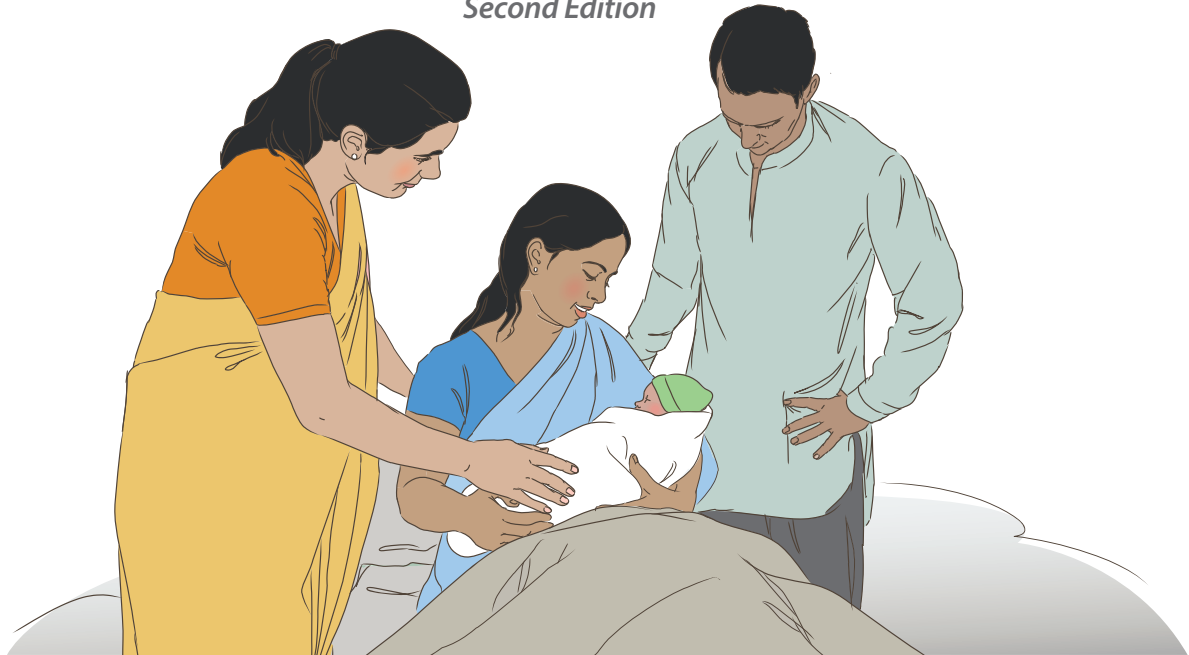


Helping Babies Breathe

Provider Guide

Second Edition



Helping Babies Breathe[®]
THE GOLDEN MINUTE[®]

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN[™]



To those who care for babies at birth

Helping Babies Breathe teaches birth attendants how to care for newborns at birth.

- All babies need to be kept clean, warm, and helped to breastfeed
- Babies who do not breathe need extra help in the first minute after birth

Helping Babies Breathe focuses on

The Golden Minute when stimulation to breathe and ventilation with bag and mask can save a life. At least one person skilled in helping a baby breathe should be present at every birth.

Helping Babies Breathe is designed to be part of a program for essential newborn care, which covers important actions in the first days after birth. However, training is only a first step toward the goal of better health for newborns.

Use this Provider Guide before, during, and after a training course.

Before

- Read the *Provider Guide*
- Answer the *Check yourself* questions

During

- Practice the *Action Plan* and the skills of bag and mask ventilation
- Share your experiences and ask questions
- Participate actively in *Group discussion*
- Help others learn

After

- Commit to providing the best care at birth
- Continue to practice the *Action Plan* and the skills of bag and mask ventilation
- Work with others to improve care in your facility

Planning for birth begins in the family and the community. The provider helps the pregnant woman and her family prepare a birth plan and emergency plan during antenatal care. Health workers, community leaders, and families support women to have a skilled attendant at birth. Health facilities maintain enough skilled people and equipment and the providers work as a team to give the best care.

With planning and work to put into practice the skills of **Helping Babies Breathe**, you can make sure every baby has a chance to breathe at birth.

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As a skilled birth attendant, you make the difference



As a birth attendant skilled in Helping Babies Breathe, you can save the lives of babies. You must be present at birth and prepared to take immediate action.

By one minute after birth - The Golden Minute - a baby should be breathing well or you should be providing ventilation.

You make the difference

As a skilled birth attendant you can

- Help a baby who does not breathe
- Promote warmth, cleanliness, and breastfeeding for all babies

Practice key skills

Practice in pairs

Use a neonatal simulator or mannequin to show crying, breathing, heart rate

Check yourself

Mark the box beside the best answer

When should a skilled person be present at a birth?

- If problems occur
- At every birth

Which babies benefit from a skilled birth attendant?

- Only babies who need help to breathe
- All babies

Follow the Action Plan (page 11)

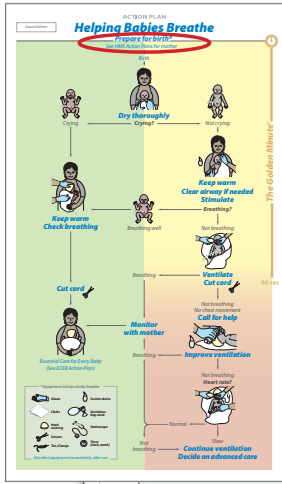
The Action Plan acts as a guide to the questions you ask, the decisions you make, and the actions you take to help a baby breathe.

To improve care in your facility

- How will new birth attendants be trained to help babies breathe?
- How will birth attendants maintain and improve their skills?

What to monitor

- Have all birth attendants in the facility been trained to help babies breathe?



Before a baby is born Prepare for birth



Identify a helper and review the emergency plan with the mother

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

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

An emergency plan includes communication and transportation to advanced care.

Prepare the area for delivery

The area where a baby is born should be

- Warm** Close windows and doors to stop drafts. Supply heat as needed.
- Well-lighted** Use a portable lamp if needed to assess the baby.
- Clean** Help mother wash her hands and prepare a clean cloth to cover the baby during skin-to-skin care.

Wash hands

Handwashing helps prevent the spread of infection. Wash hands with soap and clean water or use an alcohol-based cleaner before and after caring for a mother or a baby (see page 52). Be sure that everyone at the birth washes their hands. Gloves also protect from infections carried by blood and body fluids.

Prepare an area for ventilation

Prepare a warm, dry, flat, and safe space for the baby to receive ventilation if needed. Prepare a safe delivery kit, uterotonic (such as oxytocin or misoprostol), and equipment to help a baby breathe. Equipment should be disinfected after use and kept clean. Check that all equipment and supplies are ready for use in the area for ventilation. Test the function of the ventilation bag, mask, and suction device (see page 47).

Practice key skills

Practice in pairs

Practice the four steps to prepare for a birth

Check yourself

Mark the box beside the best answer

What important tasks can a helper do during a birth?

- Place a cold cloth on the baby's forehead
- Call for help or assist if problems arise

When should you wash your hands?

- When they look dirty
- Before and after caring for a mother or a baby

Follow the Action Plan

Point out the action step **Prepare for birth** and the **Equipment to help a baby breathe**.

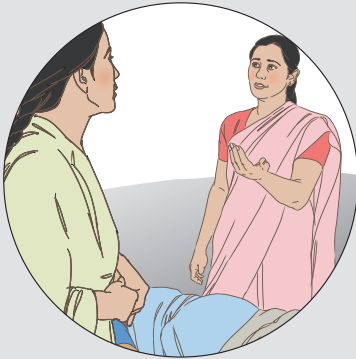
To improve care in your facility

- Who is responsible for having equipment disinfected and available for every birth?
- How can a second skilled person be available to help in an emergency?

What to monitor

- Is equipment to help a baby breathe available at all births?

Exercise: Preparation for a birth



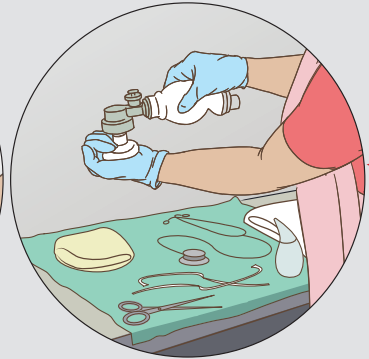
Identify a helper and review emergency plan



Prepare the area for delivery



Wash hands



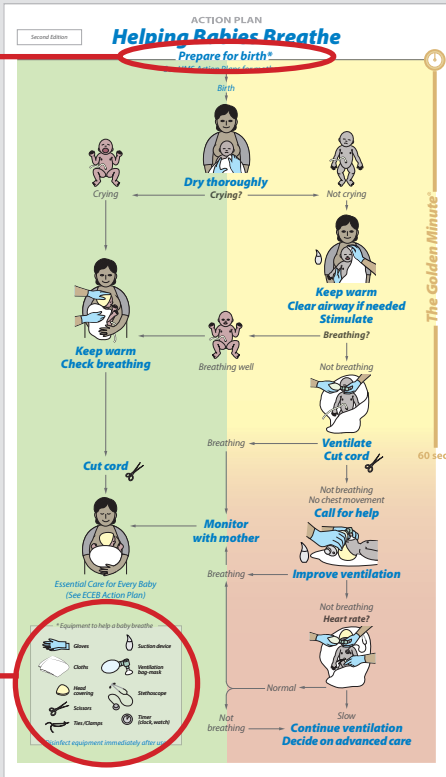
Prepare an area for ventilation and check equipment

The facilitators will demonstrate how to prepare for a birth.

Participants will work in pairs to practice the checklist. One person takes the role of the birth attendant. The other person takes the role of the mother. Begin by introducing yourself. Then communicate with the mother and helper while preparing for a birth.

Participants give one another feedback, switch roles and repeat the exercise.





Checklist

- Identify a helper and review the emergency plan

.....

- Prepare the area for delivery

.....

- Wash hands

.....

- Prepare an area for ventilation

.....

- Assemble disinfected equipment and supplies

.....

- Test the ventilation bag, mask and suction device

.....

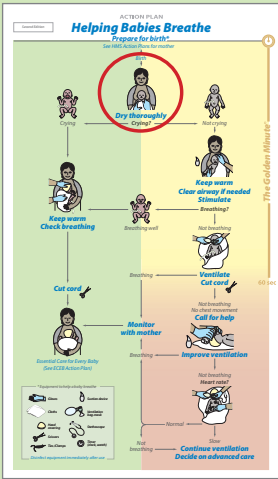
- Prepare a uterotonic for the mother

.....

Group discussion

Discuss with a small group of participants how you will put the skills you have learned into practice. Identify possible problems and solutions where you work.

1. What is the emergency plan where you work?
2. What could a helper do during a birth? How do you prepare the helper?
3. How will you prepare the area for delivery and the area for ventilation where you work?
4. Is there a source of clean water or alcohol-based hand cleaner where you work?
5. How will you have disinfected, working equipment and supplies ready for use at every birth?



At birth

Dry thoroughly



Dry the baby thoroughly at birth. Drying helps keep the baby warm and stimulates breathing. A newly born baby is wet and can become cold even in a warm room.

Dry the body, head, arms, and legs by gently rubbing with a cloth.

Drying the back provides important stimulation to breathe. Wipe the face clean of blood and feces.

Drying can be done on the mother's abdomen. Place a clean cloth on mother's abdomen before birth. Position the baby on the cloth and dry thoroughly. Remove the wet cloth, place the baby skin-to-skin with the mother, and cover with a dry cloth.

Note the time of birth.

Practice key skills

Practice in pairs

- Dry thoroughly by gently rubbing the body, head, arms, and legs
- Remove the wet cloth
- Place the baby skin-to-skin
- Cover with a dry cloth
- Note the time of birth

Check yourself

Mark the box beside the best answer

A baby is placed on a cloth beside the mother without drying.

What happens?

- The baby can become cold
- The baby will stay warm

When should you dry the baby?

- After giving a uterotonic to the mother
- Immediately after birth

Follow the Action Plan

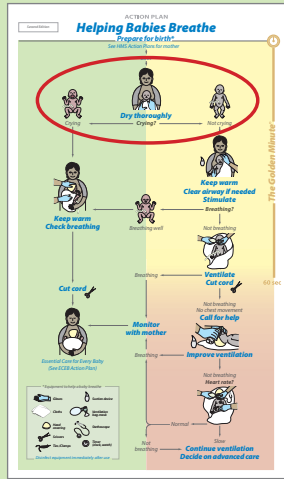
What is the first action step after birth?

To improve care in your facility

- Who is responsible for providing cloths to dry and cover the baby?

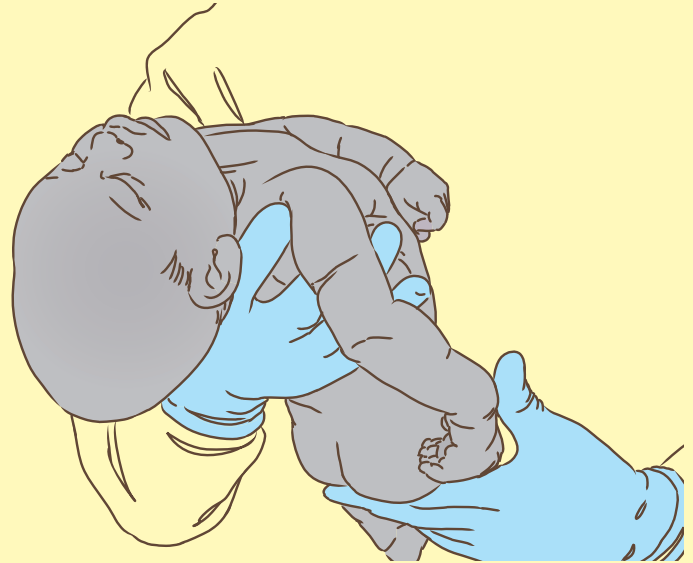
What to monitor

- Are all babies dried thoroughly at birth?



Evaluation after drying

Is the baby crying?



About 1 in 10 babies needs help to breathe. Rapid assessment after drying at birth is the best way to know if a baby needs help to breathe.

Ask this question immediately after drying: *Is the baby crying?*

Decide what care the baby needs

The baby who is crying needs routine care. Most babies cry at birth. Crying means a baby is breathing well. Crying is possible when large amounts of air move in and out of the lungs. The crying baby usually moves his or her arms and legs and has good muscle tone. After crying for some time, a baby may stop crying and begin to breathe quietly and regularly.

A baby who does not cry needs help to breathe. Babies who do not cry may not be breathing at birth. A baby who is not breathing is limp and does not move. The skin may be pale or bluish.

A baby who is breathing shallowly, gasping, or not breathing at all needs immediate help to breathe.

Quick action will help a baby start breathing sooner. If no help is given to a baby who is not breathing, that baby may die or experience serious brain damage.

Practice key skills

Practice in pairs

Use a neonatal simulator or mannequin to show crying/not crying

Check yourself

Mark the box beside the best answer

A baby is not crying after thorough drying. He is limp. What should you do?

- Give routine care
- Provide help to breathe

A baby cries after birth and then breathes quietly and regularly. What should you do?

- Give routine care
- Provide help to breathe

Follow the Action Plan

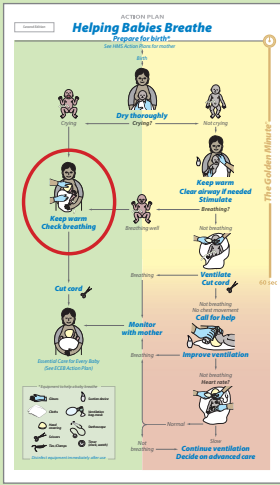
Identify the baby who is crying and the baby who is not crying.

To improve care in your facility

- *Is every baby evaluated at birth to decide what care the baby needs?*

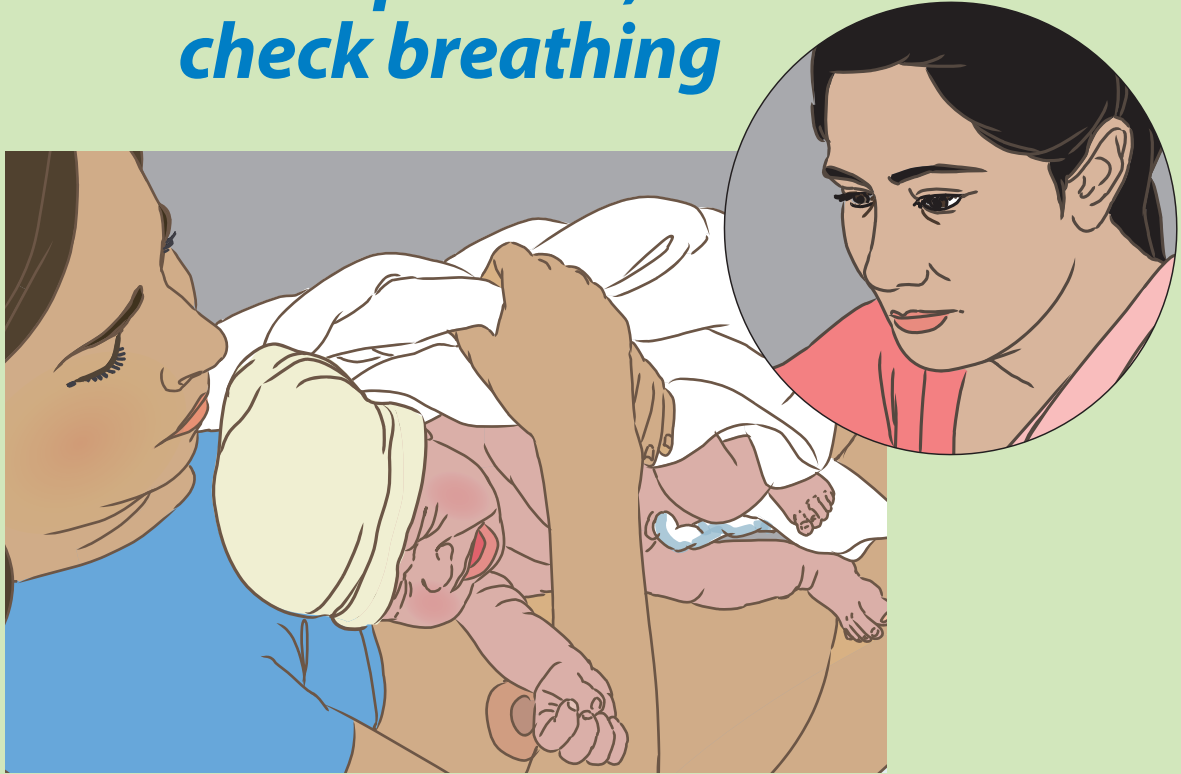
What to monitor

- *Is a trained person who can help a baby breathe present at all births?*
- *How often are babies not crying after thorough drying?*



If the baby is crying

Keep warm, check breathing



The baby who is crying can receive routine care.

Keep warm

Position the baby skin-to-skin with the mother. The warmth from the mother's body is one of the best ways to keep a baby warm. Cover the baby with a warm, dry cloth and a cap or other head covering. Otherwise, cover the baby with part of the mother's clothing. Skin-to-skin contact helps a newborn baby breathe well and initiate breastfeeding. Postpone bathing and weighing and keep the area warm.

Check breathing

Continue to assess the baby's breathing. Listen to the sounds of breathing and look at or feel the movement of the chest. Check that the baby is breathing quietly and easily or crying. Make sure that the neck is slightly extended and air can pass freely through the baby's nose. Be sure that mother and baby are not alone during the first hours after birth.

Practice key skills

Practice in pairs

- Position the baby skin-to-skin and cover head and body
- Check breathing

Check yourself

Mark the box beside the best answer

What can you do to encourage breastfeeding?

- Keep baby skin-to-skin with mother*
- Separate mother and baby after birth*

How can you keep a baby warm after birth?

- Give a warm bath*
- Position the baby skin-to-skin with mother, cover with a dry cloth and a head covering*

Follow the Action Plan

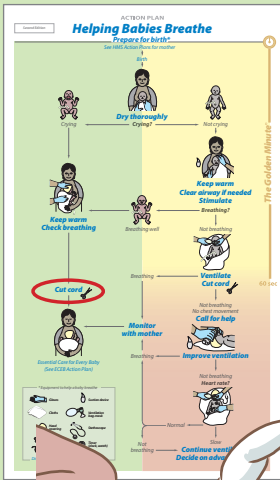
*Point out the action step **Keep warm, check breathing** in routine care (green zone).*

To improve care in your facility

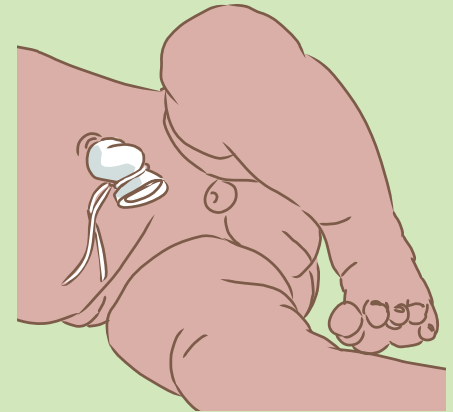
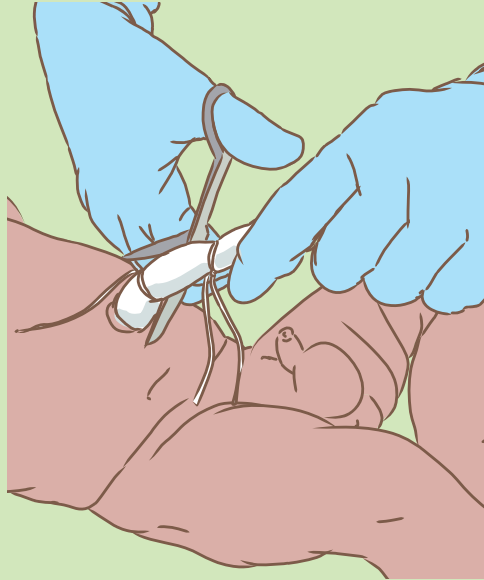
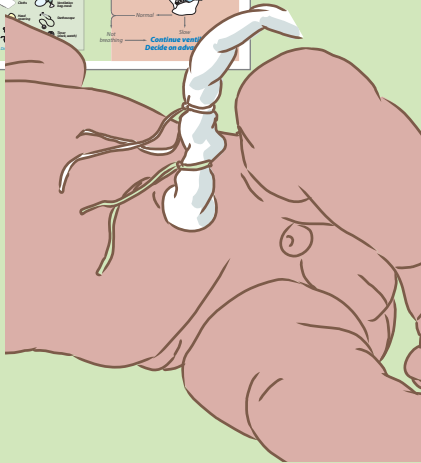
- *What are the reasons that some babies do not receive skin-to-skin care after birth?*
- *Who checks the baby's breathing and helps mother initiate breastfeeding?*

What to monitor

- *Do all babies receive skin-to-skin care at birth?*
- *Do all babies initiate breastfeeding in the first hour after birth?*



After 1-3 minutes
**Clamp or tie
 and cut the umbilical cord**



Wait at least 1 minute-and up to 3 minutes- to clamp or tie and cut the cord if the baby is receiving routine care. The baby receives needed blood from the placenta in the first minutes after birth.

Place two clamps or ties around the cord

Place the first about 2 fingerbreadths from the baby's abdomen. Place another about 5 fingerbreadths from the abdomen.

Cut between the clamps or ties with a disinfected scissors or blade

Look for any bleeding or oozing of blood. If bleeding occurs, place a second clamp or tie between the first one and the baby's skin. Leave the cut end of the cord open to the air to dry.

Everything that touches the umbilical cord should be clean to avoid infection. Wear clean gloves when clamping or tying and cutting the cord.

Position the baby to encourage breastfeeding

Help the mother and baby initiate breastfeeding in the first hour after birth. Breastfeeding provides nutrition and helps prevent infection in the baby. Avoid any other feeding besides breast milk. Keep mother and baby together. Small babies can benefit from special, prolonged skin-to-skin care (see **Essential Care for Small Babies**).

Continue with essential newborn care, identify the baby, and complete the birth record.

Practice key skills

Practice in pairs

- Clamp or tie and cut the umbilical cord
- Position the baby to encourage breastfeeding
- Communicate with the mother

Check yourself

Mark the box beside the best answer

How long should you wait to clamp or tie and cut the umbilical cord of a crying baby?

- Clamp or tie and cut the cord immediately
- Wait 1 to 3 minutes to clamp or tie and cut the cord

What actions help prevent infection of the umbilical cord?

- Good hand washing, wearing clean gloves, cutting with sterile scissors
- Covering the cord to keep it moist

Follow the Action Plan

Point out the action step **Cut cord** and describe when it occurs during routine care.

To improve care in your facility

- Are all supplies and equipment that touch the cord disinfected?

What to monitor

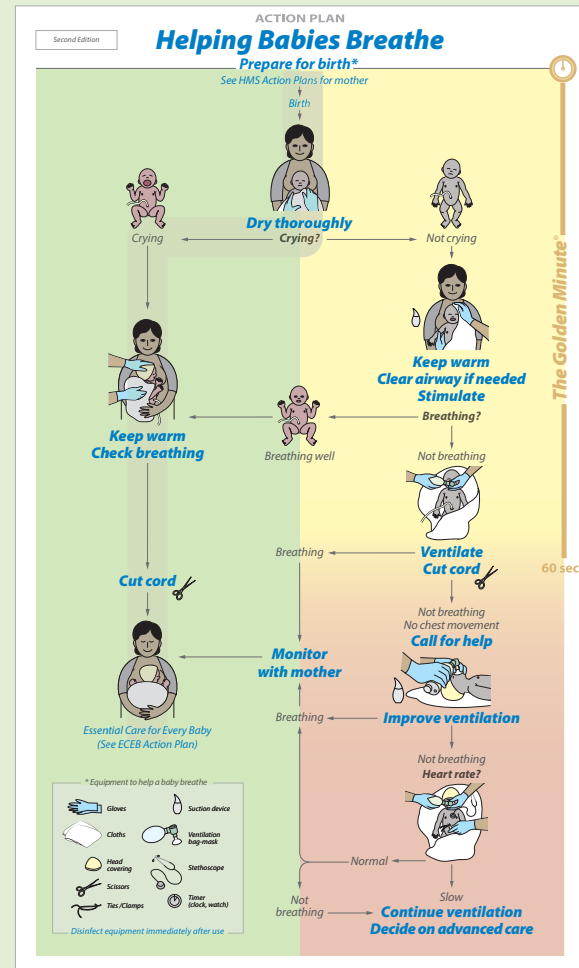
- Do all babies have cord clamping delayed for 1-3 minutes?
- How often does bleeding occur after clamping or tying and cutting the cord?

Exercise: Routine care

The facilitators will demonstrate routine care and the baby's responses.

Participants will work in pairs with the mannequin to practice the checklist. One person takes the role of the birth attendant. The other person takes the role of the mother and gives the response of the baby. The birth attendant communicates with the mother while providing routine care.

Participants give one another feedback, switch roles and repeat the exercise.



Checklist

- Dry thoroughly*
.....
- Recognize crying*
.....
- Keep warm*
.....
- Check breathing*
.....
- Clamp or tie and cut the umbilical cord*
.....
- Position on mother's chest to encourage breastfeeding*
.....
- Continue with essential newborn care, identify the baby, and complete the birth record*
.....

Group discussion

Discuss with a small group of participants how you will put the skills you have learned into practice. Identify possible problems and solutions where you work.

- 1. Where will you place a baby receiving routine care immediately after birth? In your experience, do mothers routinely practice skin-to-skin care?*
- 2. How can you protect mother and baby from infection during and after birth?*
- 3. Who cares for the baby if the mother has a problem after birth?*

Notes

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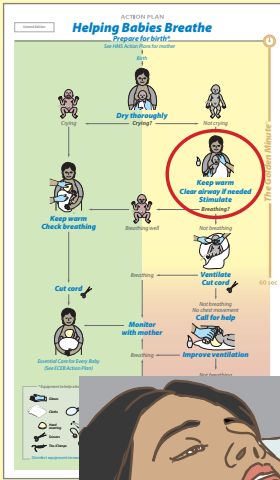
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If the baby is not crying
**Keep warm,
 clear airway if needed
 and stimulate breathing**



If the baby is not crying after drying, you will need to help the baby breathe in The Golden Minute.

Keep warm

Keep the baby skin-to-skin on the mother's chest/abdomen. If that is not possible, place the baby on a warm, dry blanket beside the mother. Ask your helper to cover the head.

Clear the airway if needed

Position the head. Position the neck slightly extended to keep the airway open. The nose will be as far forward as possible. If the neck is flexed or extended too far, air may not enter freely. If secretions are not seen and there is no meconium, move directly to stimulate breathing.

Remove secretions from the airway

- **if they are blocking the mouth or nose**
OR
- **if there is meconium in the amniotic fluid**

Remove secretions by

- Wiping – use a cloth to gently clear mouth and then nose to remove the largest amount of secretions first.
OR

- Bulb suction – squeeze the bulb before inserting the tip into the mouth and release before withdrawing. Then clear the nose.
OR
- Suction tube – insert the tube into the side of the baby's mouth no more than 5 cm. Apply suction for 2-3 seconds while withdrawing the tube. Insert the tube 1 to 2 cm into the nostril and apply suction while withdrawing.

Stop suctioning when secretions are cleared, even if the baby does not breathe. Suctioning too long, too vigorously, too deeply, or too often can cause injury, slow heart rate, and prevent breathing.

Stimulate breathing

Rub the back 2 or 3 times gently but firmly. Do not delay or stimulate longer. Move quickly to evaluate breathing and ventilate if needed. Drying, clearing the airway, and stimulating breathing should take less than one minute. Your actions in The Golden Minute can help many babies begin to breathe.

Practice key skills

Practice in pairs

- Keep warm
- Clear the airway - position the head, remove secretions if needed
- Stimulate breathing

Check yourself

Mark the box beside the best answer

Which babies need clearing of the airway with a suction device?

- Babies who have secretions blocking the mouth or nose
- All babies who are not crying

Suctioning several times or suctioning deeply can

- Stimulate a baby's breathing
- Keep a baby from breathing

Follow the Action Plan

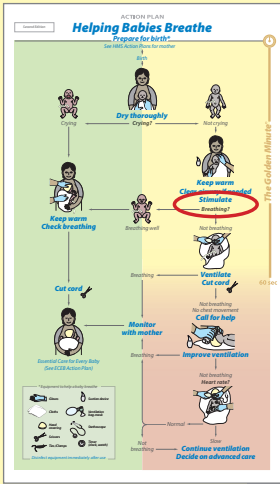
Trace the action and evaluation steps in The Golden Minute (yellow zone).

To improve care in your facility

- How do you remove secretions from the airway?
- If a suction device is used, is it disinfected before being used again?

What to monitor

- How often do babies require suctioning of secretions from the airway?
- How often do babies who are crying (routine care) receive unnecessary suctioning of the airway?



After stimulation

Is the baby breathing well?



Evaluate the baby after stimulation by asking the following question: *Is the baby breathing well?*

A baby who is breathing well may be

- Crying
OR
- Breathing quietly and regularly

A baby who is not breathing well may be

- Gasping - taking a single deep breath followed by a long pause or several deep, irregular breaths followed by a pause
OR
- Not breathing at all

Some babies will have shallow, irregular, slow, or noisy breathing immediately after birth. Others may have chest indrawing (retractions). These babies with abnormal breathing will require continued monitoring of their breathing, heart rate, and color to decide if they need more help to breathe.

Decide what care the baby needs after clearing the airway and stimulation.

If the baby is breathing well, the baby can receive routine care. Continue to check the breathing. Clamp or tie and cut the umbilical cord. Encourage breastfeeding in the first hour.

If the baby is not breathing well (gaspings or not breathing at all), begin ventilation with bag and mask. Quickly move the baby to the area for ventilation. Delaying ventilation may result in death or brain damage.

Practice key skills

Practice in pairs

Use a neonatal simulator or mannequin to show

- Crying
- Breathing quietly and regularly
- Gasping
- Not breathing at all

Check yourself

Mark the box beside the best answer

A baby is not breathing well after drying and rubbing the back. There are no visible secretions.

What should you do?

- Suction the airway and give more stimulation
- Ventilate with bag and mask

Which baby is breathing well?

- A baby who is breathing quietly and regularly
- A baby who takes one deep breath followed by a long pause

Follow the Action Plan

What is the evaluation question after clearing the airway and stimulating breathing?

To improve care in your facility

- *How long does it take to evaluate if a baby is breathing well?*

What to monitor

- *How often do babies who are not crying after drying begin to breathe after clearing of the airway (if needed) and stimulation?*

Exercise: The Golden Minute

– clear the airway if needed and stimulate breathing

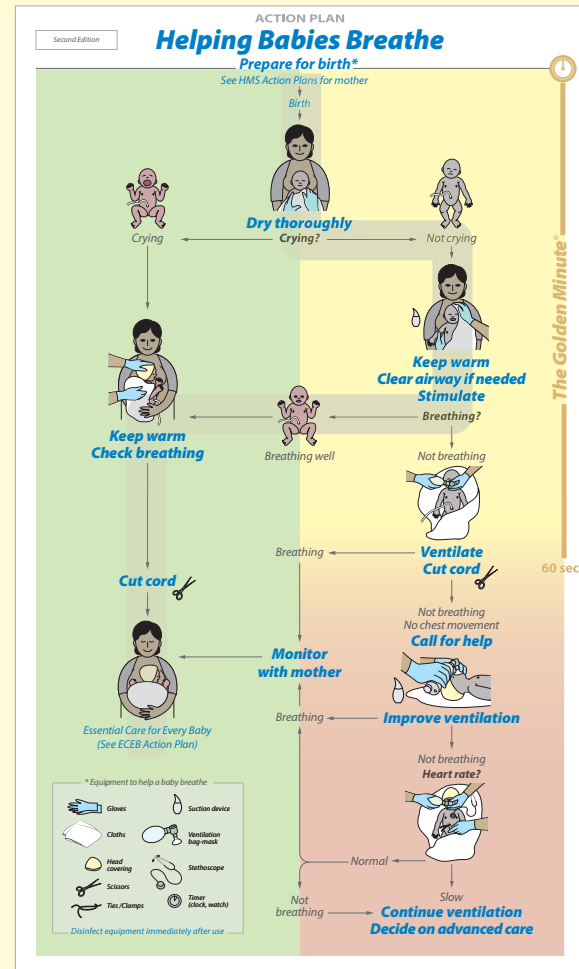
The facilitators will demonstrate clearing the airway and stimulating breathing during The Golden Minute and the baby's responses.

Participants will work in pairs with the mannequin to practice the checklist. One person takes the role of the birth attendant. The other person takes the role of the mother and gives the response of the baby. The birth attendant communicates with the mother.

Participants review their actions, give one another feedback, switch roles and repeat the exercise.

Participants should be prepared to care for a baby with

- meconium in the amniotic fluid
- secretions blocking the nose or mouth
- no secretions



Checklist

- Dry thoroughly
.....
- Recognize not crying
.....
- Keep warm
.....
- Clear airway if needed
.....
- Stimulate breathing
.....
- Recognize breathing well
.....
- Check breathing
.....

- Clamp or tie and cut the umbilical cord
.....
- Position on mother's chest to encourage breastfeeding
.....
- Continue with essential newborn care, identify the baby, complete the birth record, and review your actions
.....

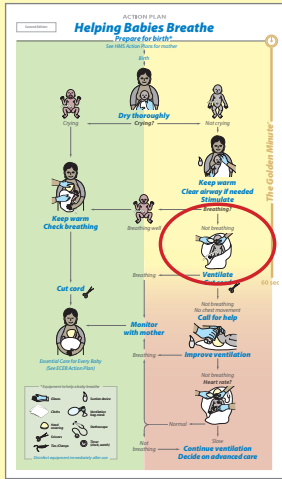
Group discussion

Discuss with a small group of participants how you will put the skills you have learned into practice. Identify possible problems and solutions where you work.

1. How do you clear secretions blocking a baby's nose and mouth? What are the advantages and disadvantages of this method?
2. Do all babies have their mouth and nose suctioned? Is this useful or harmful?
3. Drying and rubbing the back are methods to stimulate breathing. Are other methods used in your region? Are these methods useful or harmful or neither?

Review your actions

- What happened at the birth?
- Did you follow the Action Plan?
- What went well and what could have gone better?
- What did you learn from the case?
- What will you do differently next time?



If the baby is not breathing well
Begin to ventilate



Ventilation with bag and mask is the most important and effective way to help the baby who is not breathing or is gasping. Ventilation opens the lungs with air.

Begin to ventilate

Follow your facility's routine for when to clamp or tie and cut the cord

Cutting the cord should not delay the start of ventilation. Begin ventilation by 1 minute.

Place the baby on the area for ventilation

Use an area beside the mother if the cord is left intact. A skilled helper can clamp or tie and cut the cord if the baby is moved to a separate area.

Stand at the baby's head

You will need to control the position of the head and look for movement of the chest.

Check that the mask size is correct

The mask should cover the chin, mouth, and nose, but not the eyes. The mask should make a tight seal on the face so air will enter the baby's lungs.

A mask that is too large will not seal well on the face. Air will escape under the mask.

A mask that is too small will not cover both the mouth and nose and may block the nose. Air will not enter the lungs freely.

Practice key skills

Practice in pairs

- Follow your facility's routine for when to clamp or tie and cut the cord
- Place the baby on the area for ventilation
- Stand at the baby's head
- Check that the mask size is correct

Check yourself

Mark the box beside the best answer

How do you select the correct mask?

- Select the mask that covers the chin, mouth, and nose, but not the eyes
- Select the mask that covers the chin, mouth, nose, and the eyes

Where will you place the baby for ventilation?

- In a crib to protect from cold
- On a flat, warm, dry surface

Follow the Action Plan

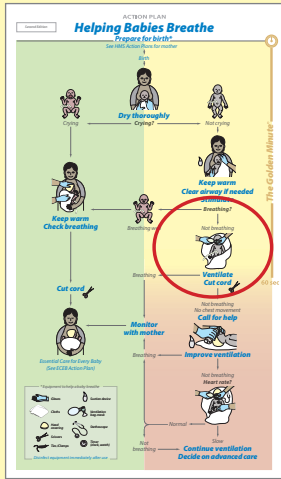
What action step includes *Begin to ventilate*?

To improve care in your facility

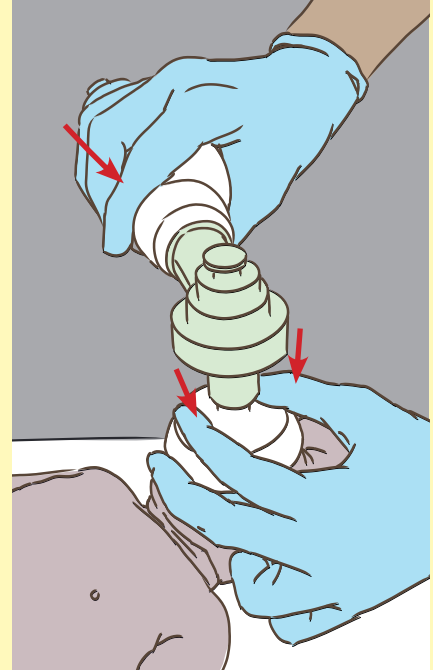
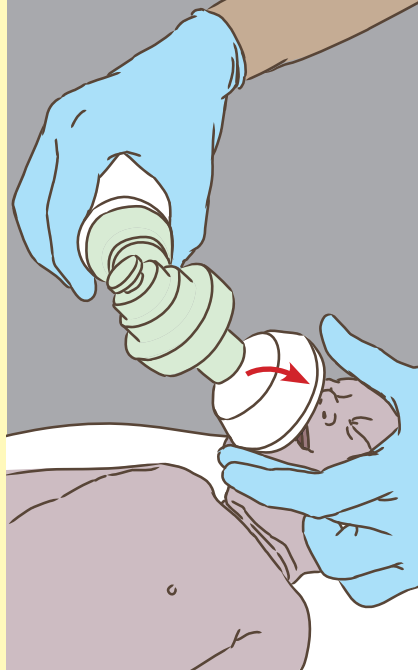
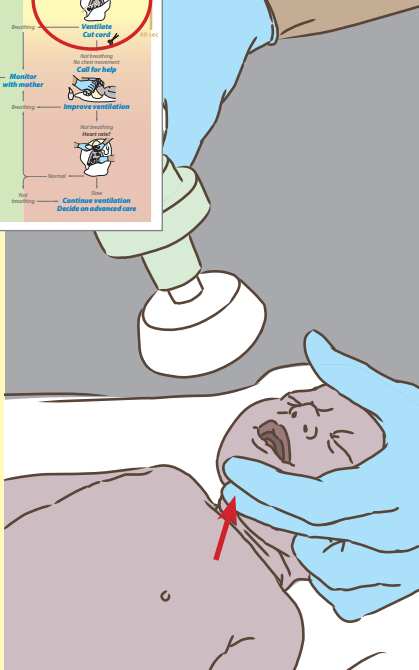
- Who will provide ventilation to a baby? What roles do nurses, midwives, and doctors take?

What to monitor

- Does ventilation begin by one minute after birth for all babies who are not yet breathing?



By one minute Ventilate with bag and mask



Position the head slightly extended

Keep the baby's airway open by positioning the head slightly extended and supporting the chin.

Apply the mask to the face

Position the rim of the mask to rest on the tip of the chin, then place the mask over mouth and nose.

Make a tight seal between the mask and the face

Hold the mask on the face with the thumb and index finger on top of the mask. Use the middle finger to hold the chin up toward the mask. Use the 4th and 5th fingers along the jaw to lift it forward and help keep the airway open.

Make a tight seal by pressing lightly on the top of the mask and gently holding the chin up toward the mask. If the seal is not tight, air will not move into the lungs as you squeeze the bag. The air will escape under the rim of the mask. Do not push the mask down onto the

face. This may change the head position and interfere with air entering the lungs.

Squeeze the bag to produce a gentle movement of the chest

The chest should move as if the baby were taking an easy breath. Make sure there is no leak between the mask and the baby's face. Squeeze the bag smoothly between your thumb and 2 fingers. Squeeze the bag harder if you need to deliver more air with each breath.

Give 40 ventilation breaths per minute

Count aloud, "1...2...3...1...2...3". If you squeeze the bag as you say, "1" and release while you say, "2...3", you will ventilate at a rate that helps air move into and out of the lungs well.

Practice key skills

Practice in pairs

- Position the head
- Apply the mask to the face

- Make a tight seal
- Squeeze the bag to produce gentle movement of the chest
- Give 40 ventilation breaths in one minute

Check yourself

Mark the box beside the best answer

What allows you to move air into a baby's lungs during ventilation?

- A flexed position of the head
- A good seal between the mask and the face

To help keep the baby's airway open, you should position the head

- Slightly extended
- Hyperextended

Follow the Action Plan

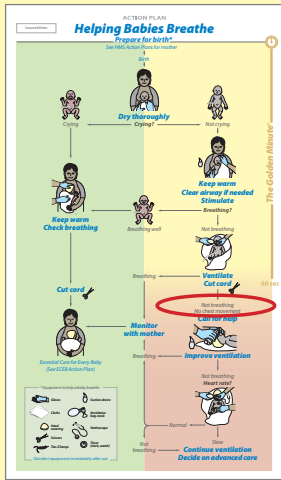
What are the action steps within The Golden Minute?

To improve care in your facility

- *What is the most difficult part of providing ventilation with bag and mask?*

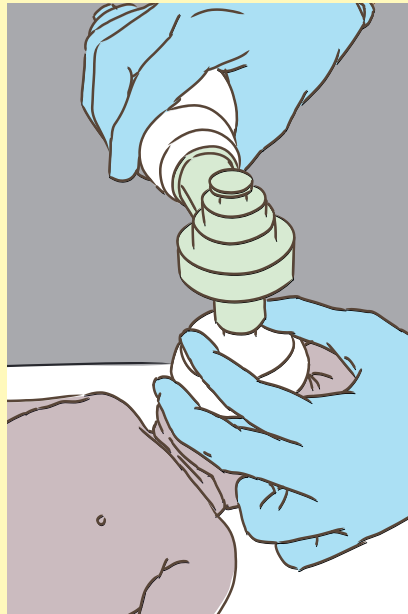
What to monitor

- *How often is ventilation given with the correct rate of 40 breaths per minute?*



During ventilation

Is the chest moving or is the baby breathing well?



Evaluate the baby during ventilation by asking: *Is the chest moving with ventilation or is the baby breathing well?* Effective ventilation should produce a gentle movement of the chest.

If the chest is not moving immediately

- Reapply the mask to make a better seal and at the same time
- Reposition the head to open the airway

Keep ventilating with good chest movement until the baby begins to breathe. Some babies improve quickly and begin breathing well after brief ventilation.

A baby who is breathing well may be

- Crying
OR
- Breathing quietly and regularly

A baby who is not breathing well may be

- Gaspings or breathing abnormally
OR
- Not breathing at all

Decide what care the baby needs after beginning ventilation

Stop ventilation when the baby is breathing well. The baby can remain with the mother under close monitoring. Count the breathing rate, listen for grunting, and look for chest indrawing. A baby who is gasping or not breathing at all needs continued ventilation with bag and mask. A baby who is breathing abnormally needs close monitoring and may need more help to breathe.

Practice key skills

Practice in pairs

- Evaluate chest movement
- Improve chest movement by reapplying the mask and repositioning the head
- Use a neonatal simulator or mannequin to show
 - Crying or breathing well
 - Gaspings or breathing abnormally
- Ventilate for one minute at 40 ventilations per minute with good chest movement

Check yourself

Mark the box beside the best answer

A baby who is not breathing is receiving ventilation with bag and mask. The chest is moving gently with ventilation. What should you do?

- Stop ventilation to see if the baby breathes
- Continue ventilation

A baby begins to breathe well after 30 seconds of ventilation with bag and mask. What should you do?

- Monitor the baby closely with the mother
- Provide routine care only

Follow the Action Plan

What is the evaluation question after beginning ventilation?

To improve care in your facility

- *What do you do if the baby does not breathe quickly with ventilation?*
- *Who monitors the baby who has received ventilation with bag and mask? Where does the care of mother and baby take place?*

What to monitor

- *How often do babies not crying or breathing well after stimulation begin to breathe with less than 1 minute of bag and mask ventilation?*

Exercise: The Golden Minute

- ventilation

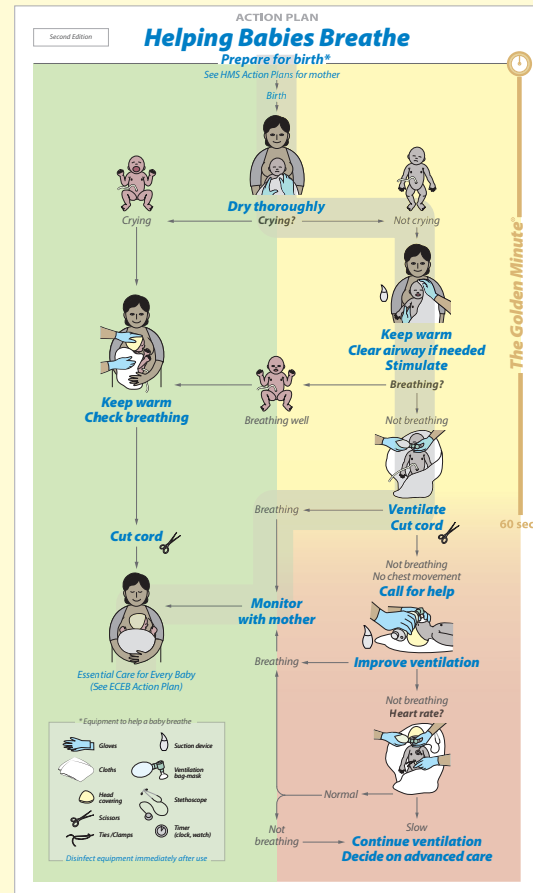
The facilitators will demonstrate The Golden Minute and the baby's responses.

Participants will work in pairs with the mannequin to practice the checklist. One person takes the role of the birth attendant. The other person gives the response of the baby and acts as the mother and a helper when needed. The birth attendant communicates with the helper and the mother.

Participants review their actions, give one another feedback, switch roles and repeat the exercise.

Participants should be prepared to care for a baby who

- does not breathe after clearing the airway and stimulating
- does not have good chest movement with ventilation
- breathes after brief ventilation



Checklist

- Dry thoroughly
.....
- Recognize not crying
.....
- Keep warm, clear airway if needed
.....
- Stimulate breathing
.....
- Recognize not breathing
.....
- Follow routine for when to clamp or tie and cut the umbilical cord
.....
- Move to area for ventilation, stand at head, check mask size
.....

- Ventilate (by 1 minute)
.....
- Recognize chest moving/not moving
.....
- Recognize breathing
.....
- Monitor with mother
.....
- Continue with essential newborn care, identify the baby, complete the birth record, and review your actions
.....

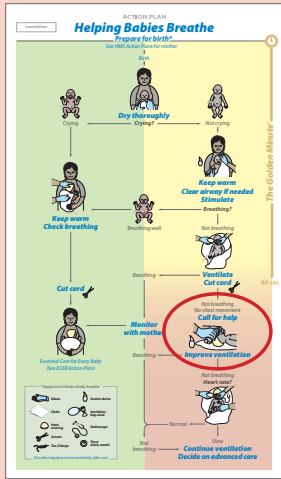
Group discussion

Discuss with a small group of participants how you will put the skills you have learned into practice. Identify possible problems and solutions in your facility.

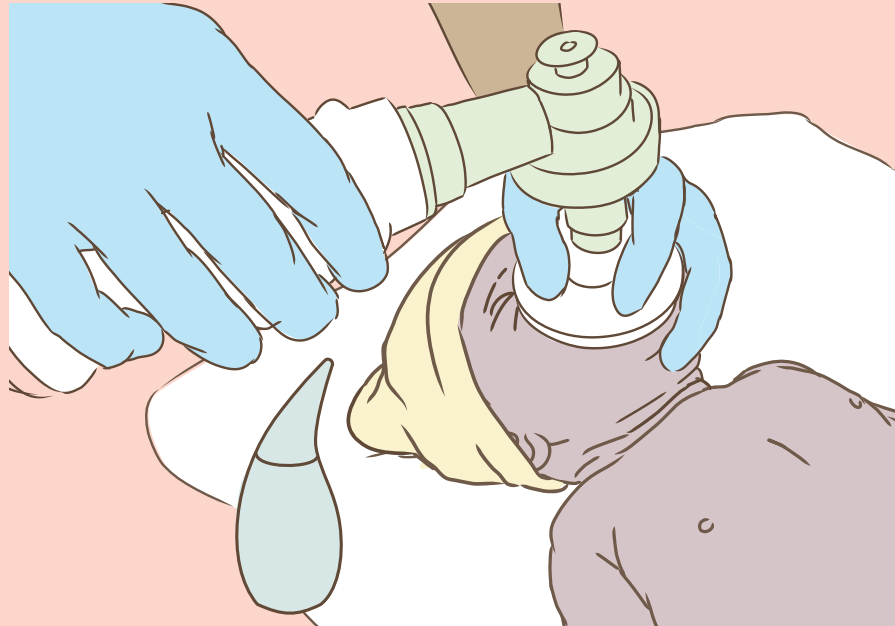
1. Where will you place a baby who needs ventilation with bag and mask? How will you keep the baby warm?
2. What is your facility's routine for when to clamp or tie and cut the cord of the baby who needs ventilation? How will you avoid delay in beginning ventilation?

Review your actions

- What happened at the birth?
- Did you follow the Action Plan?
- What went well and what could have gone better?
- What did you learn from the case?
- What will you do differently next time?



If the baby is not breathing
Call for help
Improve ventilation



If the baby is not breathing, continue ventilation and call for help. Ask the birth companion to call another skilled person, if available, and help the mother.

Check that ventilation breaths produce movement of the chest as if the baby were breathing normally. Take steps to improve ventilation if the chest is not moving.

Head:

- Reapply the mask to the face to form a better seal
- Reposition the head with the neck slightly extended

Mouth:

- Clear the mouth and the nose of secretions.
- Open the baby's mouth slightly before reapplying the mask

Bag:

- Squeeze the bag harder to give a larger breath

An air leak under the mask and incorrect position of the head are common reasons for poor chest movement. If you still do not see gentle movement of the chest, try to find the problem and repeat the necessary steps to improve ventilation. Recheck the function of the ventilation bag. Replace it if another bag is available.

Cut the cord if not already done.

Practice key skills

Practice in pairs

- Call for help
- Improve ventilation
 - Reapply mask
 - Reposition head
 - Clear mouth and nose of secretions
 - Open mouth slightly
 - Squeeze the bag harder

Check yourself

Mark the box beside the best answer

A baby's chest does not move with ventilation. What should you do?

- Suction the airway and stimulate the baby
- Reapply the mask to the face and reposition the head with the neck slightly extended

A baby does not breathe after several ventilation breaths with bag and mask. What should you do?

- Suction the airway and stimulate the baby
- Call for help and continue ventilation

Follow the Action Plan

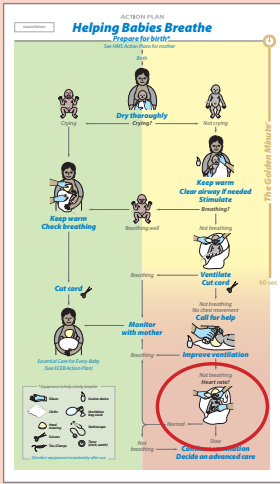
Trace the action and evaluation steps during continued ventilation (red zone).

To improve care in your facility

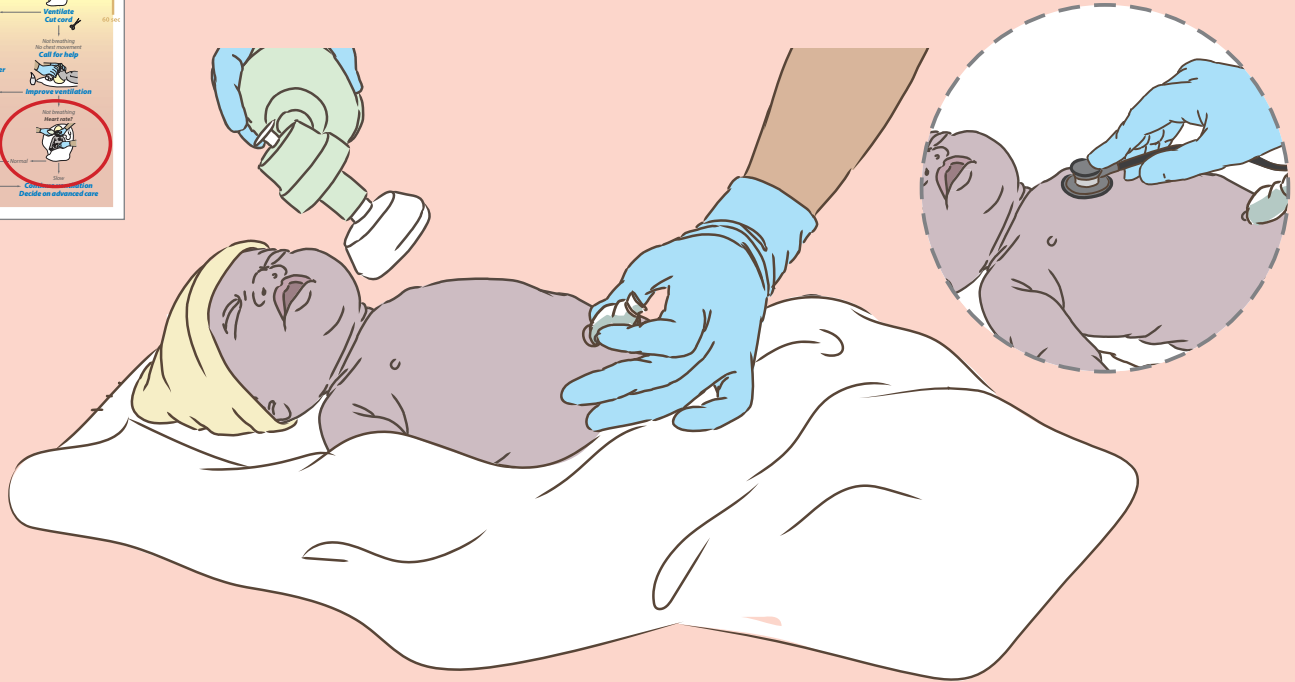
- *What are the most common problems when providing ventilation with bag and mask?*
- *What are the most common reasons the chest does not move well during ventilation?*

What to monitor

- *How often do babies who are receiving ventilation require prolonged ventilation (> 1 minute) before they begin breathing on their own?*
- *How often do babies require the steps to improve ventilation?*



If the baby is not breathing well after improved ventilation
Is the heart rate normal or slow?



If a baby does not begin to breathe after 1 minute of ventilation with chest movement, evaluate heart rate to decide if ventilation is adequate.

Ask the question:

Is the heart rate normal or slow?

Continue ventilation for 1 minute before stopping to check the heart rate. A skilled helper can count the umbilical cord pulsations during the first minute without interrupting ventilation. If you have no skilled helper or the cord pulse cannot be felt, you will need to rely on movement of the chest as an indicator of adequate ventilation.

Decide if the heart rate is normal or slow

A baby's heart rate should be faster than your heart rate. Evaluate the heart rate by listening to the heartbeat with a stethoscope or feeling the umbilical cord pulse. Listen over the left chest and pause ventilation for several seconds in order to

hear the heartbeat. Feel the pulse in the umbilical cord where it attaches to the baby's abdomen. If no pulse can be felt in the cord, you or your helper must listen for the heartbeat.

- A heart rate of 100 beats per minute or more is normal
- A heart rate of less than 100 beats per minute is slow

Minimize the time without ventilation. Listen to the heart rate just long enough to recognize if it is normal or slow.

Practice key skills

Practice in pairs

- Feel the umbilical cord pulse
- Listen to the heartbeat with a stethoscope
- Decide if the heart rate is normal or slow

Check yourself

Mark the box beside the best answer

You are breathing for a baby with bag and mask. When should you check the heart rate?

- After every 10 breaths with the ventilation bag*
- After 1 minute of ventilation*

You feel the umbilical cord to count the heart rate. You cannot feel any pulsations. What should you do next?

- Listen for the heartbeat with a stethoscope*
- Do nothing more, the baby is dead*

Follow the Action Plan

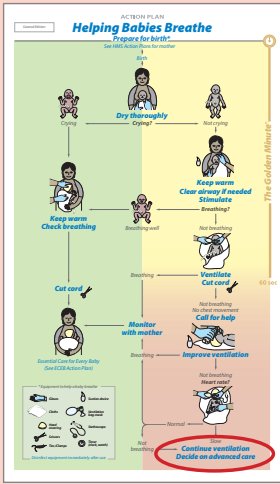
What are the evaluation questions during continued ventilation?

To improve care in your facility

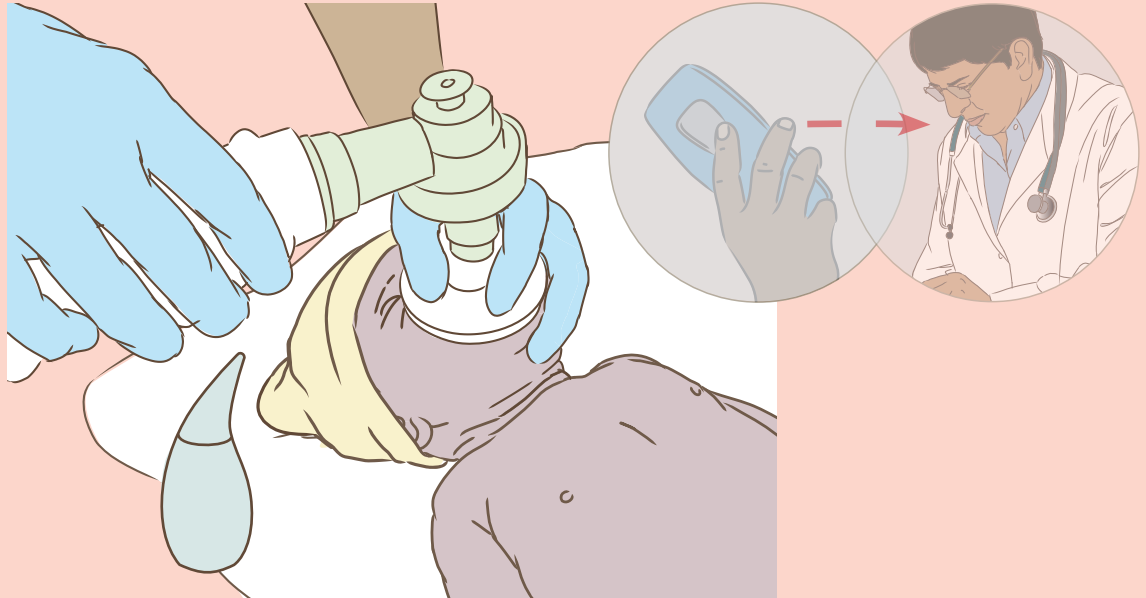
- *Who is available to evaluate heart rate while a baby is receiving ventilation?*
- *Is there good teamwork and communication when a baby needs continued ventilation?*

What to monitor

- *How often is a second skilled helper available to check heart rate during ventilation?*



If the baby is not breathing well
**Continue ventilation,
 evaluate heart rate and breathing
 to decide on advanced care**



If the heart rate is normal, continue to ventilate until the baby is breathing.

Look for the baby's breathing. Stop ventilation when the baby is breathing and the heart rate stays normal.

If the heart rate is normal, but the baby is not breathing or is gasping, continue ventilation and re-evaluate breathing and heart rate.

If the heart rate is slow, make sure that you have taken all the steps to improve ventilation and re-evaluate breathing and heart rate. A skilled helper can continuously evaluate chest rise and heart rate.

A baby who needs continued ventilation will need advanced care.

Activate the emergency plan to seek consultation or advanced care at a specialty facility. Continue ventilation during transport if the baby will be moved for advanced care. If advanced care or suitable transport is not

available, discuss with parents and consider stopping ventilation after 20 minutes if heart rate is slow or the baby does not breathe.

If the baby has no heart rate and no breathing after giving ventilation for 10 minutes, the baby is dead.

Stop ventilation.

Skin that is purple-white or peeling (maceration) suggests that a baby died long before birth. If recognized at birth, ventilation need not begin. Ventilation can be stopped whenever maceration is recognized. A baby who never had a heart rate and never breathed after birth is stillborn.

Practice key skills

Practice in pairs

- Decide on actions for normal and slow heart rate with and without breathing
- Seek consultation to decide on advanced care
- Communicate with the family and receiving facility

Check yourself

Mark the box beside the best answer

A baby has received ventilation for 3 minutes. The heart rate is checked and is slow. What should you do?

- Stop ventilation
- Take steps to improve ventilation and assess that the chest is moving

After 10 minutes of ventilation with good chest movement, a baby is not breathing and there is no heart rate (no cord pulse, no heart beat by stethoscope). What should you do?

- Stop ventilation, the baby is dead
- Continue ventilation for another 10 minutes

Follow the Action Plan

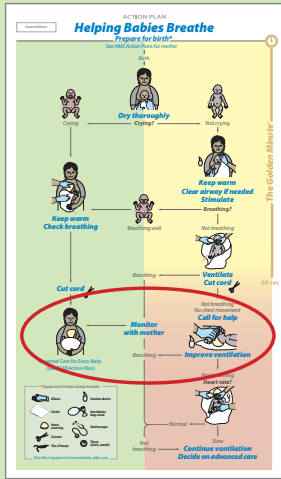
Trace the action steps with normal and slow heart rate.

To improve care in your facility

- What problems do babies experience after receiving ventilation?
- What resources are available to care for a baby who requires continued ventilation?

What to monitor

- How often do babies who require ventilation with bag and mask need advanced care?
- How often are babies classified as fresh stillbirths?
- How often are babies classified as macerated stillbirths?



If the baby responded to ventilation
Monitor with mother



A baby who responded to ventilation needs continued monitoring of breathing, heart rate, color, and temperature. Assess the baby for abnormal breathing or other danger signs that require advanced care.

Provide ongoing care

- Prolong skin-to-skin care
- Continue with immediate essential newborn care to assess, maintain temperature, provide nutrition, and prevent infection
- Make a note of care provided in the clinical record (see page 49)

If referral is needed, transport mother and baby together

Every facility should have guidelines for consultation or referral of babies who need help with breathing, feeding or temperature. Monitor the baby frequently before and during transport. Communicate the actions you have taken and your assessment to the responsible person at the receiving facility. Try to keep mother and baby together during transfer, even if only one is ill. Skin-to-skin care during transport facilitates observation and keeps the

baby warm. Consider if alternative methods of feeding are needed.

Support the family.

If a baby needed help to breathe, explain what happened and what care will be given. Answer the family's questions or find help to answer them. The mother may need help to express breast milk. If a baby is ill or dies, respond in a culturally appropriate way. Respect the family's wishes, privacy, and religious beliefs. Give the mother advice on breast care and family planning.

Prepare for the next time a baby needs help to breathe.

Review the actions taken with other team members. Disinfect the ventilation bag, mask, and suction device. Store the equipment in a place where it will stay clean and available for use (see page 46).

Practice key skills

Practice in pairs.

- Communicate with a mother whose baby needs advanced care.

Check yourself

Mark the box beside the best answer

A baby needed ventilation with bag and mask. She is breathing fast.

What should you do?

- Leave mother and baby alone to rest*
- Explain the baby's condition, record the care provided, and continue to monitor with mother to decide on advanced care*

A baby will be taken to the district hospital with breathing difficulty.

How should you advise the mother?

- Advise her not to travel for at least a week*
- Advise her to go with her baby if possible*

Follow the Action Plan

*Point out the action step **Monitor with mother.***

To improve care in your facility

- *What challenges do you face when transporting a baby and mother to advanced care?*
- *Are there policies and procedures for disinfection, storage, and availability of clean equipment ?*

What to monitor

- *Do all babies have a record of the care received at birth?*
- *Do all babies have their status recorded when they leave the facility (live, dead, referred for advanced care)?*

Exercise: Continued ventilation with normal or slow heart rate

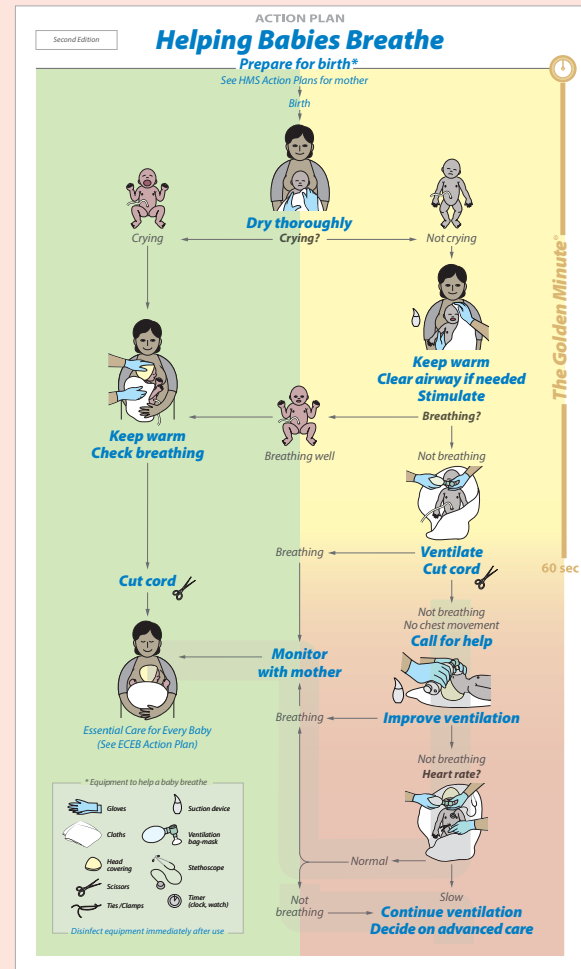
The facilitators will demonstrate continued ventilation with normal or slow heart rate.

Participants will work in pairs with the mannequin to practice the checklist. One person takes the role of the birth attendant. The other person gives the response of the baby and acts as the mother and a helper when needed. The birth attendant communicates with the helper and the mother.

Participants review their actions, give one another feedback, switch roles and repeat the exercise.

Participants should be prepared to care for a baby who

- has no chest movement
- has a normal OR slow heart rate and breathes OR does not breathe



Checklist

- Recognize not breathing and chest not moving
.....
- Call for help
Cut the cord if not already done
.....
- Continue and improve ventilation
.....
- Recognize not breathing
.....
- Recognize normal OR slow heart rate
.....
- Recognize breathing OR not breathing
.....

- If breathing and normal heart rate monitor with mother
OR
if not breathing or slow heart rate continue ventilation and decide on advanced care
.....
- Communicate with mother and family
.....
- Continue with essential newborn care, identify the baby, complete the birth record, and review your actions
.....
- Disinfect equipment
.....

Group discussion

Discuss with a small group of participants how you will put the skills you have learned into practice. Identify possible problems and solutions in your facility.

1. How can you give ventilation and evaluate the baby if there is not a second skilled person at a delivery?
2. If a baby needs continued ventilation for longer than several minutes, where will that baby receive care?
3. What are the reasons you would transfer a baby?
4. What are the challenges of communicating with the family of a baby who is ill or who died?

Review your actions

- What happened at the birth?
- Did you follow the Action Plan?
- What went well and what could have gone better?
- What did you learn from the case?
- What will you do differently next time?

Mastering bag and mask ventilation

Ventilation with bag and mask can be lifesaving when a baby does not breathe.

Mastering and maintaining this skill require ongoing practice.

Practice so that you can perform all the steps perfectly.

1. Begin to ventilate with bag and mask

Place the baby on the area for ventilation

Stand at the baby's head.....

Check that the mask size is correct.....

2. Ventilate with bag and mask

Position the head slightly extended.....

Apply the mask to the face.....

Make a tight seal between the mask and the face.....

Squeeze the bag to produce gentle movement of the chest.....

3. Continue ventilation (for 1 minute)

Ventilate to produce gentle movement of the chest with each ventilation breath..

Ventilate at 40 breaths/minute (30-50 breaths/minute acceptable).....

4. Improve ventilation

Reapply mask

Reposition head.....

Clear the mouth and nose of secretions.....

Open the mouth.....

Squeeze the bag harder

Disinfecting and testing equipment after every use *

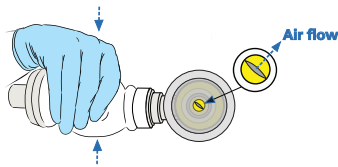
To disinfect

- **Wipe (immediate pre-cleaning):** While wearing gloves, wipe the outside of the ventilation bag and mask with a gauze soaked in 0.5% chlorine solution. Also wipe the outside of a bulb suction device. If the suction device cannot be opened for cleaning inside, discard it after use.
- **Disassemble:** Take apart the devices completely.
- **Clean:** Wash in warm soapy water to remove visible blood, secretions, and other contaminated matter.
- **Sterilize or high-level disinfect:** Sterilize all parts by autoclaving or high-level disinfect parts by boiling or steaming for 20 minutes or submersion in an appropriate chemical disinfectant. Rinse in boiled water after chemical disinfection.
- **Dry:** Allow all parts to dry completely before reassembly.
- **Reassemble:** Inspect all pieces for cleanliness and damage. Put together the pieces of the ventilation bag and mask and suction device.

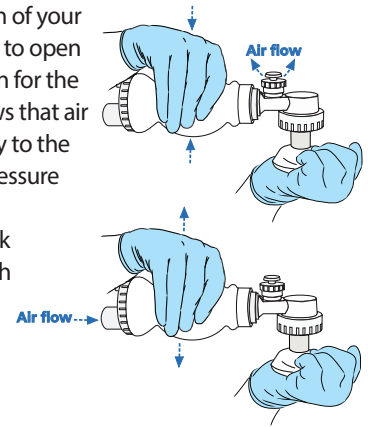
To test

Ventilation bag and mask

- Put the mask on the ventilation bag. Squeeze the bag and look for the valve in the patient outlet to open as you squeeze. This shows the device is ready to deliver air to a patient.



- Seal the mask tightly to the palm of your hand and squeeze hard enough to open the pressure release valve. Listen for the sound of air escaping. This shows that air which cannot be delivered safely to the baby will escape through the pressure release valve.
- Maintain the tight seal and check that the bag re-inflates after each squeeze. This shows that fresh air will enter the bag through the inlet valve.



Suction device

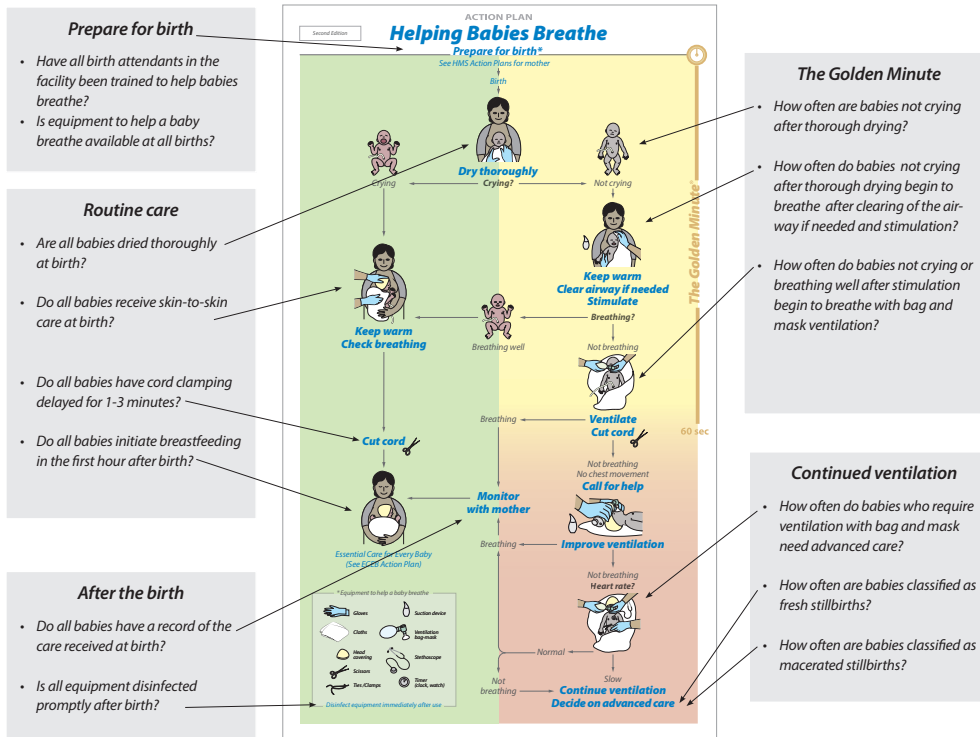
- Squeeze the bottom portion of the suction device and hold the squeeze. Block the opening of the tip against the palm of your hand and release the squeeze. The suction device should not expand until the tip is unblocked.

To ensure equipment is ready for use at all times

- **Repair or replace any equipment that is damaged or does not function.** Correct a problem when it occurs.
- **Store clean equipment in a protected, safe place where it can be accessed easily.** Store in a closed metal or plastic container that has been high-level disinfected. Keep all equipment together where it will be used.
- **Dispose of contaminated supplies and handle contaminated linen properly.** Restock with clean supplies and linen.

* *Reprocessing Guidelines for Basic Neonatal Resuscitation Equipment in Resource-Limited Settings, available at www.path.org/publications/detail.php?i=2601 and at <http://hbs.aap.org>*

Commit to making a difference



Providing the best care at birth

Improving care saves lives. Knowing the right care to give is not always enough to save babies' lives—that knowledge must be put into practice.

Completing a workshop in **Helping Babies Breathe** is just the first step in improving the care that you give.

After the course, **commit to making a difference** by:

(1) Identify areas that need improvement
 Identify differences between what is recommended and what is done at your facility. Use the *Action Plan*, the *Questions to improve care* and *What to monitor*.

(2) Create a system for ongoing practice and review of cases
 Master the *Action Plan* by participating in ongoing practice, reviewing your actions every time you help a baby breathe, and using case reviews and audits to identify areas that need improvement.

(3) Make changes that will improve care
 Work with others on a plan to improve care and take action in your facility.

Recording information and using it to improve care

Complete a birth record for every baby to help plan ongoing care. A simple birth record also can help identify areas that need improvement and measure change as a result of improvement activities.

For example, every baby should receive

- Thorough drying
- Immediate skin-to-skin contact
- Delayed cord clamping

If these actions do not occur, reviewing and talking with other providers will help you understand why. Once problems and barriers are identified, changes can be made to overcome them.

Review the actions taken if a baby

- Does not cry at birth
- Receives clearing of the airway, stimulation to breathe, or ventilation with bag and mask
- Needs special care after birth
- Dies in the delivery area
- Is stillborn

The care may be appropriate and complete, or there may be steps in care that can be improved. When improvement activities are in progress, the birth record can help measure change.

Sample birth record for newborn

1. IDENTIFICATION

Baby's name _____ ID No. _____ Birth date _____ Time _____

Mother's Name _____ ID No. _____

Mother's/Father's physical address _____ Contact _____

2. BIRTH

Complications during pregnancy/delivery _____

Gestational age _____ Method of delivery _____ Maternal anaesthesia _____

Care at birth	Check if yes	Apgar score			Status at birth
		1 min	5 min	10 min	
Was the baby dried thoroughly?	<input type="checkbox"/>				Sex: _____ Weight: _____
Did the baby cry? yes <input type="checkbox"/> no <input type="checkbox"/>					Male <input type="checkbox"/>
Did the baby receive					Female <input type="checkbox"/>
- Clearing of the airway?	<input type="checkbox"/>				<i>Check one</i>
- Stimulation to breathe?	<input type="checkbox"/>				<input type="checkbox"/> Alive - routine care
- Ventilation with bag and mask?	<input type="checkbox"/>				<input type="checkbox"/> Alive - special care
- Immediate skin-to-skin contact?	<input type="checkbox"/>				<input type="checkbox"/> Death in delivery area
- Delayed cord clamping?	<input type="checkbox"/>				<input type="checkbox"/> Fresh stillbirth
					<input type="checkbox"/> Macerated stillbirth
		Total			

Birth Provider _____ Date _____ Time _____

Continuing to learn with the Action Plan

There are 3 main questions in the Action Plan:

- **Crying?**
- **Breathing?**
- **Heart rate?**

The answers to these questions identify different pathways through the Action Plan.

- **Trace each of the cases described on page 51 on the Action Plan.**

Practice the questions you must ask and the actions you take in the correct order.

- **Have another provider describe a case to you and give feedback.**

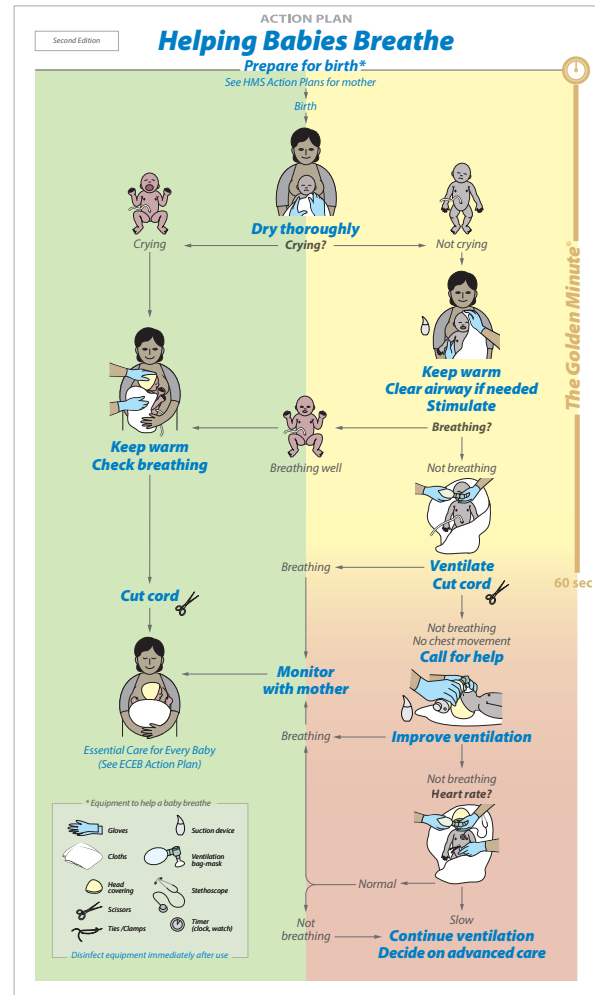
Ask the evaluation questions. Your partner will answer by responding with the neonatal simulator or in words. Decide on the correct action. Perform the action. Ask the next evaluation question. Continue until the baby is breathing well or you decide on advanced care. Reflect on what you did and ask your partner for feedback (helpful suggestions to improve what you do).

- **Review after helping a baby breathe.** Use the Action Plan as a guide to review your actions after helping a baby breathe. You can review by yourself and with other providers who assisted.

Ask these questions:

- What happened at the birth?
- Did you follow the Action Plan?
- What went well and what could have gone better?
- What did you learn from the case?
- What will you do differently next time?

Share your experiences with other birth attendants so you can learn from one another.



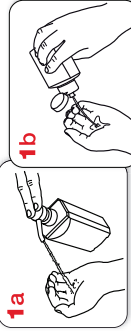
Trace six cases

1	2	3	4	5	6
Dry thoroughly	Dry thoroughly	Dry thoroughly	Dry thoroughly	Dry thoroughly	Dry thoroughly
Crying	Not crying	Not crying	Not crying	Not crying	Not crying
Keep warm	Keep warm	Keep warm	Keep warm	Keep warm	Keep warm
Check breathing	Clear airway if needed	Clear airway if needed	Clear airway if needed	Clear airway if needed	Clear airway if needed
	Stimulate breathing	Stimulate breathing	Stimulate breathing	Stimulate breathing	Stimulate breathing
Breathing well	Breathing well	Not breathing	Not breathing	Not breathing	Not breathing
Cut cord	Cut cord	Ventilate	Ventilate	Ventilate	Ventilate
Routine care	Routine care	Cut cord	Cut cord	Cut cord	Cut cord
		Breathing well	Not breathing	Not breathing	Not breathing
		Monitor with mother	Call for help	Call for help	Call for help
			Continue/improve ventilation	Continue/improve ventilation	Continue/improve ventilation
			Breathing	Not breathing	Not breathing
			Monitor with mother	Continue ventilation	Continue ventilation
				Normal heart rate	Slow heart rate OR Normal heart rate
				Breathing	Not breathing
				Monitor with mother	Continue ventilation Advanced care



Hand washing and hand cleaning

How to handrub? WITH ALCOHOL-BASED FORMULATION



1a



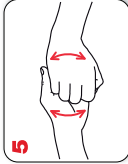
1b

Apply a palmful of the product in a cupped hand and cover all surfaces.



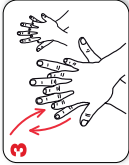
2

Rub hands palm to palm



5

backs of fingers to opposing palms with fingers interlocked



3

right palm over left dorsum with interlaced fingers and vice versa



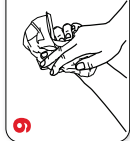
6

rotational rubbing of left thumb clasped in right palm and vice versa



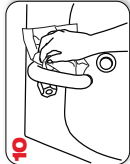
8

rinse hands with water



9

dry thoroughly with a single use towel



10

use towel to turn off faucet

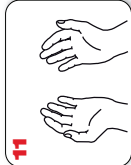


8

...once dry, your hands are safe.



20-30 sec



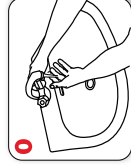
11

...and your hands are safe.



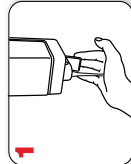
40-60 sec

How to handwash? WITH SOAP AND WATER



0

Wet hands with water



1

apply enough soap to cover all hand surfaces.



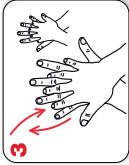
4

palm to palm with fingers interlaced



7

rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



3

right palm over left dorsum with interlaced fingers and vice versa



6

rotational rubbing of left thumb clasped in right palm and vice versa



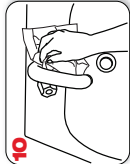
8

rinse hands with water



9

dry thoroughly with a single use towel



10

use towel to turn off faucet

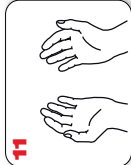


8

...once dry, your hands are safe.



20-30 sec



11

...and your hands are safe.



40-60 sec

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Second Edition

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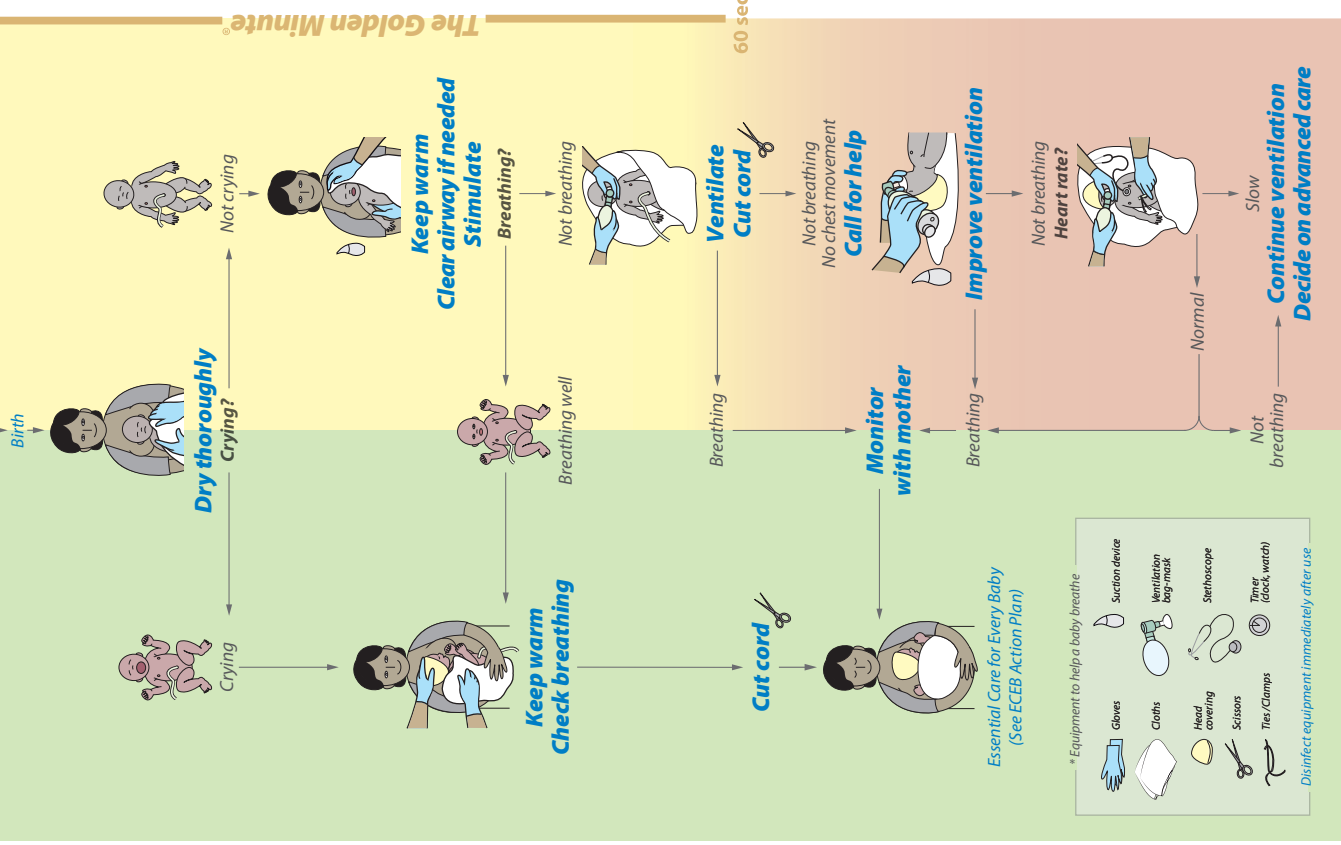
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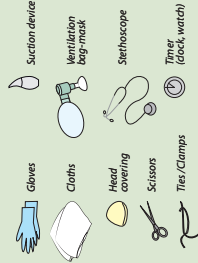
ACTION PLAN Helping Babies Breathe

Prepare for birth*
See HMS Action Plans for mother



Essential Care for Every Baby
(See ECEB Action Plan)

* Equipment to help a baby breathe



Disinfect equipment immediately after use.