

DOING NEWBORN RESUSCITATION

If the baby does not respond to stimulation, begin resuscitation immediately. Continuing tactile stimulation to the newborn who is not breathing wastes time. Resuscitation must be started as soon as you see that the baby is asphyxiated. Quickly clamp (or tie if you have no clamps) and cut the cord, leaving a cord stump at least 10 cm long for now.

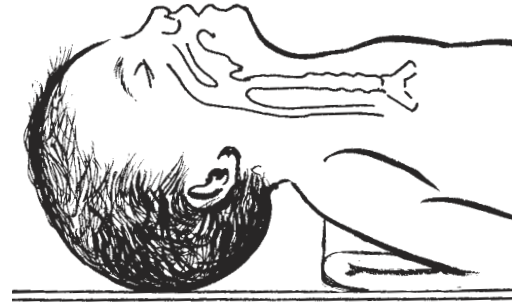
As you prepare to resuscitate, briefly talk to the mother. A mother usually knows something is wrong when she does not hear her baby cry. Explain that the baby needs help with breathing and that you will give that help. Ask another health worker or family member to stay with the mother to give emotional support and to watch for and help with any bleeding.

Step 1: Position the Baby

- Place the baby on his back on a flat surface.
- Position the head so that the neck is slightly extended. You may put a rolled cloth under the shoulders to maintain the position.
- The resuscitation surface should be well lit and warm.
- Keep the baby's head and lower body covered to keep him warm.

FIGURE 4.3 **CORRECT HEAD EXTENSION FOR RESUSCITATION**

Correct



Incorrect: over-extended



Incorrect: under-extended



Step 2: Clear the Airway

- Wipe off the baby's face with a clean piece of gauze or cloth.
- Suction the baby.
 - Bulb suction may be used (see Appendix D). Discard the bulb syringe after use.
 - Mechanical suction with a De Lee-type suction device or mucus extractor.
 - Machine suction can be used with a clean soft suction tube or catheter, size 12F. The suction pressure of the machine should not be more than 130 cm water or 100 mm Hg.
 - Always suction the baby's mouth first and then the nose.
 - Suction only while pulling the suction tube out, not while putting it in.
 - Do not suction deep in the throat as this may cause the baby's heart to slow or the baby may stop breathing.
 - Do not insert a suction tube or bulb more than 5 cm into the mouth or 3 cm into the nose.
- If the amniotic fluid was stained with meconium (yellow or greenish color), gently suction out the mouth and nose as soon as the head is born and while it is still on the perineum (before the shoulders emerge).
- Quickly reassess the breathing after you have positioned the baby and cleared the airway.
 - If the baby is breathing without difficulty, no further resuscitation steps are needed. Go to Step 4.
 - If the baby is having trouble breathing or is not breathing, begin ventilation. Go to Step 3.
- Signs the baby is having trouble breathing include:
 - Gasping (short, difficult breaths that produce a sound when the baby breathes in). Gasping is a sign of a serious problem and requires the same management as absent breathing.
 - Breathing less than 30 breaths per minute, with or without any of the following:
 - Indrawing of the chest (when the baby breathes in, areas between the ribs are pulled in)
 - Grunting (a sound the baby makes when breathing out)
 - Shallow irregular breathing

Step 3: Ventilate

For bag-and-mask ventilation use the proper size mask to cover the baby's mouth and nose. To ventilate: hold the mask with one hand to ensure an airtight seal using one or two fingers of the same hand to hold the chin and keep the head slightly extended. Squeeze the bag with the other hand (See figure 4.5).

For mouth-to-mouth ventilation use your mouth (with a piece of gauze over the baby's nose and mouth) to cover the baby's mouth and nose. To ventilate, breathe a mouthful of air into the baby. Remember that the baby's lungs are small. When doing mouth-to-mouth ventilation use only air from your mouth and not your lungs.

Ventilate once or twice, watching to see if the baby's chest rises. If the chest does not rise, check the baby's position, reposition the baby, your mouth or the mask, and try again until you get the chest to rise with each breath. If necessary, repeat suctioning.

- Ventilate about 40 times in 1 minute.
- After 1 minute, stop to see if the baby starts to breathe independently.
- Continue ventilation until the baby spontaneously cries or breaths.

When the baby's breathing is normal, stop ventilation and continue to monitor the baby closely. The cord should now be securely tied and cut to the proper length.

If there is no breathing or gasping after 20 minutes, stop ventilation. The baby has died.

FIGURE 4.4 **PROPER MASK PLACEMENT**

Incorrect mask placement

This mask is too large and will not make a tight fit.



Incorrect mask placement

This mask only covers the mouth. The mask must cover both mouth and nose.



CORRECT mask placement

This mask covers both mouth and nose.



FIGURE 4.5 **BAG-AND-MASK RESUSCITATION**



CHART 4.3

**SIGNS A BABY NEEDS
REFERRAL AFTER
RESUSCITATION**

- Not sustaining adequate breathing (less than 30 breaths in 1 minute) or gasping: continue resuscitation efforts during transport
- More than 60 breaths in 1 minute
- Indrawing of the chest
- Grunting (sound made when breathing out)
- The baby's tongue and lips are blue or the whole body is pale or bluish.

Step 4: Monitor

Closely monitor a baby who had resuscitation or who has poor color, even if he appears to be breathing well.

- Watch for breathing problems: grunting, indrawing of the chest, flaring of the nostrils, rapid breathing (greater than 60 breaths per minute), slow breathing (less than 30 breaths per minute), blue or pale color. If the baby is having difficulty breathing, give oxygen if available.
- Keep the baby warm and dry. Defer the first bath for at least 6 hours until the baby is warm, stable, and breathing normally.
- If the baby's breathing and color are good, give him to his mother, skin-to-skin, for continued warmth, stimulation, and breastfeeding as soon as possible.
- **If the baby's condition deteriorates, transfer rapidly to a hospital for medical care. (See chart 4.3.)**

CHART 4.4 **NEWBORN RESUSCITATION SUMMARY**

Position	Place the baby on his back with the neck slightly extended.
Clear airway	<ul style="list-style-type: none">■ Clear the airway by wiping out the mouth with gauze.■ Suction the baby's nose and mouth.■ Reassess the baby's breathing.
Ventilate	<ul style="list-style-type: none">■ Use bag and mask (or mouth-to-mouth and nose if bag and mask are not available) to ventilate at 40 breaths per minute.■ Reassess the baby's breathing after 1 minute.■ Continue to ventilate until the baby breathes independently.■ Stop after 20 minutes if the baby has not responded.
Monitor	<ul style="list-style-type: none">■ Keep the baby warm (skin-to-skin).■ Defer the bath for at least 6 hours after the baby is stable.■ Breastfeed as soon as possible.■ Watch for signs of a breathing problem: rapid, labored, or noisy breathing, poor color.■ If a breathing problem occurs, stimulate, give oxygen (if available), and refer.

Babies who have difficulty breathing use a lot of energy. Breastfeeding will help give the newborn more energy.

CARE AFTER RESUSCITATION

If Resuscitation Is Successful

Counsel/advise

- Talk with the mother and family about the resuscitation. Answer any questions they may have.
- Teach the mother to check her newborn for breathing and warmth and to contact the health worker if any findings are abnormal.
- Encourage the mother to breastfeed as soon as possible. Babies who have difficulty breathing use a lot of energy. Breastfeeding will help give the newborn more energy.
- Encourage the mother to keep the newborn warm by keeping the baby skin-to-skin.
- Explain to the mother and family how to recognize newborn danger signs and how to get care immediately if the baby has any danger signs.

Give care

- Tie the cord securely and cut it to the proper length.
- Check the newborn hourly for at least 6 hours for:
 - Breathing problems (less than 30 or more than 60 breaths in 1 minute, indrawing of the chest, grunting, or gasping)
 - Color: blue tongue or lips, pale or bluish skin
 - Temperature that is too low (axillary temperature below 36 °C/96.8 °F) or too high (axillary temperature above 37 °C/98.6 °F)
- Give normal care for a newborn (see chapter 2).

Record

- The newborn's condition at birth
- What you did during the resuscitation
- How long the resuscitation took
- Results of the resuscitation
- The care you gave after the resuscitation

Do follow-up

Ask the mother to bring her baby for a follow-up visit on day 2-3.

If the Baby Is Breathing but Needs Referral

After the resuscitation, the baby may need special help.

Counsel/advise

- Talk with the mother and family about the resuscitation and how the baby is doing now. Answer any questions they may have.
- Explain that the baby needs special care.
- If the baby needs to be referred to another facility, send the mother and baby together.
- Explain to the mother that she should breast-feed as soon as possible and during the referral. However, this may not be possible if the baby is not breathing well.
- Explain why and how to keep the baby warm:
 - Keep the baby's head covered.
 - If possible, put the baby skin-to-skin with the mother and cover both the mother and baby with warm blankets.

Give care

- Continue to resuscitate the baby, if needed.
- Keep him warm and monitor his breathing and color.
- Give oxygen, if available. Continue oxygen during transport, if possible.
- Arrange for referral.

Records

- Prepare records for referral (see above).
- Prepare records to be kept at your facility and home-based records to be kept by the family.

Do follow-up

Ask the mother to bring her baby back for a follow-up visit after the baby's problem is resolved.

FIGURE 4.6 KEEP THE BABY WARM



Normal changes in a woman's hormones after pregnancy can make her feel very sad, worried, or irritable.

If Resuscitation is Not Successful

If the baby is not breathing or gasping after 20 minutes, stop resuscitation. The baby has died. The mother and family will need much support. Be caring and gentle when talking to the family.

Counsel/advise

- Talk with the mother and family about the resuscitation and the baby's death. Answer any questions they may have.
- Give the mother and family care that is culturally acceptable. Be sensitive to their needs.
- Find out what they wish to do with the baby's body.
- Explain to the mother and family that:
 - The mother will need rest, support, and a good diet at home.
 - The mother should not return to a full workload too early.
 - The mother's breasts will become full around day 2-3. She may have a mild fever for a day or two. She may do the following to shorten the time the breasts will be full:
 - Bind the breasts with a tight bra or cloth until there is no milk in the breasts.
 - Do not express milk or stimulate the breasts.
- The mother may feel very emotional and cry a lot. The normal changes in a woman's hormones after pregnancy can make her feel very sad, worried, or irritable. Because of the baby's death, the feelings may be worse than usual. Encourage the mother and family to speak with a health worker if they wish to talk.

Do follow-up

Ask the mother to return for a postpartum visit early (within three weeks) as ovulation will resume soon since she is not breastfeeding. At that time advise her to use a family planning method until she is physically and emotionally ready to become pregnant again. If possible, give postpartum care at a place away from other postpartum mothers in order to provide privacy for the family during the grieving process. The mother and family may find it painful to be cared for among mothers with healthy newborns.

Records

Do the required recording and notification for a baby's birth and death and complete any other required medical records for the delivery.

CLEANING EQUIPMENT AND SUPPLIES

Equipment and supplies used for infant resuscitation may be contaminated by body fluids from both the mother and the baby. Everything needs to be cleaned correctly to protect health workers and other babies from infection. Use the three infection prevention steps: decontamination (soaking in a decontamination solution), cleaning (washing with soap and water), and high-level disinfection (boiling, autoclaving, or dry heat treatment) for the items listed below (see Appendix C).

- Disposable items: Decontaminate disposable items such as gauze, bulb syringe, gloves, suction catheters, etc. for 10 minutes before discarding in a safe place.
- Reusable suction catheter or gloves: Do the three infection prevention steps (decontamination, cleaning, and high-level disinfection).
- Cloths and linen: Wash, air- or sun-dry, iron, then store in a clean, dry place.
- Table or surface used for resuscitation: Wipe with decontamination solution and then wash with soap and water. Air-dry.

Ask the mother to return for a postpartum visit. At that time advise her to use a family planning method until she is physically and emotionally ready to become pregnant again.