

# Basic Newborn Care for Merrygold Health Network

Participant's Guide  
2008



Uttar Pradesh Social Franchising Project

**A project supported by USAID & SIFPSA. Implemented by HLPFPT**



# Preface

HLFPPT is an organization committed to work with various partners pioneering innovations for bettering health outcomes for the poor. Merrygold Health Network is one of such innovations in the field of Social Franchising.

Merrygold Health Network, aims towards achieving an objective of improving Maternal and Child Health through increased access to low cost – high quality healthcare services, for rural and urban working poor in Uttar Pradesh. In U.P. Social Franchising Project (supported by USAID and SIFPSA), HLPPT as an implementing agency, will be establishing 70 fully franchised Merrygold Hospitals at district level, 700 partially franchised Merrysilver Clinics at block level and will be working with more than 10,000 Tarang partners (ASHAs, Chemists, Fare price shop owners, Tarang health committee members, Opinion leaders, Anganwadi workers, Depot holders) and AYUSH practitioners at the village level by 2010. Two model hospitals are already established in Kanpur and Agra focusing on maternal and child health care.

In our endeavour to make this a successful model, it was felt that training of doctors, nurses and other team members will be a key component to improve the quality of service delivery and equip the staff with appropriate knowledge and skill.

This training manual on *“Basic Newborn Care for Merrygold Health Network - 2008”* was designed by Dr. Siddarth Ramji (Professor and Head, Deptt. of Neonatology, Maulana Azad Medical Collage, New Delhi) and Dr. V. K. Anand (Neonatologist, Kalawati Saran Children’s Hospital, New Delhi) to meet the above objectives. It has been pre-tested with Merrygold L0 hospital staff at Kanpur and Agra. The inputs and feedbacks from the hospital staff and comments of review committee members from SIFPSA and ITAP, has given this manual the present shape.

I am sure that this manual, when used by hospitals and clinics in the Social Franchising Project will act as an enabling tool towards excellent service delivery.

**HLFPPT**

# Acknowledgement

Effective Newborn care is a crucial challenge that is faced by every health care setting dealing in maternal and child health. I present this manual on “***Basic Newborn Care for Merrygold Health Network - 2008***”, as the first step towards sensitizing health care professionals and support staff, about the issue of Maternal and Child Health. This manual is the result of sincere intent, aspirations and hard work of all those who are an integral part of the network.

I am grateful to Mr. G. Manoj, (CEO, HLPPT) who has shown faith in my entire team to undertake the task of preparing this manual.

My sincere thanks to Mr. Rajeev Kapoor I.A.S. (Executive Director - SIFPSA & Mission Director - NRHM), Mr. S. Krishnaswamy (General Manager Private Sector - SIFPSA), Dr. M. K. Sinha (General Manager Public Sector – SIFPSA), Ms. Savita Chauhan (Dy. General Manager Private Sector - SIFPSA), Dr. Lovleen Johari (Senior Reproductive Health Advisor, USAID) and Ms. Shuvi Sharma (Manager - Social Marketing & Franchising, ITAP) for their support and encouragement for developing this manual.

I am deeply indebted to Dr. Siddarth Ramji and Dr. Vinod. K. Anand for designing and developing this manual. I also thank Ms. Divya Babbar from HLPPT for providing secretarial assistance.

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The manual has been pre tested by Dr. Ramji and Dr. Anand at both Merrygold L0 hospitals at Kanpur and Agra. Efforts made by Mr. Alok Tabelabux, Mr. B. K. Mishra from HLPPT, in organizing the trainings and involvement of entire Merrygold hospital staff in trainings was commendable.

Special mention needs to be made of Mr. Sharad Agarwal, Dr. Sanjeev Yadav, Dr. Brinda Frey, Mr. Rajeev Shukla, Mr. Gajendra Verma, Ms. Preeti Dwivedi and entire U.P. Social Franchising team for their efforts, valuable time and support for arranging and organizing training program based on this manual.

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## Abbreviations

BCG	Bacille Calmette-Guérin
BPM	Breaths per Minute
CRT	Capillary Refilling Time
Hep B	Hepatitis B vaccine
HIV	Human Immunodeficiency Virus
HR	Heart Rate
IPPR	Intermittent positive-pressure respiration
I/V	Intra venous
KMC	Kangaroo Mother Care
OPV	Oral Polio Vaccine
PPV	Positive pressure ventilation

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## About the Manual

This manual discusses the essential elements of newborn care. The four modules in the manual, talks about care at or with one hour of birth, examination and care of newborns and timely recognition and treatment of infections during postnatal period, careful management of low birth weight babies, and transportation of sick newborns.

This manual can serve as a reference guide for Doctors and nurses of Merrygold Health Network for preventing and treating newborn complications efficiently.



# Module 1

## Care at Birth

- Unit 1.1 Care at Birth (or with in one hour of birth)
- Unit 1.2 Neonatal Resuscitation

# About this Module

This Module gives guidelines for routine care of the newborn at the time of birth and within one hour of birth. It also talks in detail about identifying a newborn with complication, requiring resuscitation and the process of giving resuscitation.

## Unit 1.1: Care at Birth (or within one hour of birth)

**Learning Objectives:** After completion of this unit the participant should be able to-

- Provide routine care at birth for all newborns.
- Identify and manage newborns who may need special care.

### 1.1.1 Why care at birth is important?

- A baby's survival is totally dependent on the caregivers and the mother.
- It is important to provide the right care at birth to reduce the risk of complications.

### 1.1.2 Basic Needs at birth

The four basic needs of ALL newborns at the time of birth and for the first few weeks of life are:

1. To be protected
2. To breathe normally
3. To be warm
4. To be fed
5. To be checked for congenital anomalies

### 1.1.3 Protecting the baby: Universal Precautions and Cleanliness

In all health care facilities and whenever care is given certain precautions must be taken to **protect** the mother and baby and health workers from infections with bacteria and viruses, including HIV.

**One must take following precautions:**

- Wash hands.
- Wear gloves and other attires.
- Protect yourself from blood and other body fluids during deliveries.
- Practice safe sharps disposal.
- Practice safe waste disposal.
- Deal with contaminated laundry.
- Process contaminated equipments and gloves

**\*(In case sufficient gloves are available discard gloves)**

**Hand washing**

- **Hand washing** is important for health workers
- It is essential before and after touching mother and newborn or before performing any new task

**Steps of hand washing**

- Remove bangle/watch/ring
- Fold sleeves above elbow
- Wet hands and apply soap
- Follow the 6 steps of hand washing as shown below
- Allow hands to air dry, keeping the elbow dependent

**Fig 1: Steps of Hand Washing**



(1) The palms and fingers



(2) The back of hands



(3) Wash fingers & knuckles



(4) The thumbs



(5) The finger tips



(6) The wrists & arms upto elbows

### 1.1.4 Immediate Newborn Care.

The order in which we carry out immediate care of baby is important. The carry out actions are given below:

**Table 1: Immediate Newborn Care – Carry out actions**

<b>1. Call out /note the time of birth</b>	
<b>2. Deliver the baby onto a warm, clean and dry towel or cloth on a warm dry surface.</b>	- <i>A baby should be delivered onto its mother's abdomen, If this is not possible or not acceptable, then on to a clean, warm, safe place close to the mother.</i>
<b>3. Immediately dry the baby with a warm clean towel or cloth.</b>  <b>Wipe eyes.</b>	- <i>Thoroughly dry the baby to prevent it getting cold.</i> - <i>Wipe away any blood or meconium.</i> - <i>Do not wipe off the white greasy substance covering the baby's body (vernix). This helps to protect the baby's skin and gets reabsorbed very quickly.</i>
<b>4. Assess the baby's breathing while drying.</b>	- <i>If not breathing or difficulty in breathing, carryout resuscitation.</i>
<b>5. Clamp and cut the umbilical cord</b>	
<b>6. Examine the baby quickly for malformations/birth injury</b>	- <i>If there is a major malformation/severe birth injury refer the baby to a newborn unit</i> - <i>Ensure warmth during examination</i>
<b>7. Leave the baby between the mother's breasts to start skin-to-skin care</b>	- <i>If not possible , place the baby under a radiant warmer</i>
<b>8. Place an identity label on the baby</b>	- <i>At wrist / ankle</i>
<b>9. Cover the baby's head with a cloth. Cover the mother and baby with a warm cloth.</b>	- <i>Cover the mother and baby with a blanket if the room is less than 25<sup>0</sup>C or cold and use room heater</i>
<b>10. Encourage the initiation of breastfeeding</b>	- <i>Preferably within ½ an hour.</i>

### 1.1.5 The baby's need to breathe normally

- To 'breathe normally' was identified as one of the baby's immediate and basic 'needs'. A baby can die or become brain damaged very quickly if breathing does not start soon after birth.
- Oxygen is needed to keep the baby's brain and other vital organs healthy. When the umbilical cord is cut the baby no longer receives oxygen via the placenta.
- Once a baby is born, and while it is being dried, assess baby's breathing. If a baby is breathing normally, the chest will rise and fall equally at around 30 to 60 times a minute.

#### **Decide: Does the baby need any help with its breathing?**

The majority of babies do not have problems with their breathing after birth. Therefore, it is vital to **recognize** those babies who do need immediate help.

#### **The following babies need help with their breathing**

- Babies who are not breathing/ gasping
- Babies who do not have good muscle tone

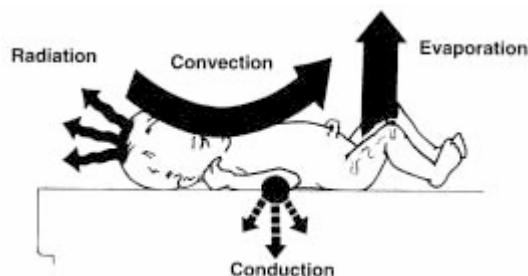
If a baby is not breathing well after birth **CALL FOR HELP!**

*(Details of how to care for these babies is described in Unit 1.2)*

### 1.1.6 Keeping the baby warm

A baby's skin temperature falls within seconds of being born. There are 4 ways by which a baby may lose heat.

**Fig 2: Ways a newborn may lose heat to the environment**



If the temperature continues to fall the baby will become ill and may die.

### **Keeping a newborn warm after delivery**

- Provide a warm, draught free room for delivery at 25-28°C
- Immediately after birth dry baby with a clean, warm, dry cloth
- Put the baby on the mother's abdomen between the mother's breasts.
- Cover the mother and baby with a warm and dry cover
- Encourage breast feeding as soon as possible after birth

### **If mother and baby's separation is necessary, do the following.**

- Wrap the baby in a clean dry warm cloth and place under a radiant warmer. If warmer is not available ensure warmth by wrapping the baby in a clean dry warm cloth and cover with a blanket. Ensure baby's head is covered.
- If radiant warmer is not available, use 200 watt bulbs, fixed at the height of 18 inches from the surface where baby is kept.
- Delay the first bath to beyond 24 hr period.
- Skin-to-skin contact can re-start as soon as mother and baby do not need any medical care

**Fig 3: Placing baby on mother's abdomen soon after birth**



**Fig 4: Naked baby between the mother's breasts for skin-to-skin contact**



### **1.1.7 Immediate Cord Care**

- Clamp and cut cord with a sterile pair of scissors.
- Tie the cord between 2 to 3 cms from the base and cut the remaining cord.
- Observe for oozing blood. If blood oozes, place a second tie between the skin and first tie.
- **DO NOT apply any substance or medicine to stump.**
- DO NOT bind or bandage stump.
- Leave stump uncovered.

### **1.1.8 Care of the eyes**

- The eyes should be cleaned with sterile normal saline soaked swabs, using separate swab for each eye.
- **DO NOT APPLY any medication to eyes unless prescribed.**

### **1.1.9 Examine the baby quickly for malformations/birth injury**

Quick but thorough clinical screening is essential **to identify any congenital anomalies.** The infant should be examined for location and patency of all the orifices because anomalies are frequently encountered around the orifices.

### **1.1.10 Help the mother to initiate breastfeeding within one hour**

After birth, let the baby rest comfortably on the mother's chest in skin-to-skin contact.

- Do NOT give artificial teats or pre-lacteal feeds to the newborn like water, sugar water, ghuttee, honey or local foods.
- Tell the mother to help the baby to her breast when the baby seems to be ready, usually within the first hour. Signs of readiness to breastfeed are:
  1. Baby looking around/moving
  2. Mouth open
  3. Searching

**Fig 5: Initiating breast feeding with baby's on mother's abdomen**



- Check position and attachment are correct at the first feed. Offer to help the mother at any time.

**Fig 6: Baby attached well and sucking on breast**





- The baby's first feed of colostrum is very important because it helps to protect against diseases.
- The baby can feed from its mother whether she is lying down or sitting; baby and mother must be comfortable.
- There is **NO NEED** to **ROUTINELY** separate babies born by Caesarean Section or Instrumental delivery from mother.

### **1.1.11 Weighing the baby**

Weigh all babies before they leave the delivery room

#### **How to weigh a baby**

- Cover the pan of scale with clean cloth
- Check and adjust zero of machine
- Remove all clothing of baby including diaper (if any)
- Weigh baby naked
- **WAIT** till baby stops moving
- Read and record weight
- Wrap baby
- Return baby to mother

## Unit 1.2 Neonatal Resuscitation

This unit gives guidelines for neonatal resuscitation at the time of birth and within one hour of birth, if required.

**Learning Objectives:** After completion of this unit the participant should be able to-

- Identify the newborns who require special care.
- Resuscitate the baby efficiently and effectively without losing time.
- Identify and refer newborns needing advanced care, to the nearest health facility with neonatal care unit.

Approximately 10% of newborn require some assistance to begin breathing at birth; about 1% need extensive resuscitative measures to survive. An increased risk of breathing problems may occur in babies who are:

- Preterm,
- Born after long traumatic labour,
- Born to mothers who received sedation during the late stages of labour.

It is essential for health professionals who attend the mother at birth to be skilled at resuscitation and know how to recognize babies at risk. You must:

- **Anticipate**
- **Be prepared**
- **Know what to do**
- **In what order**
- **Be able to work quickly**

**Basic resuscitation must begin within one minute of life if a baby has breathing difficulties.**

### 1.2.1 Neonatal Resuscitation Supplies and Equipment

<b>Bag and mask equipment</b> Self-inflating bag(volume 250-500 ml) Face masks, size 0 & 1(cushioned-rim masks preferred)	<b>Medications</b> Epinephrine 1:10,000 Isotonic crystalloid
<b>Suction equipment</b> Mucus extractor Mechanical suction and tubing Suction catheters, 5F or 6F, 8F, 10F, 12	<b>Miscellaneous</b> Radiant warmer or other heat source Firm, padded resuscitation surface Warmed linens Clock with second hand Oxygen source with flowmeter Feeding tube, 5F Gloves
<b>Intubation equipment(optional)</b>	

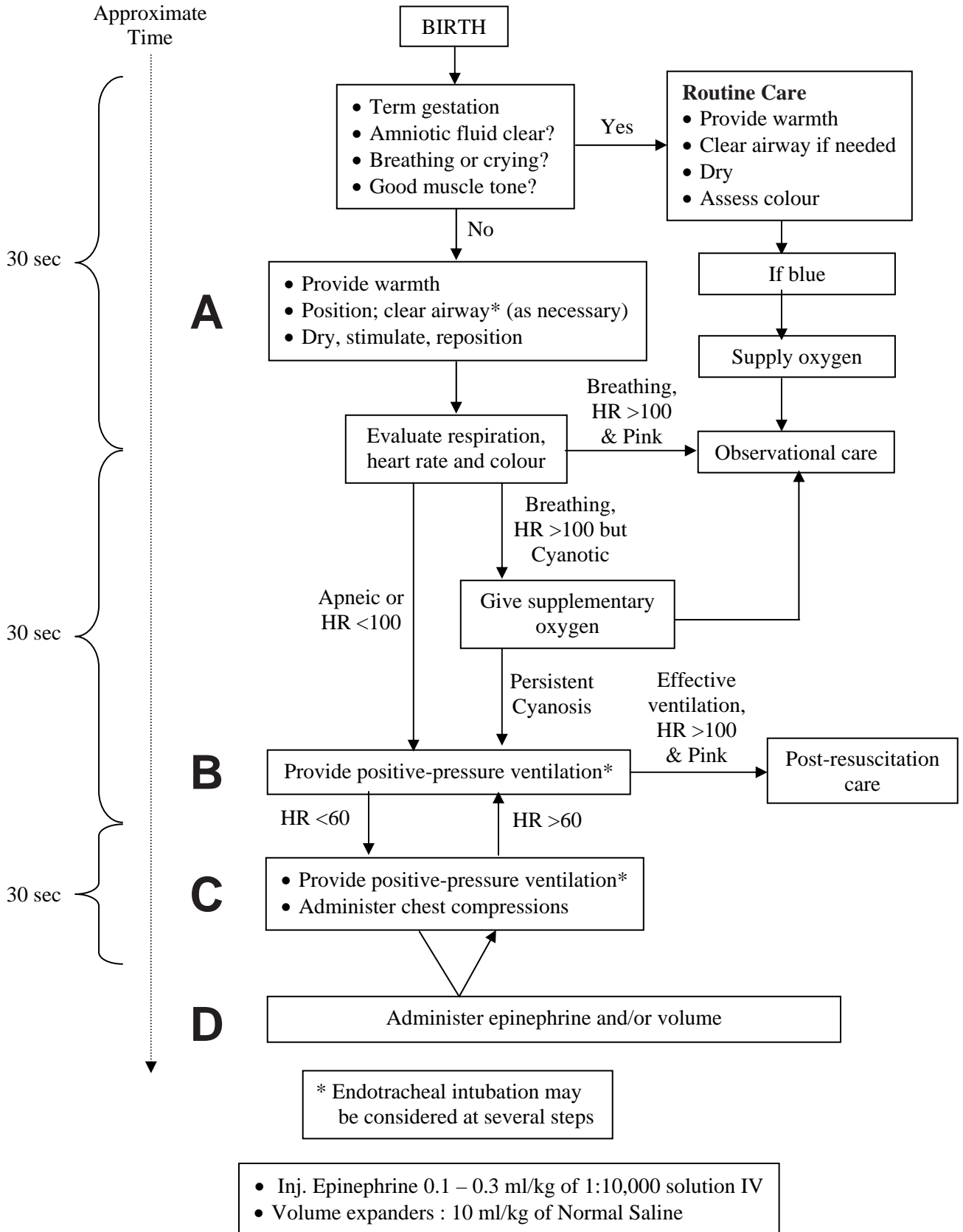
### 1.2.2 Who needs resuscitation?

- Babies who are not breathing/ gasping
- Babies who do not have good muscle tone

### 1.2.3 How to resuscitate?

Fig. 7 provides a flow of actions for performing the steps of resuscitation. The diagram begins with the birth of the baby. Each resuscitation step is shown in a block

**Fig 7: Flow Diagram of Neonatal Resuscitation**

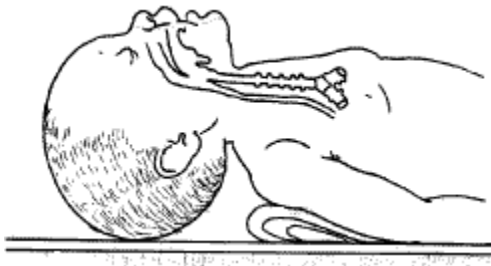


### 1.2.4 What are the initial steps and how are they administered?

If the baby needs resuscitation, initiate all the initial steps within a few seconds.

- **Provide warmth:** Dry and shift the baby to a newborn corner, place under a radiant warmer. The baby should not be covered with blanket or towels.
- **Position:** By extending the neck slightly. Care should be taken to prevent hyperextension or flexion of the neck.

**Fig 8: Correct position of the head for ventilation**



To help maintain the correct position, you may place a rolled towel under the shoulders.

- **Clear airway** (as necessary)
  1. Suction first the mouth and then the nose.
  2. Do this by gently introducing suction tube 5 cm into the baby's mouth
  3. Use suction while withdrawing the tube
  4. Next introduce the suction tube 3 cm into each nostril.
  5. Use suction while withdrawing the tube and until there is no mucus.
- **Stimulate to breathe, and reposition:**

Often, positioning the baby and suctioning will provide enough stimulation to initiate breathing. Drying will also provide stimulation. Safe and appropriate methods of providing additional tactile stimulation include:

1. Slapping or flicking the soles of the feet
2. Gently rubbing the newborn's back, trunk or extremities.

- **Now evaluate the baby:**

**Respiration:** There should be good chest movements.

**Heart rate:** The heart rate should be  $>100$  beats per minutes. Listen for the heart beat, count in 6 seconds and multiply by 10 to quickly estimate the beats per minute.

**Colour:** The baby should have pink lips and trunk. There should be no central cyanosis.

### 1.2.5 What do you do if the baby is breathing and heart rate is normal but has central cyanosis?

If the baby is breathing but appears blue, supplemental oxygen is indicated. Give free-flow oxygen. When the newborn no longer has central cyanosis, gradually withdraw the supplemental oxygen until the newborn can remain pink while breathing room air.

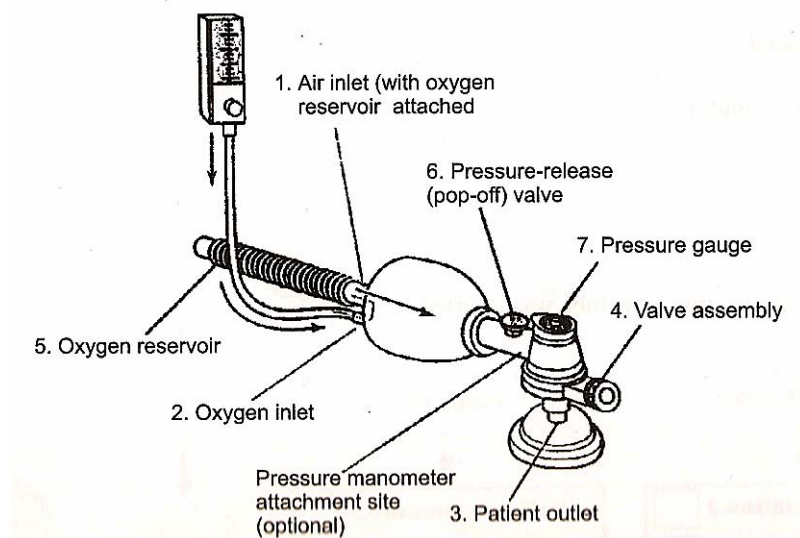
### 1.2.6 What do you do if respiration or heart rate is abnormal?

The most effective and important action in resuscitating a compromised newborn is to assist ventilation.

### 1.2.7 What do you need to check before beginning positive-pressure ventilation?

- Select the appropriate sized mask: should cover the mouth, nose and tip of chin but not the eyes.
- Be sure there is a clear airway
- Position the baby's head
- Position yourself at the bedside: Position yourself at the baby's side or head to use a resuscitation device effectively. Both positions leave the chest and abdomen unobstructed for visual monitoring the baby & for chest compressions.
- **Use a self-inflating resuscitation bag. Check the bag before use.**

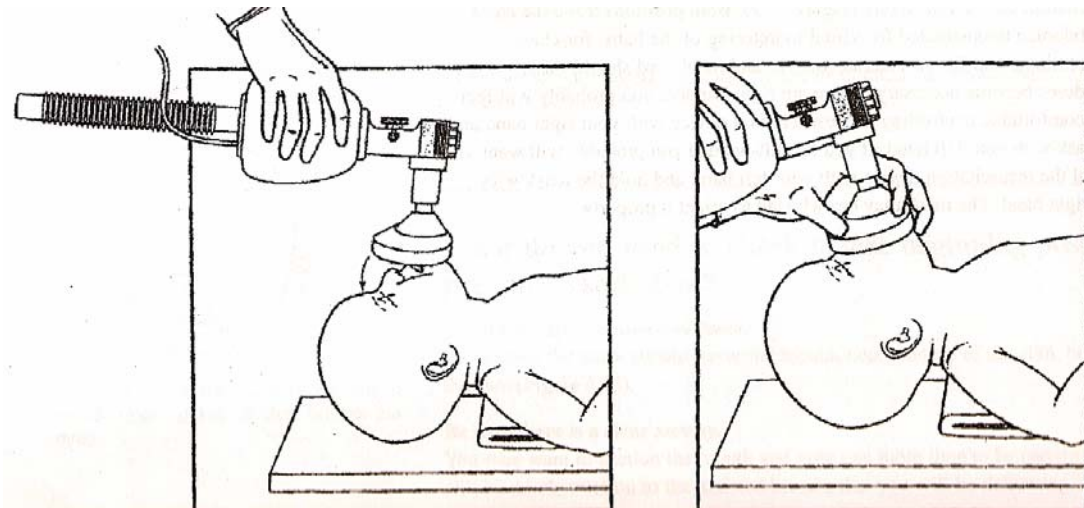
**Fig 9: Parts of a self-inflating bag**



### 1.2.8 How do you position the bag and mask on the face?

The mask is held on the face with the thumb, index, and/or middle finger encircling much of the rim of the mask, while the ring and fifth fingers bring the chin forward to maintain a patent airway.

**Fig 10: Correctly positioning mask on face**



An airtight seal between the rim of the mask and the face is essential to achieve the positive-pressure required to inflate the lungs. Look for the presence of chest movements with each positive-pressure breath. Rapid rise in baby's heart rate and subsequent improvement in colour and muscle tone are the best indicators that inflation pressure is adequate.

### 1.2.9 How often should you squeeze the bag?

During the initial stages of resuscitation, breaths should be delivered at a rate of 40 to 60 breaths per minute. To help maintain a rate of 40 to 60 breaths per minute, try saying to yourself as you ventilate the newborn:

Breathe----- Two-----Three----- Breathe  
(Squeeze)      (Release-----)      (Squeeze)

If the chest does not expand adequately, it may be due to one or more of the following reasons:

- The seal is inadequate
- The airway is blocked
- Not enough pressure is being given

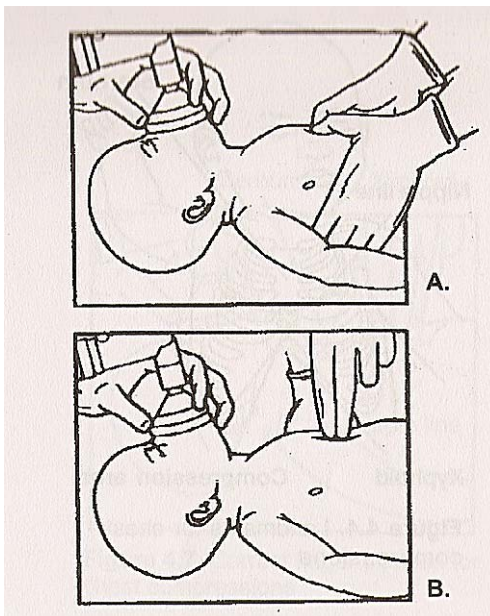
Newborns requiring positive-pressure ventilation with a mask for longer than several minutes should have an orogastric tube inserted and left in place.

### 1.2.10 What are the indications for beginning chest compressions?

Start chest compressions whenever the heart rate remains  $< 60$  breaths per minute despite 30 seconds of effective positive-pressure ventilation. While resuscitation -

- Chest compressions and IPPR should be simultaneous
- Two people required

**Fig 11: Two techniques for giving chest compressions:  
Thumb (A) and 2-finger (B)**



#### **Two finger compression technique:**

- Place the 2 fingers of one hand over the lower half of the sternum approximately 1 finger width below the intermammary line, avoiding compressing on or near the xiphoid process.
- Press down on the sternum, depressing it approximately  $1/3$  the depth of the infant's chest. This will correspond to a depth of about  $1/2$  to 1 inch. Give compressions at a rate of at least 90 times per minute.
- Continue compression and ventilation in the ratio of 3:1.

#### **Two thumb encircling hands technique:**

- Preferred method for 2 or more health workers.
- Stand at the infant's feet or side.
- Place your thumbs side by side over lower half of sternum, encircle the infant's chest and support the infants back with the fingers of both hands.



- Use both thumbs to depress the sternum.
- Continue compressions and ventilation in the ratio of 3: 1.

### **How can you practice the rhythm of chest compression with ventilation?**

Practice saying the following words and compressing the chest:

**One-and-Two-and-Three-and-Breathe-and-One-and-Two-and-Three-and-Breathe**

DO NOT Lift Thumb / Fingers off the chest between compressions

**STOP Chest Compression if Heart Rate  $\geq$  60 bpm**

**STOP IPPV if Heart rate  $\geq$  100 AND baby breathing spontaneously**

**If NO breathing or gasping after 20 minutes of ventilation – STOP VENTILATION**

### **1.2.11 Drugs in newborn resuscitation**

**Adrenaline:** This is indicated whenever the heart rate remains  $<$  60 beats / minute despite chest compression and assisted ventilation. The dose of adrenaline is 0.1-0.3 ml/kg body weight of a 1:10,000 solution. The route of administration is IV (by umbilical vein). The dose can be repeated after 3-5 minutes, if the heart rate does not rise.

### **1.2.12 Resuscitation Practices that either are not effective or are harmful**

These include:

- Hanging the baby upside down and patting the back of the baby.
- Routine aspiration (suction) of the baby's mouth and nose as soon as the head is born; or later, when the amniotic fluid has been clear;
- Routine aspiration (suction) of the baby's stomach at birth;
- Postural drainage, and slapping the back;
- Squeezing the chest to remove secretions from the airway;
- Routine administration of sodium bicarbonate to newborns who are not breathing;
- Intubation by an unskilled person.

### 1.2.13 Where do babies go from delivery room?

All babies not needing referral and short term separation from mother, should be **roomed-in with the mother.**

The following babies will need to be **referred immediately** to the nearest health facility with a neonatal care unit

- Has birth weight less than 1500 gram
- Has Major congenital malformation/severe birth injury
- Is breathing < 30 /minutes
- Is breathing > 60 /minutes
- Persistent central cyanosis
- Has severe chest in-drawing

The following babies will need to be observed more closely.

- Birth weight 1500-1800 gram
- Babies needing IPPV > 3 minutes

# Module 2

## Care in Postnatal Ward

Unit 2.1 Examination of Newborn and Care in postnatal Ward

# About the Module

The module discusses about the appropriate postnatal environment for mother and baby, routine care of the newborn, steps for examining the baby and few signs which needs immediate attention.

## Unit 2.1: Examination and Care of Newborn in Postnatal Ward

### Learning Objectives

After completion of this unit the participant should be able to-

- Examine all newborns
- Identify newborns who need referral
- Assess breast feeding and manage breast feeding problems

The care a mother and baby needs can be divided into 4 sections:

- The postnatal environment
- Every day care of the baby
- Looking for danger signs and giving treatment
- Preparation for discharge

### 2.1.1 The Postnatal Environment

A postnatal room should be kept warm with no draughts from open doors or windows. A temperature of 25<sup>0</sup>C is required to help keep a baby warm. A mother and her baby should be kept together from birth, in bed together or very near each other. This helps the mother to get to know her baby and form an early close loving relationship (bonding), she can also respond quickly when her baby wants to feed, which helps establish breastfeeding and reduce breastfeeding difficulties.

### 2.1.2 Every day care for the baby

The key areas of every day care which are important for a newborn baby are:

- Warmth
- Breastfeeding
- Cord care
- Hygiene

## **A) Warmth**

Newborn babies are very prone to develop hypothermia unless adequate precautions are taken to protect them. The baby must be kept dry at all times and effectively clothed using a cap and socks. The baby bath should be delayed at least till the next day when his temperature has stabilized. During winter, the linen and clothes of the baby should be pre-warmed before dressing. The room should be kept warm in winter with the help of heater. The baby should be nursed in close proximity to the mother so that the baby is kept warm by maternal warmth. In summers, depending upon the environmental temperature, the baby should be dressed in loose cotton clothes and kept indoors as far as possible. Exposure of the baby to direct sunlight during the hot summer months can lead to serious hyperthermia.

## **B) Assess Breast Feeding**

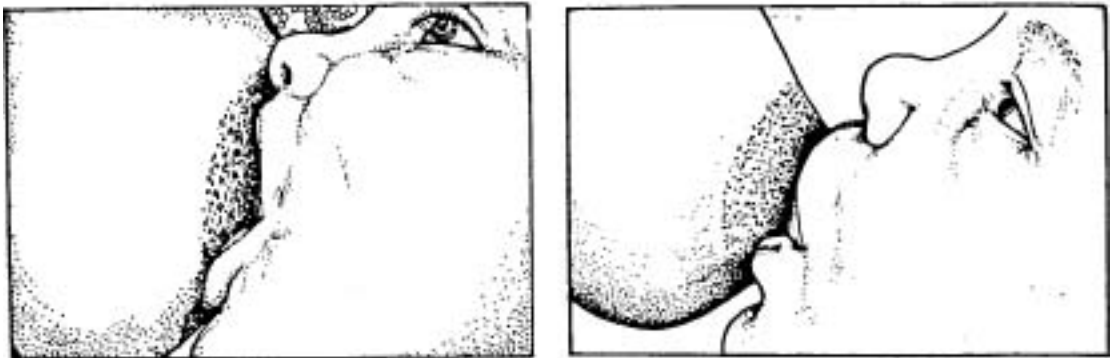
- Assess breast feeding in all newborns
- Ask mother if the infant has breastfed in the previous hour?
- If infant has not fed in the previous hour, ask the mother to put her infant to the breast. Observe the breastfeed for 4 minutes.

**Check attachment of baby on mother's breast.** Four signs of good attachment are:

### **Signs of Good Attachment**

1. Baby's mouth is wide open
2. Lower lip is turned outwards
3. Baby's chin touches mother's breast
4. More areola visible above than below.

**Fig 12: Good (left) and poor (right) attachment of infant to the mothers breast**



It is very important to ensure good attachment because poor attachment results in

- Pain or damage to nipple leading to sore nipple.
- Breast milk not removed effectively thus causing breast engorgement
- Poor milk supply hence baby is not satisfied and irritable after feeding.
- Breast produces less milk resulting in frustrated baby who refuses to suck. This leads to poor weight gain.

**If attachment is not good, check for correct positioning.** Signs of proper position of the baby while breast-feeding are:

#### **Signs of Good Position**

1. Baby's body is well supported.
2. The head, neck and the body of the baby are kept in the same plane.
3. Entire body of the baby faces the mother.
4. Baby's abdomen touches mother's abdomen

**Fig 13: Good (left) and poor (right) position of infant to the mothers breast**



**Check for baby's sucking.** Effective sucking is when the infant shows slow deep sucks, sometimes pausing

If not sucking well, then look for ulcers or white patches in the mouth (thrush).

### **Problems in breast feeding**

- a. Inverted / flat nipples:** Flat or short nipples which protract well (become prominent or pull out easily) do not cause difficulty in breast feeding. Inverted or retracted nipples make attachment to breast difficult. They should be diagnosed in the antenatal period. These mothers need additional support to feed their babies.

**Treatment** is started after birth of the baby. Nipple is manually stretched and rolled out several times a day.

- b. Sore Nipple:** A sore nipple is caused by incorrect attachment of the baby to the breast. A baby who only sucks at the nipple does not get enough milk so he sucks more vigorously resulting in a sore nipple. Frequent washing with soap and water, pulling the baby off the breast while he is still sucking may also result in a sore nipple. Candidial infection of the nipple can also be a cause of a sore nipple.

**Treatment** consists of correct positioning and attachment of the baby to the breast. Hind milk should be applied to the nipple after a feed and the nipples should be aired, to allow healing in between feeds.

- c. Breast engorgement:** The milk production increases during the second and third day after delivery. If feeding is delayed or infrequent or the baby is not well positioned at the breast, the milk accumulates in the alveoli. As milk production increases, the amount of milk in the breast exceeds the capacity of the alveoli to store it comfortably. Such a breast becomes swollen, hard, warm and painful and is termed as an engorged breast.

**Treatment:** Breast engorgement can be prevented by early and frequent feeds and correct attachment of the baby to the breast. Treatment consists of local warm water packs, analgesics (Paracetamol) to the mother to relieve the pain. Milk should be gently expressed to soften the breast and then the mother must be helped to correctly attach the baby to the breast.

- d. Breast abscess.** If a congested, engorged breast, an infected cracked nipple, or a blocked duct and mastitis are not treated in the early stages, then an infected breast segment may form a breast abscess. The mother may also have high grade fever and a raised blood count.

**Treatment:** Mother must be treated with analgesics and antibiotics. The abscess is to be incised and drained. Breast feeding must be continued.

- e. **Not enough milk.** Many mothers complain that they do not have enough milk. Reassurance is needed if baby is gaining weight adequately, passing urine 6-8 times/day and sleeps for 2-3 hours after each feed. Common causes of not enough milk include – not breast feeding often enough, too short or hurried breastfeeds, poor suckling position, poor oxytocin reflex, breast engorgement or mastitis.

**Treatment:** If baby is not gaining weight adequately, ask the mother to feed the baby more frequently and feed especially during the night. Make sure that attachment is proper. Any painful condition in mother such as sore nipple, mastitis should be taken care of. Back massages are especially useful for stimulating lactation.

### **C) Cord Care**

The umbilical cord is an important portal of entry for pathological organisms. Health personnel must be told the importance of using a sterile disposable dai-kit to prevent the occurrence of tetanus neonatorum. Cord should be cut with a sterilized blade. Umbilical stump must be inspected after 2 to 4 hours of clamping. Bleeding may occur at this time due to shrinkage of cord and loosening of the ligature. The use of rubber band or disposable clamp safeguard against this hazard.

The cord must be left open without any dressing. The cord usually falls after 4 to 10 days but may take longer if it has been kept moistened or when it gets infected and in immuno-compromised babies. The stump should be inspected for any discharge or infection and kept clean and dry till complete healing takes place.

### **D) Hygiene**

Mother must wash hands before feeding, after changing the diapers of baby or cleaning the baby. Mother must maintain personal hygiene – bath, clean clothes, keep nails short

#### **2.1.3 Why is it important to examine a baby?**

- To assess if newborn is healthy or sick
- To start appropriate care/treatment as early as possible

#### **2.1.4 When should a baby be examined?**

- At birth
- Before discharge from hospital
- If there is maternal concern about baby's condition
- If any danger signs are observed during monitoring



## 2.1.5 How to examine the baby?

The steps of examining the baby are the same for all babies.

- **ASK** the mother about the baby
- **LOOK** at the baby
- **LISTEN** to the baby
- **FEEL** the baby

### A) **ASK the mother**

- Does she or the baby have any problems and record what she says
- Has she started breast feeding the baby?
- Is there any difficulty in feeding the baby?

### B) **LOOK at the baby**

#### **Count the breath rate.**

- Make sure you can see the baby's chest and abdomen clearly
- Baby must be quiet
- Count the rate for full **ONE** minute. If breath rate  $\geq 60$ / minute; repeat the count. If breath rate on second count is also  $\geq 60$ /minute, the baby has fast breathing. This is **NOT NORMAL**. (Normal breathing in newborns is 30-60/minute)

#### **Look for Chest indrawing**

- During normal breathing, as baby breathes in, the chest rises and abdomen moves out
- If chest moves in and abdomen moves out during inspiration, it is chest indrawing
- Mild chest indrawing may be normal in newborns. Severe chest indrawing is **NOT NORMAL**.

#### **Look at umbilicus**

- Is it red or discharging pus? This is **NOT NORMAL**

#### **Look at skin for pustules**

- Are there 10 or more pustules or a big boil/abscess? This is **NOT NORMAL**.

#### **Look for Jaundice**

- Jaundice may be physiological in newborns.
- Jaundice is **NOT NORMAL** if -
  - it has appeared  $< 24$  hours

- palms and soles are stained
- if it is still visible after 14 days

### Look at baby's alertness

- A normal baby (if not asleep) should be alert, looking around at its surroundings and have a good cry
- If the baby is not alert and/or has poor cry, the infant is **lethargic/unconscious**. This is NOT NORMAL

### Look at baby's movements

- A normal awake baby moves all its limbs
- If the baby's movements are less than normal or movements are not seen on one side (due to birth injury such as Erb's palsy) then it is NOT NORMAL.

**Fig 14: Abnormal position of arm and hand**



### C) LISTEN to the baby

**Listen for grunting:** This is a sharp expiratory sound made by the baby. This is NOT NORMAL

### D) FEEL and RECORD

#### Feel/Record the baby's temperature

- Normal axillary temperature of a newborn baby is 36.5-37.4<sup>0</sup> C
- Hypothermia is an important cause of neonatal death
- **What is hypothermia?** Any temperature < 36.5<sup>0</sup> C
- **What is fever?** Any temperature > 37.4<sup>0</sup>C
- Temperature can be assessed by recording axillary temperature or feeling the baby

**Table 2: Assessment of body temperature**

<b>Hypothermia severity</b>	<b>Axillary temperature</b>	<b>Assessment by feeling</b>
Mild	36.0 °C to < 36.5 °C	Cool feet, warm abdomen
Moderate	32 °C to <36.0 °C	Cold feet and abdomen
Severe	< 32 °C	Cold feet and abdomen
Fever	> 37.4 °C	Feels hot

### **Recording temperature**

- **Axillary temperature** is recorded by placing the bulb of thermometer against the roof of dry axilla, free from moisture. Baby's arm is held close to the body to keep thermometer in place. The temperature is read after 5 minutes.
- **Feeling the skin with dorsum of hand.** Warm and pink feet of the baby indicate that the baby has normal temperature. When feet are cold and abdomen is warm, it indicates that the baby is in mild hypothermia. If both feet and abdomen are cold to touch, the baby has moderate-severe hypothermia.

### **Feel and Look for Bulging fontanel**

- A bulging fontanelle is NOT NORMAL. It could be a sign of meningitis.

### **2.1.6 Normal Phenomena**

There are several phenomena after birth that is normal and mothers only need reassurance.

- |   |
|---|
| <ul style="list-style-type: none"> <li>• <b>Meconium</b> should be passed by 24 hours. <b>Passage after 24 hours</b> is NOT NORMAL and needs investigation.</li> <li>• <b>Urine</b> is passed by 48 hours. It is NOT NORMAL if not passed by 48 hours.</li> <li>• <b>A transitional stool</b> is the passage of frequent, loose stools, yellowish-green in color between day 3 and day 14 of life. It needs NO treatment.</li> <li>• <b>Vaginal white discharge/bleeding</b> in female babies is normal</li> <li>• <b>Red rashes</b> on the skin may be seen on 2-3 days of life. These are normal</li> </ul> |
|---|

### 2.1.7 Danger Signs

Newborns with the following signs have **Danger Signs** suggestive of serious illness.

- Respiratory rate  $\geq$  60/minute
- Severe chest indrawing
- Grunting
- Not sucking (after 6 hours of life)
- Jaundice onset < 24 hrs or yellow staining of palms/soles
- Lethargic/unconscious
- Many pustules (> 10) or abscess
- Bulging fontanelle
- Bleeding
- Vomiting.

ALL these newborns would need specialized newborn care

### 2.1.8 Preparing for discharge

The first item is to **immunize, if due.**

Babies should receive:

- BCG – mandatory as a part of National Immunization Program
- OPV- 0 - mandatory as a part of National Immunization Program
- Hepatitis B (HB-1) – if available

These vaccines should be given within the first week of life and preferably before discharge from the health facility. Advise mother about

- Return visit after 6 weeks
- her diet
- need to take iron tablets
- family planning information
- When she should seek care for danger signs
- Immunization of newborn.

### 2.1.9 Follow up

Each baby should be followed up for assessment of growth and development, early diagnosis and management of illnesses and health education of parents. It is preferable that every baby is seen and assessed by health worker of that area, at least once every month for 3 months and subsequently 3 monthly till 1 year of age.

# Module 3

## Care of Small Babies

Unit 3.1 Care of Small (Low Birth Weight)  
Babies

# About the Module

A small baby needs more care and monitoring than a baby born at term with a weight above 2500g. Small babies are at increased risk of hypothermia, breathing difficulties, infection and jaundice and feeding difficulties. This module discusses about the ways of identifying small babies, problems associated with her/him and care.

## Unit 3.1 Care of Small (Low Birth Weight) Babies

### Learning Objectives:

After completion of this section the participant should be able to-

- Identify a small baby
- Provide appropriate feeding to small babies
- Keep small babies warm

#### 3.1.1 Who is a small baby?

A Small Baby is one who

- Is born with **weight between 1500-2500 grams** OR
- Born **preterm between 32-36** weeks gestation

**A Very small baby is one who is < 32 weeks OR has birth weight < 1500 grams. All very small babies need to be referred for additional care**

#### 3.1.2 What are the additional needs of a small baby?

The additional needs of small babies compared to normal weight babies are:

- Help with feeding to prevent hypoglycemia
- To be kept warm
- Daily monitoring including weighing, temperature, breathing and checking for jaundice
- Care in health facility for longer time

**A small baby can be cared for at a primary care health facility as long as it stays well.**

#### 3.1.3 Feeding a small baby

Small babies need to be given adequate volume of feeds and frequently to prevent hypoglycemia and ensure adequate growth.

## **Support breast feeding**

- Encourage mothers to breastfeed every 2 hours
- Assess breastfeeding daily: attachment, sucking, duration and frequency of feeds
- If baby is NOT SUCKING WELL consider alternative methods of feeding

## **Alternative Methods of Feeding**

These methods include expressing breast milk directly into baby's mouth, by cup/spoon or by gavage.

### **a. Expressing breast milk directly into baby's mouth**

#### **Direct expression of breast milk**

The mother should

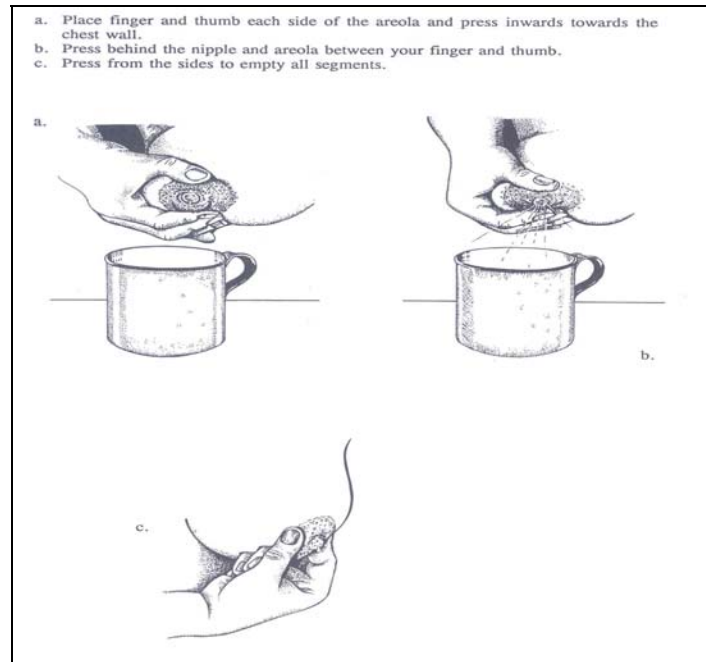
- Wash her hands
- Hold her baby skin-to-skin with its mouth close to the nipple
- Express some drops of milk onto nipple
- Wait until baby is alert and opens its mouth widely
- Stimulate the baby if it appears sleepy
- Let some milk fall into the baby's mouth
- Wait until baby swallows before expressing more drops of breastmilk
- When the baby has had enough, it will close its mouth and take no more milk.

### **b. Expressing breast milk into cup**

The mother should

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

**Fig 15: Expressing breast milk**



### **Cup/spoon feeding expressed breast milk**

One can use a cup of glass, plastic or stainless steel which has rounded edge. One can also use a paladai or spoon.

Ask mother to:

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

**c. If the baby has no sucking then consider giving the milk by gavage feeding.**

**Gavage feeds:** For gavage feeding, 5-6 french size feeding catheter is required for orogastric placement. Polythene catheter being soft, are preferable to the red rubber catheters. At the time of feeding, the outer end of the tube is attached to a 10 ml syringe (without plunger) and milk is allowed to trickle by gravity. The baby should be placed in left lateral position for 15-20 minutes to avoid regurgitation. There is no need to burp a gavage fed baby. The polythene orogastric tube may be inserted before every feed or left



in situ for 2-3 days. While pulling out a feeding tube, it must be kept pinched and pulled out gently while applying constant negative pressure with a syringe to avoid trickling of gastric mucus into the trachea. Before every feed, the abdominal girth should be measured (just above the umbilical stump). If the abdominal girth increases by more than 2 cm from the baseline the feeding should be suspended.

### Quantity to feed by cup/gavage

- Start with 60-80 milliliters /kilogram /day on day 1.
- Increase total volume by 20 milliliters /kilogram /day till a maximum of 150 milliliters /kilogram /day
- Divide total volume into 8 feeds and feed the baby 3 hourly

**Table 3: Approximate Quantity for feeding (in milliliters) small babies every 3 hours from birth**

Weight (kg)	Day 0	1	2	3	4	5	6	7
1.5-1.9	15	17	19	21	23	25	27	27 +
2.0-2.4	20	22	25	27	30	32	35	35 +

### 3.1.4 Multivitamin Supplementation:

- All young infants less than 1800 grams should receive 5 drops of a multivitamin preparation every day from 1 week of age
- Start iron supplementation in a dose of 2 miligram /kilograms per day from 4 weeks of age

### 3.1.5 Keeping the Baby Warm

- Explain to the mother that keeping the baby warm is important
- Dress the baby in adequate clothing and always remember to cover the head
- Ensure the baby is wrapped and covered in a blanket
- Keep the baby close to the mother
- Keep the room for mother and baby warm
- If the room is not warm enough, stable small babies can be kept warm by skin-to-skin contact using Kangaroo mother Care (KMC)
- Assess warmth every 4 hours by touching the baby's feet; if cold re-warm by skin-to-skin contact and add extra blankets.

**A) Kangaroo Mother Care (KMC)**

- Kangaroo Mother Care is a way of providing a well preterm or low birth weight baby with the benefits of incubator care.
- It provides warmth to the baby
- It maintains the baby's sleep pattern
- The baby has ready access to the breast for feeding

**B) Warmth by Skin-to-skin contact (KMC)**

**How to keep the young infant warm**

- Provide Skin to Skin contact (Kangaroo mother care) as much as possible, day and night.
  - Provide privacy to the mother.
  - Request the mother to sit or recline comfortably.
  - Undress the baby gently, except for cap, nappy and socks.
  - Place the baby prone on mother's chest in an upright and extended posture, between her breasts, in Skin to Skin contact; turn baby's head to one side to keep airways clear
  - Cover the baby with mother's blouse, 'pallu' or gown; wrap the baby-mother duo with an added blanket or shawl.
  - Breastfeed the baby frequently.
  - If possible, warm the room with a heating device.
  - If mother is not available, Skin to Skin contact may be provided by the father or any other adult.
- When Skin to Skin contact not possible:
  - Keep the room warm.
  - Clothe the baby in 1-2 layers (Summer)
  - Clothe the baby in 3-4 layers (Winter) and cover the head, hands and feet with cap, gloves and socks respectively
  - Let the baby and mother lie together on a soft, thick bedding
  - Cover the baby and the mother with additional quilt, blanket or shawl in cold weather

**Fig 16: Baby's position during KMC**



### **3.1.6 Assessing the Small Baby**

Assess the small baby every day for the following:

- Assess the baby's sucking, feeding frequency and amount baby is feeding if alternative methods of feeding is being used
- Assess the baby's temperature by feeling the feet or recording axillary temperature
- Check the baby's breathing
- Assess for jaundice
- Assess for **danger signs**
- Assess **weight**. The baby can loose up to 10% weight in first 7 days. After that the baby must gain weight (at least 100g each week).

### **3.1.7 Discharge and Follow-up**

Low birth weight babies can be discharged when:

- They have no DANGER signs or signs of serious infection
- They are gaining weight on breastfeeding alone
- They can maintain their temperature in the normal range (36.5–37.4°C) in an open cot
- The mother is confident and able to take care.

Low birth weight babies should be given all scheduled vaccines at the time of birth, and any second doses that are due by the time of discharge.

### **3.1.8 Counseling on Discharge**

Counsel parents before discharge on

- Exclusive breastfeeding
- Keeping the baby warm
- Danger signs for seeking care
- Immunization of the baby.

Low birth weight babies should be followed up weekly for weighing, assessment of feeding, and general health until they have reached 2.5 kilogram.

# Module 4

## Transporting Sick Newborns

### Unit 4.1 Transport of Sick Newborns

# About the Module

This module talks about the situation where a new born has to be referred to a better equipped facility like neonatal ICU, for advance care and treatment. It also discusses in detail about the indications for referral, pre transport stabilization to a sick newborn and care to be taken during transport.

## Unit 4.1 Transport of Sick Newborns

### Learning Objectives

After completion of this section the participant should be able to-

- Provide pre-transport stabilization to sick newborns
- Provide care during transport to sick newborns

#### 4.1.1 Who needs to be transported?

All newborns with signs listed in the box need referral and have to be transported

#### Indications for Referral

- Has birth weight less than 1500 grams
- Has Major congenital malformation / severe birth injury
- Is breathing <30/minute
- Is breathing > 60/minute
- Severe chest in-drawing
- Grunting
- Jaundice onset < 24 hours or yellow staining of palms/soles
- Bluish discoloration of the body.
- Lethargic/unconscious
- Bulging fontanelle
- Bleeding
- Convulsions
- Vomiting

**Take the baby to the nearest referral facility, by the shortest route, using the fastest possible mode of transport**

#### 4.1.2 What to do before transporting the baby?

1. **Assess :** Make sure that there is a genuine reason for referral and baby is going to get better care than available in your facility
2. **Communicate :** Use good communication skills to explain the need for referral to the family and if possible inform the referral facility
3. **Stabilize :** Maintain the airway and breathing, Correct hypoglycaemia if present Administer first dose of antibiotics if needed
4. **Correct hypothermia:** If baby is hypothermic, correct it by providing warmth either by skin to skin contact (Kangaroo mother care) or by radiant warmer.
5. **Referral note:** Write a detailed referral note for the providers at the referral facility giving all the details of need for referral and treatments given to the baby.

Write:

- the name and age of the patient
- the date and time of referral
- description of the patient's problems
- the reason for referral
- treatment that you have given
- any other information that the doctor at the hospital needs to know in order to care for the infant, such as earlier treatment of the illness or immunizations needed
- your name and the name of your clinic.

#### EXAMPLE OF REFERRAL NOTE

2 – 7 – 2007

11:00 am

Urgent referral to Kalawati Saran Children's Hospital

Baby of Shashi, age 7 days                      Weight : 2.7 Kg

Referred for : Serious bacterial infection with meningitis  
Being referred as no improvement after 2 days of treatment

Treatment given at the hospital:

Inj. Ampicillin and Inj. Gentamicin

Inj. Phenobarbitone

Inj. Vitamin K

Oxygen

I/V fluids

Dr. Ramesh Gupta  
Medical Officer  
Mehrauli CHC

6. **Encourage mother to accompany :** Encourage the mother to accompany the baby to provide supportive care on the way and in the hospital

#### 4.1.3 What to do during transport?

- A) **Ensure an open airway :** Do not cover the baby's mouth and nose and gently wipe the secretions from the nose and mouth.
- B) **Check breathing :** Watch baby's breathing and if baby stops breathing, provide tactile stimulation to the soles to restore it or give bag and mask ventilation
- C) **Maintain temperature:**
- (a) The best way to maintain temperature on the way to the hospital is by skin to skin contact (Kangaroo care) which can be given by mother or any other family member. Avoid using hot water bottles. The baby should not remain wet and immediately wipe if baby passes urine or stool
- (b) Preheated thermocol boxes, baby wrapped in aluminium foil or cotton wool can also be employed.
- (c) Portable incubator with battery backup is ideal but very expensive.
- (d) Maintain blood sugar: Maintain the blood sugar by continued breastfeeding during transportation, if baby can breastfeed. If the baby is not breastfed, give animal milk or sugar solution by cup and spoon.

#### **Mnemonic for transport – S T A B L E**

S = Sugar

T = Temperature

A = Airway, breathing, oxygen

B = Blood pressure, perfusion

L = Lines (IV),

E = Emotional support, communication with family



# Annexures and References

## Annexure 1: Monitoring a sick baby

Sick newborns need to be monitored correctly and frequently to initiate appropriate treatment. The table below provides an outline of what needs to be checked and the action to be taken.

S O	CHECKLIST	ASSESSMENT	ACTION
1	Temperature	Mild hypothermia	Rewarm by KMC
		Hypothermia (Moderate/Severe)	KMC/Rapid Rewarming by radiant warmer
		Fever	Removal of excess clothing, change environment, Sepsis screening
2	Airway	Obstructed	Open the airway (Position and suction)
3	Breathing	Apnoea/Gasping	PPV with Bag and Mask
		Respiratory Distress	Oxygen
4	Circulation	Shock	Give 10 ml /Kilogram Normal saline/Ringer Lactate in 30 minutes
5	Fluids	No shock	Maintenance Fluid
6	Medication	Suspected sepsis	Antibiotics
7	Feeding	Sucking, frequency of feeds, volume of feed, weight	As per guidelines
8	Monitor	Temperature, Respiration, Colour, Heart Rate, Capillary refilling time, Danger Signs	
9	Communication		<b>For Home care:</b> <ul style="list-style-type: none"> <li>➤ Exclusive Breast Feeding</li> <li>➤ Maintain Temperature</li> <li>➤ Cord &amp; Eye Care</li> <li>➤ Danger Signs</li> <li>➤ Maternal Health</li> </ul> <b>Care during referral</b>
10	Follow Up		Actions to be mentioned

(Mnemonic: T.A.B.C.F.M.F.M.B.C )

## Annexure 2: Fluid requirements in newborn

### 2. Guidelines for fluid requirements

- First day 60-80 ml/kg/day
- Daily increment 20 ml/kg/day

#### Fluid requirement (ml /kg)

Day of life	Volume/kg body weight
1	60
2	80
3	100
4	120
5	140
6	150
7 onward	150

### 1. Type of fluid to be given

- First 2 days ; 10% dextrose in water
- After 2 days: Isolyte-P OR 10% dextrose in water with sodium chloride and Potassium chloride (dose of 2 mmol/kg each)

### Annexure 3: Management of the newborn in Postnatal Wards

Name: \_\_\_\_\_ Date and time of Birth \_\_\_\_\_ Birth Weight: \_\_\_\_\_ Temperature \_\_\_\_\_ °C

ASK: Does the mother or infant have any problem? \_\_\_\_\_

**ASSESS** (Circle all signs present)

<b>CHECK FOR FEEDING PROBLEM</b>	<b>D1</b>	<b>D2</b>	
<p><b>ASK THE MOTHER</b></p> <ul style="list-style-type: none"> <li>• Have you started breast feeding the baby?</li> <li>• Is there any difficulty in feeding the baby?</li> <li>• Do you have any pain while breast feeding?</li> </ul> <p>If yes, then look for:</p> <ul style="list-style-type: none"> <li>Flat or inverted nipples, or sore nipples</li> <li>Engorged breasts or breast abscess</li> </ul> <ul style="list-style-type: none"> <li>• Have you given any other foods or drinks to the baby?</li> </ul> <p>If Yes, what and how ?</p>			
<p><b>CHECK FOR DANGER SIGNS</b></p> <ul style="list-style-type: none"> <li>• Count the breaths in one minute. _____ breaths per minute Repeat if elevated _____ Fast breathing?</li> <li>• Look for severe chest indrawing.</li> <li>• Look and listen for grunting.</li> <li>• Look and feel for bulging fontanelle.</li> <li>• Look at the umbilicus. Is it red or draining pus?</li> <li>• Look for skin pustules. Are there 10 or more pustules or a big boil?</li> <li>• Measure axillary temperature (if not possible, feel for fever or low body temperature): Normal (36.5-37.4° C) Mild hypothermia (36.0-36.4° C/ cold feet) Moderate hypothermia (32.0° C – 36.0° C, cold feet and abdomen) Severe hypothermia (&lt; 32° C) Fever (&gt; 37.5° C/ feels hot)</li> <li>• See if young infant is lethargic or unconscious</li> <li>• Look at young infant's movements. Less than normal? (Lethargic, not responding, irritable, not accepting feed)</li> <li>• Look for jaundice. Are the palms and soles yellow?</li> <li>• Has the infant had convulsions?</li> </ul>			
<p><b>ASSESS</b></p> <p><b>BREASTFEEDING:</b> If infant has not fed in the previous hour, ask the mother to put her</p> <ul style="list-style-type: none"> <li>• Has the infant breastfed infant to the breast. Observe the breastfeed for 4 minutes in the previous hour? <ul style="list-style-type: none"> <li>• Is the infant able to attach? To check attachment, look for: <ul style="list-style-type: none"> <li>- Chin touching breast Yes ___ No ___</li> <li>- Mouth wide open Yes ___ No ___</li> <li>- Lower lip turned outward Yes ___ No ___</li> <li>- More areola above than below the mouth Yes ___ No ___</li> </ul> <p style="margin-left: 40px;"><i>no attachment at all    not well attached    good attachment</i></p> </li> <li>• Is the infant suckling effectively (that is, slow deep sucks, sometimes pausing)?  <i>not suckling at all    not suckling effectively    suckling effectively</i></li> </ul> </li> </ul> <p>If not sucking well, then look for:</p> <ul style="list-style-type: none"> <li>• ulcers or white patches in the mouth (thrush).</li> </ul>			
<p><b>HAS THE YOUNG INFANT RECEIVED</b></p> <ul style="list-style-type: none"> <li>➤ Vitamin K</li> <li>➤ BCG &amp; OPV 0 (must be given), HEP-B 1 (If available)</li> </ul>			

**ASSESS OTHER PROBLEMS:**

**Annexure 4: Monitoring form for sick newborn**

SIGNS	TIME						
Temperature							
Resp. rate							
Chest indrawing							
Apnea							
Grunt							
Colour							
Heart rate							
Capillary refilling time (CRT)							
Activity							
Abdominal distention							
Jaundice							
Bleeding							
Convulsions							
<b>Treatment</b>							
Feeding - Type - volume							
Fluid-drop/min -vol. left(ml)							
Oxygen							
Antibiotics (name & dose given)							
Other medication							

**Baby's Name** \_\_\_\_\_ **Weight** \_\_\_\_\_ **Date** \_\_\_\_\_

## References

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4. The International Liaison Committee on Resuscitation (ILCOR) Consensus on Science with Treatment Recommendations for Pediatric and Neonatal Patients: Neonatal Resuscitation. Pediatrics 2006;117:978-988