

CARE OF NORMAL, AT-RISK, AND SICK NEONATES

The module is designed to complement in-service education orientation and continuing education of nursing personnel involved in care of newborns.

LEARNING OBJECTIVES

At the end of this session, participants will be able to:

- **Demonstrate evidence based every day care of the newborn baby**
- **Teach the mother how to look after her baby and what to do if her baby has any health problems**
- **Identify and manage at-risk and sick neonates**

MODULE CONTENTS

The module includes following elements:

- **Text material:** Easy to read format for quick reproduction and essential reference material for the participants. Key messages are highlighted in the boxes.
- **Role-play:** Observing the procedure of 'counseling before discharge'. Participants will also be provided with opportunity to role play.
- **Oral drill:** You will learn how to classify neonates as normal, at-risk and sick.
- **Self-evaluation:** At the end of text, a self evaluation based on what has been learnt is included. Feel free to consult your text material, if you need assistance in recapitulating.

I. CARE OF NORMAL NEONATES

1. INTRODUCTION

All mothers need help, support, and advice in the initial few days after delivery to ensure proper care of their newly born babies. The care and help given to mothers and babies in the first few days after birth are critical in maintaining the normality and preventing any complications in them.

2. WHY DO MOTHERS NEED HELP IN THE INITIAL FEW DAYS OF DELIVERY?

Ideally, all pregnant women should be counseled regarding the care of the baby during the antenatal period itself. This would help them to be mentally prepared to take care of their babies after birth.

After delivery, majority of mothers usually stay for a very short time in the hospital. During this short period, they

- need time to get to know their babies
- need time to rest (since they are often tired and exhausted after delivery)
- In addition, they need to know what care has to be given to their baby and how to carry out the care; they also need to know what to do if their baby is not well

Therefore, it is very important for the health care providers to help the mothers (whether at a health facility or at home) in this crucial time period. First time mothers often need more help and support for the proper care of their infants.

3. ROUTINE CARE AFTER BIRTH

The care a mother and her baby need in the initial few days after delivery can be broadly grouped under the following headings:

1. The postnatal environment
2. Every day care of the baby
3. Looking for danger signs and giving treatment
4. Preparation for discharge

3.1 *The postnatal environment*

A postnatal room should be kept warm with no draughts from open doors or windows. A temperature of at least 25°C is required to keep a baby warm. Often, a radiant heater, blower or other devices for providing warmth are necessary to maintain the correct room temperature especially in winter months.

A mother and her baby should be kept together from birth (in bed or very near to 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.

In hot country, a bed net prevents a mother and baby becoming ill from diseases spread by mosquitoes and other insects (e.g. malaria).

Postnatal environment

- Ensure that the room is warm with no draught
- Keep mother and baby close together in same room and same bed
- Provide bed nets to sleep

3.2 *Every day care of the baby*

Here, we shall discuss the every day care needed by ALL newborn babies until the time of discharge from the health facility. The needs are the same even for babies born at home; it is the duty of the health care provider to ensure that each baby receives appropriate care irrespective of the place of delivery.

The key areas of every day care include:

- **Breastfeeding**
- **Warmth**
- **Cord care**
- **Hygiene**

Breastfeeding and warmth (thermal protection) are covered in detail in separate modules; similarly, cord care is explained in the module on 'Care at birth'. In this module, only the salient features are discussed.

The key areas of every day care of a newborn baby include: breastfeeding, warmth, cord care, and hygiene.

3.2.1. *Breastfeeding*

To support mothers in breast feeding their babies, health workers must be both skilled and knowledgeable. They should know the key points of correct positioning and attachment of the baby to the breast. In addition to teaching about positioning and attachment, health workers must also be able to give mothers the correct information about infant feeding.

Mothers should be informed that in the first few days after birth, only a small amount of thick yellow milk (*Colostrum*) is secreted (if she needs to express at this time, only a teaspoonful can be expressed). They should be reassured that even this much is sufficient for a normal baby in the first 2 days and that the amount of milk secreted will gradually increase. The importance of giving colostrum should be emphasized and any doubts or false beliefs should be clarified.

The steps of breastfeeding counseling and support are covered in detail in the module on 'Feeding of normal and low birth weight babies.' Some important points are summarized below:

Every day care: Breastfeeding

1. Support exclusive breastfeeding **on demand** day and night.
2. Ask the mother to **get help** if there is a breastfeeding difficulty.
3. **Assess** breastfeeding in every baby **before** planning for **discharge**.
4. If the mother reports a breastfeeding difficulty, assess breastfeeding and help her with attachment and positioning.
5. **DO NOT** discharge the baby if breastfeeding is not established.

3.2.2. Warmth

The essential steps in preventing heat loss and maintaining the normal temperature in a newborn baby are discussed in detail in the module on 'Temperature regulation.' Some important steps are summarized in the box below:

Every day care: Ensuring warmth

1. Explain to the mother that keeping baby warm is important for the baby to remain healthy.
2. Dress the baby or wrap in soft dry clean cloth.
3. Cover the head with a cap especially if baby is small.
4. Keep the baby within easy reach of the mother. Do not separate them.
5. If mother and baby need to be separated, ensure the baby is dressed or wrapped and covered with a blanket.
6. Assess warmth every 4 hours by touching baby's feet; if feet are cold, use skin-to-skin contact, add extra blanket and reassess.
7. Keep the room for the mother and baby warm.

3.2.3. Cord care

Care of the umbilical cord at the time of birth has been explained in the module on 'Care at birth'.

Routine cord care in the first few days of life (until the cord dries and falls off) is summarized below:

Every day care: Keeping the cord healthy

1. Wash hands before and after cord care.
2. Put NOTHING on the stump.
3. Fold nappy (diaper) below the level of the stump.
4. Keep cord stump loosely covered with clean clothes.
5. If stump is soiled, wash it with clean water and soap. Dry it thoroughly with clean cloth.
- 6. Look for signs of infection (daily)**
 - Pus discharge from the cord stump
 - Redness around the cord especially if there is swelling
 - High temperature (more than 37.5°C) or other signs of infection
7. Explain to the mother that she should seek care if the umbilicus is red or draining pus or blood.

It is important to teach the mothers that the umbilical stump should be left dry; they SHOULD NOT APPLY ANYTHING on the stump. Health care providers should look for any possible sign(s) of infection of the umbilical stump (see above). Mother should be explained about these signs and advised to report if they are present.

3.2.4. Hygiene

The important aspects of personal hygiene such as washing, bathing are given in the box below:

Every day care: Ensuring hygiene

1. Wash the face, neck, and underarms of the baby daily.
2. Do not bathe the baby before 24 hours of age or if the baby is cold. In case of small babies, bathe only after the baby reaches a weight of 2000g.
3. If bath is given
 - Ensure room is warm and there is no draught while changing clothes, washing and bathing
 - Use warm water for bathing
 - Thoroughly dry the baby, dress and cover after bath
 - Take extra precautions if the baby is small
4. Wash the buttocks when soiled. Dry thoroughly.
5. Use cloth diaper on baby's bottom to collect stool. Dispose off the stool as for woman's pads. Wash hands after disposing.
6. Do not apply 'Kajal' on eyes

3.3 Looking for danger signs and giving treatment

It is important that mothers, care givers and health workers are able to recognise the signs and symptoms which indicate that the baby is not well ('DANGER SIGNS'). Early recognition of the danger signs will help in identifying those babies who need urgent care and treatment.

The important danger signs are given in the box below:

DANGER SIGNS

1. Not feeding well
2. Less active than before
3. Fast breathing (more than 60 breaths per minute)
4. Slow breathing (less than 30 breaths per minute)
5. Moderate or severe chest in-drawing
6. Grunting/ moaning
7. Convulsions
8. Floppy or stiff
9. Fever (temperature $>37.5^{\circ}\text{C}$)
10. Temperature $<35.5^{\circ}\text{C}$ or not rising after re-warming
11. Umbilicus draining pus or umbilical redness extending to skin
12. More than 10 skin pustules or bullae, or swelling, redness, hardness of skin
13. Bleeding from umbilical stump
14. Pallor

3.4 Normal neonate: Preparing for discharge

3.4.1 Ensure immunization

All babies should receive the following 3 vaccines within the first week of life and preferably before discharge from the health facility:

- BCG,
- OPV-0,
- Hepatitis B (HB-0)

It is the duty of the health workers to ensure that the baby gets immunized before discharge. Mothers should also be given an 'Immunization card' (if available) and advised regarding the immunization schedule.

3.4.2 Check if the baby is fit for discharge

A baby can be discharged if the following criteria are fulfilled (see box):

Criteria for discharge from a health facility

1. Feeding well (suckling effectively) at least 8 times in 24 hours
2. No danger signs
3. No need for any medication except vitamins
4. For small baby: feeding well and gaining weight adequately (see module on 'Feeding of normal and low birth weight babies')



ROLE-PLAY

You will observe a role-play being conducted by two facilitators regarding 'Counseling before discharge.' Write your comments for discussion at the end of the role play.

Checklist for demonstration role-play

A (Ask)

L (Listen)

P (Praise)

A (Advise)

C (Check understanding)

Checklist for role-play by participants

A (Ask)

L (Listen)

P (Praise)

A (Advise)

C (Check understanding)



SELF EVALUATION

1. The key areas of everyday care include:

2. Enumerate the steps to keep normal baby warm:

3. Mention at least ten danger signs in a neonate

4. Discharge criteria for a normal baby include:

****You will be given individual feedback after you have evaluated yourself.***



ORAL DRILL

There will be an oral drill by the facilitator.

Clinical	Normal Neonate	'At Risk' Neonate	Sick Neonate
Weight	≥2500g	1500 - 2499g	<1500g
Temperature	36.5-37.5°C	36.0-36.4°C	<36°C
Cry after birth	<1 min	1-5 min	>5 min
Sucking	Good	Poor	Absent
Sensorium	Active	Depressed	Non arousal
Respiration	Rate <60/min	Rate ≥60/min but NO retractions	Retractions/ Apnea/Gasping
Jaundice	Absent	Present without staining of palms/soles	Staining of palms/soles
<ul style="list-style-type: none"> ● Diarrhea ● Vomiting ● Abdominal distension ● Umbilical discharge (pus) ● Multiple skin pustules ● Fever 	None	Presence of any one	Presence of two
<ul style="list-style-type: none"> ● Central cyanosis ● Convulsions ● Bleeding ● Major malformation 	None	None	Presence of any one

Note: If the baby has multiple signs, (s)he gets classified into the sickest category

II. CARE OF AT-RISK NEONATES

1. WHO IS AN 'AT-RISK' NEONATE?

An 'at-risk' neonate has one or more of the following features:

1. Weight 1500-2499g
2. Temperature (axillary) 36.0°C-36.4°C
3. Babies with moderate or severe hypothermia who respond to warming
4. Cried late (>1min) but within 5 minutes of birth
5. Sucking poor, but not absent
6. Depressed sensorium, but is arousable
7. Respiratory rate of over 60 per minute, but no chest retractions
8. Jaundice present, but no staining of palms/soles
9. Presence of any one of the following:
 - Diarrhea or vomiting or abdominal distension
 - Umbilicus draining pus or pustules on skin
 - Fever

2. CARE OF AT-RISK NEONATES

2.1 Where should an at-risk neonate be managed?

The care of 'at-risk' neonate should be initiated at the health facility itself under direct supervision. After initial improvement, further care can be provided at home.

2.2 What care is provided to the at-risk baby at the health facility?

The care of at-risk babies is outlined below:

2.2.1 Warmth

The details are explained in a separate module (Refer to 'Thermal Protection' module).

The steps are dependent up on the current temperature of the baby (see below).

Temperature	Management
Normal temperature	Prevent hypothermia <ul style="list-style-type: none"> ● Wrap the baby in layers of clothing ● Cover the head and limbs ● Place the baby in direct contact with mother ● In winter months, the room may have to be warmed with heater, angeethi etc
Cold stress (temperature between 36.0°C and 36.4°C)	Treat hypothermia <ul style="list-style-type: none"> ● Wrap the baby with extra layers of clothing ● Cover the head and limbs ● Place the baby in close contact with the mother, preferably skin-to-skin ● In winter months, heat the room with a heater, angeethi etc.
Hypothermia (Temperature <36.0°C)	<ul style="list-style-type: none"> ● Requires immediate exposure to a radiant heat source (such as radiant warmer) or heater ● Other measures same as for cold stress

2.2.2. *Stabilization*

Most of these babies do not require stabilization other than prevention for hypothermia as above. If there is occasional apnea, physical stimulation may be provided.

2.2.3 *Feeds*

Feeding of at-risk infants is explained in another module (Refer to the module on 'Feeding of normal and low birth weight babies').

The baby is started on direct breast feeding. If not sucking well, she is provided expressed breast milk by spoon or paladai. Occasionally, expressed breast milk may have to be given by gavage feeding.

2.2.4 *Specific therapy*

Some simple conditions can be readily treated at the health facility and later at home.

Condition	Treatment
Umbilical redness/pus discharge	Local application of 1% gentian violet and syrup cotrimoxazole 1/3 tsf BDx5days
Skin pustules	Local application of 1% gentian violet
Pneumonia (Respiratory rate >60/min, no chest retractions)	Syr Cotrimoxazole 1/3 tsf BD x 7 days (or syrup Amoxycillin 1.25ml TDSx7days)

2.2.5 *Monitoring*

The following signs should be monitored every two hours:

Signs to be monitored	
Temperature	Convulsion
Sucking	Bleeding
Sensorium	Diarrhea
Respiration	Vomiting
Apnea	Abdominal distension
Cyanosis	
<i>All the signs should be monitored 2 hourly</i>	

2.2.6 *Re-evaluation*

After stabilization and/or specific therapy, the baby has to be re-evaluated for improvement.

The two cardinal signs of improvement are:

- i. The temperature will become normal (36.5°C-37.5°C) and**
- ii. The baby will accept feeds well.**

Other signs such as rapid breathing, depressed sensorium, abdominal distention etc. will also start improving. Such a baby can be sent home after advising the mother/family regarding care at home. Prepare a brief note regarding baby's condition, treatment and advice.

On the other hand, if the baby does not improve and exhibits signs indicative of sick state, he should be referred to other hospital. The mother/family should be taken into confidence and the physician should organize efficient and stable transport of the baby.

2.2.7 Communication

Communication with the family, especially the mother is very important during the management of at-risk and sick neonates. Health workers should inform the mother frequently regarding the baby's condition - whether it is improving or not.

If the condition improves, the family has to be reassured; mother should be explained about the care of the baby at home. A note has to be made regarding the baby's condition and care.

If the condition does not improve, the family needs to be explained regarding the need for referral and transport. They should be guided about where to take the baby for further treatment. Mother has to be counseled regarding the care during transport.

Communication with the family

1. Reassure the mother and family.
2. Prepare a note regarding baby's condition and care.
3. If baby improves and is to be sent home, explain care of the baby at home.
4. If baby does not improve or worsens, explain the need for referral and care during transport.

3. FOLLOW - UP

3.1 Advice about follow-up visits

Mother has to be advised regarding the time of follow-up visit, whether the baby is referred or sent home (See table).

As we can see from the table, one visit by the health worker at home is a must after discharge. This improves the relationship between the family and the health worker and also leads to better understanding of the home environment.

Condition	Time of follow-up visit
If sent home	Health worker: to visit next day Mother (with the baby): to be called after two and seven days
If referred	Health worker: to visit one day after discharge from hospital Mother (with the baby): to be called after two and seven days of discharge from hospital

3.2 What advice should you give to mother and family regarding home care?

3.2.1. Keep the baby warm

Baby should be kept well clothed taking care to cover the head and limbs. He should be dried quickly if urine or stool is passed. Maternal contact, preferably skin to skin should be practiced. This not only provides warmth from mother's body, but also promotes lactation and close mother-baby bonding. Warming of the room with heater or angeethi may be required in winter. Baby should be bathed only when the weight of the baby is over 2000g and that also if the baby has no other features that characterize him at-risk. Bathing an 'at-risk' baby may aggravate his condition severely.

3.2.2. *Provide exclusive breast milk feeding*

Baby should be provided only breast milk. Often an at-risk baby can suck adequately on the breasts. Some babies, however, may not suck well for a few days. These babies may be provided expressed breast milk by spoon/paladai. It should be emphasized that baby must be put on the breast first, to provide stimulus for lactation. This should be followed by expression of breast milk and assisted feeding with spoon or paladai. The mother should be explained the method of manual expression of breast milk and feeding with spoon.

3.2.3. *Continue the prescribed treatment*

If the baby has been advised local gentian violet application on the cord for umbilical sepsis or on skin for pustules, that advice should be followed at home also. Babies prescribed oral cotrimoxazole for mild pneumonia should be administered the medication regularly.

3.2.4. *Observe progress of baby*

The mother / family should be explained that signs of well being of the 'at-risk' neonate are: (i) the baby accepts feeds well and (ii) (s)he has warm trunk, warm and pink soles and palms.

The baby should also be monitored for any danger signs described above.

In case any of these features are present or persistent or have reappeared, the baby should be re-evaluated without delay.

3.2.5. *Counsel and educate the mother and family*

The doctor & nurses team should explain the condition of the baby to the mother and the family. They should be reassured and educated regarding the care at home. Emphasis should be laid on keeping a careful vigil for signs of improvement and of worsening. It should be stressed upon them that a baby may require re-evaluation any time if the progress is not satisfactory or if there is worsening. Above all, the health care provider must encourage the mother/family to gain confidence in looking after the baby.

3.2.6. *Follow-up*

A home visit by the health worker one day after evaluation at hospital is desirable. Thereafter the baby should be seen again after 2 and 7 days by health worker.

At follow up baby's weight should be taken. A gain of 10-15 g/kg per day is expected after 7 to 10 days of age. Immunization should be provided as for other neonates.



SELF EVALUATION

1. An 'at-risk' neonate will have:
 - a. Birth weight: _____
 - b. Sensorium: _____
 - c. Respiratory rate: _____
 - d. Yellowness of skin, but no _____

2. The staff nurse should monitor the following signs every 2 hourly in 'at-risk' neonates:

3. Follow-up care of 'at-risk' neonate includes:

Condition	Time of follow-up visit (for health worker)	Time of follow-up visit (for mother)
If sent home		
If referred		

4. Signs of well-being in an 'at-risk' neonate include:

5. Where is 'at risk' neonate managed?

6. What advice you give for home care of 'at risk' baby?

****You will be given individual feedback after you have evaluated yourself.***

III. CARE OF SICK NEONATES

1. WHO IS A 'SICK' NEONATE?

A sick neonate is the one who has any of the following features:

1. Weight <1500 g
2. Temperature <36°C despite warming for one hour
3. Cried after 5 minutes of birth
4. Absent sucking
5. Not arousable
6. Respiratory rate more than 60/min with chest retractions
7. Apnea or gasping respiration
8. Central cyanosis
9. Jaundice staining palms/soles
10. Convulsions
11. Bleeding
12. Major malformation
13. Presence of two of the following
 - Diarrhea or vomiting or abdominal distension
 - Umbilicus draining pus
 - Multiple skin pustules
 - Fever

Also remember that if an 'at-risk' neonate does not improve while being observed under your care, he is also considered a sick neonate.

2. CARE OF THE SICK NEONATE

2.1 Where is sick neonate managed?

A sick neonate is looked after in a district or small hospital.

2.2 What can be done at the hospital?

At smaller health facility, only immediate care is provided. The principles of care at this level are:

2.2.1. Warmth

The guidelines for provision of warmth have been covered in the Module on 'Thermal Protection'.

2.2.2. Stabilization (Refer to the modules on 'Neonatal Resuscitation' and 'Procedures')

The sick neonate may need physical stimulation, bag and mask ventilation or oxygen if there is respiratory failure. If necessary, an intravenous access has to be established and the following medications administered (as per the doctor's orders):

- Inj. Dextrose (10%) 2ml per kg IV stat followed by drip
- Inj. Normal saline 10 ml per kg IV slowly over 10 minutes if pulses are poor or capillary refill time is over 3 seconds.
- Inj. **Vit. K 1 mg IM** (If not given at birth)

2.2.3. Feeds (Refer to the module on 'Feeding of normal and low birth weight babies')

In a sick newborn, oral feeding should not be insisted upon. (s)he shall be started on intravenous fluids depending upon the level of sickness. Once the baby becomes stable, he should be put on the mother's breast and allowed to breast feed. If he is unable to do so, he should be given expressed breast milk by either gavage or spoon/paladai. Intravenous fluids should be stopped as early as possible.

2.2.4 Specific therapy

Doctor will order for the first dose of antibiotics:

- Inj Ampicillin 50 mg/kg IV stat
- Inj Gentamicin 2.5 mg/kg IV stat
- Vitamin K and anticonvulsants, if indicated

Oxygen may be started in a baby with respiratory distress or central cyanosis.

2.2.5. Monitoring

The following signs should be monitored every one hour by staff:

Signs to be monitored	
Temperature	Convulsion
Sucking	Bleeding
Sensorium	Diarrhea
Respiration	Vomiting
Apnea	Abdominal distension
Cyanosis	Capillary refill time

*All the signs should be monitored **hourly***

2.2.6 Communication

- Explain condition of the baby, reassure parents
- Explain need for referral, if doctor feels that baby cannot be managed
- Explain care during transport

2.2.7 Organize transport (Refer to the module on 'Procedures: Transport of Neonates')

Doctor will write a precise note. Following guidelines should be followed:

- Encourage mother to accompany
- If possible, let a health care provider accompany the baby
- Ensure warmth on the way

Explain family the care to be provided during transport (keep baby's trunk and palms / sole warm to touch, keep airway open, physical stimulation if apneic)

Take baby to nearest facility by fastest mode of transport by the shortest route



SELF EVALUATION

Let us see how much you have learnt about 'AT RISK' and 'SICK' Neonate:

1. What are the signs you will monitor in a sick neonate?

2. What is the immediate care given for a sick baby?

3. How frequently would you monitor

a) At risk neonate : _____

b) Sick neonate : _____

4. Mark (✓) for 'sick' neonate

- a. Weight 1800g
- b. Jaundice staining palms/soles
- c. Cried after 5 minutes of birth
- d. Axillary temperature 36.2°C
- e. Respiratory rate >60/mt without retractions

5. Organization of transport for 'sick neonate' must ensure.

****You will be given individual feedback after you have evaluated yourself.***