Helping Babies Breathe, 2nd Edition
Update Guide

For facilitators and providers who have used HBB 1st Edition

Helping Babies Breathe 2nd Edition includes scientific updates to harmonize with the 2015 ILCOR Consensus on Science with Treatment Recommendations as well as the 2012 WHO Basic Newborn Resuscitation Guidelines.

Since its launch in 2010, HBB has been implemented in 80 countries around the world. HBB 2nd Edition now builds on that success with strengthened guidance on educational methods, implementation, and ways to improve care in facilities.

Helping Babies Breathe 2nd Edition offers the opportunity to refresh training of providers and renew the commitment to better health for newborn babies. All providers who care for babies at birth should be trained, but training in a workshop should be only the first step in improving care.

Use the following summary of updates and changes to understand how HBB 2nd Edition can renew the focus on helping babies breathe at birth and improve care in facilities.
What’s new on the HBB 2nd Edition Action Plan?

- Link with Helping Mothers Survive
- Illustration of care of the baby with
- Removal of “If meconium, clear airway”
- Clearing airway by positioning for all
- Suctioning only if needed
- Decision to begin ventilation before or after cutting the cord
- Emphasis on chest movement with ventilation
- Link with Essential Care for Every Baby
- Emphasis on continued ventilation until the baby is breathing
- Decision on advanced care
- Equipment disinfection and storage
What’s new in the HBB 2nd Edition Facilitator Flip Chart?

Link to the Action Plan at each step

Emotional engagement of the participant

More complete outline for what to explain and demonstrate

Ask a participant to point out
The Golden Minute

Explain and demonstrate

Begin The Golden Minute with a breath-holding exercise.
Ask participants to stand and breathe deeply. Then ask them to hold their breath for 1 minute. Call out the time every 15 seconds. Ask participants to be seated if they need to take a breath before one minute.

“By one minute a baby should be breathing or receiving ventilation.”

If the baby is not crying, help the baby breathe in The Golden Minute.

Keep warm
- Keep the baby skin-to-skin
- Cover the head (helper may assist)

Clear the airway if needed
- Position the head slightly extended
- Remove secretions from the airway if they are blocking the mouth or nose
- OR if there is meconium in the amniotic fluid

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

Facilitate practice

Ask the participants to practice in pairs
- Keep warm
- Clear the airway - position the head, remove secretions if needed
- Stimulate breathing

Check yourself (page 23)

Which babies need clearing of the airway with a suction devise?
- 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

Background
Clearing the airway can cause harm if done unnecessarily or not done gently. Suction only if there are secretions blocking the nose or mouth or if there is meconium in the amniotic fluid. Suctioning too deeply can harm or irritate the back of the throat. Suctioning or wiping to clear an object can injure the lining of the mouth. In both cases, the baby may not breathe well. Suctioning repeatedly or too long can keep a baby from breathing or cause a baby to have difficulty breathing.

The device used to clear the airway differs from one area to another. Each device has advantages and disadvantages. Any device can introduce infection if it is not disinfected before use. Otherwise, the device must be disinfected (p. 244).

Some forms of stimulation can harm babies and should never be used.
Essential methods include slopping the back, squeezing the diaphragm, flexing the thighs onto the abdomen, dilating the anus, using hot/cool water, and shaking or holding the baby upside-down. Help participants evaluate other methods of stimulation that may be in use.

Stimulation can help a baby begin to breathe, even after drying. Prolonged suctioning or stimulation are unlikely to be effective, may cause harm, and will delay ventilation. If a baby is not breathing well or crying after clearing the airway and brief stimulation, the baby needs ventilation with bag and mask. More stimulation alone is unlikely to be effective. Prolonged stimulation only wastes time while the baby is becoming sicker. Stimulation can be given to improve and sustain spontaneous breathing during and after ventilation with bag and mask.

Educational advice
Emphasis that there are two ways to clear the airway: first by positioning the head and second by removing secretions that are blocking the airway. Stimulation by rubbing the back is a separate step from drying.

Use suction devices available locally to demonstrate the skill. Discuss their advantages and disadvantages. Help participants use the bulb suction device correctly by transferring water from one container to another.

Expanded educational advice and teaching tips for specific skills.
Background and educational advice

In a small group of participants (no more than 6 persons with 1 facilitator):
- Demonstrate continued ventilation with normal or slow heart rate and communication with mother and a helper.
- Show four different scenarios:
  - Heart rate normal, baby begins to breathe; close monitoring
  - Heart rate normal, baby not breathing; continue ventilators, seek consultation to decide on advanced care
  - Heart rate slow, baby not breathing; improve and continue ventilation, seek consultation to decide on advanced care, consider stopping ventilation after 20 minutes
  - No heart rate, no breathing; after 10 minutes of ventilation, stop ventilation
- Answer questions and encourage correct actions during the exercise.
- Have participants practice the checklist in pairs, give one another feedback and review their actions (debrief).
- What happened at the birth?
- Did you follow the Action Plan?
- What went well and what could have been better?
- What did you learn?
- What will you do differently next time?
- Share feedback with the whole group after the exercise.
- Review the group discussion questions.

Group discussion

At the end of the exercise, ask participants to answer these questions in the small groups. Encourage them to think about how they will put the skills learned into practice. Make note of other questions that participants ask and their answers.

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, who will take over the resuscitation 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 died?
Implementation – putting new knowledge and skills to use after the workshop

3 questions to improve care

1. What are you going to do differently?
2. What will you no longer do?
3. How are you going to make these changes happen?

Ask the participants to:
1. Review the Action Plan as a guide to the level of care at birth.
2. Review the Questions to improve care and what people resolve in their provider guides.
3. Determine differences in what is recommended and what is currently done at their facility.
4. Identify some areas for further practice and improvement of care.

Improve care seven times. Knowing the right care to give is not enough. To see babies live, that knowledge must be put into practice.

Improving a workshop in helping babies breathe is just the first step in improving the quality of care you give.

After the course, commit to making a difference by:
1. Identifying areas that need improvement
2. Creating a system for ongoing practice and review of cases.
3. Making changes that will improve care for every baby.

Educational advice:
- During the workshop, provide educational resources and tools for ongoing practice and improvement.

Explain and demonstrate:
Providers will lead with the skills to help every baby breathe. Improving the health of babies and the quality of care.
A provider who has mastered the Action Plan will perform the necessary actions for every baby and maintain those skills.

A provider who has mastered the Action Plan is:
1. Participating in ongoing practice.
2. Referring the steps taken when helping a baby breathe.
3. Using case reviews and audits to identify areas that need improvement.

Facilitate practice:
Ask participants to:
1. Not all babies where the care at birth did not go well.
2. Describe the care from their experience and trace the corresponding path through the Action Plan.
3. Discuss how they can improve the care if a similar situation should occur again.

Invite discussion:
Ask the participants to answer the following questions to organize a system for ongoing practice and case review:
1. What skills need continuing practice? How will frequent skill practice become a routine?
2. How and when will providers review and or audits be organized to improve care?
3. How will routine case reviews or audits be organized to improve care?

Use this worksheet to record the information:

Systems for practice and identifying areas for improvement

Improvement team activities
What’s new in the HBB 2nd Edition Provider Guide?

Skills practice for use after the workshop

Larger illustrations with horizontal format

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 and 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 mechanism, move directly to stimulate breathing.

Remove secretions from the airway
• If they are blocking the mouth or nose
• If there is mechanism 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?
Resources for practice and improving care

### Commit to making a difference

- Improves habits of health in the family through re-emphasizing the need for baby care.
- Implementing regimes to help establish healthy practices at birth.
- Builds staff confidence to help improve maternal and newborn health.

### Routine care

- Staff indicators should be taken care.
- Staff should practice effective practices for baby care.

### After the birth

- Staff indicators should be followed as always.
- Staff should practice effective practices for baby care.

### Providing the best care at birth

Improving care practices, knowledge of right care to give is not always enough to save babies’ lives—the knowledge must be put into practice.

Completing a workshop on 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.
2. Identify differences between what is recommended and what is done at your facility.
3. Use the Action Plan, the Questions to Improve and What to Monitor.
4. Create a system of ongoing practice and review of cases.
5. Make changes that will improve care.

Complete a birth record for every baby to help plan ongoing care. A simple birth record can also 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 cleaning of the airway, stimulation to breathe, or ventilation with bag and mask
- Needs special care after birth
- Dies in the delivery area

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

---

### Sample birth record for newborn

<table>
<thead>
<tr>
<th>1. IDENTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby’s name</td>
</tr>
<tr>
<td>Mothers Name</td>
</tr>
<tr>
<td>Father’s physical address</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. BIRTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complications during pregnancy/delivery</td>
</tr>
<tr>
<td>Gestational age</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Care at birth</th>
<th>Check if yes</th>
<th>Apgar score</th>
<th>Status of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 min</td>
<td>5 min</td>
</tr>
<tr>
<td>Was the baby dried thoroughly?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did the baby cry?</td>
<td></td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>Did the baby receive</td>
<td>Clearing of the airway?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stimulation to breathe?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ventilation with bag and mask?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immediate skin-to-skin contact?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Delayed cord clamping?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Birth Provider | Date | Time |

---
Checklist
Updating Helping Babies Breathe 1st Edition materials


☐ Compare the Action Plans
  ___ Mark through “If meconium, clear airway”
  ___ Add “if needed” to Clear airway
  ___ Note emphasis on chest movement when ventilation begun
  ___ Decide on and follow the facility routine for initiating ventilation with cord intact or cut
  ___ Decide on when and where advanced care will be sought
  ___ Add “Disinfect equipment after use” under box in lower left corner

☐ Annotate the Facilitator Flip Chart – consider gathering a group of facilitators to discuss the changes and make notes on the materials
  ___ Review What the facilitator needs to know and do; explore the additional resources
  ___ Read Educational advice on each page to pick up teaching tips
  ___ Emphasize communication with mother and self-reflection, feedback in pairs, and review of actions (debriefing) during the exercises
  ___ Insert the breath-holding exercise at the beginning of The Golden Minute
  ___ Download pdfs of the HBB 2nd Edition Knowledge Check, Bag and Mask Skill Check, OSCEs A and B
  ___ Download pdfs and insert the pages Commit to making a difference, Master the Action Plan, make changes to improve care. Practice facilitating these pages

☐ Update knowledge and skills with the Provider Guide – consider gathering all providers for a refresher to discuss the major changes and practice skills
  ___ Present and demonstrate the changes on the following pages and practice the skills:
  ___ Dry thoroughly – do not routinely clear the airway before drying if meconium is present
  ___ Keep warm, clear the airway if needed and stimulate breathing – suction only if secretions block the nose or mouth or if there is meconium in the fluid (and the baby is not crying)
  ___ Ventilate with bag and mask – practice ventilation with chest rise for a full minute
  ___ Is the chest moving or is the baby breathing well – emphasize 2 immediate steps if the chest does not move with ventilation (reapply the mask, reposition the head)
Call for help, improve ventilation – emphasize 5 steps to improve ventilation

Continue ventilation, evaluate heart rate and breathing to decide on advanced care – emphasize need for spontaneous breathing before stopping ventilation; discuss when, where, and how to refer

Monitor with mother – emphasize communication with family; disassemble ventilation bag and mask for disinfections

Commit to making a difference – identify what to change

Master the Action Plan – create a routine in the facility for low-dose high-frequency practice, use self-reflection, feedback, review of actions after help to breathe and case reviews

Make changes to improve care – identify a change and work through the steps to accomplish the change; discuss data collection and use

Additional Resources available on hbs.aap.org

- Summary of Changes
- FAQs
- Update Guide for users of HBB 1st Edition
- Background presentations
- Reprocessing Guidelines and associated materials
- HBB 2nd Edition Webinar – Coming SOON