VI. Care after childbirth

VI.1. Initial care of the newborn

• Check the baby's breathing and color every 5 minutes.

• If the baby becomes cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 breaths per minute), give oxygen by nasal catheter or prongs.

• Check warmth by feeling the baby's feet every 15 minutes:

- If the baby's feet feel cold, check axillary temperature;
- If the baby's temperature is below 36.5°C, rewarm the baby

• Check the cord for bleeding every 15 minutes. If the cord is bleeding, retie cord more tightly.

• Apply antimicrobial drops (1% silver nitrate solution or 2.5% povidone-iodine solution) or ointment (1% tetracycline ointment) to the baby's eyes.

Note: Povidone-iodine should not be confused with tincture of iodine, which could cause blindness if used.

• Wipe off any meconium or blood from skin.

• Encourage breastfeeding when the baby appears ready (begins "rooting"). Do not force the baby to the breast.

Avoid separating mother from baby whenever possible. Do not leave mother and baby unattended at any time.

Newborn care principles

When a baby is born to a mother being treated for complications, the management of the newborn will depend on:

• Whether the baby has a condition or problem requiring rapid treatment;

• Whether the mother's condition permits her to care for her newborn completely, partially or not at all.

Newborns with problems

• If the newborn has an acute problem that requires treatment within 1 hour of delivery, health care providers in the labor ward will be required to give the care. Problems or conditions of the newborn requiring urgent interventions include:

- Not breathing;
- Breathing with difficulty;
- Central cyanosis (blueness of skin);
- Low birth weight (less than 2500 g);
- Lethargy;
- Hypothermia/cold stress (axillary temperature less than 36.5°C);
- Convulsions

- The following conditions require early treatment:
  - Possible bacterial infection in an apparently normal baby whose mother had prelabor or prolonged rupture of membranes;
  - Possible syphilis (mother has positive serologic test or is symptomatic).
- If the newborn has a malformation or other problem that does not require urgent care:
  - Provide routine initial newborn care
  - Transfer the baby to the appropriate service to care for sick newborns as quickly as possible

Newborns without problems

- If the newborn has no apparent problems, provide routine initial newborn care, including skin_-to-skin contact with the mother and early breastfeeding
- If the mother's condition permits, keep the baby in skin-to-skin contact with the mother at all times;
- If the mother's condition does not permit her to maintain skin-to-skin contact with the baby after the delivery (e.g. caesarean section):
  - Wrap the baby in a soft, dry cloth, cover with a blanket and ensure the head is covered to prevent heat loss;
  - Observe frequently.
- If the mother's condition requires prolonged separation from the baby, transfer the baby to the appropriate service to care for newborns.

Transferring babies

- Explain the baby's problem to the mother
- Keep the baby warm. Wrap the baby in a soft, dry cloth, cover with a blanket and ensure the head is covered to prevent heat loss.
- Transfer the baby in the arms of a health care provider if possible. If the baby requires special treatment such as oxygen, transfer in an incubator or bassinet.
- Initiate breastfeeding as soon as the baby is ready to suckle or as soon as the mother's condition permits.
- If breastfeeding has to be delayed due to maternal or newborn problems, teach the mother to express breast milk as soon as possible and ensure that this milk is given to the newborn.
- Ensure that the service caring for the newborn receives the record of the labor and delivery and of any treatments given to the newborn.

VI.2. Immediate newborn conditions or problems

Problems

- The newborn has serious conditions or problems:
  - Not breathing or is gasping;
  - Breathing with difficulty (less than 30 or more than 60 breaths per minute, indrawing of the chest or grunting);
  - Cyanosis (blueness);
  - Preterm or very low birth weight (less than 32 weeks gestation or less than 1 500 g);
  - Lethargy;
  - Hypothermia;
  - Convulsions
- The newborn has other conditions or problems that require attention in the delivery room:
  - Low birth weight (1500-2500 g);
  - Possible bacterial infection in an apparently normal newborn whose mother had prelabor or prolonged rupture of membranes;
  - Possible congenital syphilis in newborn whose mother has a positive serologic test for syphilis or is symptomatic.

Immediate management

Three situations require immediate management: no breathing (or gasping, below), cyanosis (blueness) or breathing with difficulty.

No breathing or gasping

- Dry the baby, remove the wet cloth and wrap the baby in a dry, warm cloth.
- Clamp and cut the cord immediately if not already done.
- Move the baby to a firm, warm surface under a radiant heater for resuscitation.
- Observe standard infection prevention practices when caring for and resuscitating a newborn

VI.3. Resuscitation

Resuscitation equipment

To avoid delays during an emergency situation, it is vital to ensure that equipment is in good condition before resuscitation is needed:

- Have the appropriate size masks available according to the expected size of the baby (size 1 for a normal weight newborn and size 0 for a small newborn).
- Block the mask by making a tight seal with the palm of your hand and squeeze the bag:
  - If you feel pressure against your hand, the bag is generating adequate pressure;
  - If the bag reinflates when you release the grip, the bag is functioning properly.

Opening the airway

- Position the newborn
  - Place the baby on its back;
  - Position the head in a slightly extended position to open the airway;
  - Keep the baby wrapped or covered, except for the face and upper chest.

Figure-16: Correct position of the head for ventilation; note that the neck is less extended than in adults

- **Clear the airway by suctioning first the mouth and then the nostrils. If blood or meconium is in the baby's mouth or nose, suction immediately to prevent aspiration.**

Note: Do not suction deep in the throat as this may cause the baby's heart to slow or the baby may stop breathing.

- Reassess the baby:
  - If the newborn starts crying or breathing, no further immediate action is needed. Proceed with initial care of the newborn
  - If the baby is still not breathing, start ventilating (see below).

Ventilating the newborn

- Recheck the newborn's position. The neck should be slightly extended (Figure-16)
- Position the mask and check the seal (Figure-17):
  - Place the mask on the newborn's face. It should cover the chin, mouth and nose;
  - Form a seal between the mask and the face;
  - Squeeze the bag with two fingers only or with the whole hand, depending on the size of the bag;
  - Check the seal by ventilating twice and observing the rise of the chest.

Figure-17: Ventilation with bag and mask

- Once a seal is ensured and chest movement is present, ventilate the newborn. Maintain the correct rate (approximately 40 breaths per minute) and the correct pressure (observe the chest for an easy rise and fall):
  - If the baby's chest is rising, ventilation pressure is probably adequate;
  - If the baby's chest is not rising:
    - Recheck and correct, if necessary, the position of the newborn
    - Reposition the mask on the baby's face to improve the seal between mask and face;
    - Squeeze the bag harder to increase ventilation pressure;
    - Repeat suction of mouth and nose to remove mucus, blood or meconium from the airway.
- If the mother of the newborn received pethidine or morphine prior to delivery, consider administering naloxone after vital signs have been established
- Ventilate for 1 minute and then stop and quickly assess if the newborn is breathing spontaneously:
  - If breathing is normal (30-60 breaths per minute) and there is no indrawing of the chest and no grunting for 1 minute, no further resuscitation is needed. Proceed with initial care of the newborn
  - If the newborn is not breathing, or the breathing is weak, continue ventilating until spontaneous breathing begins.
- If the newborn starts crying, stop ventilating and continue observing breathing for 5 minutes after crying stops:
  - If breathing is normal (30-60 breaths per minute) and there is no indrawing of the chest and no grunting for 1 minute, no further resuscitation is needed. Proceed with initial care of the newborn
  - If the frequency of breathing is less than 30 breaths per minute, continue ventilating;
  - If there is severe indrawing of the chest, ventilate with transfer the baby to the most appropriate service for the care of sick newborns.
- If the newborn is not breathing regularly after 20 minutes of ventilation:
  - Transfer the baby to the most appropriate service for the care of sick newborns;
  - During the transfer, keep the newborn warm and ventilated, if necessary.
- If there is no gasping or breathing at all after 20 minutes of ventilation, stop ventilating; the baby is stillborn. Provide emotional support to the family

VI.4. Care after successful resuscitation

- **Prevent heat loss:**
  - Place the baby skin-to-skin on the mother's chest and cover the baby's body and head;
  - Alternatively, place the baby under a radiant heater.
- Examine the newborn and count the number of breaths per minute:
  - If the baby is cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 breaths per minute, indrawing of the chest or grunting), give oxygen by nasal catheter or prongs
- Measure the baby's axillary temperature:
  - If the temperature is 36°C or more, keep the baby skin-to-skin on the mother's chest and encourage breastfeeding;
  - If the temperature is less than 36 °C, rewarm the baby
- Encourage the mother to begin breastfeeding. A newborn that required resuscitation is at higher risk of developing hypoglycemia:
  - If suckling is good, the newborn is recovering well;
  - If suckling is not good, transfer the baby to the appropriate service for the care of sick newborns.
- Ensure frequent monitoring of the newborn during the next 24 hours. If signs of breathing difficulties recur, arrange to transfer the baby to the most appropriate service for the care of sick newborns.

Cyanosis or breathing difficulty

- If the baby is cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 breaths per minute, indrawing of the chest or grunting) give oxygen by nasal catheter or prongs:
  - Suction the mouth and nose to ensure the airways are clear;
  - Give oxygen at 0.5 L per minute by nasal catheter or nasal
  - Transfer the baby to the appropriate service for the care of sick newborns.
- Ensure that the baby is kept warm. Wrap the baby in a soft, dry cloth, cover with a blanket and ensure the head is covered to prevent heat loss.

Use of oxygen

When using oxygen, remember:

- Supplemental oxygen should only be used for difficulty in breathing or cyanosis;
- If the baby is having severe indrawing of the chest, is gasping for breath or is persistently cyanotic, increase the concentration of oxygen by nasal catheter, nasal prongs or oxygen hood.

Note: Indiscriminate use of supplemental oxygen for premature infants has been associated with the risk of blindness.

Assessment

Many serious conditions in newborns-bacterial infections, malformations, severe asphyxia and hyaline membrane disease due to preterm birth-present in a similar way with difficulty in breathing, lethargy and poor or no feeding.

It is difficult to distinguish between the conditions without diagnostic methods. Nevertheless, treatment must start immediately even without a clear diagnosis of a specific cause. Babies with any of these problems should be suspected to have a serious condition and should be transferred without delay to the appropriate service for the care of sick newborns.

Management

Very Low Birth Weight or very preterm baby

If the baby is very small (less than 1 500 g or less than 32 weeks), severe health problems are likely and include difficulty in breathing, inability to feed, severe jaundice and infection. The baby is susceptible to hypothermia without special thermal protection (e.g. incubator).

Very small newborns require special care. They should be transferred to the appropriate service for caring for sick and small babies as early as possible. Before and during transfer:

- Ensure that the baby is kept warm. Wrap the baby in a soft, dry cloth, cover with a blanket and ensure the head is covered to prevent heat loss.
- Immediate newborn conditions or problems
- If maternal history indicates possible bacterial infection, give first dose of antibiotics:
  - gentamicin 4 mg/kg body weight IM (or give kanamycin);
  - PLUS ampicillin 100 mg/kg body weight IM (or give benzyl penicillin).
- If the baby is cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 breaths per minute, indrawing of the chest or grunting), give oxygen by nasal catheter or prongs

Lethargy

If the baby is lethargic (low muscular tone, does not move), it is very likely that the baby has a severe illness and should be transferred to the appropriate service for the care of sick of newborns.

Hypothermia

Hypothermia can occur quickly in a very small baby or a baby who was resuscitated or separated from the mother. In these cases, temperature may quickly drop below 35 °C. Rewarm the baby as soon as possible:

- If the baby is very sick or is very hypothermic (axillary temperature less than 35°C):
  - Use available methods to begin warming the baby (incubator, radiant heater, warm room, heated bed);
  - Transfer the baby as quickly as possible to the appropriate service for the care of preterm or sick newborns;
  - If the baby is cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 breaths per minute, indrawing of the chest or grunting), give oxygen by nasal catheter or prongs
- If the baby is not very sick and axillary temperature is 35°C or more:
  - Ensure that the baby is kept warm. Wrap the baby in a soft, dry cloth, cover with a blanket and. ensure the head is covered to prevent heat loss;
  - Encourage the mother to begin breastfeeding as soon as the baby is ready;
  - Monitor axillary temperature hourly until normal;
  - Alternatively, the baby can be placed in an incubator or under a radiant heater.

Convulsions

Convulsions in the first hour of life are rare. They could be caused by meningitis, encephalopathy or severe hypoglycemia.

• Ensure that the baby is kept warm. Wrap the baby in a soft, dry cloth, cover with a blanket and ensure the head is covered to prevent heat loss.

• Transfer the baby to the appropriate service for the care of sick newborns as quickly as possible.

Moderately preterm or low birth weight baby

Moderately preterm (33-38 weeks) or low birth weight (1500-2500 g) babies may start to develop problems soon after birth.

• If the baby has no breathing difficulty and remains adequately warm while in skin-to-skin contact with the mother:

- Keep the baby with the mother;
- Encourage the mother to initiate breastfeeding within the first hour if possible.

• If the baby is cyanotic (bluish) or is having difficulty breathing (less than 30 or more than 60 per minute, indrawing of the chest or grunting), give oxygen by nasal catheter or prongs

• If axillary temperature drops below 35 °C, rewarm the baby

Preterm and/or prolonged rupture of membranes and an asymptomatic newborn

The following are suggested guidelines which may be modified according to local situations:

• If the mother has clinical signs of bacterial infection or if membranes were ruptured for more than 18 hours before delivery even if the mother has no clinical signs of infection:

- Keep the baby with the mother and encourage her to continue breastfeeding;
- Make arrangements with the appropriate service that cares for sick newborns to take a blood culture and start the newborn on antibiotics.

• If these conditions are not met, do not treat with antibiotics. Observe the baby for signs of infection for three days:

- Keep the baby with the mother and encourage her to continue breastfeeding;
- If signs of infection occur within 3 days, make arrangements with the appropriate service that cares for sick newborns to take a blood culture and start the newborn on antibiotics.

Congenital syphilis

• If the newborn shows signs of syphilis, transfer the baby to the appropriate service for the care of sick newborns. Signs of syphilis include:

- Generalized edema;
- Skin rash;
- Blisters on palms or soles;
- Rhinitis;
- Anal condylomata;

- Enlarged liver/spleen;
- Paralysis of one limb;
- Jaundice;
- Pallor;
- Spirochetes seen on darkfield examination of lesion, body fluid or cerebrospinal fluid.

• If the mother has a positive serologic test for syphilis or is symptomatic but the newborn shows no signs of syphilis, whether or not the mother was treated, give benzathine penicillin 50 000 units/kg body weight IM as a single dose.