs during pregnancy/delivery or during the post-natal	Newborn danger signs
<ul style="list-style-type: none"> <li>• Heavy vaginal bleeding</li> <li>• Respiratory difficulty</li> <li>• Fever</li> <li>• Severe headache/blurred vision</li> <li>• Severe abdominal pain</li> <li>• Convulsions/loss of consciousness</li> <li>• Foul smelling discharge</li> <li>• Prolonged labour (Latent phase &gt; 12 hours or Active phase across the Action line on the partograph) or Obstructed labour</li> </ul>	<ul style="list-style-type: none"> <li>• Unable to breastfeed or can't suck well</li> <li>• Convulsion</li> <li>• Fast breathing (60 or more per minute)</li> <li>• Chest indrawing</li> <li>• High temperature or fever (Above 37.5<sup>o</sup>C or 99.5<sup>o</sup> F)</li> <li>• Lethargic or restricted movement</li> <li>• Redness around umbilicus or pus draining from umbilicus</li> </ul>

A coordinated system for transferring a patient from a center lacking appropriate facilities and services to a higher center having necessary service for reduction of both mortality and morbidity is called referral. There must be a referral guideline for each facility.

- Upazilla Health Complexes (UHC) are the first referral centers
- District Hospitals are the secondary referral centers
- Medical College Hospitals and some specialized district hospitals are the tertiary referral centers

### Identifying the conditions to be referred:

In COVID-19 situation, any patient developing the signs of sevre (severe pneumonia, sepsis) or critical illness (septic shock, ARDS) and may require oxygenation and ICU support. If the facility do not have Oxygenation and ICU facility ptient will be referred to the higher facility.

### **During labour:**

- Excessive vaginal bleeding (pad soaked in 5 mins)/ Postpartum haemorrhage (>500ml)
- High blood pressure  $\geq 140/90$  mm of Hg
- Continuous headache
- Convulsion
- Premature rupture of membrane with high fever
- Prolonged/Obstructed labour (see above)
- Breech presentation/transverse lie; malpresentation
- Cord /hand/feet prolapse
- Fetal distress – FHR>160/min, <110/min.
- Retained placenta
- Complete (3<sup>rd</sup> or 4<sup>th</sup> degree) perineal tear and cervical tear
- Rupture of uterus (severe continuous pain and bleeding)
- Blood group – Rh negative

NB: There is no need to routinely refer Fetal Death in Utero; most will delivery normally. Only refer if they are not coming into spontaneous labour in more a month after fetal demise.

### **Newborn with major complications:**

- Congenital abnormality
- Birth asphyxia/ breathing difficulty
- Birth trauma
- Pathological jaundice (at birth)
- Physiological jaundice in aggravated form
- Convulsion
- Hypothermia
- Prematurity
- Lethargy /reluctant to suck/ take food

### **How to Refer? (Procedure)**

- Proper history taking and thorough examination of the patient to reach a diagnosis
- Find out the reason for referral
- Take emergency measures necessary before referral e.g. I/Vline antibiotics/sedatives/anticonvulsant drugs etc.
- Counsel the patient and family about the need for referral and dangers of keeping without referral
- Show sympathy and assurance to the patient and family
- Fill up referral form/card
- Communicate with referral center
- Help family to arrange transport (communication with family/community/religious leader)
- Follow up the referred case through communication with referral center and family
- Referral note and information related to management should be given with the patient
- Counsel the relatives to take food, water and money with them
- Follow up the patient in the referral center
- Keep the mobile number of the relatives and patient

### **Referral Note**

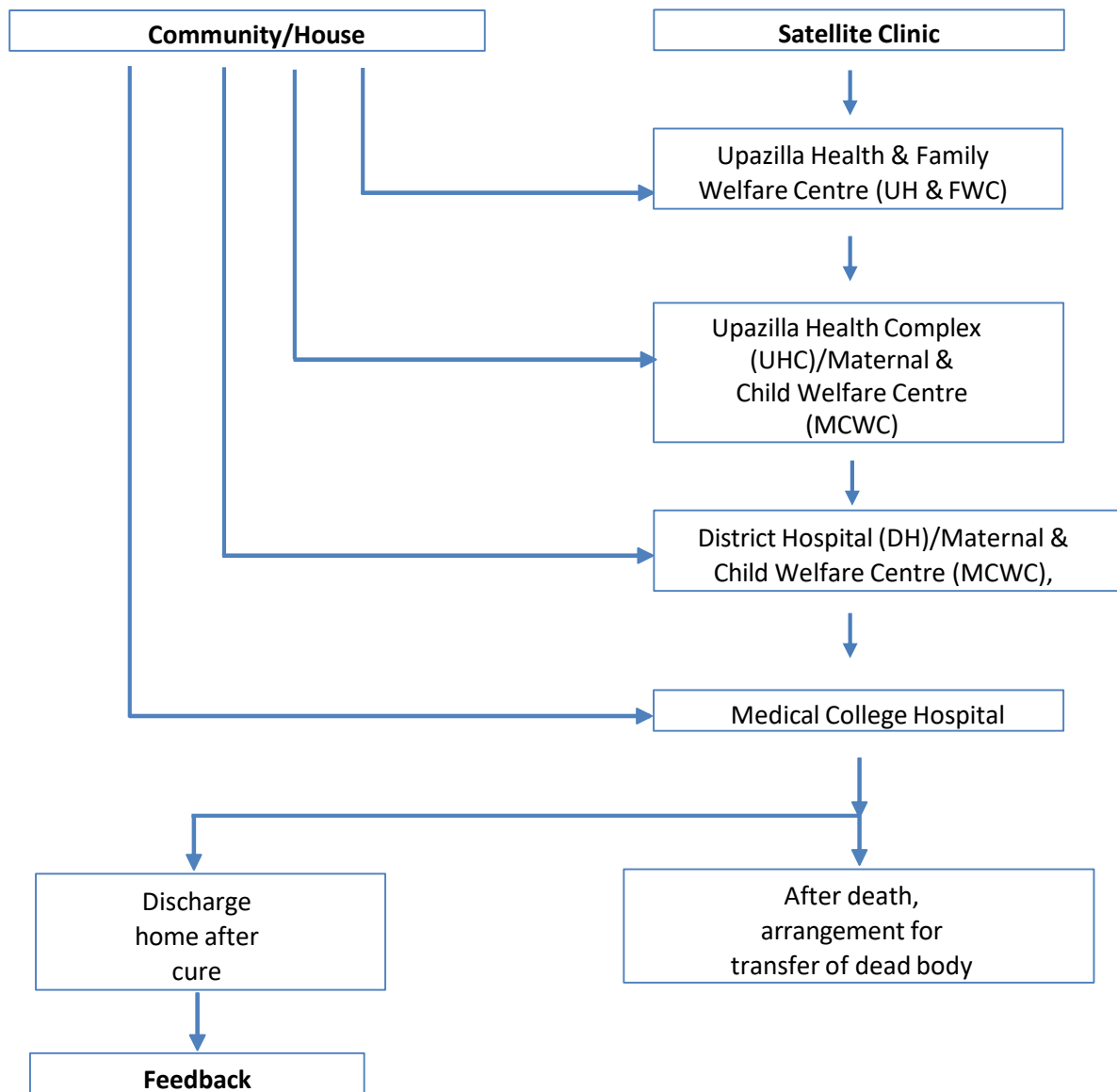
Referral note contains identification of patient (name, age, address) provisional diagnosis, condition of patient on arrival, measures taken, and reasons for referral. The referral note must be signed by the persons referring with his/her designation. A copy should be kept for record at the original center and patient must be followed up.

### **Referral guidelines**

- Proper assessment: A complete history and general examination of the patient is essential for the decision making.
- Counselling the patient and her family explaining the situation to them and the need and importance of referral
- Assurance to the patient and her family
- Selection of the appropriate accessible and acceptable place for referral
- Filling up the referral form/card
- Discharge/referral time need to be recorded

- Communicating with the referral centre
- Arrange transportation
- Follow up of the referred case
- Feedback from referring centre

### Referral Linkage



### Contents of referral sheet

Documentation of:

1. Active participation of family members and relatives
2. Information about ground of reference and referred center
3. Arrangement of transport

4. Support from specialist physician/Service Provider of referred center
5. Referral notes
6. Feedback

**A COVID19 referral sheet may have the patients information:**

**A sample referral form is given in ANNEX**

- 1.Name
- 2.Address
- 3.Mobile number
- 4.Husband's name
- 5.Symptoms: fever, cough, sore throat, respiratory distress
- 6.Chest X-ray findings
- 7.Exposure history within 14 days
- 8.Travel history within 14 days
- 9.Referral history by any other hospital

#### **Steps taken in Referral**

1. Proper assessment: A complete history and general examination of the patient is essential for the decision making
2. Counselling the patient and her family explaining the situation to them and the need and importance of referral
3. Assurance to the patient and her family
4. Selection of the appropriate accessible and acceptable place for referral
5. Filling up the referral card properly (Organization what action had taken)
6. Communicating with the referral centre (by mobile)
7. Arrangement of transportation
8. Follow up of the referred case
9. Feedback to the referring centre

**Standard: All healthcare providers and support staff (e.g. cleaners) involved in Maternal and Neonatal care should use recommended infection prevention practices. There should be regular meeting of infection prevention committee for continuous improvement**

Infection prevention is the process that prevents spread of organisms capable of producing diseases in the health care facility.

Infection prevention practices focus on preventing infection and disease transmission in both patients and healthcare workers. These practices should be integrated into every component of maternal and newborn care to protect the mother, newborn, healthcare workers and other health facility staff.

## Labour room preparedness

The majority of women presenting in labour will not have respiratory symptoms, and the labour room should continue to provide services as before. However, the attention to infection prevention practices should be higher:

- Have sufficient supplies of all PPE supplies (masks, gloves, goggles, gowns, hand sanitizer, soap and water, cleaning supplies) in the labour room
- All surfaces should be cleaned thoroughly with spray and a clean cloth after any contact by patient or staff

Personal Protective Equipment (PPE) is essential in the Infection Prevention and Control program of COVID-19 pandemic. Again, its rationale use is mandatory to prevent shortage of supply for those who need it the most. The maternal healthcare providers should have full access to all personal protective equipment and sanitation at all times. Maintaining a healthy workforce and safe environment will ensure quality care.

WHO recommend that PPE needs to be used according to standard precautions and risk assessment. Wearing PPE for all patient contact will depend on the availability of PPE within individual facilities and individual judgement on the exposure risk by the maternity care provider.

Gloves and a plastic apron need to be worn during the delivery of care that may involve exposure of blood, body fluids, secretions, excretions, touching oral mucosa, or medication assistance (including: taking blood or vaginal swabs, performing a stretch and sweep and first stage of labour).

**During second and third stage of labour, in addition to hand washing, a surgical mask, plastic apron, eye protection, a plastic apron and gloves need to be worn.**

## Steps of Infection Prevention

The following infection prevention practices should be in place at all facilities where maternal and newborn care is provided.

## Personal protective equipment

Personal protective equipment is used to protect healthcare workers and clients from infectious organisms, especially when splashing of blood or other body fluids is likely. These include gloves, eye protection (face shield, goggles, or glasses), rubber or plastic aprons to provide a fluid resistant barrier that keeps contaminated fluids off the healthcare worker's clothing and skin, and foot ware to protect the healthcare worker's feet from injury by sharps or heavy items that may accidentally fall on them.

### Who needs PPE?

- Health care personnel
- Patients

### How to wear PPE:

#### Donning:

- Wash hands properly with soap and water and apply hand sanitizer as shown below:



Figure: Hand washing method

Source: WHO Guidelines on Hand Hygiene in Health Care: a Summary



- Check the integrity of the components of PPE set and match with the list provided.

The set should include:

- Non-sterile Gloves: 3sets
- Gown: 1 piece
- N95 Respirator: 1
- Goggles: 1pair
- Shoe cover: 1 pair
- Poly apron: 1 piece
- Alcohol pads
- Sani cloth
- Biohazard bag



Figure: Personal Protective Equipment Set for Healthcare providers

- Set up the doffing area with-
  - Alcohol pad
  - Sani cloth
  - 1% hypochlorite solution
  - A bin with biohazard bag
  - Another bin preferably with biohazard bag, but if not available a yellow bin
  - A pair of non-sterile gloves
  - A medical mask
- Wear the gown cautiously so that it does not touch the floor. Pull on the chain. But don't pull on the head cover
- Hold the front of the mask with one hand covering mouth and nose properly and pull the straps one after another behind your hand, adjusting the mask strongly fitted over your face. Check the seal of the mask by pressing the margins of the mask
- Hold Goggles on your eyes and pull the straps over your head. Adjust the goggles firmly over your face by pulling the straps' length as necessary

- Pull over the gown's head cover up to the upper end of the goggles. Fit the cover with the goggles by buttoning it with the 2 white buttons of the goggles so that it doesn't slip away from head while working. Insert all straps inside the cap. If there is any gap, cover it with micropore
- Wear shoe cover
- Wear poly apron and tie behind. It will protect from any splash and spill
- Wear 2<sup>nd</sup> pair of gloves. Use micropore to firmly attach the gloves ends with the gowns' sleeves
- Wear the outer gloves. In case of wearing multiple gloves, always wear the bigger one beneath the smaller one

It should be changed –

- Between patient care, physical examination and performing procedure of another patient
- Between procedure in the same patient if handling of different body parts is required. Such as pelvic examination followed by administration of intramuscular oxytocin
- Between breaks
- As soon as gloves are damaged or non-integrity suspected
- After use, before touching non-contaminated items

#### **Doffing:**

- Clean the gloves, gown and shoe cover with Sani cloth
- Remove the shoe cover. Start from behind and pull it off by rolling inside outwards. Fold it and drop inside the biohazard bag
- Remove the poly apron by untying and pulling off from behind. Fold it and drop inside the biohazard bag
- Clean the gloves with alcohol pad and pull off the gloves. Remove gloves of one hand by holding the outer surface while remove the other one by holding it from inside and rolling outwards. Put the first gloves inside the second gloves and drop inside the biohazard bag
- Remove all the micropores, but don't touch your skin
- Untie the gown's chain and pull off the gown from behind. Be careful not to touch the outer surface. Roll inside outwards and fold it after removing. Drop inside the biohazard bag
- Rub off the hands with alcohol pad and remove the goggles by holding it with one hand and gently pulling the straps forward. Drop the goggles in the 1% hypochlorite solution. Goggles are reusable

- Clean the hands with hand sanitizer and pull off the mask in the same manner as goggles, only mask is not reusable and it should be dropped inside the biohazard bag
- Remove the final gloves and use hand sanitizer
- Wear another set of non-sterile gloves and surgical mask. Spray 1% hypochlorite solution over the biohazard bag and tightly tie the open end of the bag. Put the tied bag inside the bin. Spray 1% hypochlorite solution over the biohazard bag once again. Dispose of the surgical mask and gloves in the yellow bin. Perform hand hygiene.

The cleaner will take care of these materials according to hospital policy (recommended: autoclave/ burn/ bury)

### Labour/ Delivery room:

#### Healthcare provider

#### *At all stages of labour in case of suspected/ confirmed COVID-19 patient handling*

While treating a suspected/ confirmed COVID-19 pregnant woman

- Medical mask
- Gown (Coverall including attached head cover and shocks)
- Gloves
- Goggles
- Shoe cover

While treating a suspected/ confirmed COVID-19 pregnant woman if the healthcare provider is directly involved in aerosol performing procedures such as suctioning airway secretions, administering nebulizing medication or performing CPR

- Respirator N95 or FFP2 or any equivalent respirator
- Gown (Coverall including attached head cover and shocks)
- Gloves
- Goggles
- Apron
- Shoe cover

#### 1<sup>st</sup> stage of labour

While treating a patient without respiratory symptoms

The healthcare provider should decide by herself depending on the availability of PPE and risk of exposure -

- Medical mask
- Gown (Coverall including attached head cover and shocks) / Plastic apron
- Gloves
- Goggles
- Shoe cover

## 2<sup>nd</sup> and 3<sup>rd</sup> stages of labour

While treating a patient without respiratory symptoms

The healthcare provider should decide by herself depending on the availability of PPE and risk of exposure -

- Medical mask
- Gown (Coverall including attached head cover and shocks) / Plastic apron
- Gloves
- Goggles
- Shoe cover

## Patient

With respiratory symptoms

• Wear a medical mask and maintain at least a distance of 1 meter or 3 feet with the rest. These patients should be moved to isolation room as soon as possible and handled separately with utmost caution and full protection. If the patient suffocates then there is no need to wear a mask

- Gloves

Without respiratory symptoms

- Medical mask as necessary

## Cleaner

While advising a patient with respiratory symptoms

- Medical mask
- Gown (Coverall including attached head cover and shocks)
- Heavy duty gloves
- Goggles (If there is a chance of splashes and sprays)
- Boot or closed shoes

## Operation theater:

### Healthcare provider

While operating a suspected/ confirmed COVID-19 pregnant woman

- Medical mask
- Gown (Coverall including attached head cover and shocks)
- Plastic apron
- Gloves
- Goggles
- Shoe cover

While operating a suspected/ confirmed COVID-19 pregnant

- Respirator N95 or FFP2 or any equivalent respirator
- Gown (Coverall including attached head cover and shocks)
- Plastic apron

woman where there is a chance of contact with aerosol or droplet

- Gloves
- Goggles
- Apron
- Shoe cover

While operating a patient without respiratory symptoms

The healthcare provider should decide by himself f the use of appropriate PPE assessing the situation at hand -

- Medical mask
- Gown (Coverall including attached head cover and shocks)
- Plastic apron
- Gloves
- Goggles

### Patient

With respiratory symptoms

- Medical mask
- Gloves

Without respiratory symptoms

- Medical mask as necessary

### Cleaner

While a patient with respiratory symptoms is operated in the operation theater

- Medical mask
- Gown (Coverall including attached head cover and shocks)
- Heavy duty gloves
- Goggles (If there is a chance of splashes and sprays)
- Boot or closed shoes

Soiled instruments, used surgical gloves, and other reusable items can transmit disease if infection prevention procedures are not properly followed. These procedures include the following:



Sterilized and HLD items must be stored in a clean, dry area. Sterile packs and containers should be dated and rotated, using a “first in, first out” approach. Wrapped packages that remain dry may be used up to one week, and wrapped packages sealed in plastic up to one month.

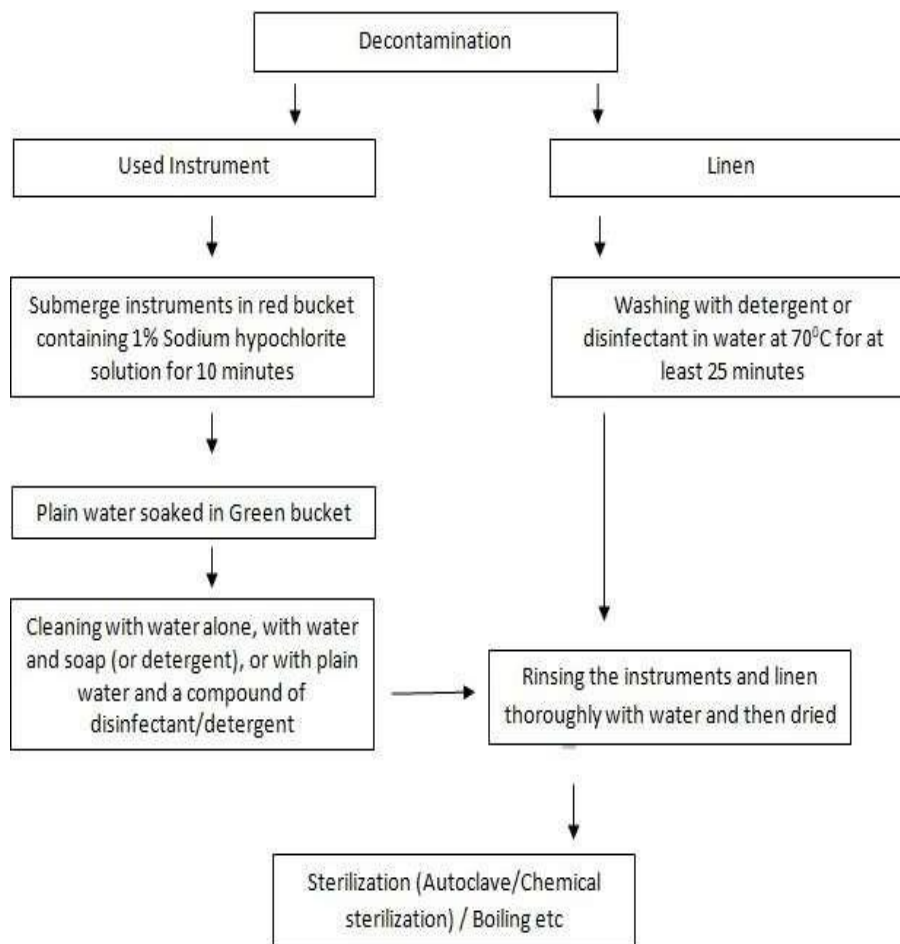
**Decontamination:** Decontamination of used instruments and gloves by merging for 10 minutes in chlorine solution. Then wash by plain water.

**Cleaning:** After decontamination instruments and used linen will be cleaned by soft brush and detergent mixed water in a bowl and then wash by plain water and dry in air.

**Sterilization:** All dried instruments, cotton and reusable linen, gloves etc will be sterilized by autoclaving.

**Storage of instrument:** Storage items should be used or properly stored immediately after processing so that they do not become contaminated. Proper storage is as important as proper decontamination, cleaning, and sterilization or HLD. If items are not stored properly, all the effort and supplies used to properly process them will have been wasted, and the items may be contaminated.

## Equipment sterilization/decontamination procedure



### Waste disposal: General rules for medical wastemanagement

- Use specific coloured container (as per national guideline) for specific medical waste before disposal
- Ensure minimum handling of waste before disposal
- Always use utility gloves and gumboot during handling and carrying waste product
- All containers should have appropriate lead
- Puncture proof container should be kept in all clinical areas
- Do not store waste no longer than 2 days
- Wash waste storage container with chlorine solution and plain water

## চিহ্নিত বর্জ্য ধরন অনুযায়ী নির্দিষ্ট রং এর পাত্রে রাখুন



Fig 13: Colour coding for waste management

### Delivery Specific waste disposal management

- For placenta, amniotic fluid, blood & serum: All will be collected in a leak-proof bucket and carefully thrown into dumping pit/buried
- For used chlorine solution: Chlorine solution will be discarded in wash room or open drain/non-septic latrine but not in septic latrine pan. Chlorine solution will be discarded regularly and do not keep longer than 24 hours
- For sharp (syringe, needle) and broken/unbroken glassware: Collect in a puncture proof carton/pot. After filling 2/3 portion of carton/pot burn by incineration
- For syringe, saline/blood bag, infusion set, broken/unbroken glassware, cotton, gauze & packet: Collect in a leak-proof bucket (as per national guideline) and discard by incineration

### Practices for environmental cleaning in healthcare facilities

#### Cleaning agents and disinfectants

- Sodium hypochlorite solution should be prepared in light protected colored container and used within 24hrs
- Leaving the solution for a contact time of at least 20 minutes is recommended
- Alcohol (e.g. isopropyl 70% or ethyl alcohol 70%) can be used to wipe down surfaces where the use of bleach is not suitable, e.g. metals

#### Frequency of cleaning:



- **High touch surfaces:** Disinfection of high touch surfaces like (doorknobs, telephone, call bells, bedrails, stair rails, light switches, lift-buttons, armrests tables, air/ light controls, keyboards, switches, basin, wall areas around the toilet) should be done every 3-4 hours
- **Low-touch surfaces:** For Low-touch surfaces (walls, mirrors, etc.) mopping should be done at least once daily
- **In between patient care:** 70% alcohol-containing hand sanitizer
- **Triage area:** Disinfection of high touch surfaces by sodium hypochlorite solution should be done in every 3-4 hours. After attending each patient health care worker should maintain hand hygiene
- Mop floor with routinely available disinfectant (sodium hypochlorite solution, phenol etc.)
- Remove curtains/ fabrics/ quilts for washing, preferably using the hot water cycle. For Hot-water laundry cycles, wash with detergent or disinfectant in the water at 70°C for at least 25 minutes. Soak the linen in 1:100 strength sodium hypochlorite solution for at least 30minute before rinsing with clean water and complete sun drying it

Sodium Hypochlorite solution of 1:10 strength	Sodium Hypochlorite solution of 1:100 strength
Hospital excreta	Surfaces
Dead-bodies	Medical equipment
Spills of blood/ body fluid	Bedding, curtains, fabrics or quilts
	Reusable personal protective equipment

**Note:** Sodium hypochlorite solution should be applied to surfaces using a damp cloth. They should not be applied to surfaces using a spray pack, as coverage is uncertain and spraying may promote the production of aerosols.



- Promptly clean and decontaminate spills of blood and other potentially infectious materials
- Wear protective gloves
- Using a pair of forceps and gloves, carefully retrieve broken glass and sharps if any, and use a large amount of folded absorbent paper to collect small glass splinters. Place the broken items into the puncture proof sharps container
- Cover spills of infected or potentially infected material on the floor with paper towel/ blotting paper/newspaper
- Pour freshly prepared Sodium hypochlorite solution and leave for 20-30 minutes for contact
- Place all soiled absorbent material and contaminated swabs into a designated waste container
- Then clean the area with gauze or mop with water and detergent with gloved hands

***NB: Any material treated with hypo-chlorite solution should never be sent for incineration***

**Preparation of Sodium hypochlorite Solution (Refer to Annex-35)**

**From concentrated solution**

- **1:10 strength solution:** 3-4tsp bleach solution is to be diluted in 1L of water
- **1:100 strength solution:** 2tsp bleach solution is to be diluted in 1L of water

- **From powder form**
  - **1:10 strength solution:** 1tbsp bleach solution is to be diluted in 2L of water
  - **1:100 strength solution:** 1tbsp bleach solution is to be diluted in 20L of water



*NB: Preparation should be done in red colored covered bucket and mix it by wooden stirrer. Water should be poured prior to given sodium hypochlorite solution of powder (DGHS IPC guideline)*

## Personal health and safety

Your own health and safety and that of your family is very important. Before leaving the maternity facility and going home, or before entering home: wash your hands, and change clothes and wash them with soap and water

During stressful events, your own health can be easily compromised. Maternity care providers need to **self-monitor for signs of illness** such as fever, shortness of breath, cough, loss of sense of taste and smell and sore throat and self-isolate and report illness to managers, if it occurs.

**Staff with symptoms of COVID-19 should not come to work**

**a)** You can stop home isolation under the following 3 conditions: You have had 3 full days of no fever without the use of medicine that reduces fever and, other symptoms have improved (i.e.: shortness of breath or cough) and, at least 10 days have passed since your symptoms first appeared. Medical help should be sought if fever and cough are worsening, respiratory distress, altered mental status and/ or extreme lethargy develop [13]

b) Fatigue, burn out and stress related to the environmental, family and economic effects of COVID-19 can all impact upon mental and physical health. Advise management and seek help if you are feeling signs of undue stress or have mental health challenges that require supportive interventions

c) Maternity care providers over the age of 65, those who have cardiac, respiratory or metabolic conditions, and possibly persons with immune deficiency including acquired immune deficiencies, need to avoid clinical contact with any patient (not only those suspected of having COVID-19) and consider non-clinical duties if at all possible

d) Health care providers in their last trimester of pregnancy or with underlying health conditions such as heart or lung disease in any stage of pregnancy, are recommended to avoid direct contact with patients

## **Annexure**

### ***All Protocol charts (Labour room, Eclampsia, PPH, HBB and Breastfeeding included)***

Annex-1: Labour ward floor plan

Annex-2: Delivery room floor plan

Annex-3: Practices in Normal Birth, WHO

Annex-4: Flow Chart for Specific Management of severe Pre-Eclampsia and Eclampsia (SPE/E)

Annex-5: Antenatal Care

Annex-6: Essential Newborn care

Annex-7: Steps of AMTSL

Annex-8: Different positions of labour

Annex-9: Squatting position

Annex-10: Antenatal checkup & birth planning

Annex-11: ANC Checkup and Remote Contact

Annex-12: Checklist for Remote Antenatal Contact and Considerations during Antenatal care

Annex-13: KMC

Annex-14: Delayed cord clamping

Annex-15: Photos of KMC & DCC

Annex-16: Essential newborn care

Annex-17: Breastfeeding

Annex-18: Breastfeeding

Annex-19: AMTSL

Annex-20: PPH management

Annex-21: HBB

Annex-22: Essential care for small babies

Annex-23: Management of PE/Eclampsia

Annex-24: Management Protocol of Preeclampsia and Eclampsia

Annex-25: Partograph

Annex-26: Squatting chair

Annex-27: Eclampsia box

Annex-28: PPH box

Annex-29: FP box

Annex-30: Logistics and Equipment for 100 bedded/ 250 bedded/ 500 bedded hospital

Annex-31: Referral form for COVID-19 patients

Annex-32: COVID-19 Newborn Guidance in Labour Room

Annex-33: What should Pregnant Mothers and Family DO to Prevent COVID19

Annex-34: Emergency Management of COVID19 Suspected/ Confirmed Mothers

Annex-35: Preparation of Disinfectant Solution

Annex-36: HEPA filter and UV-ray sterilization

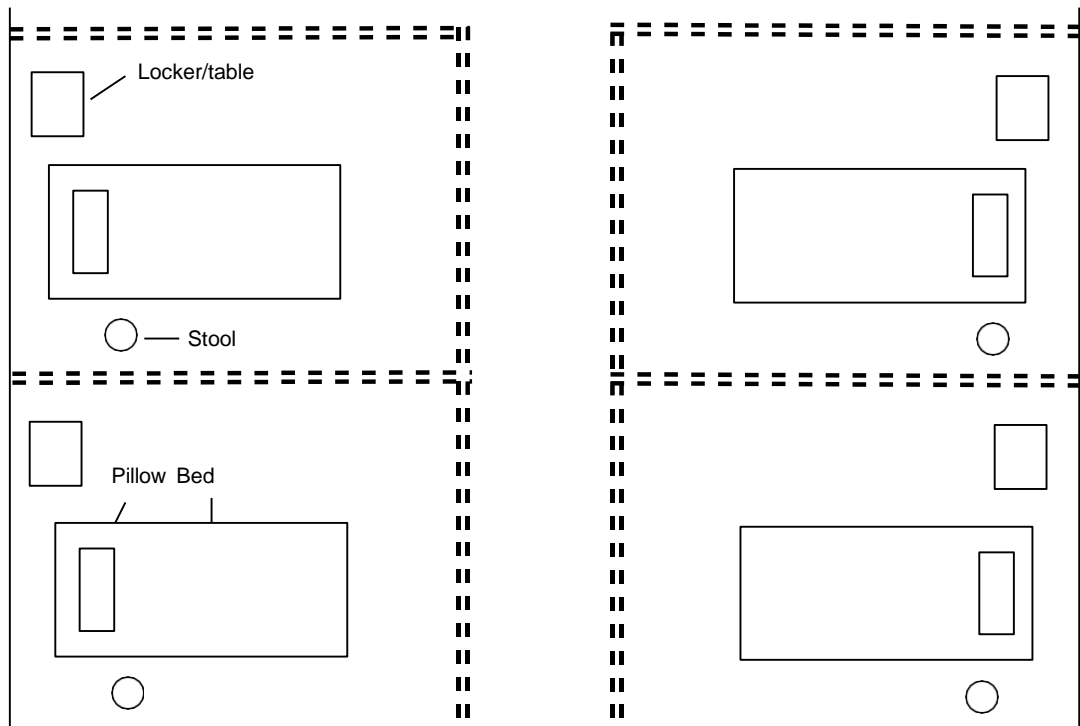
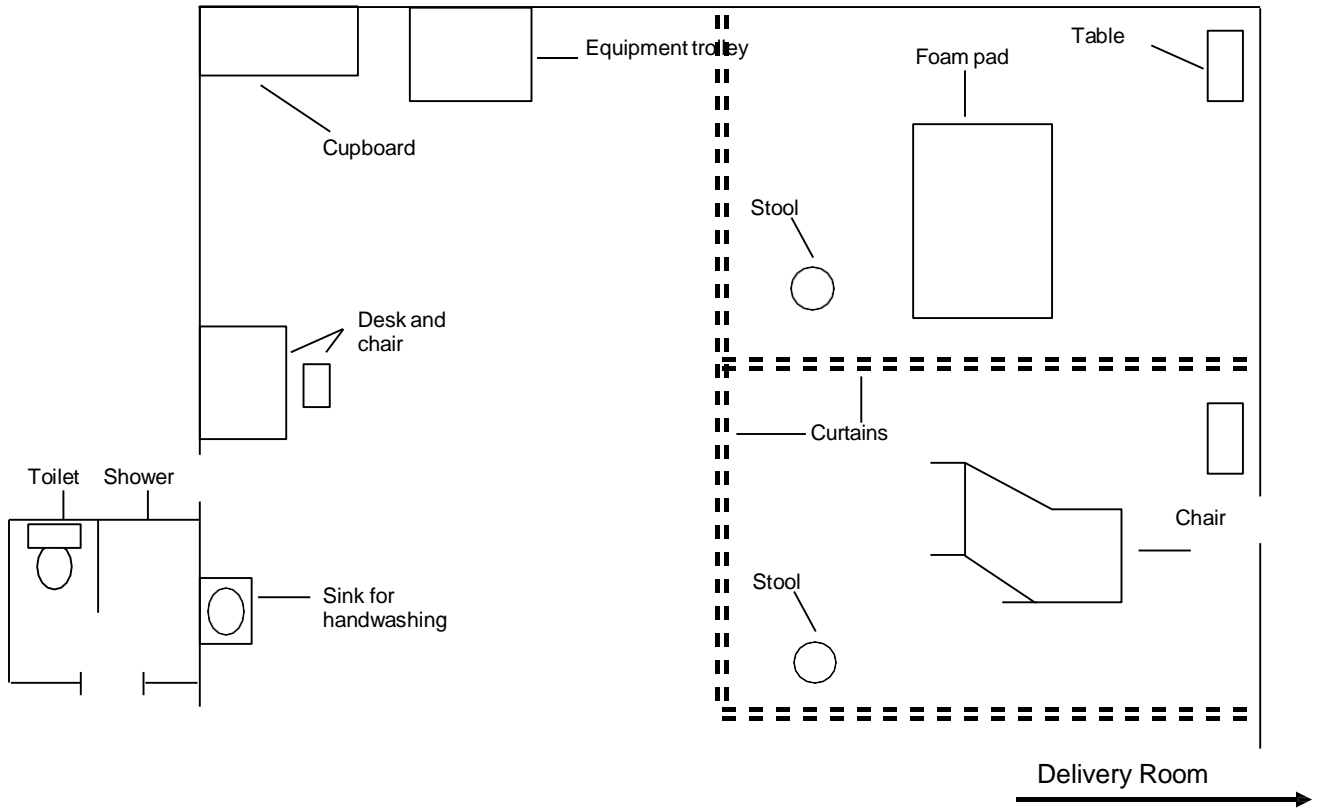
Annex-37: Pulse oximeter and Thermal scanner

Annex-38: Donning and doffing of Personal Protective Equipment

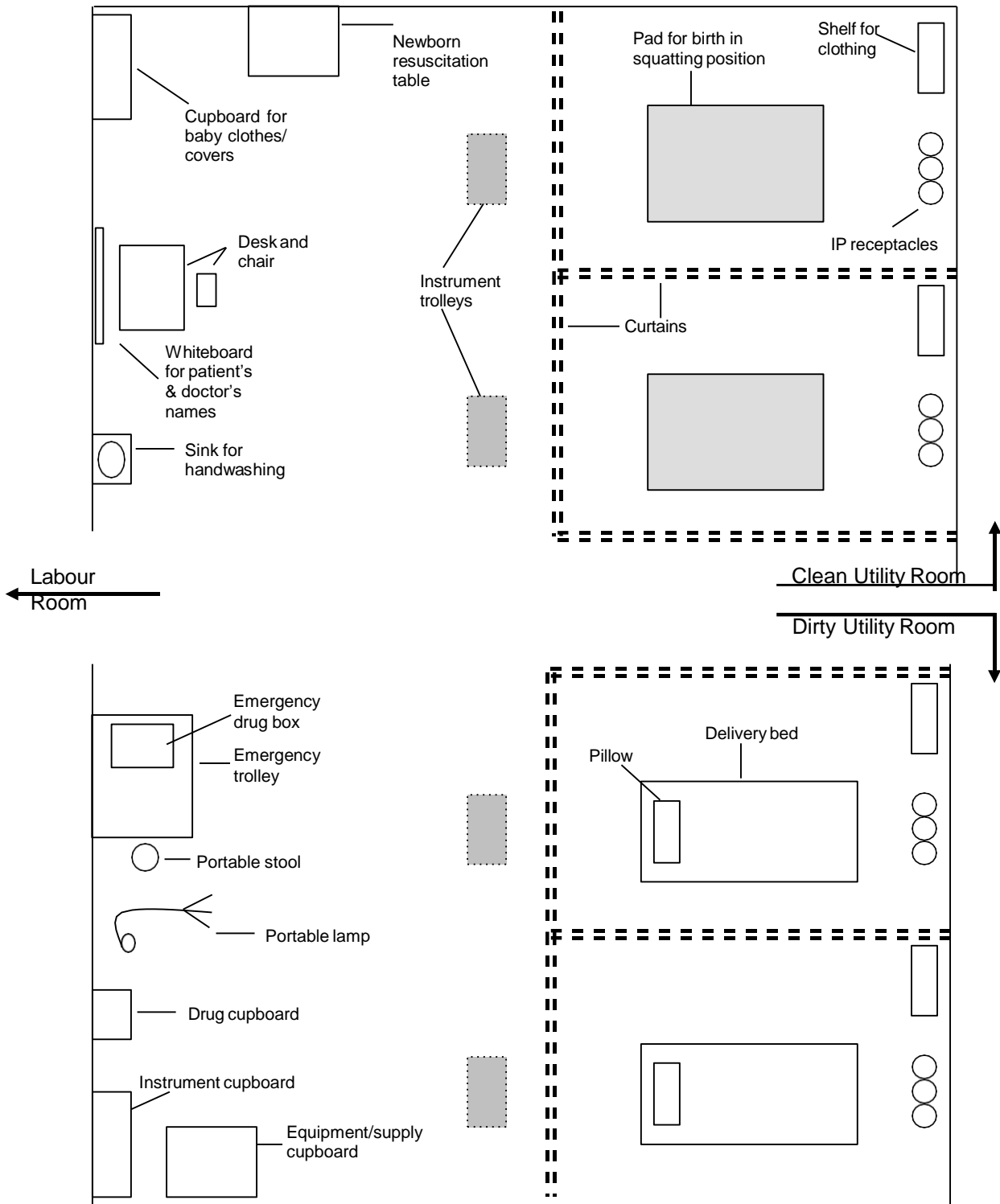
Annex-39: Signal functions to identify basic and comprehensive emergency obstetric care services

Annex-40: Newborn signal functions (NSFs) for Bangladesh

# ANNEX-1: LABOUR WARD FLOOR PLAN



# ANNEX-2: DELIVERY ROOM FLOOR PLAN



## Practices in normal birth, WHO

### A. Practices which are Demonstrably Useful and Should be Encouraged]

#### Birth planning

1. A personal plan to determine the place of delivery and level of care provider needed made with the pregnant woman and her husband/family **Risk Assessment** - Risk assessment of pregnancy during prenatal care, throughout labour & postnatal period

**Assessment** - Risk assessment of pregnancy during prenatal care, throughout labour & postnatal period

1. Select facility /place for safe delivery respecting the women's choice
2. Respecting women's informed choice of place of birth
3. Monitoring the woman's physical and emotional well-being throughout labour and delivery, and at the conclusion of the birth process
4. Respecting the right of women to privacy in the birthing place
5. Empathetic support by caregivers during labour and birth
6. Respecting women's choice of female companions during labour and birth
7. Giving woman as much information and explanation as they desire
8. Offering oral fluids during labour and delivery
9. Non-invasive, non-pharmacological methods of pain relief during labour, such as massage, relaxation and breathing techniques
10. Fetal monitoring with intermittent auscultation of FHR ½ hourly
11. Freedom in position and movement throughout labour
12. Encouragement of non-supine position in labour
13. Single use of disposable materials and appropriate decontamination of reusable materials throughout labour and delivery
14. Use of gloves in vaginal examination, during delivery of the baby and in handling the placenta
15. Careful monitoring of the progress of labour, by the use of the WHO partograph
16. Active management of third stage of labour to prevent postpartum haemorrhage
17. Use of Misoprostol for AMTSL where oxytocin is not available
18. Sterility in the cutting the cord - 1 min – 3 min delay cord clamping.
19. Routine examination of the placenta and the membranes
20. Late clamping of umbilical cord
21. Prevention of hypothermia of the baby
22. Early skin-to-skin contact between mother and child and support the initiation of breast-feeding within 1 hour postpartum in accordance with the WHO guidelines on breast-feeding

### B. Practices which are Frequently Used Inappropriately

1. Restriction of food and fluids during labour
2. Pain control by systemic agents
3. Pain control by epidural analgesia
4. Continuous electronic fetal monitoring
5. Wearing masks and sterile gowns during labour conduction
6. Oxytocin augmentation inspite of uterine contraction
7. Early amniotomy in the first stage of labour
8. Routinely moving the labouring woman to a different room at the onset of the second stage
9. Encouraging the woman to push when full dilatation, before the woman feels the urge to bear down herself
10. Rigid adherence to a stipulated duration of the second stage of labour, such as 1 hour, if maternal and fetal conditions are good and if there is progress of labour
11. Unnecessary operative delivery
12. Liberal or routine use of episiotomy
13. Routine use of Misoprostol in third stage of labour
14. Routine use of additional oxytocin (in drip) after AMTSL

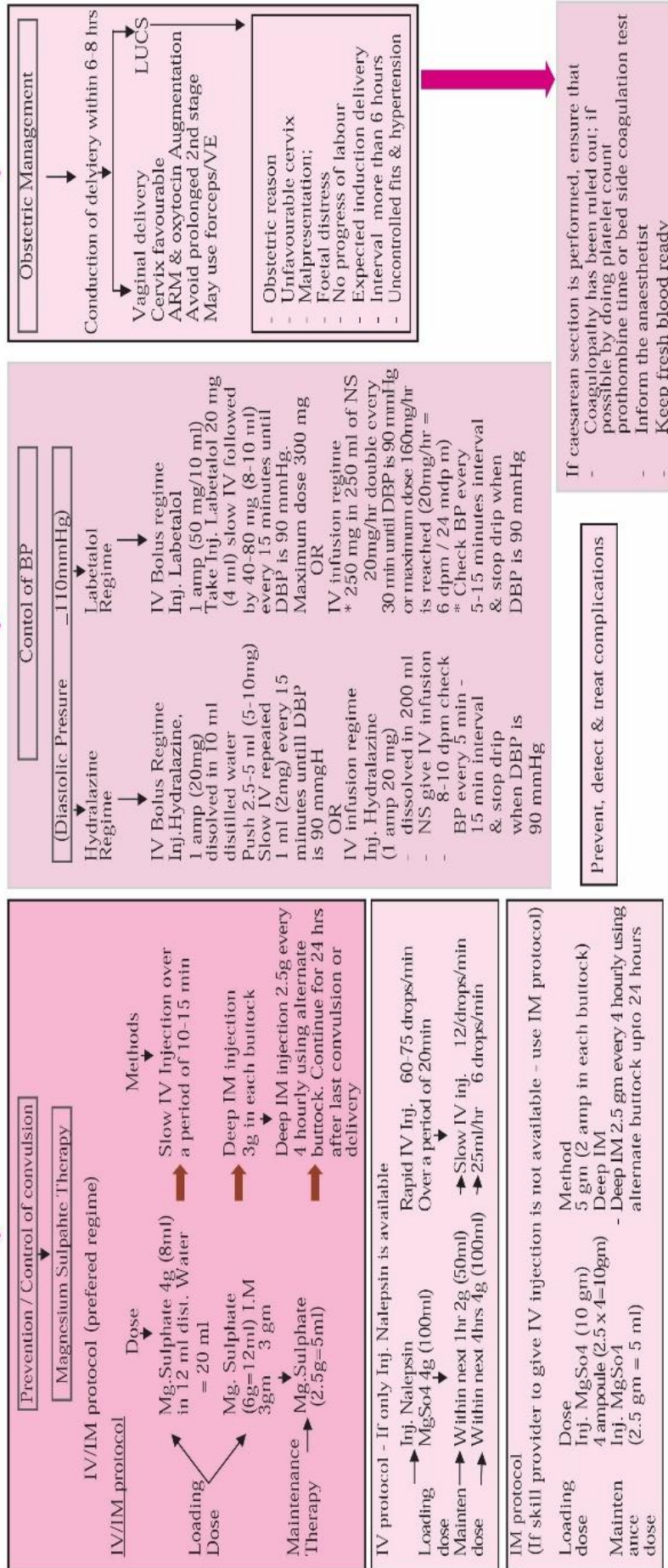
### C. Practices which are Clearly Harmful or Ineffective and Should be Eliminated

1. Routine use of enema, pubic shaving, intravenous infusion in labour
2. Routine prophylactic insertion of intravenous cannula
3. Routine use of bladder catheterization
4. Routine use of the supine position during labour
5. Administration of oxytocics for augmentation at any time before delivery without indication and effective monitoring
6. Routine use of lithotomy position during labour
7. Repeated or frequent vaginal examinations especially by more than one caregiver
8. Sustained, directed bearing down efforts during the second stage of labour
9. Massaging and stretching the perineum during the second stage of labour
10. Fundal pressure during labour
11. Routine use of oral or parenteral ergometrine in the third stage of labour
12. Routine lavage of the uterus after delivery
13. Routine manual /exploration of the uterus after delivery



# ANNEX-4: FLOW CHART FOR SPECIFIC MANAGEMENT OF SEVERE PRE ECLAMPSIA AND ECLAMPSIA (SPE/E)

## Flow chart for specific management of severe pre eclampsia and eclampsia (SPE/E)










Source: Standard Clinical Management Protocols and Flow Charts on Emergency Obstetric and Neonatal Care - Keep fresh blood ready

দুটি সন্তানের বেশি নয়

একটি হলে ভাল হয়

স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়

গর্ভবতী ও নবজাতকের  
যত্ন নিন মা ও শিশুর মৃত্যুর ঝুঁকি কমান

 <p>8 বার শারীরিক পরীক্ষা করান</p>	 <p>দিনে অন্তত 8 বার সুস্থ খাবার খান</p>
 <p>সময়মতো টিটি ইনজেকশন নিন</p>	 <p>দিনের বেলায় দুপুরে খাবারের পূর্বে কমপক্ষে ২ ঘণ্টা বিশ্রাম নিন, ভারি কাজ করবেন না</p>
 <p>প্রসবকালীন খরচের জন্য কিছু সঞ্চয় করুন</p>	 <p>প্রসবের জন্য নিকটস্থ সেবাদানকেন্দ্র অথবা একজন প্রশিক্ষণপ্রাপ্ত ও দক্ষ প্রসব সেবাদানকারী ঠিক করুন</p>
 <p>প্রয়োজনে হাসপাতালে যাওয়ার জন্য কমিউনিটি ব্যবস্থাপনায় যানবাহনের ব্যবস্থা রাখুন</p>	 <p>জন্মের পরপরই বাচ্চাকে শালদুধ নিন, ৬ মাস পর্যন্ত শুধু মায়ের দুধ দিন। শিশুকে উষ্ণ রাখুন। জন্মের ৩ দিনের মধ্যে গোসল করবেন না। শিশুকে সময়মতো টিকা দিন</p>



## নবজাতকের অত্যাবশ্যকীয় পরিচর্যা

**স্বাস্থ্যকর**  
নবজাতককে স্বাস্থ্যকরভাবে রাখা এবং পরিষ্কার করা।



**কিছুটা খাবার খাওয়া**  
নবজাতককে খাবার খাওয়াতে এবং পরিষ্কার করা।



**কিছুটা ঘুম**  
নবজাতককে ঘুম পাড়ানোর সুযোগ দেওয়া এবং পরিষ্কার করা।



**কিছুটা পরিষ্কার**  
নবজাতককে পরিষ্কার করা এবং পরিষ্কার করা।



**কিছুটা পরিষ্কার**  
নবজাতককে পরিষ্কার করা এবং পরিষ্কার করা।



**কিছুটা পরিষ্কার**  
নবজাতককে পরিষ্কার করা এবং পরিষ্কার করা।



**কিছুটা পরিষ্কার**  
নবজাতককে পরিষ্কার করা এবং পরিষ্কার করা।




**কিছুটা পরিষ্কার**  
নবজাতককে পরিষ্কার করা এবং পরিষ্কার করা।



**কিছুটা পরিষ্কার**  
নবজাতককে পরিষ্কার করা এবং পরিষ্কার করা।




মা ও স্বাস্থ্যকর পরিচর্যা দ্বারা সুরক্ষিত


  
**প্রসবের তৃতীয় ধাপের সক্রিয় ব্যবস্থাপনা**  
**Active Management of the Third Stage of Labor (AMTSL)**

সকল মহিলাদের জন্য, প্রতিটি প্রসবে, প্রত্যেক দক্ষ সেবাদানকারী.....


**১** বাচ্চা প্রসবের এক মিনিটের মধ্যে মাংশ পেশীতে ১০ ইউনিট অক্সিটোসিন দিন



**২** নাভিরজুতে নিয়ন্ত্রিত টান এবং জরায়ুতে বিপরীতমুখী চাপ দিয়ে গর্ভফুল প্রসব করান





**৩** গর্ভফুল প্রসবের পরপরই মহিলার পেটের উপর দিয়ে জরায়ুতে ম্যাসেজ দিন





**৪** গর্ভফুল প্রসবের পর থেকে পরবর্তী ২ ঘন্টা পর্যন্ত প্রতি ১৫ মিনিট পরপর মায়ের পেটের উপর দিয়ে জরায়ুতে হাত দিয়ে দেখুন জরায়ু সংকুচিত আছে কিনা এবং যোনীপথে অতিরিক্ত রক্তক্ষরণ হচ্ছে কিনা লক্ষ্য রাখুন


**প্রসব পরবর্তী রক্তক্ষরণজনিত মাতৃমৃত্যু.....**  
**.....প্রতিরোধ করতে হবে এখনই**

  
**USAID**  
FROM THE AMERICAN PEOPLE

  
**POPPHI**  
Prevention of Postpartum Hemorrhage Initiative

  
**OGSB**

  
**EngenderHealth**



## LABOR POSITIONS / Birth Positions

### 1st Stage

walk, stair climb  
slow dance  
wall lean  
sit upright  
pelvic rock, hip sway  
open knee chest pose  
abdominal lift  
shower or bath

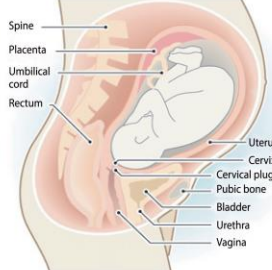
**Transition**

fuel body  
use gravity  
conserve energy


### 2nd Stage

classic position  
hands and knees  
asymmetrical stand  
side lying position  
assisted squat  
asymmetrical squat  
toilet squat  
standing squat


knees up, elbows out  
tuck chin, trap air  
push to the point of comfort




**VERTICAL LABOUR AND DELIVERY POSITIONS**




**SITTING (labor)**  
Makes uterus moves forward taking pressure off diaphragm. Improves blood supply to contracting muscles.



**STANDING (labor)**  
Helps widen pelvic opening while gravity assists in pressing baby's head against cervix.




**KNEELING (delivery)**  
Opens pelvis even wider and rotates baby into more favorable positions down into birth canal.



**SQUATTING (delivery)**  
Maintains upright position without straining back.


### নরমাল ডেলিভারীর পজিশন

WALKING, STANDING, AND LEANING (হাঁটাচলা, দাঁড়ানো এবং হেলান দেয়া অবস্থায় ডেলিভারী)




- এই পজিশন খুব ভালো। Contraction হতে সাহায্য করে।
- বাচ্চাকে নিচের দিকে নামতে সাহায্য করে।

KNEELING (হাঁটু গেড়ে বসা বা উপুড় হওয়া)



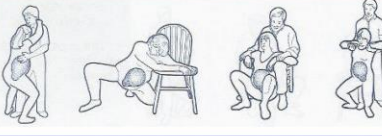
- এই পজিশনে ব্যথা কম হয়।
- বাচ্চাকে তার সুবিধামত পজিশনে ঘুরতে সাহায্য করে।

SITTING (সিটিং পজিশনে ডেলিভারী)



- বাচ্চাকে নিচের দিকে নামতে সাহায্য করে।
- প্রকৃতি Contraction এর মাঝে বিরতি থাকে এবং মাকে বিশ্রাম নিতে সাহায্য করে।




SQUATTING (পজিশনে ডেলিভারী)




- বাচ্চাকে নিচে নামতে সাহায্য করে।
- পেলভিক ডায়ামিটার বাড়ে।
- Fetal Distress কমে।
- জরায়ুর Contraction দ্রুত ভালো হয়।

### Up Right Position এ ডেলিভারীর উপকারিতা:


- Up Right Position এ পেলভিক ডায়ামিটার ২৮-৩০% বেড়ে যায়। জরায়ুর মুখ সহজে খুলবে এবং প্রসঙ্গ্য হবে। এতে খুব সহজেই মায়ের ডেলিভারী হয়।
- Up Right Position ২৯% ইমারজেন্সি সিজারিয়ান ডেলিভারী হার কমায়। পেলভিক ডায়ামিটার বড় হওয়ার জন্য মায়ের ডেলিভারী সময়টা কম লাগে, অনেক বেশি চাপ দিতে হয় না এবং কষ্ট কম হয়।
- Up Right Position ২১% Episiotomy হার কমায়।
- Up Right Position এ মায়ের Contraction খুব ভালো হয় এবং খুব তাড়াতাড়ি বাচ্চা ডেলিভারী হয়।
- Up Right Position এ ডেলিভারীতে ২৩% এর কম মায়ের Medical Assistance দরকার হয়। কিন্তু প্রতিটা Delivery এর সময় মায়ের সাথে একজন মিডওয়াইফ প্রয়োজন।
- Up Right Position এ প্রসবের সময় মা তার পছন্দ অনুযায়ী সুবিধামত চাপ দিতে পারে এবং বাচ্চা খুব সহজে নিচের দিকে নেমে আসে।
- Up Right Position ইপিডুরাল এনেস্থেসিয়া ব্যবহারের হার কমায়।
- Up Right Position এ fetal distress কম হয়।







### Squatting Chair




সহযোগীতায়











# SQUATTING

## THE POSITION for Labor and Birth

The Benefits of the Squatting Position vs. the Supine Position during Labor and Birth

- Tilts pelvis and uterus forward
- Increases the strength of contractions
- Works with gravity for smooth descent of the baby
- Relieves back pressure
- Encourages dilatation of the cervix
- Supports abdominal muscles by placing thigh pressure against the abdomen
- Shortens birth canal depth
- Relaxes and stretches evenly the pelvic floor muscles
- Reduces need for episiotomy
- Decreases need for forceps deliveries
- Shortens second labor stage

Pelvis viewed from below

Squatting increases the size of the pelvic outlet by 1-2 cm over the supine position.

Squatting      Non-Squatting or Supine

## গর্ভবতীর চেকআপ এবং প্রসবের পরিকল্পনা ও প্রস্তুতি



**১ম চেকআপ**  
মত তাত্ত্বিক স্তর

৪ মাসের মধ্যে

**২য় চেকআপ**

৬-৭ মাসে

**৩য় চেকআপ**

৮ মাসে

**৪র্থ চেকআপ**

৯ মাসে

প্রতিবার চেকআপের সময় রক্তচাপ, রক্ত-খন্ডতা ও গর্ভাব পরীক্ষা করা হয়

আপে থেকেই প্রসবের জন্য স্বাস্থ্যকেন্দ্র অথবা প্রশিক্ষণপ্রাপ্ত দক্ষ প্রসব সেবা প্রদানকারী (এসবিএ) ও বিপদে কোন স্বাস্থ্যকেন্দ্র যেতে হবে তা ঠিক করে রাখা

প্রয়োজনের সময়ে হাসপাতালে যেতে যানবাহন ও সাথী ঠিক করে রাখা

গর্ভাবস্থার শুরু থেকেই টাকা-পয়সা জমিয়ে রাখা

রক্তের গ্রুপ জেনে রাখা ও রক্তের প্রয়োজনে আত্মীয় স্বজনদের প্রস্তুত রাখা

মা ও নবজাতক বাঁচানোর সাফ কথা

 Save the Children



ANC visit Schedule for COVID-19

Number of Visits	Time of Visit	Type of visit
1 <sup>st</sup> visit	At 2 months/ 8 weeks	<b>Remote contact</b> Comprehensive history and planning Risk assessment over the telephone or video calling Health education, advice, and counseling*
2 <sup>nd</sup> visit	At 3 months/ 12 weeks	<b>Remote contact</b> History Risk assessment over the telephone or video calling** Advice USG for NT test and uterine arterial doppler study (where indicated and possible) *** Health education, advice, and counseling
3 <sup>rd</sup> visit	At 4 months/ 16 weeks	<b>Face-to-Face Contact</b> Detailed History and Examination Screening Tests (CBC, blood grouping and Rh typing, VDRL, Glucose challenge test, Urine R/E Health education, advice, and counseling
4 <sup>th</sup> visit	At 5 months/ 20-24 weeks	<b>Remote Contact</b> Detailed History Advice Anomaly Scan**** (virtual report sharing) Advice TT (first dose) Health education, advice, and counseling
5 <sup>th</sup> visit	At 6-7 months/ 24-28 weeks	<b>Face-to-Face Contact</b> Detailed History and Examination TT (second dose) GTT, CBC and urine test Laboratory Tests Health education, advice, and counseling
6 <sup>th</sup> visit	At 30 weeks	<b>Remote contact</b> Unless risk factors for hypertension in pregnancy or growth restriction identified previously ongoing risk assessment over the telephone or video calling Health education, advice, and counseling
7 <sup>th</sup> visit	At 8 months/ 32 weeks	<b>Face-to-Face</b> History, Abdominal Palpation including FHR Ongoing risk assessment Growth scan (if possible) Birth planning
8 <sup>th</sup> visit	At 9 months/ 34-36 weeks	<b>Face-to-Face</b> BP/Blood tests and Abdominal Palpation including FHR Ongoing risk assessment Birth planning

\* Health education and advise instruction for each visit- Counselling on Immunization, family planning, breastfeeding, danger signs of mother and newborn, ANC/ PNC exercise

\*\*Regular virtual sharing of reports

\*\*\* Perform Nuchal Translucency (NT) test for screening of Down's Syndrome, Color doppler scan for uterine artery blood flow study for early detection of PE and

\*\*\*\*USG for anomaly scan when and where indicated



Table 1 Checklist for remote antenatal contact

<b>Remote Antenatal Contact Checklist</b> <b>ALL contacts regardless of method should include:</b>
<p><b>Respectful Maternity Care – includes:</b></p> <ul style="list-style-type: none"> <li>▪ Treating all women with dignity and respect</li> <li>▪ Maintaining confidentiality and privacy</li> <li>▪ Freedom from discrimination</li> <li>▪ Supporting women’s right to information and informed autonomous decision making</li> </ul>
<ul style="list-style-type: none"> <li>▪ Introduce yourself and greet the woman in a friendly manner</li> <li>▪ Assessment for possible COVID-19 symptoms (both woman and any support persons) and refer to country/facility guidance or pathway for care if symptoms identified</li> <li>▪ Enquire about the woman’s general health and wellbeing</li> <li>▪ Consider physical, social, emotional and cultural wellbeing</li> <li>▪ Ask about pregnancy progress</li> <li>▪ Undertake routine observation and assessment</li> <li>▪ Explain all tests and procedures and obtain consent</li> <li>▪ Review history and undertake an ongoing assessment of risk factors</li> <li>▪ Discuss danger signs                             <ul style="list-style-type: none"> <li>➤ Vaginal bleeding</li> <li>➤ Convulsions/fits</li> <li>➤ Severe headache and/or blurred vision</li> <li>➤ Fever and too weak to get out of bed</li> <li>➤ Severe abdominal pain</li> <li>➤ Fast or difficult breathing</li> </ul> </li> <li>▪ Offer time for questions – take time to answer</li> <li>▪ Provide gestation and pregnancy-specific information and education</li> <li>▪ Undertake consultation and referral where necessary</li> <li>▪ Discuss plan for emergency transport from the woman’s home to a health facility if needed</li> <li>▪ Plan for next AN contact and ongoing care</li> <li>▪ Document assessments, discussions and plans for continued care</li> </ul>

<b>Considerations during Antenatal care</b> <b>At 2 months /8 weeks</b>	
First Remote contact	<ul style="list-style-type: none"> <li>▪ Does this woman require any routine testing – can it be delayed until the first face-to-face AN contact?</li> <li>▪ What information or education does this woman need at this gestation? (early pregnancy advice, signs of early pregnancy loss)</li> <li>▪ Have you identified any new risk factors? If so,               <ul style="list-style-type: none"> <li>➢ Does this woman need face-to-face AN contact?</li> <li>➢ Does this woman know the referral pathway for accessing hospital services during COVID-19 (i.e.: Do pregnant women need to be seen in a different location to usual at the hospital? Where do they go for triage and initial exposure risk screen etc?)</li> </ul> </li> <li>▪ How/where will you document this contact?</li> <li>▪ Document date and details of phone contact in woman’s handheld record</li> </ul>
<b>At 3 months/ 12 weeks</b>	
Second Remote contact	<ul style="list-style-type: none"> <li>▪ Does this woman require any routine testing – can it be delayed until the face-to-face AN contact?</li> <li>▪ What information or education does this woman need at this gestation?               <ul style="list-style-type: none"> <li>➢ Discuss signs of preterm labour and what to do if she thinks labour is starting</li> <li>➢ Discuss fetal movements and what to do if she notices a change in the movement pattern</li> </ul> </li> <li>➢ Discuss birth preparedness</li> <li>Have you identified any new risk factors? If so,               <ul style="list-style-type: none"> <li>➢ Does this woman need face-to-face AN contact?</li> <li>➢ Does this woman know the referral pathway for accessing hospital services during COVID-19 (i.e.: Do pregnant women need to be seen in a different location to usual at the hospital? Where do they go for triage and initial exposure risk screen etc?)</li> </ul> </li> <li>▪ How/where will you document this contact?</li> <li>▪ Document date and details of phone contact in woman’s handheld record</li> </ul>
<b>At 4 months/ 16 weeks</b>	
First Face-to-Face contact	<ul style="list-style-type: none"> <li>▪ Confirm the pregnancy and calculate the EDD</li> <li>▪ Take full history, perform general, systemic and obstetrical examination</li> <li>▪ What information or education does this woman need at this gestation?               <ul style="list-style-type: none"> <li>➢ Develop birth and emergency plan</li> <li>➢ Advice and counsel the importance of ANC care. self-care at home, rest, avoid heavy work, danger signs, nutrition etc.</li> </ul> </li> <li>▪ Investigation: CBC, Urine R/M/E, Blood sugar, Blood grouping and Rh typing, HbsAg, USG of lower abdomen and RT-PCR if the mother is suspected case</li> </ul>
<b>At 5 months/ 20 weeks</b>	
Third Remote contact	<ul style="list-style-type: none"> <li>▪ Is this woman due for any routine testing – can it be delayed until the next face-to-face AN contact?</li> <li>▪ What information or education does this woman need at this gestation?               <ul style="list-style-type: none"> <li>➢ Discuss signs of preterm labour and what to do if she thinks labour is starting</li> <li>➢ Discuss fetal movements and what to do if she notices a change in the movement pattern</li> </ul> </li> <li>▪ Have you identified any new risk factors? If so,</li> <li>▪ Does this woman need a face-to-face AN contact?</li> <li>▪ Does this woman know the referral pathway for accessing hospital services during COVID-19 (i.e.: Do pregnant women need to be seen in a different location</li> </ul>

	<p>to usual at the hospital? Where do they go for triage and initial exposure risk screen etc?)</p> <ul style="list-style-type: none"> <li>▪ How/where will you document this contact?</li> <li>▪ Document date and details of previous phone contact in woman's hand held record</li> </ul>
<b>At 6-7 months/ 24-28 weeks</b>	
Second Face-to-Face contact	<ul style="list-style-type: none"> <li>▪ Assess maternal and fetal wellbeing</li> <li>▪ Look for pregnancy induced hypertension, anemia and multiple pregnancy</li> <li>▪ What information or education does this woman need at this gestation? <ul style="list-style-type: none"> <li>➤ Check the birth and emergency plan</li> <li>➤ Advice and counsel diet, rest, ambulation, self-care, danger signs, bowel and bladder habit, exercise, post-partum family planning, hand hygiene</li> <li>➤ Birth preparedness: place of delivery, attendant and blood donor, money, transport</li> <li>➤ Essential newborn care, immediate and exclusive breastfeeding, importance of PNC, danger signs of newborn, skin to skin care and KMC</li> </ul> </li> <li>▪ Investigation: CBC, Urine R/M/E, Blood sugar, HbsAg, USG of lower abdomen with anomaly scan and RT-PCR if the mother is suspected case</li> </ul>
<b>At 30 weeks</b>	
Fourth Remote contact	<ul style="list-style-type: none"> <li>▪ Is this woman due for any routine testing – can it be delayed until the next face-to-face AN contact?</li> <li>▪ What information or education does this woman need at this gestation? <ul style="list-style-type: none"> <li>➤ Discuss signs of preterm labour and what to do if she thinks labour is starting</li> <li>➤ Discuss fetal movements and what to do if she notices a change in the movement pattern</li> <li>➤ Discuss birth preparedness</li> </ul> </li> <li>▪ Have you identified any new risk factors? If so,</li> <li>▪ Does this woman need a face-to-face AN contact?</li> <li>▪ How/where will you document this contact?</li> <li>▪ Document date and details of previous phone contact in woman's hand held record</li> </ul>
<b>At 8 months/ 32 weeks</b>	
Third Face-to-Face contact	<ul style="list-style-type: none"> <li>▪ Assess maternal and fetal wellbeing</li> <li>▪ Look for pregnancy induced hypertension, anemia, IUGR and multiple pregnancy</li> <li>▪ What information or education does this woman need at this gestation? <ul style="list-style-type: none"> <li>➤ Check the birth and emergency plan</li> <li>➤ Advice and counsel essential newborn care, early initiation of breastfeeding, PNC, post-partum family planning and birth spacing</li> </ul> </li> <li>▪ Investigation: CBC, Urine R/M/E, Blood sugar, USG of lower abdomen with pregnancy profile and RT-PCR if the mother is suspected case</li> </ul>
<b>At 9 months/ 34-36 weeks</b>	
Fourth Face-to-Face contact	<ul style="list-style-type: none"> <li>▪ Assess maternal and fetal wellbeing</li> <li>▪ Look for pregnancy induced hypertension, anemia, adequate maternal weight gain (9kg), IUGR, malpresentation and multiple pregnancy</li> <li>▪ What information or education does this woman need at this gestation? <ul style="list-style-type: none"> <li>➤ Check the birth and emergency plan</li> <li>➤ Advice and counsel essential newborn care, early initiation of breastfeeding, PNC, post-partum family planning and birth spacing</li> </ul> </li> <li>▪ Investigation: CBC, Urine R/M/E, Blood sugar and RT-PCR if the mother is suspected case</li> </ul>



# Kangaroo Care

## Benefits of Kangaroo Care

Kangaroo Care, also known as skin-to-skin contact, has great benefits for all newborns, but is especially beneficial to premie babies in the NICU

- Regulates baby's heart rate, breathing and body temperature


- Helps baby spend more time in deep sleep


- Improves baby's weight gain


- Increases mother's milk production for breastfeeding


- Increases bonding between baby and mother (or baby and father if he is practicing Kangaroo Care)



Reference:  
Kangaroo Care, March of Dimes Website: [MarchOfDimes.org/baby/kangaroo-care.aspx](http://MarchOfDimes.org/baby/kangaroo-care.aspx).  
Updated August 2014.

## How to Practice Kangaroo Care

Hold your diapered baby on your bare chest

Place a blanket over the baby to keep her warm



# ACOG's

## 5 REASONS TO DELAY CORD CLAMPING

*"...delayed umbilical cord clamping for at least 30-60 seconds is recommended..."*





**PUMPING IRON**

In term infants, delayed cord clamping increases hemoglobin levels at birth and improves iron stores in the first several months of life.



**EARLY BIRDS**

Benefits for preterm infants include improved transitional circulation, better building of red blood cell volume, decreased need for blood transfusion, and lower incidence of necrotizing enterocolitis and intraventricular hemorrhage.



**GOOD FOR ALL BABIES**

Given the benefits to most newborns, ACOG now recommends a delay in umbilical cord clamping in vigorous term and preterm infants for at least 30-60 seconds after birth.



**MELLOW YELLOW**

Delayed cord clamping comes with a small increase of jaundice; providers should ensure that babies are monitored, and if needed, treated appropriately.



**SAFE FOR MOM**

Delayed umbilical cord clamping does not increase the risk of maternal postpartum hemorrhage.



**What is considered "delayed"?**

American Academy of Pediatrics: 30-60 seconds  
 World Health Organization: 1 minutes  
 Royal College of Obstetricians and Gynaecologists: 2 minutes  
 American College of Nurse-Midwives: 2-5 minutes

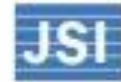
for more information, read  
**ACOG's Delayed Umbilical Cord Clamping After Birth**  
[www.staciebingham.com](http://www.staciebingham.com)







Government of Nepal  
Ministry of Health & Population  
Department of Health Service



# Five Key Messages of Essential New Born Care

The following care should be given to all newborn



1. Wipe the baby immediately after birth using a soft, clean and dry cloth and wrap the baby with another dry cloth to keep baby warm.



2. Use 4% CHX gel immediately after cord cutting and keep the cord clean and dry. Apply nothing on the cord and surrounding areas.



3. Keep baby in skin to skin contact



4. Initiate breast feeding within one hour of birth

**5. Delay bathing for at least 24 hours after birth**



The IMPORTANCE of BREASTFEEDING

Maternal Health Benefits



2018

References on reverse





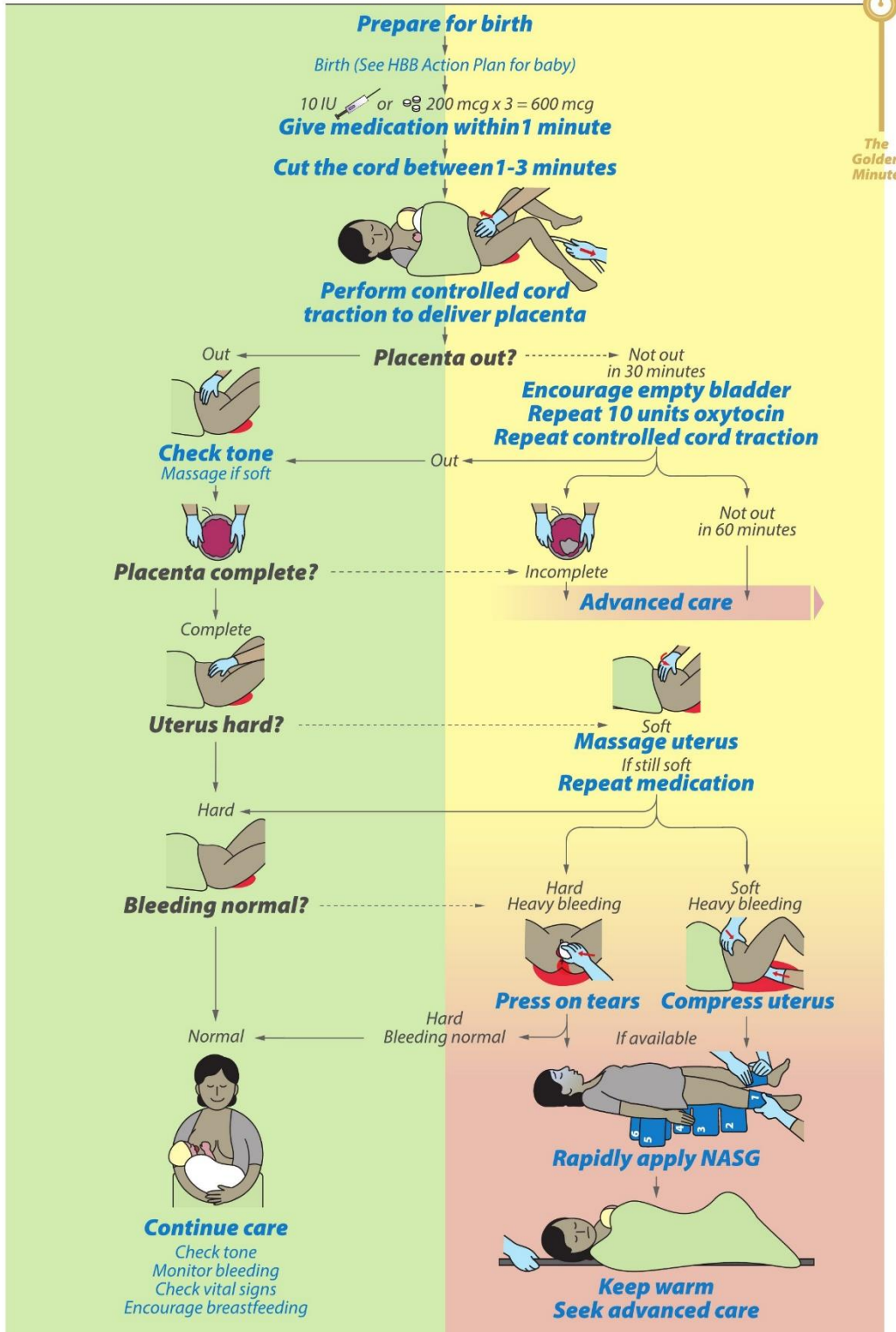
### The IMPORTANCE of BREASTFEEDING

#### Infant Health Benefits



# Helping Mothers Survive Bleeding after Birth

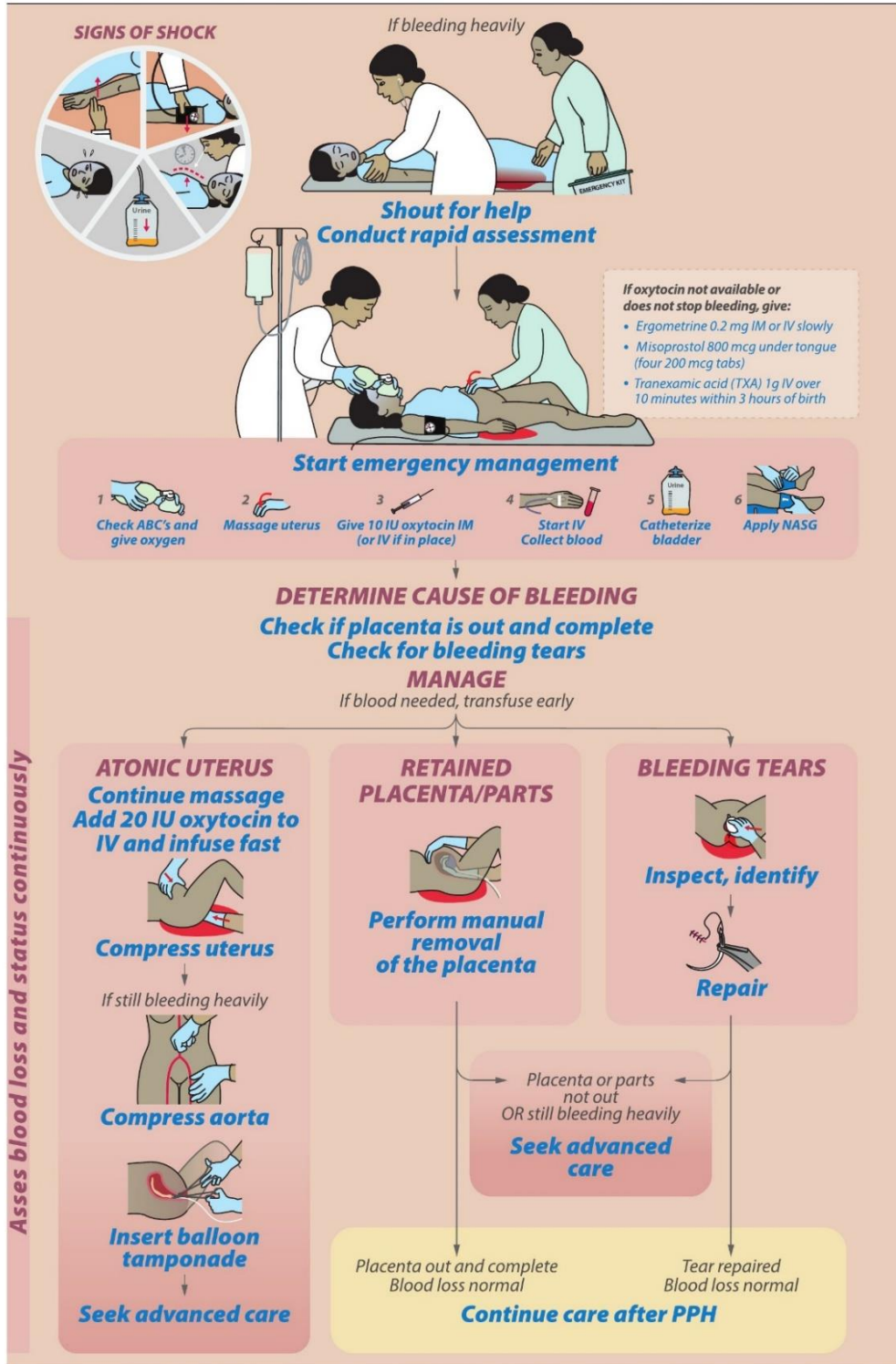
ACTION PLAN

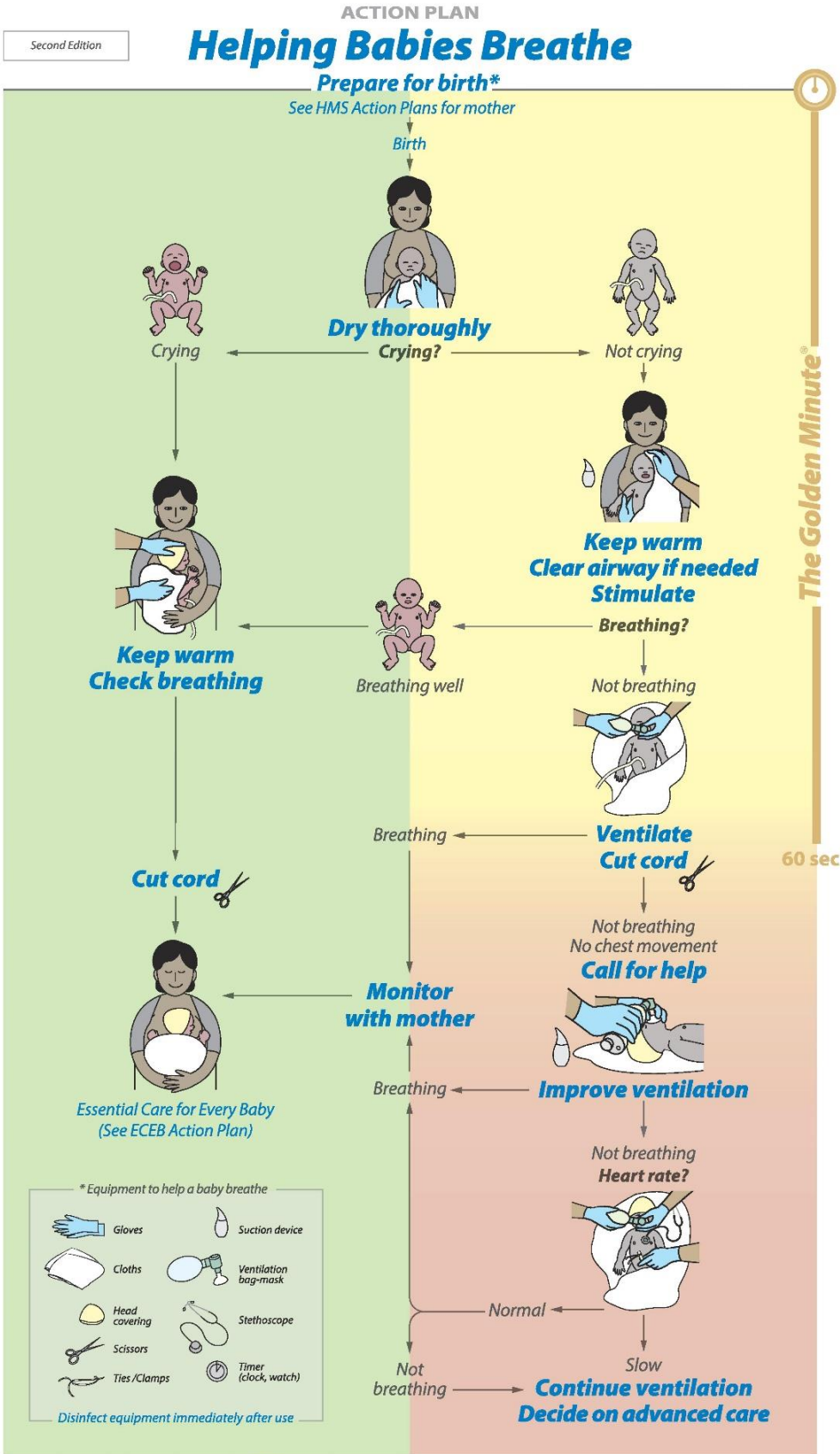


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Helping Mothers Survive  
**Prevent and manage shock from PPH**

ACTION PLAN

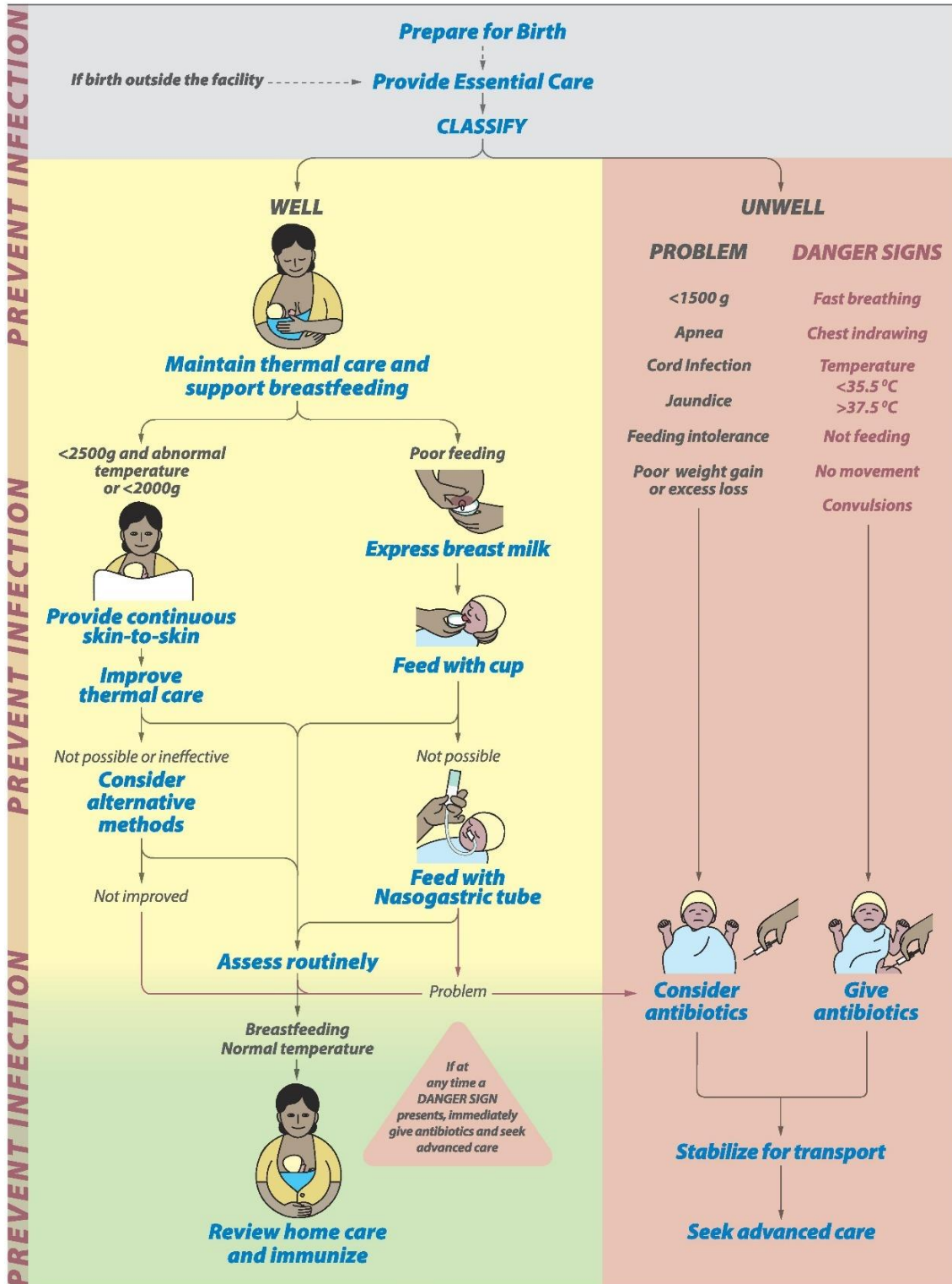






Helping Babies Survive  
**Essential Care for Small Babies**

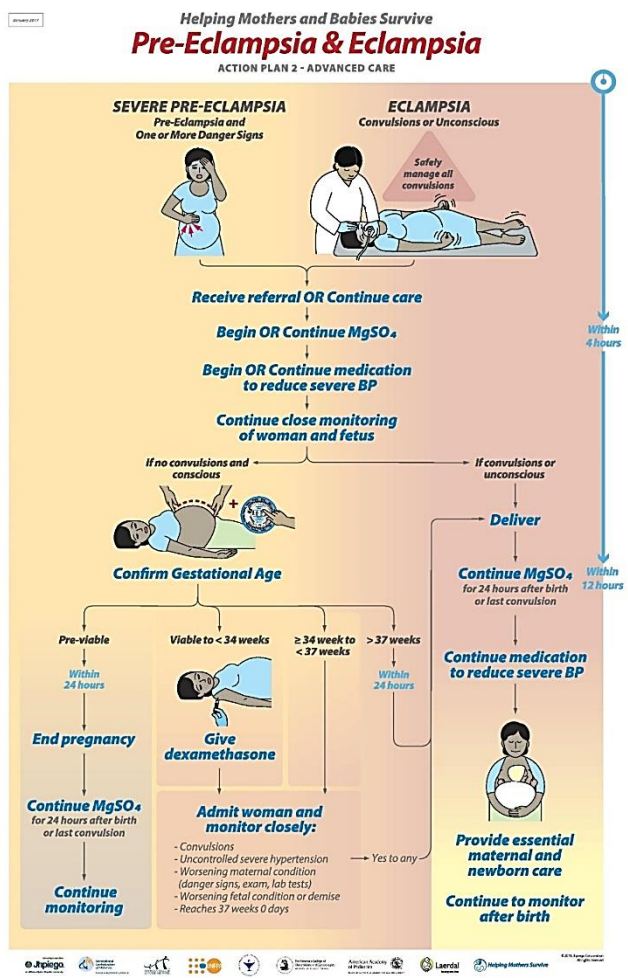
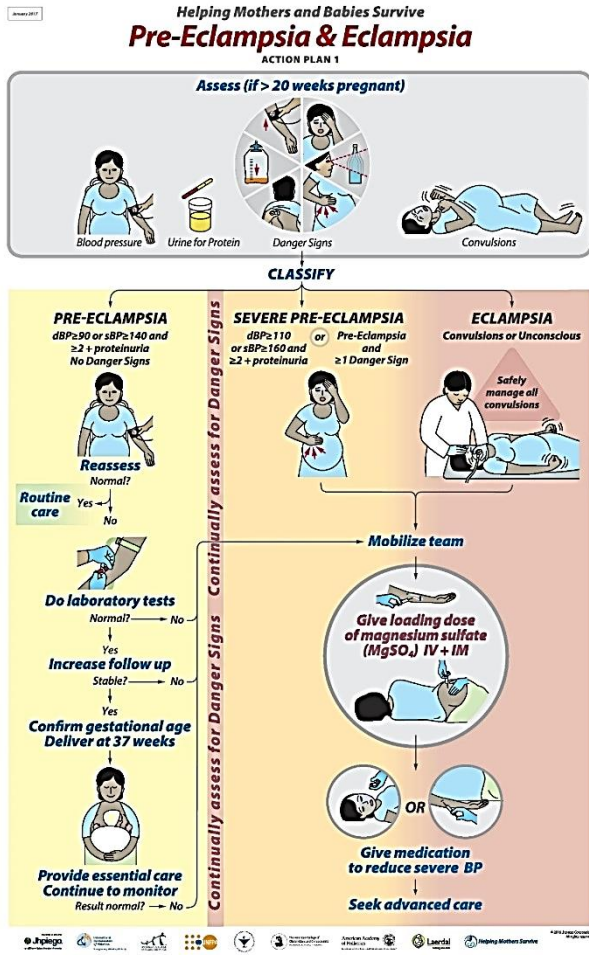
ACTION PLAN



JULY 2013



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## প্রি-একলাম্পশিয়া ও একলাম্পশিয়া ব্যবস্থাপনা প্রটোকল উপজেলা স্বাস্থ্য কমপ্লেক্স/জেলা সদর হাসপাতাল

প্রি-একলাম্পশিয়া: গর্ভকালীন সময়ে ২০ সপ্তাহের পর রক্তচাপ  $\geq 180/90$  mm of Hg হলে; এবং প্রশাবে এলবুমিন থাকলে।  
মারাত্মক প্রি-একলাম্পশিয়া: গর্ভকালীন সময়ে রক্তচাপ  $\geq 160/110$  mm of Hg হলে; অথবা উচ্চ রক্তচাপের সাথে এক বা একাধিক বিপদ চিহ্ন যেমন: (মাথা ব্যাথা, উপরের পেট ব্যাথা বা চোখে ঝাপসা দেখা)।  
একলাম্পশিয়া: গর্ভকালীন সময়ে উচ্চ রক্তচাপ  $\geq 180/90$  mm of Hg এবং খিঁচুনি বা অজ্ঞান।

তাত্ক্ষনিক ব্যবস্থাপনা	খিঁচুনি নিয়ন্ত্রণ	রক্তচাপ নির্ণয়
১. দ্রুত সাহায্য চাওয়া	রোগী যদি লোভিং ভোজ পেয়ে আসে তাহলে মেইনটেনেন্স ভোজ থেকে শুরু করতে হবে।	ডায়াস্টলিক প্রেসার $\geq 110$ মি.মি. মার্কারী হলে:
২. ABC এসেসমেন্ট	● যদি Inj. Nalepsin থাকে (IV ব্যবস্থাপনা) Inj. Nalepsin সর্বমোট: ৭ বোতল যোগাড় করুন। (প্রতি বোতলে ১০০ ml = ৪ গ্রাম পরিমাণে থাকে।)	-Inj. Labetalol প্রতি এম্পুল = ১০ মি.লি. (৫০ মি. গ্রাম) পরিমাণে থাকে।
A-শ্বাসনালী স্বাভাবিক রাখার জন্য মাউথগ্যাপ দিন।	লোভিং ভোজ: Inj. Nalepsin: ১ম বোতল	-Inj. Labetalol ৪ মি.লি. = ২০ মি. গ্রাম ধীরে শিরাপথে ২ মিনিট ধরে দিন।
B-শ্বাসপ্রশ্বাস এর গতি পর্যবেক্ষণ করুন। (স্বাভাবিক ১৪-১৮ বার/প্রতি মিনিটে)	মেইনটেনেন্স ভোজ (লোভিং ভোজ শেষ হওয়ার সাথে সাথে অথবা দ্রুত শুরু করুন): Inj. Nalepsin এর ১টি বোতল ৪ ঘন্টা ধরে শিরাপথে দিন। এভাবে বাকি ৬ বোতল ২৪ ঘন্টায় শেষ করুন।	-রক্তচাপ মাপুন।
C-নাড়ীর গতি পর্যবেক্ষণ করুন। (স্বাভাবিক গতি ৭০-৮০/প্রতি মিনিটে) এবং রক্তচাপ নির্ণয়।	● যদি Inj. MgSO4 এম্পুল থাকে (IV + IM ব্যবস্থাপনা) Inj. MgSO4 ১ এম্পুল (৫ মি.লি.) = ২.৫ গ্রাম পরিমাণে থাকে।	-১৫ মিনিটের মধ্যে রক্তচাপ কমে ডায়াস্টলিক প্রেসার ৯০-এর নিচে না আসলে আবার Inj. Labetalol ৮ মি.লি. = ৪০ মি. গ্রাম ধীরে শিরাপথে দিন।
৩. Oxygen প্রদান ৪-৬ L/প্রতি মিনিটে।	লোভিং ভোজ: Inj. MgSO4 (৮ মি.লি.) + ডিসটিলড ওয়াটার (১২ মি.লি.) = ২০ মি.লি. মিশ্রণ।	-একইভাবে প্রতি ১৫ মিনিট পর BP চেক করুন যতক্ষণ না পর্যন্ত ডায়াস্টলিক BP ৯০ তে নেমে আসে।
৪. রোগীকে একলাম্পটিক পজিশনে রাখুন।	● মেইনটেনেন্স ভোজ (লোভিং ভোজ শেষ হওয়ার ৪ ঘন্টা পর): Inj. MgSO4 ১ এম্পুল = ৫ মি.লি. (২.৫ গ্রাম)	-মনে রাখবেন, Inj. Labetalol-এর সর্বোচ্চ ভোজ ৩০০ মি. গ্রাম হবে।
৫. মূত্র খালিতে ফলিস ক্যাথেটার দিন।	লোভিং ভোজ: Inj. MgSO4 ১২ মি.লি. (৬ গ্রাম) দিন।	
৬. I/V line চালু করুন।	● যদি Inj. MgSO4 এম্পুল থাকে এবং দ্রুত প্রসবেস্বাদানকারী না থাকে (IM ব্যবস্থাপনা) Inj. MgSO4 ১ এম্পুল (৫ মি.লি.) = ২.৫ গ্রাম পরিমাণে থাকে।	
৭. শিরাপথে Normal Saline/Lactoride Infusion ধীরগতিতে ১০-২০ ফোঁটা/প্রতি মিনিটে (মনে রাখবেন, Infusion Rate ঘন্টায় ৮০ ml এর বেশি দিবেন না। এভাবে ২৪ ঘন্টায় ২ লিটারের বেশি নয়।	লোভিং ভোজ: Inj. MgSO4 (৪ এম্পুল বা ১০ গ্রাম দিন)	
৮. এন্টিবায়োটিক ইনজেকশন দিন।	● মেইনটেনেন্স ভোজ (লোভিং ভোজ শেষ হওয়ার ৪ ঘন্টা পর): Inj. MgSO4 ১ এম্পুল = ৫ মি.লি. (২.৫ গ্রাম)	

মনে রাখবেন

খিঁচুনি নিয়ন্ত্রণের পর ও প্রতি ১/২ ঘন্টা পর পর রক্তচাপ মাপবেন এবং Input/Output চার্ট এর মাধ্যমে প্রশাবের পরিমাণ মাপুন।

### প্রয়োজনীয় জরুরী একলাম্পশিয়া বক্স



- এয়ারওয়ে টিউব (প্রাপ্ত বয়স্কদের বিভিন্ন সাইজ)- ৩টা
  - ইনজেকশন: Magnesium sulfate
  - ইনজেকশন: G Magnaliph-১০ এম্পুল
  - ইনজেকশন: NALEPSIN ১০০ml-৭ বোতল
  - ফলিস রাখার ক্যাথেটার ১৪- ১টা সঙ্গে ইউরো ব্যাগ
  - ইনফিউশন হার্টসল ১০০০ml - ১ ব্যাগ
  - ইনফিউশন নরমাল স্যালাইন ১০০০ml- ১ ব্যাগ
  - আইভি কেবুল - ২০ G-২টা
  - স্টেটাইল গ্রাউন্ড- ২ জোড়া
  - ডিসটিল্ড ওয়াটার- ৫০০- ১০ এম্পুল
  - ডিসপোজেবল সিরিঞ্জ ২০ cc ১টা
  - ১০ cc ২টা
  - ৩ cc ২টা
  - স্যালাইন সেট ৩-৩টা
- Note : Inj. MgSo4 is given both for Loading dose 10gm & Maintenance doses and for IV & IV+IM regimen

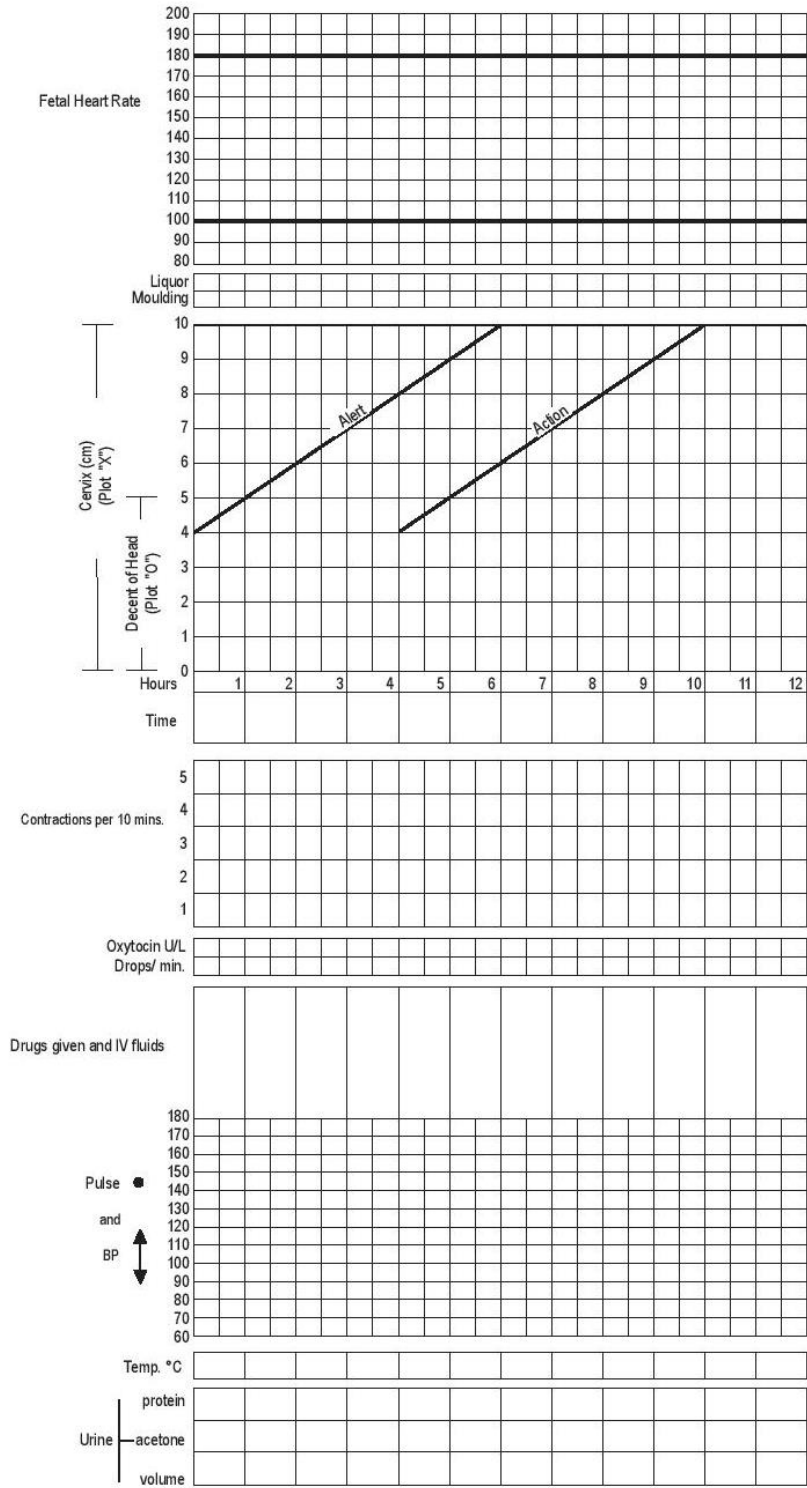
সহযোগীতায়





### The Modified WHO Partograph

Name	Gravida	Para	Hospital no.
Date of admission	Time of admission	Ruptured membranes	hours









## প্রয়োজনীয় জরুরী পিপিএইচ বক্স



- ইনজেকশন. Oxytocin 5 IU- 6 গ্রাম্পুল (ফ্রিজে রাখতে হবে)
- ট্যাবলেট Mesoprostol 200 micro gm- 8টা
- ইনফিউশন হার্টসল - 1000ml - ১ ব্যাগ
- ইনফিউশন নরমাল স্যালাইন- 1000ml - ১ ব্যাগ
- ইনজেকশন. Tranexamic Acid - 500গ্রামজি - 4 ইম্পালস (২৪ ঘন্টার জন্য)
- ফলিস রাবার ক্যাথেডার ১৪ সাইজ-১টা সঙ্গে ইউরো ব্যাগ
- প্লেন রাবার ক্যাথেডার-১টা
- কনডম -২টা
- স্টেরাইল সিল্ক- ১ পাতা
- স্টেরাইল গ্লোভস- ২ জোড়া
- স্যালাইন সেট- ৩টা
- আইভি কেনুলা ১৪ G -১টা, ২০ G - ১টা
- ডিসপোজেবল সিরিঞ্জ - 10cc - ১টা, 5cc-৪টা
- এয়ারওয়ে টিউব (প্রাপ্ত বয়স্কদের বিভিন্ন সাইজ)- ২টা





Equipment	Upazilla health complex UHC (100 bed)	District Hospital (250 bed)	Tertiary Medical College Hospital (500 bed)
1. Labour table/Squatting chair	√	√	√
2. Instrument trolley	√	√	√
3. Saline stand	√	√	√
4. Oxygen cylinder/oxygen tube, nasal cannula and face masks	√	√	√
5. Radiant warmer	√	√	√
6. Sucker machine	√	√	√
7. Vacuum extractor	√	√	√
8. Baby weight machine	√	√	√
9. Drum	√	√	√
10. Spot light	√	√	√
11. CTG machine	√	√	√
12. Big tray for instruments	√	√	√
13. Small stairs beside labour table	√	√	√
14. Doppler ultrasound	√	√	√
15. USG machine	√	√	√
16. Sterilizer	√	√	√
17. Table for baby management	√	√	√
18. Basket for waste disposal	√	√	√

LOGISTICS:			
1. BP machine	√	√	√
2. Stethoscope (adult and fetal)	√	√	
3. Jar for lifter and lifter	√	√	√
4. Disposable syringe	√	√	√
5. IV cannula	√	√	√
6. Butterfly cannula	√	√	√
7. Tourniquet	√	√	√
8. Micropore	√	√	√
9. Cotton	√	√	√
10. Gloves	√	√	√
11. Napkins/towel	√	√	√
12. Drapes and sheets	√	√	√
13. Clean clothes (1meter x 1meter) 2 pieces	√	√	√
14. Clean gauze, swab or cloth for wiping baby's eyes	√	√	√
15. Clean perineal pad	√	√	√
16. Delivery kits (with episiotomy set)	√	√	√
17. Bowl/tray	√	√	√
18. PPH kits and Eclampsia kits	√	√	√

INSTRUMENT:			
1. Sponge holding forceps	√	√	√
2. Gullipot	√	√	√
3. Episiotomy scissors	√	√	√
4. Needle holder (medium)	√	√	√
5. Tooth dissecting forceps	√	√	√
6. Stitch cutting scissors	√	√	√
7. Umbilical cord clamp	√	√	√
8. Kidney dish	√	√	√
9. Sims speculum	√	√	√

10. Mayo's scissor	√	√	√
11. Obstetric forceps- Wrigley's	√	√	√
12. Allys tissue forceps	√	√	√

Record form:			
1. Admission register	√	√	√
2. Family card (to be kept by mother)	√	√	√
3. Delivery register	√	√	√
4. Partograph (including delivery record on reverse side)	√	√	√
5. Referral form	√	√	√
6. Discharge form	√	√	√
7. Birth certificates	√	√	√

Drugs for routine care:			
1. Inj. oxytocin	√	√	√
2. Inj. ergometrine	√	√	√
3. Inj. TT/TIG	√	√	√
4. Inj. Amoxicillin	√	√	√
5. Vitamin A supplements	√	√	√
6. Vitamin K1	√	√	√
7. Iron/folate tablets	√	√	√
8. Antimicrobial eye prophylaxis (1% silver nitrate solution, 2.5% povidone iodine or 1% tetracycline eye ointment)	√	√	√
9. Hexisol	√	√	√
10. Povidone iodine ointment	√	√	√
11. Jasocaine jelly	√	√	√



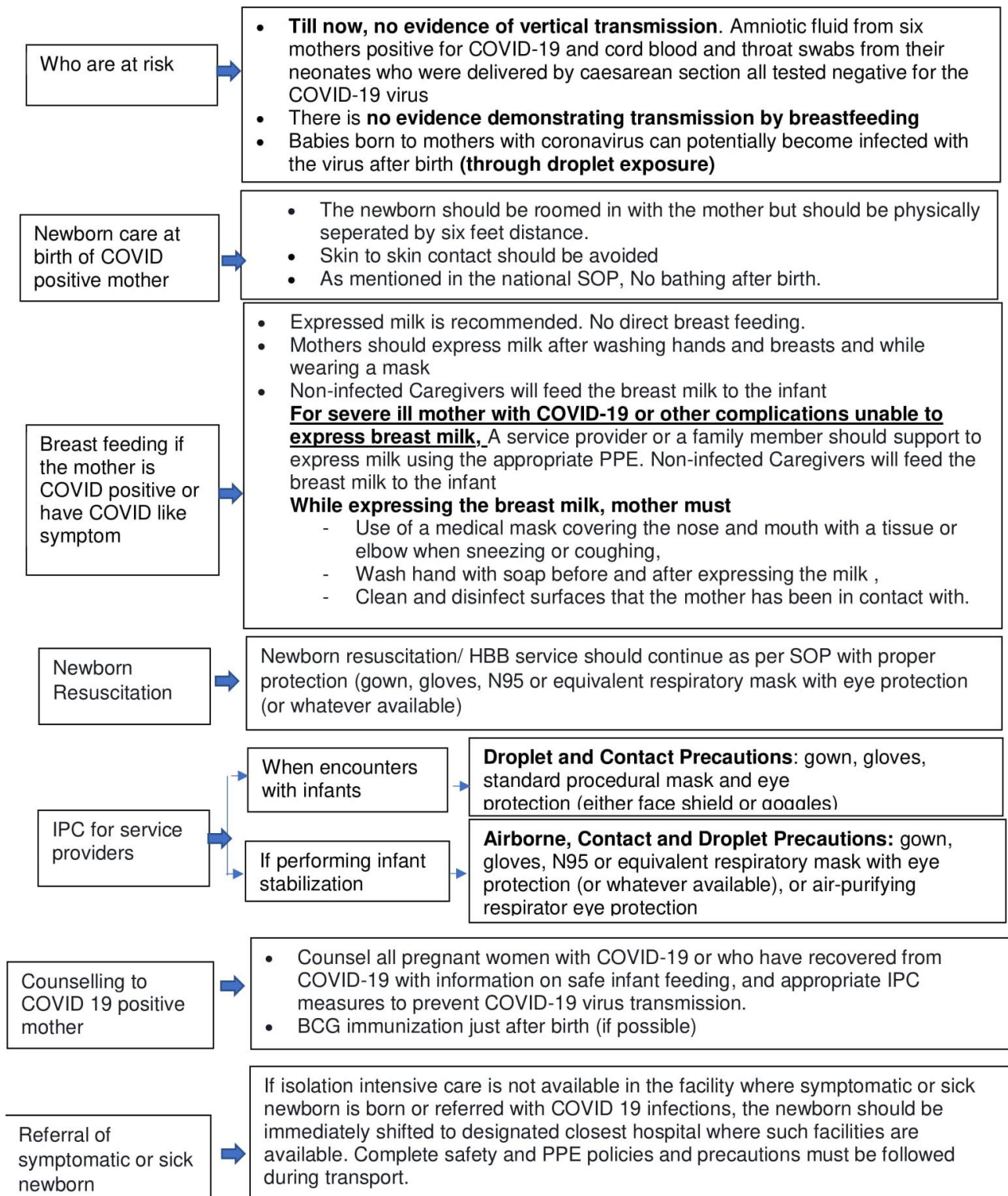
12. 7.1% chlorhexidine	√	√	√
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Drugs for emergency care/services			
1. Inj. Oradexon	√	√	√
2. Inj. Amoxicillin	√	√	√
3. Inj. Hydralazine	√	√	√
4. Inj. Diazepam	√	√	√
5. Inj. Ergometrine	√	√	√
6. Inj. Adrenaline	√	√	√
7. Inj. Magnesium sulfate	√	√	√
8. Lidocaine 2% (for dilution to 0.5%)	√	√	√
9. Inj. Pethidine	√	√	√
10. Tab. Paracetamol (Acetaminophen)	√	√	√
11. Tab. Phenobarbital	√	√	√
12. Inj. Calcium gluconate	√	√	√
13. Tab. Misoprostol	√	√	√
14. Tab. Nifedipine	√	√	√
15. Topical antibiotic ointment	√	√	√

Infusion:			
1. Normal saline	√	√	√
2. Dextrose solution (5%)	√	√	√
3. Ringer's lactate	√	√	√



## COVID19 Newborn Guidance in Labour room





## বিশ্বজুড়ে COVID-19 প্রতিরোধে গর্ভবতী মা ও পরিবারের করণীয়



বিশ্বজুড়ে COVID-19 ভাইরাস সংক্রমণ বৈশ্বিক মহামারী আকার ধারণ করেছে। এই রোগের সংক্রমণ ও বিস্তার রোধে গর্ভবতী মা ও নবজাতকের স্বাস্থ্য সুরক্ষায় নিম্নলিখিত পদক্ষেপগুলো মেনে চলার জন্য অনুরোধ করা যাচ্ছে।

১. গর্ভবতী মা খুব প্রয়োজন না হলে ঘরেই থাকুন।
২. গর্ভবতীসহ বাড়ির সবাইকে বাইরে থেকে এসে বার বার সাবান দিয়ে ভাল করে হাত ধুতে হবে, কমপক্ষে ২০ সেকেন্ড।
৩. হাঁচি-কাশি শিষ্টাচার মেনে চলবেন। টিস্যু, রুমাল অথবা কনুয়ের ভাঁজে হাঁচি-কাশি দেবেন এবং ঢাকনা দেওয়া ডাঙিটবিনে টিস্যু পেপার ফেলবেন। রুমাল বা কাপড় সাবান দিয়ে ধুয়ে ফেলুন।
৪. জ্বর হাঁচি কাশিতে আক্রান্ত রোগীর সংস্পর্শ এড়িয়ে চলুন।
৫. করমর্দন কোলাকুলি করবেন না। পরস্পরের মধ্যে ৩ ফুট দূরত্ব বজায় রাখুন।
৬. গর্ভবতী মা লোক সমাগম বা সমাবেশে যাবেন না, তাই মার্কেট, বাজার বা বাড়ির বাইরে না যাওয়াই ভাল। প্রতিদিন পরিষ্কার কাপড় ধুয়ে ফেলুন।
৭. খাবার সুশুদ্ধ করে খেতে হবে। বিশেষ করে মাছ, মাংস, কাঁচা ও পোঁচ ডিম, কাঁচা দুধ খাওয়া যাবেনা।
৮. ফল বা সালাদ খুব ভালো করে বারে বারে ধুয়ে খাবেন।
৯. পরিবারের কেউ সর্দি জ্বরে আক্রান্ত হলে তাকে মাস্ক ও গ্লাভস পরা বা নিজেকে কারও সংস্পর্শে আসতে দেওয়া যাবে না।
১০. বিদেশ ফেরত কেউ আসলে ১৪ দিন পর্যন্ত নিজগৃহে কোয়ারেন্টাইন অবস্থায় থাকতে হবে এবং পরিবারের সদস্যদের সংস্পর্শে আসা যাবেনা। তার থাকা খাওয়া ও ব্যবহার্য বাসন কোসন আলাদা করতে হবে। ওয়ান টাইম খালা বাসন ব্যবহার করতে পারলে ভাল।
১১. গর্ভবতী মহিলা তার চিকিৎসকের কাছে অনলাইন বা টেলিফোনে বাসা থেকে চিকিৎসা নিতে পারেন। জরুরী অবস্থা হলে হাসপাতালে আসবেন অথবা আপনার চিকিৎসকের পরামর্শে নির্ধারিত হাসপাতালে আসবেন।
১২. শুকনো কাশি, হাঁচি ও সংগে জ্বর থাকলে মাস্ক ও গ্লাভস ব্যবহার করুন এবং আলাদা থাকুন।
১৩. গর্ভবতী মা জ্বরের জন্য paracetamol সেবন করতে পারবেন। হাঁচি-কাশির জন্য antihistamin দেওয়া যেতে পারে। প্রচুর পানি ও তরল খাবার খাবেন।
১৪. মানসিক ও সামাজিক সহায়তা সহ গর্ভবতী মায়ের যত্ন নিতে হবে।
১৫. যদি কোন গর্ভবতী মা COVID-19 আক্রান্ত হয়ে থাকেন তবে তাকে চিহ্নিত হাসপাতালে\* যেতে হবে এবং acute phase-এ যেকোন অপারেশন না করাই ভাল। যতটা দেরী করা যায় ততটা উত্তম।
১৬. স্বাভাবিক প্রসবের সময় সেবা দানকারীর সাহায্য নিন ও নির্দিষ্ট হাসপাতালে ভর্তি হবেন। CS-এর প্রয়োজন হলে regional anesthesia দেয়া উচিত।
১৭. আক্রান্ত কোন গর্ভবতীর তীব্র মাথা ব্যথা, চোখে ঝাপসা দেখা, যোনীপথে রক্তপাত, পেটে ব্যথা, উচ্চ জ্বর, শ্বাসকষ্ট, বাচ্চা নাড়াচাড়া কমে গেলে "Call Care" Centre-এ যোগাযোগ করবেন।
১৮. স্বাস্থ্য সেবাদানকারী ও গর্ভবতী মা উভয়ই মাস্ক ও গ্লাভস ব্যবহার করবেন। ডেলিভারীর পূর্বেই গর্ভবতী মা সুস্থ হয়ে উঠলে মাতৃত্বকালীন সেবা নিকটস্থ স্বাস্থ্য কেন্দ্রে গিয়ে নিবেন।
১৯. বাচ্চাকে হাত না ধুয়ে কেউ কোলে নেবেন না। বাচ্চাকে চুমু দেওয়া যাবে না। নবজাতককে শুধু মা একা অথবা পরিবারের নির্দিষ্ট এক জন যত্ন করলে ভাল হয়।
২০. মা যদি COVID-19 আক্রান্ত হয়ে থাকেন তবে মায়ের দুধ বের করে বাটি চামচ দিয়ে খাওয়াতে হবে।

**প্রয়োজনে যোগাযোগ করুন (কল সেন্টার): ১৬২৬৩ এবং ৩৩৩**

IEDCR Hotline: ০১৯৩৭০০০০১১, ০১৯৩৭১১০০১১, ০১৯২৭১১৭৮৪, ০১৯২৭১১৭৮৫

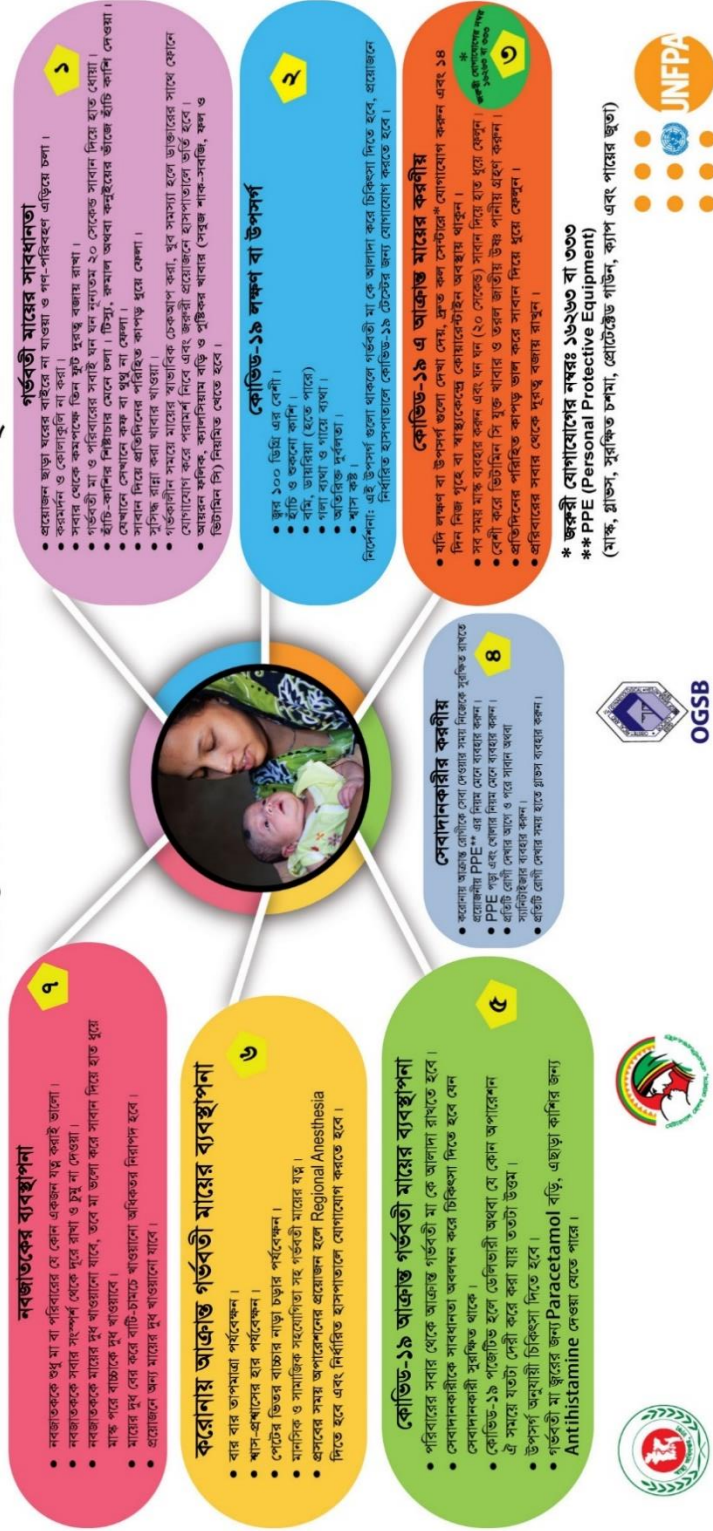
**করোনা ভাইরাস ট্রিটমেন্ট সেন্টার-**

\* মুগদা জেনারেল হাসপাতাল \* কুয়েত মৈত্রী হাসপাতাল \* মহানগর হাসপাতাল \* কুর্মিটোলা জেনারেল হাসপাতাল।





## কোভিড-১৯ এ আক্রান্ত গর্ভবতী মা ও নবজাতকের জরুরী ব্যবস্থাপনা





## করোনা মোকাবেলায় জীবানুনাশক দ্রবণ (Antiseptic Solution) তৈরির নিয়ম

### ব্লিচ ব্যবহার করে:

ব্লিচ বাজারে ক্লোটেক (Chlotech), ক্লোরক্স ও ক্লোরেক্স ইত্যাদি নামে পাওয়া যায়। ব্লিচ ব্যবহার করে জীবানুনাশক দ্রবণ তৈরির পদ্ধতি হলো:

অধিক মাত্রার সংক্রামক জীবানুনাশক দ্রবণ: (হাসপাতাল বর্জ্য বা আক্রান্ত মৃতদেহ)



স্বল্প মাত্রার সংক্রামক জীবানুনাশক দ্রবণ: (সাধারণ গৃহস্থালি পরিষ্কারের কাজে)



### ব্লিচিং পাউডার ব্যবহার করে:

ব্লিচিং পাউডার বাজারে পাউডার বা গুঁড়া হিসেবে পাওয়া যায়। ব্লিচিং পাউডার দিয়ে দুইরকমের জীবানুনাশক দ্রবণ তৈরি করা যায়। একটি বেশী ঘনত্বের ১:১০ ঘনত্বের যা দ্বারা অধিক সংক্রামক বর্জ্য, হাসপাতালের বর্জ্য, আক্রান্ত মৃতদেহ ইত্যাদি জীবানুমুক্ত করা হয়। আরেকটি ১:১০০ ঘনত্বের দ্রবণ যা সাধারণ পরিষ্কারের কাজ যেমন আসবাবপত্র, যন্ত্রাংশ, ফ্লোর, গাড়ী ইত্যাদি জীবানুমুক্ত করতে ব্যবহৃত হয়।

### ১:১০ ঘনত্বের দ্রবণ তৈরি:



### ১:১০০ ঘনত্বের দ্রবণ তৈরি:



\*এই মিশ্রণটি দৈনন্দিন পরিচ্ছন্নতার কাজে ব্যবহারযোগ্য। পানযোগ্য নহে।  
রান্না বা সংশ্লিষ্ট কাজে অব্যবহার যোগ্য। শিশুদের হাতের নাগালের বাইরে রাখুন।

## HEPA filter

### Function:

As a recirculating unit, the motor/blower can deliver up to 800 cubic feet per minute (CFM) or 1360 m<sup>3</sup>/hr to provide a large number of room air changes per hour to minimize the spread of airborne diseases to patients and healthcare workers. As a negative pressure unit, the air passing through the HEPA filter is cleansed of 99.99% of particles as small as 0.3 micron and may be exhausted directly to the exterior through a window or a wall simply by connecting flexible ducting to the 6 in. (152 mm) collar located on the top.

### Maintenance:

1. To ensure its efficacy, the HEPA filter should be changed every 6monthly
2. Plug off when not in use
3. Make sure that the air outlets are always free



Figure: HEPA filter



Figure: UV ray Sterilizer

## UV-ray sterilizer

### Function:

Ultraviolet light-emitting diode (UV-C LED) lamps emit UV light at 255-280 nm wavelengths which are strongly absorbed by the viral nucleic acid which in turn causes death or inactivation of the virus.

### Maintenance:

1. Should be replaced 12monthly

### Common instructions for both:

1. Use a soft humid piece of cloth to clean the device. Make sure that no water gets into the device
2. Do not use if there is a visible damage
3. Do not attempt to repair yourself
4. Touch with dry hands



## Pulse Oximeter



Figure: Pulse-oximeter

### Function:

A pulse oximeter is an early-warning device for Hypoxia. It measures both arterial oxygen saturation (SpO<sub>2</sub>) and pulse rate.

### Maintenance:

1. Keep the battery fully charged
2. Clean it gently with a damp cloth or alcohol swab
3. Position safely to avoid dropping or damage
4. Insert the plug or the lead correctly to avoid damage
5. Disconnect the probe carefully holding it firmly
6. When disconnecting the probe, grip the cable firmly and not the cable
7. When not in use, always coil the lead and position the probe where it cannot be damaged

## IR Thermal Scanner

### Function:

IR thermal scanner detects and records body temperature from a distance.

### Maintenance:

1. Use a soft humid piece of cloth to clean the device. Make sure that no water gets into the device
2. Do not attempt to repair yourself if damaged
3. Touch with dry hands



Figure: IR Thermal Scanner

## ব্যক্তিগত সুরক্ষা সামগ্রী (পিপিই) পরিধানের ধাপসমূহ

১. জ্বাবসুটি পরিধান করুন
২. জুতার কাভার (শু কাভার) অথবা রাবারের জুতা পরিধান করুন
৩. হাত পরিষ্কার করুন
৪. N95 মাস্ক ব্যবহার করুন
৫. মাথার কাপ পরিধান করুন
৬. সার্জিক্যাল মাস্ক পড়ুন
৭. গলাজু পড়ে নিন
৮. সার্জিক্যাল মাস্ক পরিধান করুন
৯. একবার ব্যবহার উপযোগী গাউন পরিধান করুন
১০. সার্জিক্যাল গ্লাভস পরিধান করুন
১১. ডাবল সার্জিক্যাল গ্লাভস পরিধান করুন

সম্পূর্ণ

সম্মেলনকারী:  OGSB

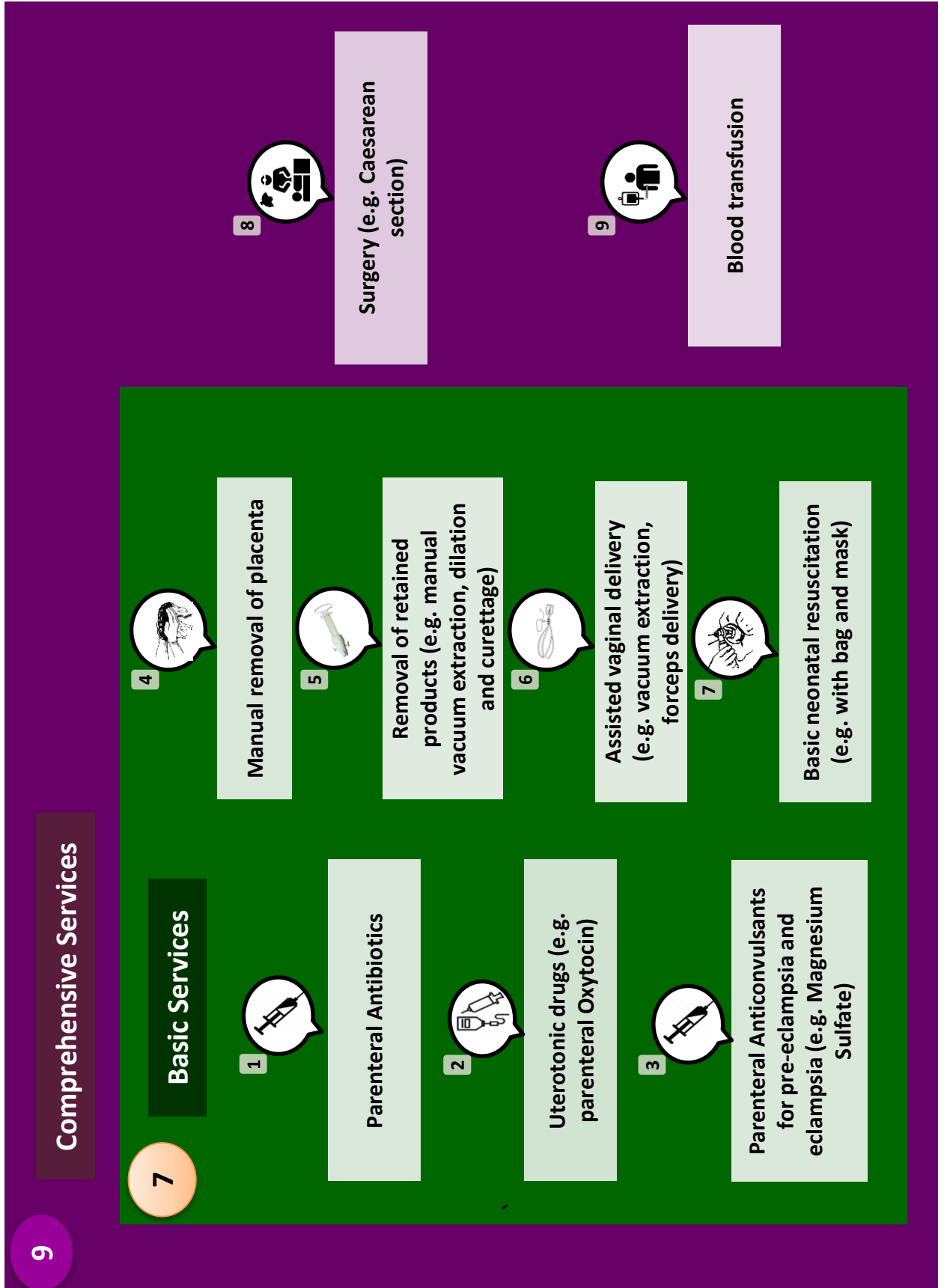
সহযোগীকারী:  RENATA LIMITED

# ব্যক্তিগত সুরক্ষা সামগ্রী (পিপিই) খুলে ফেলার ধাপসমূহ





## Signal Functions Used to Identify Basic and Comprehensive Emergency Obstetric Care Services



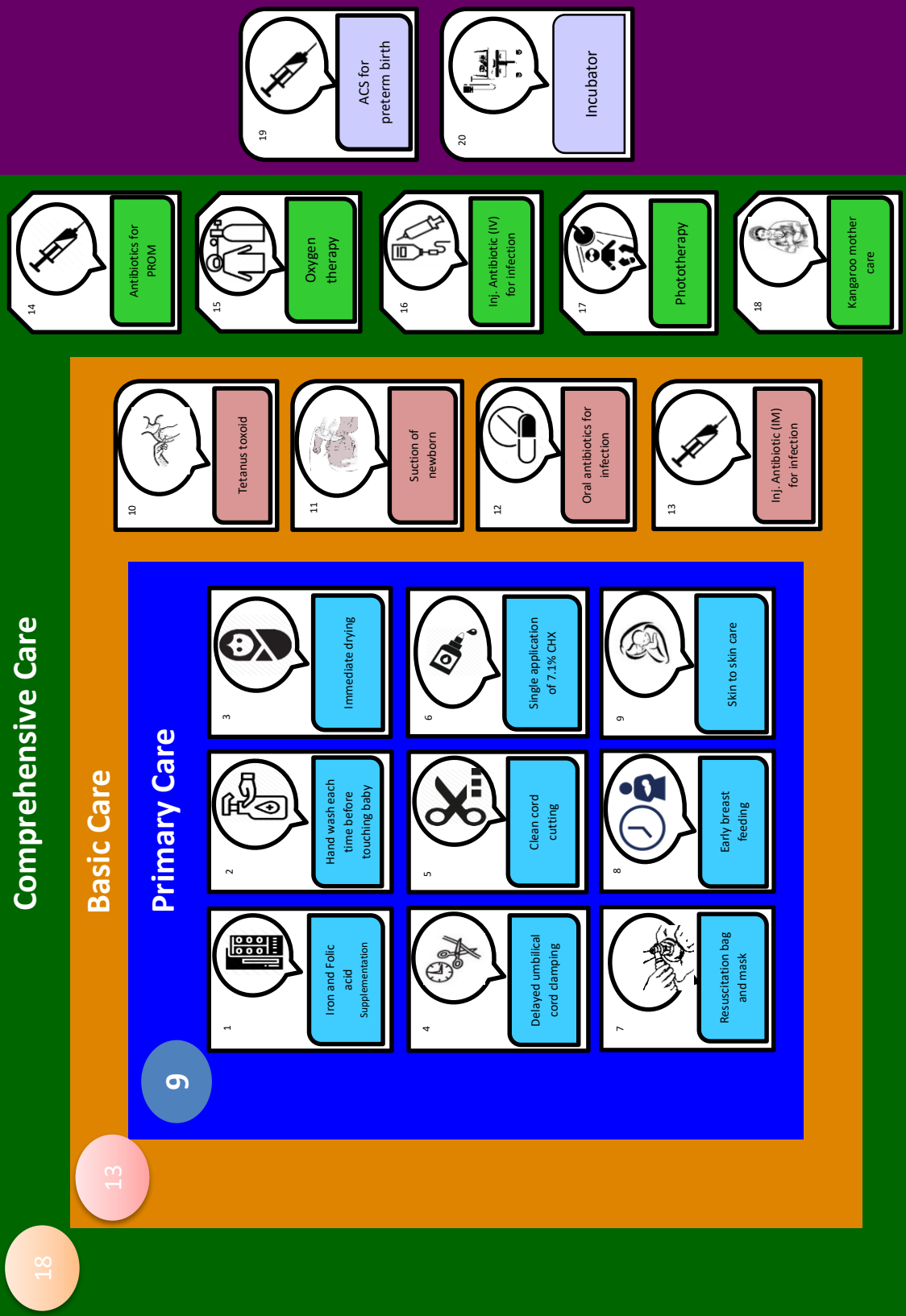
# Newborn Signal Functions (NSFs) for Bangladesh

## Advance Care

### Comprehensive Care

#### Basic Care

#### Primary Care



20

18

13

9

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8Emergency Obstetric Care. Quick Reference Guide for Front line Provider Maternal & Neonatal Health JHPIEGO pdf.usaid.govt/pdf-docs/PNACY 580 pdf

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2nd Edition

Labour Room Management Protocol

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