

HBB Frequently Asked Questions: Implications of the revised Basic Newborn Resuscitation Guidelines from WHO (anticipated publication in 2012)

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Background

- Existing WHO Basic Newborn Resuscitation Guidelines date from 1998, when a strict, evidence-evaluation format was not used.
- Reviews leading toward the revised Guidelines occurred in 2009 and June 2011. Two technical expert panels (January 2009-initial evaluation questions; June 2011 evidence evaluation review and debate), representing WHO Regions globally, met in Geneva to make guideline recommendations.
- WHO took as the basis for updated guidelines the ILCOR evidence evaluations for 2010. Evidence evaluation followed a modified GRADE system, supplemented the ILCOR reviews with additional reviews on questions that had not been considered by ILCOR, and updated all reviews with literature through April 2011. Reviews focused on randomized controlled trials, but also considered animal/experimental studies when the evidence base was scant. This approach differs from ILCOR, and furthermore, the WHO process takes into account the care environment in low-and middle-income countries. Recommendations are made by WHO even when evidence is scant because countries rely on the guidelines for operationalizing their health system approach to resuscitation.
- Since the expert technical consultation in June 2011, the draft guidelines have undergone two rounds of revision by the participants and received conditional approval of the WHO Guidelines Review Committee in December 2011. The time of publication remains uncertain.
- The new Guidelines specifically mention Helping Babies Breathe as an example of materials and programs for implementation.

Summary of Recommendations and relevance to HBB

1. Delay cord clamping until at least one minute in term and preterm infants who are vigorous or respond to the initial steps of drying, clearing the airway (as necessary) and stimulation to breathe.
Consistent with HBB.
2. Specific stimulation to breathe (rubbing the back 2 or 3 times) should be given to babies who do not breathe spontaneously after drying before clamping the cord and initiating positive-pressure ventilation.
Consistent with HBB.
3. In babies with clear amniotic fluid who are breathing well, suctioning should not be performed.
In babies with clear amniotic fluid who are not breathing well, suctioning should be performed before positive-pressure ventilation only if secretions are filling (obstructing) the mouth or nose.
Consistent with HBB. In some settings, this will require new emphasis during teaching. The phrase used in HBB ("clearing the airway" rather than "suctioning") is

meant to convey that this step removes secretions that are potentially obstructive. Routine suctioning may actually depress heart rate and delay onset of spontaneous respirations, especially if it causes vagal stimulation. Clear fluid in the oropharynx likely does not interfere with the effectiveness of ventilation unless it obstructs the movement of air into the airways. The new recommendation can be highlighted with the Check Yourself questions (page 16 Learner Workbook) and in small group discussion after the first Exercise in The Golden Minute®.

4. In babies with meconium in the amniotic fluid, intrapartum suctioning (before delivery) should not routinely be performed.
Current facilitator materials discuss intrapartum suctioning with meconium as not routinely recommended, but practiced in some settings, especially where there is little fetal monitoring, higher rates of concomitant depression at birth, and more post-term births. The new recommendation can be highlighted with the Check Yourself questions (page 10 Learner Workbook) and in small group discussion after the first Exercise in The Golden Minute®.
5. In babies with meconium in the amniotic fluid who are breathing on their own,
...tracheal suction should not be performed.
...suction of the mouth and nose is not recommended.
In babies with meconium in the amniotic fluid who are not breathing well,
...tracheal suction (if available) should be performed before initiating positive-pressure ventilation.
...suctioning of the mouth and nose should be performed before initiating positive-pressure ventilation.
Consistent with HBB. Because tracheal intubation for suctioning is not available in most settings that use HBB, suctioning of the mouth and nose before initiating positive-pressure ventilation is recommended for infants with meconium in the amniotic fluid.
6. Where mechanical devices for suction are not available, a bulb syringe (single use or able to be disinfected) is preferable to a tube-and-reservoir device used with oral suction.
Consistent with HBB. The penguin suction device can be completely disinfected for re-use. Tube and reservoir suction is mentioned in the Learner Workbook as an alternative (along with wiping the mouth and nose with a cloth). These methods may be necessary when mechanical suction or a bulb suction device is not available.
7. In babies who are not breathing well after drying and additional stimulation, positive-pressure ventilation should be provided by one minute after birth.
Consistent with HBB.
8. In term and preterm (>32 week) infants, positive-pressure ventilation should be initiated with room air.
Consistent with HBB. When delivery of a very preterm infant is anticipated, efforts should be made to transfer the mother to a center providing specialty neonatal care.
9. Positive-pressure ventilation should be provided with self-inflating bag and mask.
Consistent with HBB.

10. Positive-pressure ventilation should be provided with a face mask interface.
Consistent with HBB.
11. In babies who require positive-pressure ventilation, adequacy of ventilation should be assessed by measurement of heart rate after 60 seconds of ventilation with visible chest movement.
Consistent with HBB. The steps to improve ventilation are performed if the chest is not moving. Heart rate is checked after 1 minute of ventilation with chest movement.
12. In babies who are not breathing well by one minute, priority should be given to ventilation rather than chest compressions.
Consistent with HBB. For this reason, chest compressions are not taught in HBB. Chest compressions are part of advanced resuscitation with 2 or more health professionals, as taught in the Neonatal Resuscitation Program.
13. In babies who have no spontaneous heart rate after 10 minutes, resuscitation should be stopped.
In babies who have a heart rate < 60 beats per minute and no spontaneous breathing after 20 minutes of resuscitation, intervention should be stopped.
Consistent with HBB. The special circumstance of a baby with low heart rate despite continued ventilation is addressed. This circumstance can be highlighted in the Check Yourself questions and small group discussion.